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The California Tobacco Control Program: Can We Maintain the Progress? Results from the California Tobacco Survey, 1990-2005. Volume 2.

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The California Tobacco Control Program: Can We Maintain the Progress? Results from the California Tobacco Survey, 1990-2005. Volume 2

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California Tobacco Control Program

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To obtain data collection and statistical methodology, please contact the California Tobacco Control Program (CTCP) at: partners.webmaster@cdph.ca.gov

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Glossary

Selected Key Findings

Chapter 1

Protection of Nonsmokers from Secondhand Smoke

- In spite of a state-wide ban on smoking in the workplace since 1998, 13.9±4.5% of nonsmokers in 2005 were exposed to secondhand smoke in the workplace. The highest daily exposure history was at work sites with 50 or more employees.

- Most secondhand smoke exposure (excluding the work and home environments) occurred in parks and public outdoor places (42.9±3.6%). Restaurants were the second highest source of exposure (15.6±2.4%).

- There has been no change in the perception of the adverse health effects of secondhand smoke. In 2005, about 10% of Californians believed secondhand smoke was not harmful to babies and children and 27.8% of smokers did not consider it to be associated with causing cancer in nonsmokers.

- More than 92% of California residents believed that smoking should not be allowed in cars when children are present; this included 85.1% of smokers.

- A clear majority (66.3±2.5%) of Californians said it would make no difference to their visits to casinos and 24.4±2.2% said they would be more likely to visit casinos if smoking were prohibited in them. This majority was consistent for current casino patrons, including smokers.

- Most young adults below the age of 30 years wanted the existing ban on smoking in bars to be either kept as is or extended to outside dining areas. Only 20.4±4.6% of smokers wanted the ban to be removed while 25.5±4.4% of current smokers wanted it extended to patios and outdoor areas.

Chapter 2

Young Adults: Smoking Prevalence, Uptake, and Cessation

- Smoking prevalence among young Californians (18-29 years) continues to decline from peak rates in 1999. In 2005 smoking prevalence was 15.3±1.4%, a decrease of 19% from 1999.

- The decline in current smoking can be explained by a reduction in smoking initiation among younger birth cohorts. Among 18-20-year-olds, prevalence dropped by nearly half (46%) from 1999 to 2005, a decline not seen in older age-groups.

- Continuing declines in young adult smoking rates are expected given the declining experimentation rates in birth cohorts who are not yet young adults. Reduced experimentation among adolescents from 1999 has carried through to lower rates of

current established smoking among adults aged 18-20 years in 2005. Adolescents now age 12-17 are experimenting at half the rate of earlier adolescents.

- The prevalence of daily and moderate-to-heavy (15+ cigs/day) smoking showed the largest declines. Daily smoking among young adults declined by 40% since 1990 and moderate-to-heavy smoking declined by 61% since 1990.

- Nearly half of young adult smokers (22-29 years) continue to report first smoking "regularly" after age 18. This is particularly the case for young adults who attended college.

- Almost one-quarter of young adult current non-smokers remain at risk of future smoking. 80% of those who have experimented are either currently smoking or at risk of smoking. This emphasizes the importance of programs to prevent progression among young adults.

- Between 1999 and 2005, there was a marked decline in the proportion of young adult smokers who attempted to quit in any given year.

- For the last decade, young adults were more likely to quit successfully than were older adults. There is no evidence that this age effect is diminishing.

- Young adult smokers are less addicted than older smokers, and more have smoke-free homes. These factors are associated with higher cessation rates.

- Pharmaceutical aids were rarely used by young adults when they tried to quit. There is no evidence that increased use of pharmaceutical aids would increase cessation rates among young adults.

Chapter 3
Adolescent Smoking Behavior

- The large declines in adolescent smoking previously associated with the California Tobacco Control Program (CTCP) continued through 2005.

    - Among 16- to 17-year-olds, the percentage of established adolescent smokers (smoked at least 100 cigarettes in lifetime) declined by a factor of 76.7% between 1996 and 2005, reaching a low of 3.5±1.2% for this age group.

    - In 2005, only 2.9±1.2% of 12-13 year olds reported having ever smoked, a factor decline of 48.2% from 2002. The percentage of 14-15-year-olds who reported ever smoking was 12.7±2.8%, a factor decline of 31.0% since 2002. Among 16-17-year-olds, 23.9±3.5% reported having ever smoked, a factor decline of 31.9% since 2002.

- In 2005, 46.5±4.3% of 12-13-year-olds were at very low risk for starting to smoke (committed never smokers who definitely had never been curious about smoking), a factor increase of 22.7% since 2002. For 14-15-year-olds, 35.1±4.6% were at very low risk, a factor increase of 17.8% since 2002. The percentage of 16-17-year-olds at very low risk was 38.9±5.2%, a factor increase of 37.9% since 2002.

- However, there are a number of early warning signs that this decline may not continue into the future.
  - In 2005, among those who had ever been established smokers, the percentage of adolescent former smokers decreased to only 7.8±4.6%, a significant decline by a factor of 68.0% since 1990.
  - The percentage of adolescents perceiving a benefit to smoking rose significantly to 56.7±3.2% so that it now is similar to that observed in 1993.
  - Adolescent committed never smokers' belief that they could quit easily if they started smoking increased dramatically in 2005 to 44.2±5.7%.
  - The percentage of adolescents who reported having a best friend who smoked appeared to increase in 2005 to 28.3±2.7%.

Chapter 4
Media and Marketing Influences on Smoking

- Recall of anti-smoking advertisements decreased between 2002 and 2005 coinciding with the decline in per capita expenditure on anti-smoking mass media. There were also fewer calls to the California Smokers' Helpline in years with lower mass media expenditures.

- Over half of Californians under 40 years had a favorite anti-smoking advertisement. Many health consequences advertisements made by CTCP were named as favorites.

- However, the majority of 15-29-year-olds named "tobacco industry manipulation" advertisements as their favorite. Very few of the California Tobacco Control Program (CTCP) advertisements were nominated in this category by this very important demographic group.

- Ever increasing proportions of Californians decline to nominate a favorite brand of cigarette advertising. This included 75% of 12-14-year-old adolescents.

- Some of the most popular actors among adolescents in 2005 have appeared multiple times smoking in movies between 2000 and 2005. Approximately 23% of 12-14-year-olds and 34% of 15-17-year-olds were exposed to 10 or more episodes of smoking by popular actors in movies.

- Ever decreasing proportions of Californians are interested in using a tobacco industry promotional item although there appears to be increasing interest among at-risk smokers, suggesting a change in the industry marketing strategy.

- Bars and clubs that use tobacco industry advertising and promotion products are less likely to enforce California laws that they provide a smoke-free workplace.

Chapter 5
Access to Cigarettes among Adolescents

- There has been a constant decline in the perception among adults that enforcement of laws banning tobacco sales to minors has been inadequate, but nevertheless in 2005 54.3±3.1% still believed enforcement was inadequate.

- Adolescents seem to be avoiding age restrictions on cigarette purchases by becoming familiar with local stores that do not enforce the restrictions; as a result, 57.7±8.4% of young adult smokers aged 18-21 years reported being asked for ID when buying cigarettes, compared to less than a third of adolescents under the age of 18 years.

- The perception among never smoking adolescents that cigarettes would be easy to obtain continues to decline. In 2005, only 39.8±2.5% of never smokers thought it would be easy to get cigarettes, a decline of 31.3% from 1990. However, older adolescents were much more likely to believe it is easy to obtain cigarettes than the youngest adolescents.

- The perception among adolescents that it would be easy to purchase cigarettes did not change significantly in 2005 compared to 2002. Older and more established adolescent smokers were more likely to believe it would be easy to buy cigarettes.

- Since 1996, susceptible adolescent never smokers are consistently more likely to be offered cigarettes than are committed never smokers. In 2005, 31.3±3.3% of susceptible never smokers were offered cigarettes compared to 24.8±3.6% of committed never smokers.

- Adolescents continue to get most of their cigarettes from social sources, with 61.9±6.4% reporting that others gave them cigarettes, while 23.0±5.3% reported that others buy cigarettes for them. Most adolescents are given cigarettes by friends, but there has been a significant shift to rely on friends 18 years of age and older rather than friends below the age of 18 years.

Chapter 6

Smoke-free Schools: Tobacco Education and Policy Compliance

- The percentage of students who recalled having had a class on the health risks of smoking decreased from 80.1±1.0% in 2002 to 73.4±2.3% in 2005, a level similar to that of 15 years earlier in 1990. This decrease was particularly pronounced for adolescents 12-13 years old.

- The percentage of students who believed that classes on the health risks of smoking were effective has remained stable (from 54.4±1.9% in 2002 to 56.7±2.8% in 2005). However, the perceived effectiveness of these classes has been greatest among 12-13-year-olds.

- Approximately one-fifth (19.6±2.5%) of students in 2005 reported seeing someone smoking on school property in the past two weeks. More than twice as many public school students as private school students (21.3±2.8% vs. 8.4±3.3%) reported seeing smoking.

- Approximately two-thirds, 65.1±2.7%, of students reported that students who are caught smoking in school would receive a suspension. This percentage was higher in public schools (67.0±2.9%) than private schools (53.0±8.3%).

- Students' perceptions that teachers smoke on school grounds has remained stable. In 2005, 13.3±3.3% of students perceived that teachers smoked at school, similar to the level in 2002 (13.0±1.3). However, over twice the percentage of private school students reported seeing teachers smoke on school grounds compared to public school students: 26.0±9.9% vs. 12.0±3.2% in 2005.

- The vast majority of all students supported a complete ban on smoking on school grounds (91.6±1.4% in 2005). Of current smokers, 69.8±3.3% expressed this preference in 2005.

- Approximately three-fourths (74.5±3.0%) of non-smokers and two-thirds (67.6±10.0%) of current smokers reported that smokers complied with smoke-free school policies in 2005.

Chapter 7

A Summary of Racial/Ethnic Differences

African Americans

- Between 1990 and 2005, adult smoking prevalence in all racial/ethnic groups showed greater than 20% declines, with African Americans having a 28.3% factor decline in smoking prevalence.

- Across California Tobacco Surveys, overall smoking prevalence for African American adults has been consistently higher than for Non-Hispanic Whites.

- For the period 1999-2005, African American smokers seemed to report a higher percentage of one-day quit attempts compared with Non-Hispanic Whites. However, the percentage of African American smokers who successfully quit for 90 days was not different from Non-Hispanic Whites.

- During the period 1999-2005, a lower percentage of African American smokers reported a total household ban on smoking compared with Non-Hispanic Whites and other racial/ethnic groups.

Asian/Pacific Islanders (Asian/PI)

- Between 1990 and 2005, adult smoking prevalence for Asian/Pacific Islanders (Asian/PIs) declined by a factor of 22.5% (from 14.2±1.1% to 11.0±2.1%).

- In 2005, smoking prevalence for Asian/PI women (6.5±2.3%) was less than half the prevalence for Non-Hispanic White women (13.1±0.7%) and Asian/PI men (16.1±2.7%).

- Smoking prevalence in Asian/PI women during the period 1999-2005 was significantly higher in women who spoke English at home compared to those who did not (7.6±1.3% vs. 3.6±1.4%). An inverse association was found for Asian/PI men, but did not reach statistical significance.

- For the period 1999-2005, the percentage of Asian/PI smokers making a quit attempt of at least one day was significantly higher than that for Non-Hispanic Whites. The percentage of Asian/PI smokers making a quit attempt of 90 days or longer was higher than for Non-Hispanic Whites, but not significantly.

Hispanics

- Since 1990, the largest factor decline in overall adult smoking prevalence was seen in Hispanics (-32.6%). Since 1990, the largest factor decline in female adult smoking prevalence was seen in Hispanic women, -41.6% (from 11.7±1.3% to 6.8±1.0%), which contributed to the overall decline in Hispanic smoking.

- In 2005, smoking prevalence in Hispanic women (6.8±1.0%) was approximately half the prevalence seen in Non-Hispanic White women (13.1±0.7%) and less than half the prevalence in Hispanic men (16.7±1.8%).

- Smoking prevalence during the period 1999-2005 was significantly higher in Hispanic women who spoke English at home compared to those who did not (12.2±1.5% vs. 5.4±1.1%). The same pattern was not seen in Hispanic men.

- During the period 1999-2005, a higher percentage of Hispanic smokers than Non-Hispanic White smokers reported a quit attempt for at least one day. Similarly, a higher percentage of Hispanic smokers than Non-Hispanic White smokers quit for 90 days or more.

- As in previous surveys, in 2005, a lower percentage of Hispanic indoor workers reported smoke-free workplaces compared with Non-Hispanic Whites. Similarly, a higher percentage of non-smoking Hispanic indoor workers reported exposure to secondhand smoke in their workplace in the past two weeks compared with Non-Hispanic Whites.

Chapter 1

Protection of Nonsmokers from Secondhand Smoke

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Chapter 1

Protection of Nonsmokers from Secondhand Smoke

KEY FINDINGS

- In spite of a state-wide ban on smoking in the workplace since 1998, 13.9±4.5% of nonsmokers in 2005 were exposed to secondhand smoke in the workplace. The highest daily exposure history was at work sites with 50 or more employees.

- Most secondhand smoke exposure (excluding the work and home environments) occurred in parks and public outdoor places (42.9±3.6%); restaurants were the second highest source of exposure (15.6±2.4%).

- There has been no change in the perception of the adverse health effects of secondhand smoke. In 2005, about 10% of Californians believed secondhand smoke was not harmful to babies and children and 27.8% of smokers did not consider it to be associated with causing cancer in nonsmokers.

- More than 92% of California residents believed that smoking should not be allowed in cars when children are present; this included 85.1% of smokers.

- A clear majority (66.3±2.5%) of Californians said it would make no difference to their visits to casinos and 24.4±2.2% said they would be more likely to visit casinos if smoking were prohibited in them. This majority was consistent for current casino patrons, including smokers.

- Most young adults below the age of 30 wanted the existing ban on smoking in bars to be either kept as is or extended to outside dining areas. Only 20.4±4.6% of smokers wanted the ban to be removed while 25.5±4.4% of current smokers wanted it extended to patios and outdoor areas.

Chapter 1

Protection of Nonsmokers from Secondhand Smoke

Introduction

Awareness regarding the risks of cigarette smoking started in the 1950s and was documented in the 1964 landmark Surgeon General's report (USDHHS, 1964). However, it was not until 1993 that the adverse health impact of secondhand smoke was publicly endorsed by the United States Environmental Protection Agency report (USEPA, 1992). Since that time, both the State of California (Cal/EPA, 1997) and the federal government (USDHHS, 2006) have confirmed the adverse health impacts of secondhand smoke. More recently, the California Air Resources Board identified secondhand smoke as a toxic air contaminant (Cal/EPA, 2006) and The International Agency for Research on Cancer (IARC), part of the World Health Organization, declared secondhand smoke a type A carcinogen in its report (IARC, 2002).

The tobacco industry has continued to undermine efforts to protect nonsmokers from secondhand smoke or ban smoking in public places (Muggli et al., 2001; Muggli, Hurt, and Blanke, 2003). Their attempts to foil these efforts are the result of changing social norms that are prevalent against smoking and tobacco, and the fact that multiple studies worldwide have shown a consistent decrease in the number of cigarettes smoked by workers after a total work ban was implemented in their workplace (Chapman et al., 1999; Fichtenberg & Glantz, 2002). The tobacco industry's campaign took the form of supporting weak legislation on smoking bans (Glantz & Balbach, 2000) and undermining and subverting conclusions from significant studies like the large European study conducted by IARC (Glantz & Balbach, 2000). The extent of the public's perception about the risks of secondhand smoke may be directly attributable to both tobacco control advocates and the tobacco industry campaigns.

Changing the social norm of California's population regarding tobacco products and secondhand smoke exposure was part of the strategy of the California Tobacco Control Program (CTCP). The social norm change model is based on the concept that the thoughts, values, morals and actions of individuals are tempered by their community (CDHS, 1998). Social norms define what is an accepted behavior in a community and what is not. Home rules on smoking are indicative of the social norm. Therefore, the change in social norm in California was evident in the large percentage of homes in California that ban smoking, including the homes of smokers (Gilpin et al., 1999). Smokers in California were much more likely to support a smoking ban in public places, including sports arenas, public transportation, and hospitals, than smokers in other states, even before the 1994 work ban (NCI, 2000).

The ban on smoking in public places and the priority placed on protecting nonsmokers from the risk of secondhand smoke set CTCP apart from other state programs early on. The 1994 legislation in California that banned smoking in indoor public places (California Assembly Bill 13)[1] and was extended to all bars and restaurants in 1998 was among the first nationwide

[1] California Labor Code Section 6404.5

(Gilpin et al., 2002). This was accompanied by an aggressive media campaign on the risks of secondhand smoke that was not matched in other states (Stevens, 1998; CDHS, 2001). Other states, along with foreign countries, have followed the example of California regarding banning smoking in public places. More recently, even countries with relatively high smoking prevalence, including Italy, Ireland, and France, have added a smoking ban in public places, including bars and restaurants.

Passing the legislation was followed by the challenge of enforcing the law, especially in hospitality venues, where smoking is associated with eating and drinking, or in labor work sites. The hospitality industry strongly resisted bans on smoking in restaurants and bars for fear of affecting their revenue, which has proved to be unfounded (Glantz, 2000; CDC, 2002). In fact, bars and restaurants had better revenue after implementing the ban in California (Cowling & Bond, 2005). The casino industry is now making the same arguments against possible smoking bans in casinos.

In this chapter, we explore the trend of reported exposure and attitudes toward secondhand smoke in the last 15 years, since the inception of CTCP. Survey respondents were asked about their reported exposure at work and the type of workplace, as well as the source of this exposure, to identify methods that could limit such exposure in the workplace. Respondents were also asked about their reported exposure at home and the characteristics of the homes that banned smoking. Since the last California Tobacco Survey (CTS) report, other documentation on the health hazards of secondhand smoke has been released, and we therefore explored how population views on secondhand smoke might have changed. Proposals to enact new legislation further limiting exposure to secondhand smoke at beaches, parks, and outdoor eating venues have been in the forefront of the media in California in recent years. The public's perception about these legislations has not been consistent and we attempted to address them in our representative sample of Californians.

1. Smoking Restrictions in the Workplace

In 2005, we repeated the question on smoking policy and exposure at the work place by asking the following questions:

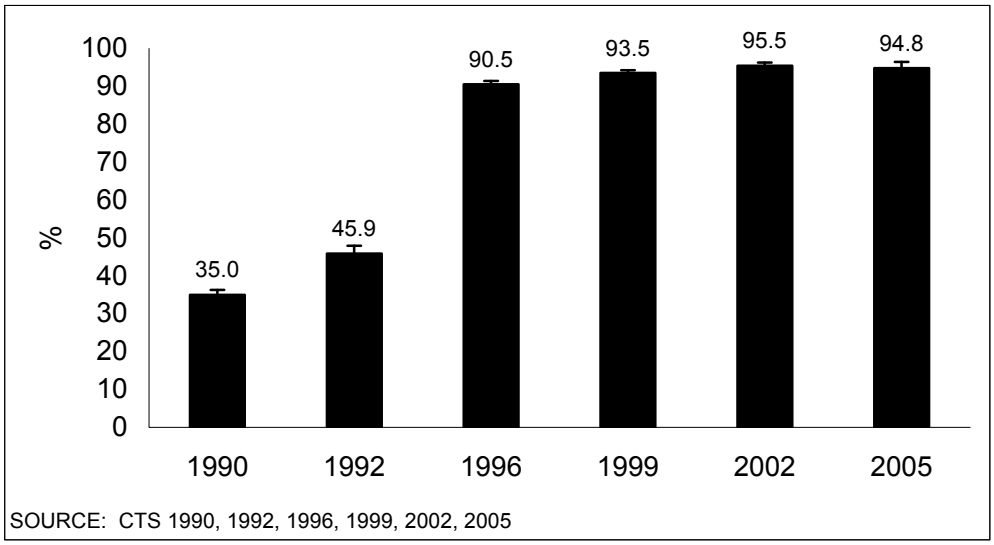
Is your place of work completely smoke-free indoors? ***(F6a)***
During the past <u>two weeks</u> has anyone smoked in the area in which you work? ***(F16)***

1. *About how often does smoking occur in your work area?* ***(F16_1)***
2. *Who is it that smokes at your work place?* ***(F16_2)***

In 2005, nearly 14% of nonsmokers continued to be exposed to secondhand smoke in the workplace.

There was no significant change in the percentage of those who reported smoke-free work places: 95.5±0.8% in 2002 and 94.8±1.7% in 2005. This represents a twofold increase from 1992, before the workplace ban legislation was passed in California. Appendix Table A.1.1 shows the detailed demographics on the report of smoke-free workplaces from 1990 through 2005. As shown in **Figure 1.1,** there has been no substantial change since 1996 when the ban was implemented and 6% of workers still report the absence of smoking bans in their workplace.

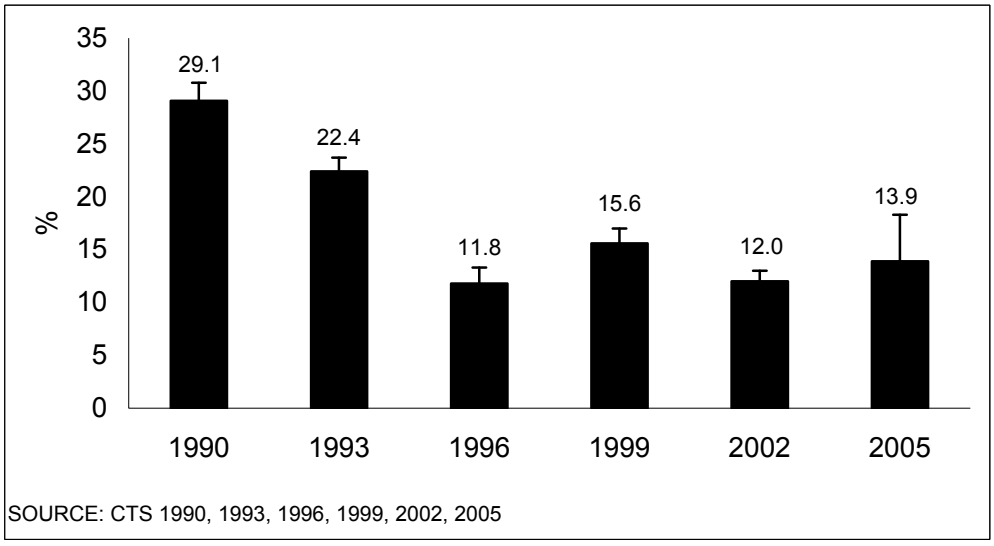
Figure 1.1: Indoor Workers Who Report Having a Completely Smoke-free Workplace, 1990-2005



SOURCE: CTS 1990, 1992, 1996, 1999, 2002, 2005

Similarly, the reported exposure of nonsmokers in the workplace significantly dropped by a factor of 37.9%, from 1993 (22.4±1.3%) to 2005 (13.9±4.5%). However, there was no significant decline in the trend for reported exposure at work after the ban was implemented; almost 14% of nonsmokers reported exposure to secondhand smoke in the workplace in 2005 (**Figure 1.2**).

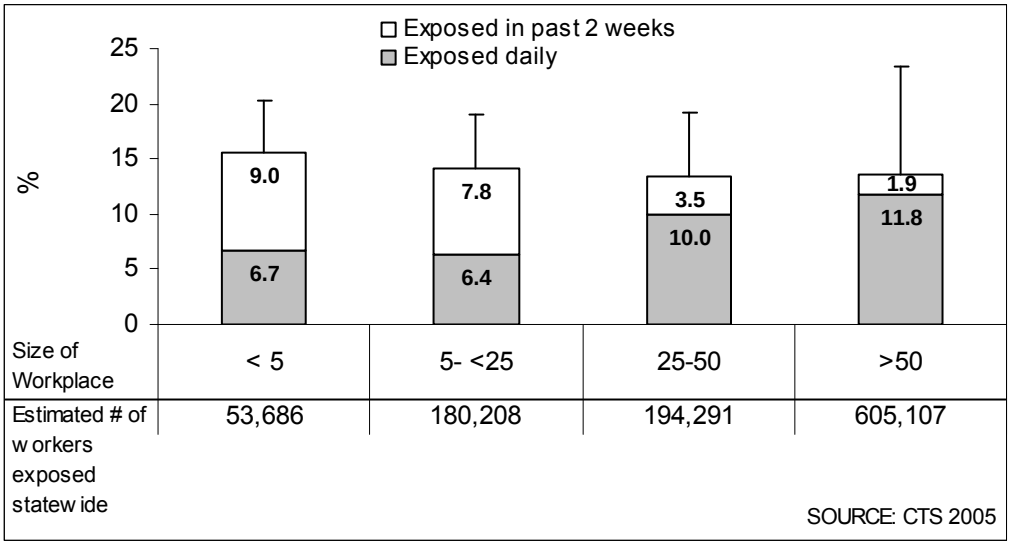
Figure 1.2: Exposure of Indoor Workers to Secondhand Smoke, 1990-2005



SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005

To further explore the group of nonsmokers exposed to secondhand smoke, reported exposure was analyzed according to the size of the workplace and whether smoking exposure occurred daily or non-daily (**Figure 1.3**). As shown in this figure, it seemed that smaller workplaces had a higher incidence of any reported exposure of secondhand smoke, and as expected, larger workplaces had the highest percent of reported daily exposure because of the higher possibility of encountering an employee smoking on any given day. However, because of the small number of respondents, these results should be interpreted with caution.

Figure 1.3: Exposure of Nonsmoking Indoor Workers by Size of Workplace In 2005



Those who were less likely to report smoke-free workplaces included those with lower education and income levels and Hispanics. Similarly, these groups and young adults were more likely to report being exposed to secondhand smoke at work on a daily basis or in the last 2 weeks (see Appendix A.1.2).

Respondents were asked about the source of secondhand smoke exposure at work in the last 2 weeks. Even though their workplace was supposed to be smoke-free, most (87.2±8.8%) reported other employees were smoking and exposing them to secondhand smoke, but only 30.7±21.4 reported that their supervisors or superiors were the source of this exposure (see Appendix A.1.3).

2. Smoking Restrictions in the Home

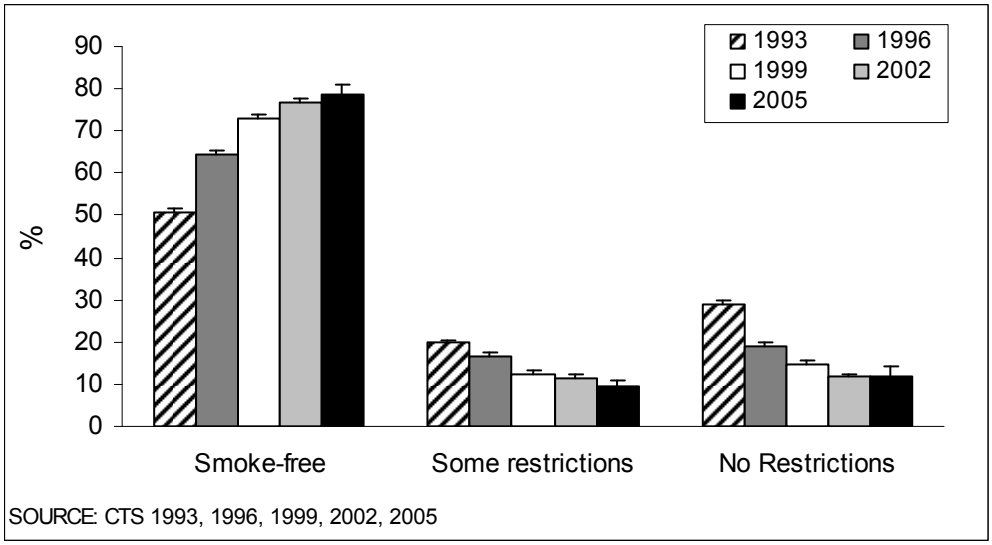
Respondents were asked about the rules on smoking in their homes. We asked the following question:

What are the smoking rules or restrictions in your household, if any? ***(F1)***

In 2005, 78.4% of adults reported a smoke-free home, a 54% factor increase since 1993.

Since 1992 when this question was first asked, there has been a consistent increase in the percentage of smoke-free homes in California (see Appendix A.1.4). In 2005, 78.4±2.5% of California respondents reported having a smoke-free home, which is a 54% factor increase since 1993 (50.9±0.9%) (**Figure 1.4**). As shown in Figure 1.4, there has been no substantial or significant change in the percentage of homes with smoking bans between 2002 and 2005.

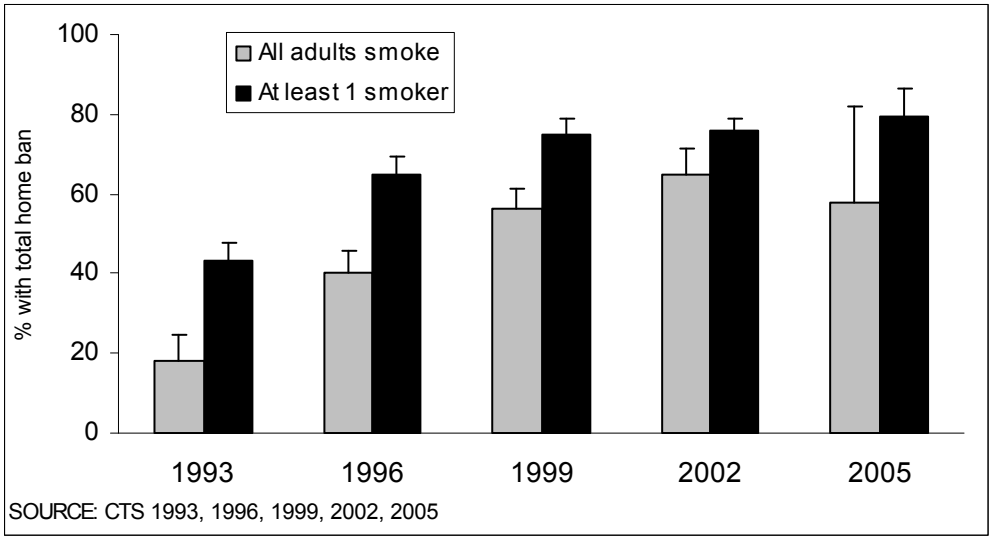
Figure 1.4: Trend in Reported Home Smoking Policy Between 1993 and 2005



	Smoke-free	Some Restrictions	No Restrictions
1993	50.9	20.0	29.1
1996	64.5	16.6	18.9
1999	72.8	12.5	14.7
2002	76.8	11.5	11.6
2005	78.4	9.71	11.9

In 2005, those less likely to report the presence of a home ban on smoking included males, younger adults (18-24 years old), and those in the lower education and income groups. This was also consistent across individual ethnic groups, except for Hispanics, who had a high percentage of home bans for all income levels. Among current smokers, this percentage was lower; nevertheless, the majority of smokers (57.8 ± 3.6%) reported having a smoke-free home in 2005 (Appendix A.1.4). For households with children, the reported home bans were categorized based on the age of the youngest child (0-5 years, 6-11 years, and 12-17 years) and whether there were no smokers, at least one adult smoker, or all adults smoked in the home (see Appendix A.1.5). There was no statistically significant difference in reported smoking bans across different age groups of children, if there were no smokers at home. Home bans were less likely when at least one smoker was present in the home compared to homes with no smokers. In homes with at least one adult smoker, the percentage of home smoking bans was higher in homes with young children than in those with older children. **Figure 1.5** shows that household bans in homes with young children (0-5 years) and with at least one adult who smoked have been increasing since 1993 (from 43.2±4.5% in 1993 to 79.6±6.9% in 2005). It is also apparent that having more smokers in the household was associated a lower likelihood of having a home ban, in spite of having young children.

Figure 1.5: Protection of Young Children (0-5 years) in Households with Smokers



	1993	1996	1999	2002	2005
All adults smoke	18.0	40.3	56.1	64.6	57.8
At least 1 smoker	43.2	64.7	74.7	75.7	79.6

3. Other Secondhand Smoke Exposure

While California workers have enjoyed declines in secondhand smoke exposure in the workplace and at home, there was increasing incidence of exposure from venues other than work or home. We asked about these venues in the following question:

> *In California, in the past 6 months, that is, since [MONTH/YEAR], have you had to put up with someone smoking near you at any other place besides your home or your workplace?* ***(F16a)***

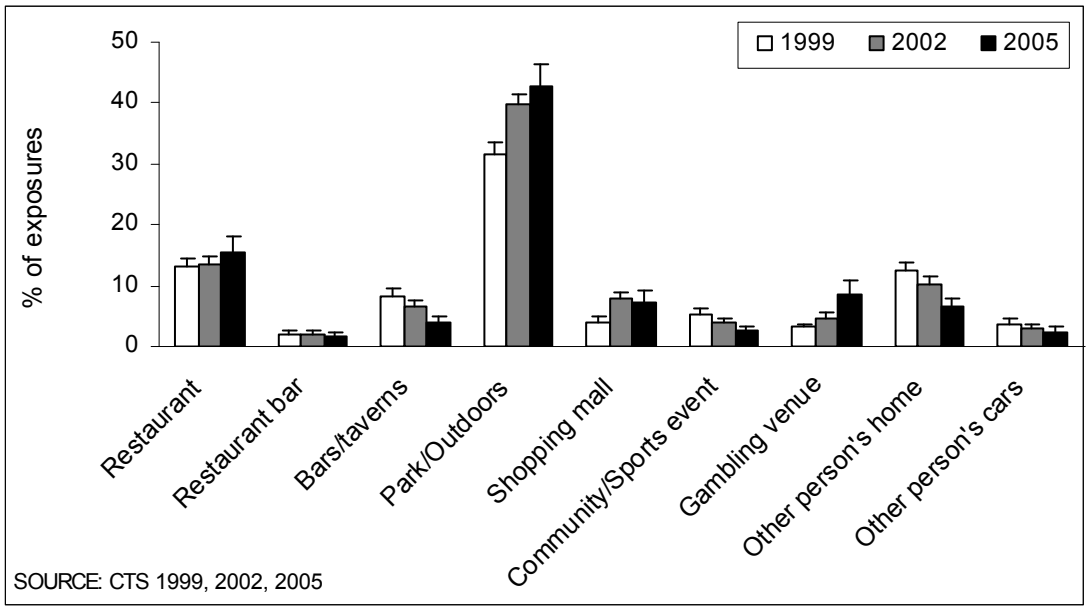
If the respondent answered yes, they were next asked:

> *The last time this happened, in California, where were you?* ***(F16b)***

42.9% of Californians reported exposure to secondhand smoke in parks and public outdoor places in 2005.

In 2005, a total of 42.9%±3.6 of nonsmokers reported being exposed to secondhand smoke at parks and outdoor places in the previous 6 months; the second highest exposure reported was at restaurants (15.6±2.4%) (**Figure 1.6**). There was also a significant increase in reported exposure to secondhand smoke from gambling venues in 2005, since they are the only indoor venues where smoking is still allowed. In 2005, we noticed a substantial decline in reported exposure in bars, community/sport events, and other persons' homes. These findings suggested a shift in the social norms and regulations so that it was no longer acceptable to smoke in the homes of others or in bars as well as at community and sports events.

Figure 1.6: Places Where Nonsmokers Have Been Exposed to Secondhand Smoke in Past 6 Months



	Restaurant	Restaurant bar	Bars/ taverns	Park/ Outdoors	Shopping mall	Community/ Sports event	Gambling venue	Other person's home	Other person's cars
1999	13.2	2.1	8.2	31.7	4.1	5.3	3.2	12.5	3.7
2002	13.4	2.1	6.6	39.8	7.8	4.0	4.7	10.3	2.9
2005	15.6	1.6	4.0	42.9	7.3	2.5	8.7	6.7	2.3

4. Beliefs of Smokers about Harm from Secondhand Smoke

To continue to assess the social norms and education among smokers regarding secondhand smoke, we asked smokers if they agreed or disagreed with the following questions:

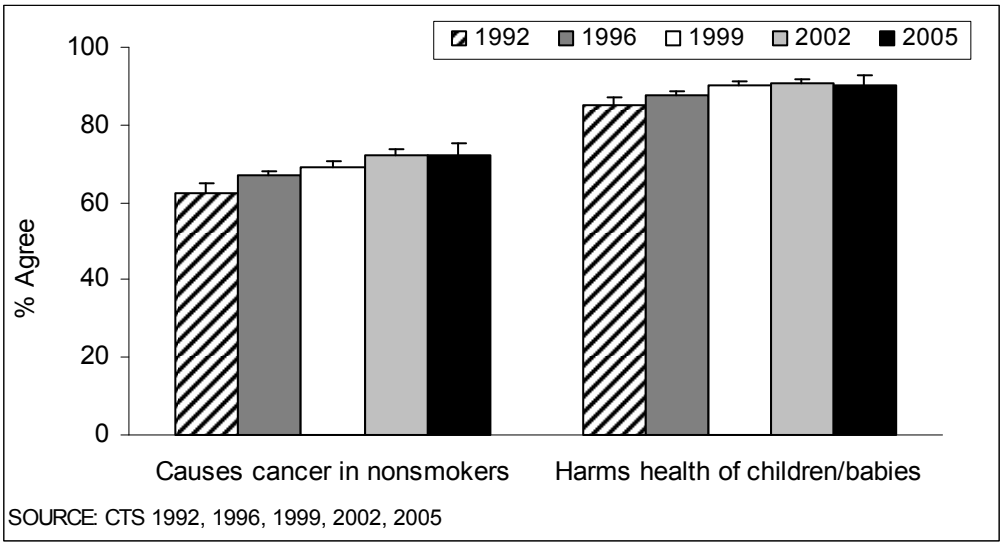
Inhaling smoke from someone else's cigarette causes lung cancer in a nonsmoker. ***(G8)***

Inhaling smoke from someone else's cigarette harms the health of babies and children. ***(G9)***

There has been no change in recent years in the percentage of California smokers who believe secondhand smoke causes cancer to nonsmokers (72.2±3.0%) or harms the health of children (90.3±2.7%). Up to 28% of smokers do not believe their smoking can cause cancer to nearby nonsmokers, and 10% of them do not believe it can harm children. As shown in **Figure 1.7** there has been a consistent but small increase in the percentage of smokers who believe that secondhand smoke harms the health of nonsmokers. There has been an increase by a factor of 15.7% in the belief that smoking causes cancer in nonsmokers, but only a 5.9% factor increase in the belief that it harms the health of children. Since 2002, there has been virtually no change in the level of belief in the harmfulness of secondhand smoke. This data suggests little progress in the area of educating smokers about the harmful effects of secondhand smoke in spite of successive reports highlighting the dangers of secondhand smoke to nonsmokers.

In 2005, 28% of adults did not consider secondhand smoke to be associated with causing cancer in nonsmokers.

Figure 1.7: The Percentage of Smokers Who Believe Secondhand Smoke Can Harm the Health of Nonsmokers (1992-2005)



SOURCE: CTS 1992, 1996, 1999, 2002, 2005

	Causes cancer in nonsmokers	Harms health of children/babies
1992	62.4	85.3
1996	66.8	87.7
1999	68.9	90.1
2002	72.1	90.9
2005	72.2	90.3

5. Support for Restrictions on Smoking

Support for current and future restrictions on smoking is a direct indicator of the social norms of a community in relation to secondhand smoke. Among Californians, the social norms relating to restrictions on smoking have been ahead of other states since the early 1990s. California was the first to support legislation against smoking in the workplace and in bars and restaurants. Some local ordinances in California already ban smoking on the beach and some parks. Since 2002, we have attempted to monitor these social norms by asking the following question:

Please tell me if you think smoking should be allowed or not allowed in each of the following places. ***(G19)***

a) Outdoor public places such as parks, beaches, golf courses, zoos, sports stadiums?

b) Outdoor restaurant dining patios?

c) Just outside entrances to buildings?

d) Indian casinos?

e) Inside cars when children are traveling in them?

92% of Californians believed that smoking should not be allowed in cars when children are present.

Children in Cars

In 2005, a question was added regarding banning smoking inside cars when children are traveling in them. The car is considered a private place and most people might be expected to support leaving this decision to individuals to decide voluntarily rather than support legal action to ban smoking in the car. In New Zealand, a country with progressive smoke-free policies from the early 1990s, although 85% of respondents in a survey supported smoke-free private and public areas when children are around, only 53.5% of New Zealand respondents reported their support to ban smoking in cars when children were traveling in them (Al-Delaimy et. al., 1999).

There has been a consistent increase in the percent of people who support a further ban on smoking in places where it is currently legal to smoke, including outdoor public places, restaurants with patios/outside areas, near entrances to buildings, and Indian casinos (**Figure 1.8**). Females and Hispanics were consistently more likely than other groups to support smoking bans for all of these venues (see Appendix Table A.1.6).

Interestingly, 92.3±0.7% of California respondents supported a ban in cars when children are traveling in them (Figure 1.8). More remarkable is that even daily and occasional smokers strongly supported such a ban (85.1±1.9% and 90.4±4.5%, respectively) (**Figure 1.9**)**.** The lowest level of support that daily smokers had for a smoking ban was for outdoor public areas (22.9%).

Figure 1.8: Percentage of Respondents Who Support Laws to Ban Smoking According to the Place of Such Bans

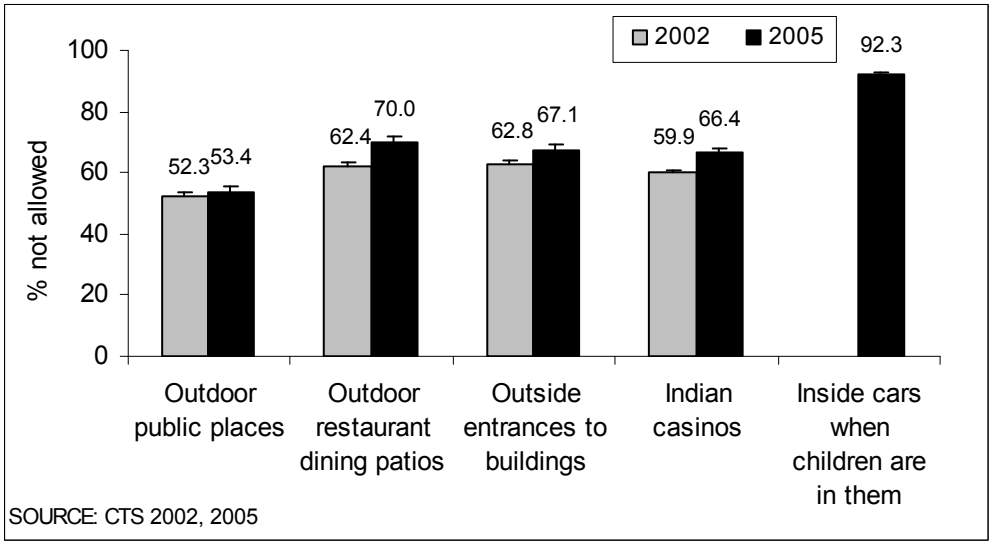
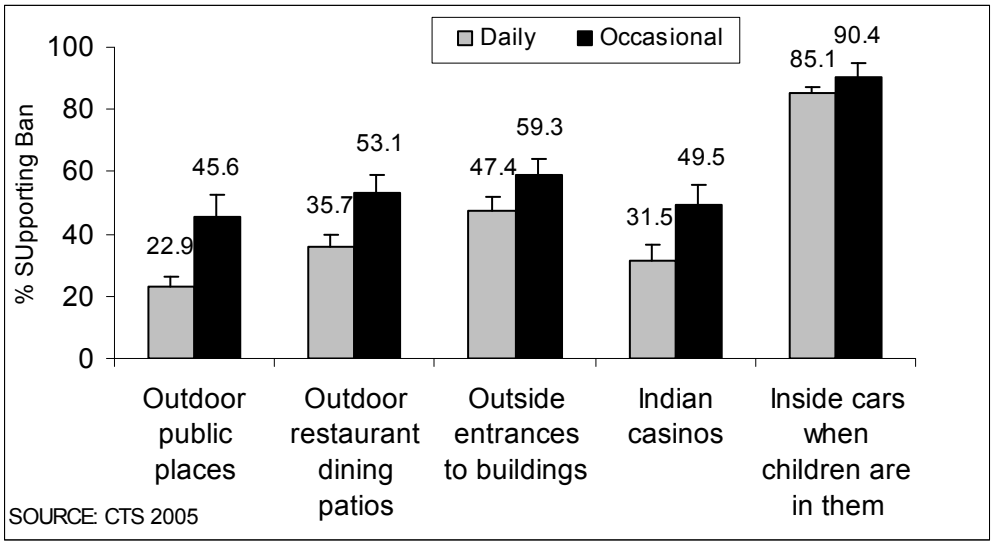


Figure 1.9: Daily and Occasional Smokers who Support Bans on Smoking According to the Places for Such Bans (2005)



Casinos

While card clubs and indoor race track gambling areas in California have been smoke-free since 1998, Indian casinos remain the last workplaces in California (as well as other states with complete bans on smoking in public places) that still allow smoking to take place without restriction. All casinos in California with slot machines are located on Indian reservations. These businesses are not under the legal jurisdiction of the State of California. However, there is growing support to ban smoking in casinos in other states and the casinos and gambling places are being considered for restrictions on smoking.

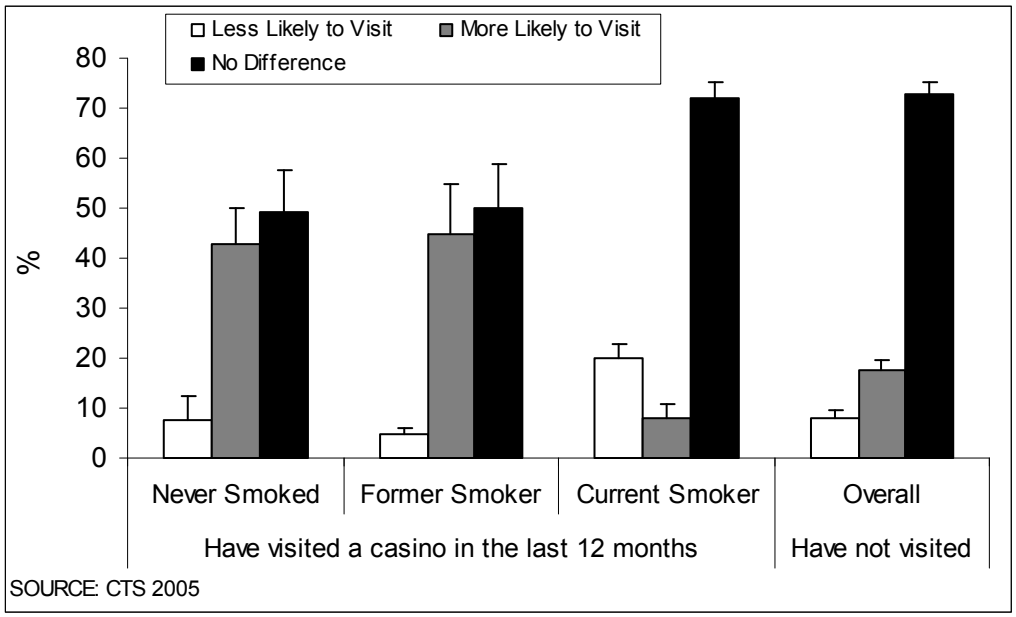
In 2005, we asked participants the following question:

> *If smoking were prohibited in California's Indian Casinos, would this make you more likely to visit them, less likely to visit them or would it make no difference to you?* ***(G21_2)***

66.3% of Californians said it would make no difference to their visits to casinos if smoking was prohibited in them.

A large majority of respondents (66.3±2.5%) said it would make no difference to them. Another 24.4±2.2% said it will make them more likely to visit Indian casinos. These responses were further stratified by whether or not they reported visiting a casino in the past 12 months. Among those who had visited a casino, it would make no difference to 53.4±5.1% of Californians if there were a ban on smoking and 37.4±4.3% reported that they would be more likely to visit casinos; only 9.1±2.7% said they were less likely to visit them. This was also true for current smokers who had visited a casino in the previous 12 months; 71.9±3.5% said it would make no difference to them and only 19.9±2.9% said they would be less likely to visit them (**Figure 1.10**).

Figure 1.10: Response to Possible Ban on Smoking in Casinos, Overall and by Smoking Status among Recent Casino Visitors



	Have visited a casino in last 12 months			Have not visited
	Never smoked	Former smoker	Current smoker	Overall
Less likely to visit	7.7	4.6	19.9	8.2
More likely to visit	42.9	45.0	8.2	17.8
No difference	49.3	49.9	71.9	72.9

Bars and Restaurants

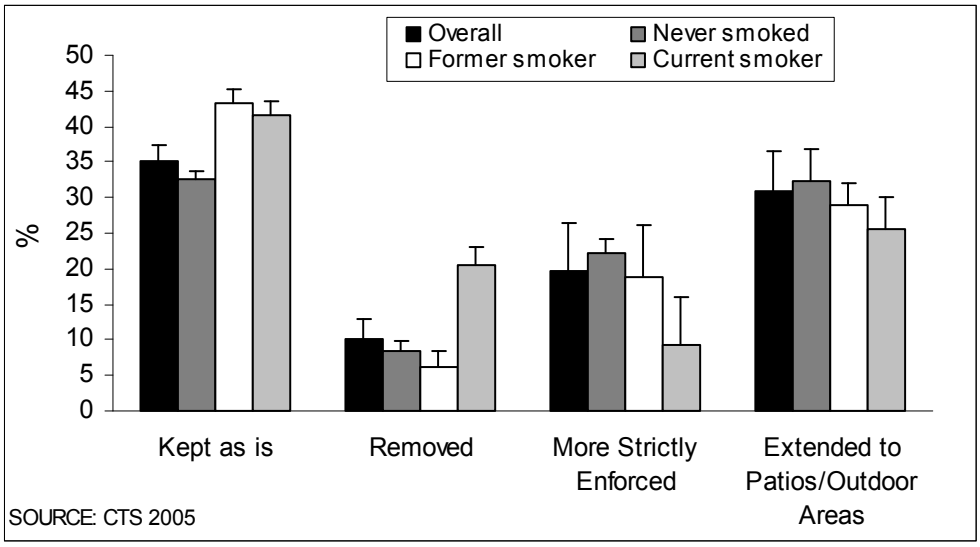
Young adults (ages 18-29 years of age) were asked about the current bar and restaurants bans on smoking, since they are most likely to frequent these venues. Respondents were asked:

> *Would you like to see the current law that bans smoking in bars kept as is, removed, more strictly enforced, or extended to patios and outdoor sitting areas?* ***(L24aa)***

Keeping or extending current smoking bans in bars was supported by 65.9% of young adults.

A majority (65.9%) of California's young adults either wanted it kept as is or extended; only 10.2% wanted the current smoking bans removed (**Figure 1.11**). Never smokers (22.3±2.3%) were more likely to support the stricter enforcement of current laws than current smokers (9.2±3.1%). Even among current smokers, a total of 67.1% supported keeping the law as is (41.6±5.6%) or extending it (25.5±4.4%) (see Appendix A.1.7), while only 20.4±4.6% of current smokers favored removing the ban. This did not change even among those who said they enjoyed smoking while drinking. As expected, never smokers and former smokers were less likely to support removing the ban.

Figure 1.11: Percentage of Support for Keeping or Changing Current Laws Banning Smoking in Bars and Restaurants According to Smoking Status



	Kept as is	Removed	More Strictly Enforced	Extended to Patios/ Outdoor Areas
Overall	35.0	10.2	19.7	30.9
Never smoker	32.5	8.3	22.3	32.4
Former smoker	43.4	6.3	18.7	29.0
Current smoker	41.6	20.4	9.2	25.5

Summary

There has been a consistent and successful implementation of the workplace smoking ban in California since the legislation passed in 1994. Even though a complete indoor workplace smoking ban was mandated in 1998, there are still some businesses that have not yet implemented the ban. About 14% of nonsmokers reported being exposed to secondhand smoke in their workplace. Enforcement is challenging, given the large variety of employers and worksites, and more innovative approaches are needed to further enforce this legislation.

Results suggest that the percentage of home smoking bans is still on the rise, but that homes with multiple smokers are less likely to have home bans even if they have young children (0-5 years). Such groups should be targeted with educational and interventional initiatives to decrease the risk of children exposed to secondhand smoke in their homes.

In spite of all the recent high profile reports on the harmful effects of secondhand smoke to nonsmokers, there has been no change in the beliefs about its harmfulness among smokers; there is a small percentage that still believes it does not cause cancer and does not harm the health of children. Although a very high percent of smokers agree that it is harmful to children and can cause cancer to nonsmokers, more efforts are needed for the most vulnerable populations who are likely to be exposed to secondhand smoke, in order to protect them from exposure and to educate their household smokers about the harm of exposure to nonsmokers.

There is strong support to expand the smoking ban in places where smoking is now allowed. The most striking of these is for cars when children are inside. This is a measure of the social norm and general population perception about the harmfulness of secondhand smoke,

especially regarding children. This support is suggestive of the success of the campaign to educate people about the harmfulness of secondhand smoke, although as noted earlier, there are some smokers who seem less likely to believe in these harmful effects.

There is concern by casino owners that banning smoking in those establishments would constrain their business, similar to fears that restaurant and bar owners expressed when the smoking ban was first implemented in the late 1990s. However, this turned out not to be the case for the restaurant and bar business; if anything, many of them faired better after the ban (Cowling & Bond, 2005). Based on the findings from the 2005 survey, it would also seem to hold true for casinos. It seems likely that they would get an approximate 25% increase in patrons who reported they would be more likely to visit casinos if the ban was implemented in them; this was even higher among current casino visitors. Among smokers who visited casinos, the group most likely to be influenced by a ban in these casinos, a large majority said it would make no difference to them if such a ban were implemented.

APPENDIX

Chapter 1

Protection of Nonsmokers from Secondhand Smoke

1. Secondhand Smoke Exposure in the Workplace

Appendix Table A.1.1 shows the demographic distribution for indoor workers reporting a completely smoke-free workplace. While those in the lowest income and educational levels were least likely to report smoke-free workplaces, these differences were not significant in 2005. Lower income and less educated workers also showed a decline in nonsmoking workplaces between 2002 and 2005, although due to large confidence intervals in 2005, these differences were not significant. Across time, Hispanics were less likely to report a smoke-free workplace compared to other racial/ethnic groups.

Appendix Table A.1.1
Indoor Workers Reporting Smoke-free Workplaces

	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %
Overall	35.0 (±1.3)	45.9 (±2.0)	90.5 (±0.9)	93.5 (±0.8)	95.5 (±0.8)	94.8 (±1.7)
Gender						
Male	32.7 (±2.0)	41.8 (±2.4)	87.9 (±1.5)	92.0 (±1.2)	94.0 (±1.5)	93.7 (±2.5)
Female	37.2 (±1.7)	49.7 (±3.1)	93.3 (±1.0)	95.1 (±1.0)	97.1 (±0.8)	96.1 (±2.5)
Age						
18-24	26.8 (±3.4)	32.4 (±4.5)	90.0 (±2.4)	92.7 (±2.4)	95.0 (±1.0)	93.9 (±3.0)
25-44	37.2 (±2.0)	47.2 (±2.7)	89.8 (±1.3)	93.9 (±1.1)	95.6 (±0.9)	95.8 (±2.1)
45-64	36.1 (±2.9)	52.9 (±4.2)	92.2 (±1.7)	94.0 (±1.3)	95.4 (±1.8)	93.6 (±3.9)
65+	30.5 (±10.6)	40.3 (±17.0)	89.3 (±6.5)	85.3 (±7.3)	96.8 (±2.5)	96.4 (±4.1)
Race/Ethnicity						
African American	42.3 (±7.9)	45.9 (±8.3)	91.8 (±3.5)	94.0 (±3.5)	96.4 (±1.2)	94.7 (±3.4)
Asian/PI	33.0 (±5.5)	43.9 (±8.8)	91.8 (±2.8)	94.0 (±2.9)	95.3 (±3.6)	96.2 (±1.8)
Hispanic	25.8 (±2.9)	30.5 (±4.3)	87.8 (±2.7)	91.3 (±2.1)	93.6 (±1.9)	90.9 (±5.0)
Non-Hispanic White	37.9 (±1.7)	51.8 (±2.3)	91.3 (±1.1)	94.5 (±0.8)	96.4 (±0.8)	97.2 (±1.6)
Education						
Less than 12 years	21.9 (±3.7)	26.3 (±6.3)	84.1 (±4.4)	88.3 (±3.9)	91.8 (±3.1)	87.1 (±9.6)
High school graduate	30.5 (±2.9)	42.1 (±4.5)	88.3 (±2.1)	90.8 (±1.7)	92.2 (±2.3)	92.7 (±3.1)
Some college	36.4 (±2.7)	48.7 (±2.9)	90.2 (±1.6)	95.5 (±1.0)	95.7 (±1.1)	96.0 (±1.8)
College graduate	45.4 (±2.3)	58.1 (±3.0)	94.8 (±1.0)	95.7 (±0.9)	98.3 (±0.7)	97.7 (±1.6)
Income						
$10,000 or less	20.7 (±6.4)		82.8 (±6.6)	88.1 (±7.4)	95.3 (±2.1)	84.9 (±22.0)
$10,001 to $20,000	28.6 (±3.4)		86.8 (±3.5)	92.0 (±3.4)	90.1 (±4.5)	81.4 (±16.3)
$20,001 to $30,000	30.1 (±3.8)		87.5 (±2.5)	91.1 (±2.9)	93.0 (±2.3)	95.6 (±4.0)
$30,001 to $50,000	37.0 (±2.3)		89.8 (±2.1)	91.3 (±1.9)	94.6 (±1.5)	97.2 (±1.4)
$50,001 to $75,000	38.7 (±3.2)		93.9 (±1.4)	93.9 (±1.4)	96.5 (±1.1)	94.8 (±2.2)
Over $75,000	44.0 (±3.2)		95.5 (±1.2)	96.8 (±0.7)	97.1 (±1.5)	96.9 (±2.0)
Missing	32.3 (±4.3)		86.5 (±3.4)	94.5 (±2.3)	94.8 (±1.6)	93.9 (±4.2)

Appendix Table A.1.2 shows the demographic distribution of indoor workers who reported exposure to secondhand smoke in the past 2 weeks. While large confidence intervals indicate that results must be interpreted with caution, it appears that Hispanics, and those with low to moderate incomes were exposed to secondhand smoke more frequently in 2005 than in 2002.

Appendix Table A.1.2
Exposure of Indoor Workers to Secondhand Smoke in the Past 2 Weeks

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1990-2005
Overall	29.1 (±1.7)	22.4 (±1.3)	11.8 (±1.4)	15.3 (±1.4)	11.9 (±1.0)	13.9 (±4.5)	-52.1
Gender							
Male	35.5 (±2.9)	27.6 (±1.9)	16.2 (±2.3)	17.7 (±1.9)	13.3 (±1.6)	18.3 (±8.9)	-48.6
Female	23.0 (±1.9)	17.1 (±1.6)	7.2 (±1.5)	13.0 (±2.2)	10.5 (±1.5)	9.2 (±2.7)	-60.1
Age							
18-24	41.4 (±4.5)	31.3 (±3.8)	17.8 (±4.6)	28.2 (±4.5)	22.5 (±1.8)	24.3 (±4.0)	-41.3
25-44	28.2 (±2.3)	22.5 (±1.7)	12.2 (±1.8)	15.1 (±2.0)	12.4 (±1.9)	15.3 (±9.3)	-45.9
45-64	23.1 (±2.6)	16.6 (±2.4)	8.6 (±2.5)	10.2 (±3.1)	6.9 (±1.7)	7.8 (±3.4)	-66.1
65+	16.6 (±9.2)	17.8 (±5.7)	9.6 (±6.5)	11.7 (±6.9)	3.0 (±3.7)	8.6 (±8.7)	-48.1
Race/Ethnicity							
African American	22.8 (±7.3)	19.1 (±4.3)	7.9 (±5.1)	15.7 (±5.6)	9.4 (±2.3)	11.3 (±4.9)	-50.6
Asian/PI	27.8 (±5.6)	26.2 (±5.2)	11.8 (±3.8)	18.4 (±7.3)	11.2 (±3.3)	9.8 (±3.1)	-64.7
Hispanic	39.7 (±4.7)	32.0 (±3.8)	19.6 (±3.8)	20.2 (±3.1)	15.4 (±2.4)	23.3 (±13.8)	-41.4
Non-Hispanic White	25.9 (±1.7)	18.9 (±1.4)	8.9 (±1.6)	12.1 (±1.4)	10.4 (±1.3)	9.2 (±2.3)	-64.4
Education							
Less than 12 years	41.7 (±8.4)	36.1 (±5.2)	28.2 (±6.8)	26.7 (±6.7)	17.7 (±5.0)	36.4 (±35.6)	-12.5
High school graduate	33.8 (±3.4)	27.8 (±2.3)	17.1 (±3.2)	19.1 (±2.9)	14.2 (±2.7)	15.9 (±6.4)	-52.9
Some college	30.0 (±3.1)	21.6 (±1.9)	9.5 (±2.1)	14.8 (±2.3)	13.0 (±1.9)	13.5 (±3.0)	-55.1
College graduate	18.5 (±1.7)	13.6 (±1.3)	5.0 (±1.2)	9.8 (±2.0)	8.4 (±1.6)	6.6 (±2.3)	-64.6
Income							
$10,000 or less	41.6 (±9.7)		28.5 (±10.0)	21.7 (±9.9)	12.3 (±4.6)	9.6 (±6.8)	-77.0
$10,001 to $20,000	35.7 (±6.5)		22.2 (±7.8)	18.9 (±5.1)	19.3 (±4.4)	29.7 (±18.5)	-16.6
$20,001 to $30,000	32.9 (±3.2)		16.3 (±4.4)	16.7 (±4.2)	16.8 (±3.9)	44.0 (±47.4)	34.0
$30,001 to $50,000	28.7 (±3.2)		11.9 (±2.6)	18.4 (±4.5)	13.1 (±3.4)	12.6 (±6.3)	-56.3
$50,001 to $75,000	25.3 (±3.1)		6.1 (±2.3)	14.5 (±2.6)	10.3 (±2.1)	10.7 (±3.5)	-57.7
Over $75,000	21.6 (±2.8)		5.3 (±1.5)	12.0 (±2.1)	9.7 (±1.5)	8.3 (±2.6)	-61.8
Missing	30.1 (±7.2)		14.0 (±5.3)	13.3 (±3.9)	12.4 (±4.5)	11.0 (±4.5)	-63.3

Appendix Table A.1.3 shows what groups of people indoor workers said were responsible for smoking in their workplace. Although workers in completely smoke-free workplaces reported that customers frequently violated policies, the most commonly reported source was fellow employees.

Appendix Table A.1.3
Smokers who Exposed Indoor-Working Nonsmokers to Secondhand Smoke in Last 2 Weeks

	Completely Smoke-free (n=688) %	Smoking Banned in Work Areas (n=42) %
Other employee	87.2 (± 8.8)	94.7 (± 8.7)
Customers or non-employees	63.0 (± 24.4)	22.9 (± 26.4)
Supervisors or your superior	30.7 (± 21.4)	18.5 (± 20.9)
Anyone else	5.3 (± 3.7)	2.7 (± 3.5)

2. Home Exposure to Secondhand Smoke

Appendix Table A.1.4 provides the demographic breakdowns of people with total household smoking bans. Such bans continue to increase within virtually all demographic groups. Those with higher incomes or education levels continue to be most likely to have bans.

Appendix Table A.1.4
Total Household Bans

	1992 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	48.1 (±1.9)	50.9 (±0.9)	64.5 (±1.1)	72.8 (±1.1)	76.8 (±0.9)	78.4 (±2.5)
Gender						
Male	49.4 (±2.7)	49.8 (±1.2)	62.8 (±1.3)	71.8 (±1.3)	74.6 (±1.4)	73.8 (±4.6)
Female	46.9 (±2.6)	52.0 (±1.2)	66.2 (±1.5)	73.9 (±1.3)	79.0 (±1.3)	82.9 (±2.0)
Age						
18-24	45.0 (±5.5)	52.6 (±2.1)	61.1 (±2.8)	70.1 (±2.6)	68.7 (±1.2)	67.8 (±2.6)
25-44	49.7 (±2.9)	52.4 (±1.2)	65.7 (±1.4)	76.2 (±1.5)	80.2 (±1.3)	80.4 (±4.9)
45-64	48.9 (±3.6)	48.7 (±1.8)	64.9 (±1.6)	71.2 (±2.0)	76.9 (±2.0)	80.2 (±3.0)
65+	45.2 (±3.9)	48.0 (±2.3)	63.2 (±3.6)	68.4 (±2.7)	74.9 (±2.8)	79.0 (±4.4)
Race/Ethnicity						
African American	46.4 (±7.0)	47.1 (±3.1)	55.9 (±4.3)	68.5 (±3.7)	72.8 (±2.6)	74.4 (±5.3)
Asian/PI	49.2 (±6.0)	60.1 (±3.2)	64.8 (±4.6)	71.3 (±3.5)	79.5 (±3.1)	80.2 (±3.7)
Hispanic	53.1 (±4.0)	57.1 (±2.1)	72.4 (±2.4)	78.0 (±1.9)	78.0 (±1.8)	78.8 (±6.8)
Non-Hispanic White	46.3 (±2.0)	48.2 (±1.0)	61.9 (±1.2)	71.3 (±1.1)	76.5 (±1.2)	78.5 (±2.7)
Education						
Less than 12 years	47.0 (±4.2)	51.2 (±2.3)	67.7 (±2.7)	73.3 (±2.8)	75.8 (±2.6)	72.7 (±9.4)
High school graduate	43.7 (±3.0)	46.1 (±1.5)	60.6 (±1.9)	68.4 (±1.9)	74.8 (±1.7)	78.1 (±3.3)
Some college	50.7 (±2.5)	50.5 (±1.5)	61.7 (±1.7)	73.4 (±1.6)	75.2 (±1.6)	78.7 (±3.2)
College graduate	53.3 (±3.3)	58.5 (±1.7)	68.3 (±2.0)	76.2 (±1.6)	80.7 (±1.6)	82.2 (±3.0)
Income						
$10,000 or less			62.0 (±3.8)	66.7 (±4.2)	71.4 (±3.7)	74.2 (±6.4)
$10,001 to $20,000			63.1 (±3.1)	73.9 (±3.9)	73.7 (±3.3)	78.3 (±4.7)
$20,001 to $30,000			59.0 (±3.5)	69.5 (±3.1)	75.4 (±2.4)	68.5 (±17.2)
$30,001 to $50,000			63.4 (±2.3)	71.0 (±2.8)	75.7 (±2.7)	77.3 (±3.9)
$50,001 to $75,000			66.1 (±3.4)	73.2 (±2.0)	77.1 (±2.2)	78.5 (±3.1)
Over $75,000			69.7 (±2.5)	78.4 (±1.9)	81.3 (±1.8)	83.0 (±3.4)
Missing			67.2 (±3.8)	72.2 (±3.5)	74.8 (±2.9)	79.3 (±5.8)
Smoking Status						
Current smoker	19.4 (±1.8)		35.9 (±1.2)	46.8 (±1.8)	51.9 (±1.9)	57.8 (±3.6)

Appendix Table A.1.5 shows the percentage of households with children that have smoking bans, by the age of the youngest child and the presence of adult smokers. Generally, households where the youngest child is under six years of age are most likely to have bans, even when all adults smoke. Households where all adults smoke remain much less likely to protect their children, although in 2005, this difference was only significant for households with older children (≥ 12 years of age).

Appendix Table A.1.5
Home smoking bans in households with children, by age of youngest child

Children Ages 0-5			
	No adult smokers	**At least 1 smoker**	**All adults smoke**
1993	71.6 (±2.1)	43.2 (±4.5)	18.0 (±6.5)
1996	79.6 (±3.2)	64.7 (±4.8)	40.3 (±5.4)
1999	88.4 (±2.2)	74.7 (±4.0)	56.1 (±5.4)
2002	88.1 (±2.0)	75.7 (±3.0)	64.6 (±6.5)
2005	89.3 (±5.8)	79.6 (±6.9)	57.8 (±24.1)
Children Ages 6-11			
	No adult smokers	**At least 1 smoker**	**All adults smoke**
1993	69.0 (±2.6)	33.4 (±5.3)	7.8 (±4.0)
1996	76.1 (±4.0)	55.0 (±6.8)	22.1 (±5.2)
1999	86.2 (±2.5)	69.3 (±5.9)	40.8 (±6.5)
2002	88.1 (±2.6)	67.4 (±6.1)	49.1 (±6.3)
2005	81.5 (±19.5)	70.2 (±10.1)	59.3 (±13.0)
Children Ages 12-17			
	No adult smokers	**At least 1 smoker**	**All adults smoke**
1993	66.3 (±3.2)	31.6 (±6.3)	7.6 (±3.9)
1996	78.7 (±3.7)	52.7 (±7.7)	16.9 (±4.9)
1999	83.8 (±3.2)	59.5 (±6.1)	36.1 (±7.9)
2002	86.7 (±2.3)	64.5 (±6.8)	42.2 (±8.5)
2005	81.9 (±8.5)	67.9 (±9.4)	38.6 (±9.2)

3. Support of Restriction on Smoking

Appendix Table A.1.6 shows the distribution, by demographics, of those who support smoking bans in venues where smoking is currently permitted. There is uniform support for a smoking ban in cars when children are present. Hispanics, in particular, strongly support additional smoking restrictions, as do females.

Appendix Table A.1.6
Places smoking should not be allowed

	Outdoor public places %	Outdoor restaurant dining patios %	Outside entrances to buildings %	Indian casinos %	Inside cars when children are in them %
Overall	53.4 (±2.1)	70.0 (±1.7)	67.1 (±1.9)	66.4 (±1.8)	92.3 (±0.7)
Gender					
Male	47.3 (±3.5)	64.4 (±3.3)	62.4 (±3.7)	62.2 (±2.6)	90.3 (±1.5)
Female	59.2 (±2.8)	75.4 (±2.0)	71.6 (±2.8)	70.4 (±3.1)	94.2 (±1.0)
Age					
18-24	55.0 (±2.9)	63.7 (±2.5)	67.6 (±2.5)	57.8 (±2.9)	94.2 (±1.4)
25-44	57.9 (±3.5)	71.4 (±3.4)	69.0 (±3.0)	65.6 (±2.7)	92.1 (±1.5)
45-64	51.7 (±4.2)	71.8 (±2.9)	67.6 (±3.9)	68.7 (±3.9)	90.5 (±1.7)
65+	42.9 (±5.7)	68.4 (±5.6)	60.6 (±5.6)	71.5 (±4.8)	94.4 (±1.8)
Race/Ethnicity					
African American	51.6 (±5.2)	65.3 (±5.2)	70.3 (±5.1)	66.3 (±6.2)	94.2 (±2.8)
Asian/PI	56.0 (±6.0)	70.6 (±5.1)	61.6 (±4.9)	68.3 (±4.5)	95.3 (±1.8)
Hispanic	72.1 (±4.6)	78.6 (±3.8)	79.2 (±4.4)	75.9 (±3.5)	97.1 (±1.1)
Non-Hispanic White	41.5 (±2.4)	65.7 (±2.3)	60.8 (±2.7)	60.3 (±2.3)	88.2 (±1.2)
Education					
Less than 12 years	67.0 (±5.8)	72.2 (±5.3)	74.7 (±6.3)	76.1 (±3.7)	95.9 (±1.9)
High school graduate	50.8 (±3.9)	66.7 (±4.1)	64.8 (±3.7)	66.7 (±3.7)	93.3 (±1.6)
Some college	48.6 (±3.8)	67.3 (±3.3)	65.3 (±3.8)	59.9 (±4.7)	91.4 (±1.7)
College graduate	50.4 (±3.3)	73.3 (±3.1)	65.5 (±3.9)	65.3 (±3.1)	89.8 (±1.6)
Income					
$10,000 or less	58.6 (±9.8)	69.6 (±8.5)	69.4 (±8.2)	66.8 (±8.6)	97.7 (±0.9)
$10,001 to $20,000	59.4 (±6.8)	69.6 (±4.6)	70.1 (±5.2)	65.0 (±6.0)	93.7 (±3.3)
$20,001 to $30,000	59.0 (±9.0)	68.8 (±9.1)	71.5 (±8.9)	69.4 (±7.6)	94.2 (±2.5)
$30,001 to $50,000	49.5 (±6.2)	66.1 (±4.8)	61.8 (±6.0)	66.2 (±6.3)	91.8 (±2.8)
$50,001 to $75,000	44.1 (±4.0)	69.0 (±3.4)	66.3 (±4.5)	62.7 (±3.9)	89.7 (±2.5)
Over $75,000	52.5 (±4.8)	70.9 (±3.4)	64.1 (±4.2)	64.6 (±4.7)	91.2 (±1.4)
Missing	57.6 (±5.5)	74.1 (±4.5)	73.9 (±3.6)	72.1 (±3.5)	92.7 (±2.8)

Appendix Table A.1.7 shows the distribution by demographic group of young adults (aged 18-29 years) who were asked their opinion of current restrictions on smoking in bars and restaurants. Females were significantly more likely than males to want current bans more strictly enforced. African Americans showed the strongest support for extending the ban to outdoor areas where Asian/Pacific Islanders showed the least. Current smokers were least likely to want existing bans to be more strongly enforced, and significantly more likely to want them removed. Former smokers were most content with the bans as they currently existed.

Appendix Table A.1.7
Opinions on the current bars and restaurant bans on smoking among young adults (age 18-29 years)

	Kept as is %	Removed %	More strictly enforced %	Extended to patios/ outdoor areas %	Missing %
Overall	35.0 (±2.2)	10.2 (±1.3)	19.7 (±2.0)	30.9 (±2.1)	4.1 (±1.0)
Gender					
Male	37.2 (±3.7)	12.1 (±2.3)	16.0 (±2.9)	30.6 (±3.0)	4.1 (±1.6)
Female	32.5 (±2.9)	8.1 (±1.8)	24.1 (±2.6)	31.2 (±2.7)	4.1 (±1.2)
Age					
18-21	34.8 (±3.9)	9.1 (±2.5)	19.5 (±2.9)	30.9 (±3.0)	5.7 (±2.0)
22-25	32.6 (±3.5)	12.5 (±2.8)	20.3 (±2.5)	32.2 (±3.9)	2.4 (±1.0)
26-29	38.0 (±4.5)	9.3 (±2.2)	19.4 (±3.7)	29.5 (±3.5)	3.9 (±1.7)
Race/Ethnicity					
African American	29.3 (±7.1)	6.8 (±4.9)	22.6 (±8.1)	36.2 (±8.4)	5.1 (±4.1)
Asian/PI	41.1 (±6.9)	11.3 (±5.0)	22.4 (±6.2)	21.8 (±5.2)	3.4 (±1.9)
Hispanic	27.3 (±3.3)	11.0 (±2.2)	22.9 (±3.3)	33.8 (±3.7)	5.0 (±1.9)
Non-Hispanic White	42.9 (±3.5)	9.4 (±2.2)	15.6 (±2.3)	28.9 (±3.0)	3.3 (±1.1)
Education					
Less than 12 years	22.7 (±6.3)	17.8 (±5.5)	19.3 (±4.2)	32.0 (±5.9)	8.3 (±4.0)
High school graduate	32.5 (±3.3)	11.7 (±2.1)	19.2 (±3.5)	33.0 (±3.3)	3.6 (±1.3)
Some college	40.5 (±3.6)	7.2 (±1.8)	19.4 (±3.0)	30.0 (±3.4)	2.8 (±0.9)
College graduate	41.4 (±4.9)	5.8 (±2.7)	21.5 (±4.7)	28.7 (±4.5)	2.6 (±1.9)
Smoking Status					
Never smoked	32.5 (±2.7)	8.3 (±1.5)	22.3 (±2.3)	32.4 (±2.5)	4.5 (±1.2)
Former smoker	43.4 (±6.8)	6.3 (±2.0)	18.7 (±7.5)	29.0 (±6.7)	2.6 (±3.1)
Current smoker	41.6 (±5.6)	20.4 (±4.6)	9.2 (±3.1)	25.5 (±4.4)	3.3 (±1.8)

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Chapter 2

Young Adults: Smoking Prevalence, Uptake, Cessation, and Attitudes

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Chapter 2

Young Adults: Smoking Prevalence, Uptake, and Cessation

KEY FINDINGS

- Smoking prevalence among young Californians (18-29 years) continued to decline from peak rates in 1999. In 2005, smoking prevalence was 15.3±1.4%, a decrease of 19% from 1999.

- The decline in current smoking could be explained by a reduction in smoking initiation among younger birth cohorts. Among 18-20-year-olds, prevalence dropped by nearly half (46%) from 1999 to 2005, a decline not seen in older age-groups.

- Continuing declines in young adult smoking rates are expected given the declining experimentation rates in birth cohorts who are not yet young adults. Reduced experimentation among adolescents from 1999 has carried through to lower rates of current established smoking among adults aged 18-20 years in 2005. Adolescents now age 12-17 years are experimenting at half the rates of younger adolescents.

- The prevalence of daily and moderate-to-heavy (15+ cigs/day) smoking showed the largest declines. Daily smoking among young adults has declined by 40% since 1990 and moderate-to-heavy smoking has declined by 61% since 1990.

- Nearly half of young adult smokers (22-29 years) continue to report first smoking "regularly" after age 18. This is particularly the case for young adults who attended college.

- Almost one-quarter of young adult current non-smokers remain at risk of future smoking. 80% of those who have experimented are either currently smoking or at risk of smoking. This emphasizes the importance of programs to prevent progression among young adults.

- Between 1999 and 2005, there was a marked decline in the proportion of young adult smokers who attempted to quit in any given year.

- For the last decade, young adults were more likely to quit successfully than were older adults. There is no evidence that this age effect is diminishing.

- Young adult smokers are less addicted than older smokers, and more have smoke-free homes. These factors are associated with higher cessation rates.

- Pharmaceutical aids were rarely used by young adults when they tried to quit. There is no evidence that increased use of pharmaceutical aids would increase cessation rates among young adults.

Chapter 2

Young Adults: Smoking Prevalence, Uptake, and Cessation

Introduction

Most adult dependent smokers in the United States (U.S.) begin experimenting with cigarettes in their adolescent years, and progress to regular smoking in their early 20's (Gilpin et al., 1994; Johnston et al., 2004). Trends in established smoking rates in young adulthood generally follow those of adolescent experimentation rates from several years earlier with progression estimated to occur in 30-50% of all experimenters (Choi et al., 2001).

Recently, a higher proportion of smokers in California have started regular smoking in early adulthood (Gilpin et al., 2004), and there was a high proportion of young adult non-smokers, whether former- or never-smokers, who appeared to be at increased risk for future smoking (Gilpin et al., 2005). These factors, along with an apparent increase in prevalence of established smoking among young adults (Lantz, 2003) raised concerns that the increase in tobacco industry marketing to young adults (Ling & Glantz, 2002) may be effectively overcoming tobacco control interventions.

The British Doctors Study suggests that successful quitting among young adult smokers may lead to the avoidance of most of the health consequences of smoking (Doll et al., 2004). Evidence suggests that, during the 1990s, there was an increase in young adult successful quitting, particularly in California (Messer et al., 2007). The evidence-based guidelines suggest that a higher success rate will result from more young adults using pharmaceutical aids to assist them to quit (Fiore, 2000; Silagy et al., 2004), although population studies have questioned the validity of this suggestion.

In this chapter we discuss the results from the California Tobacco Survey (CTS) that are relevant to young adults according to the following sections: in Section 1 we present the trends in smoking prevalence according to different demographic variables such as age, gender, education, and race/ethnicity; Section 2 deals with smoking prevalence according to birth cohorts from the CTS; Section 3 is about consumption levels and their trends since 1990; Section 4 addresses the risk of smoking among young adult nonsmokers; and Section 5 is a detailed analyses of quitting-related questions among young adults.

1. Trends in Current Smoking Prevalence among Young Adults

In this section we present trends in smoking prevalence for young adults overall and separately by gender, race/ethnicity, age group, consumption level and educational level.

Since 1999, the CTS screener surveys have ascertained smoking status with two questions:

Have you smoked at least 100 cigarettes during your lifetime? **(SC 9)**

Do you smoke cigarettes everyday, some days or not at all? **(SC 10)**

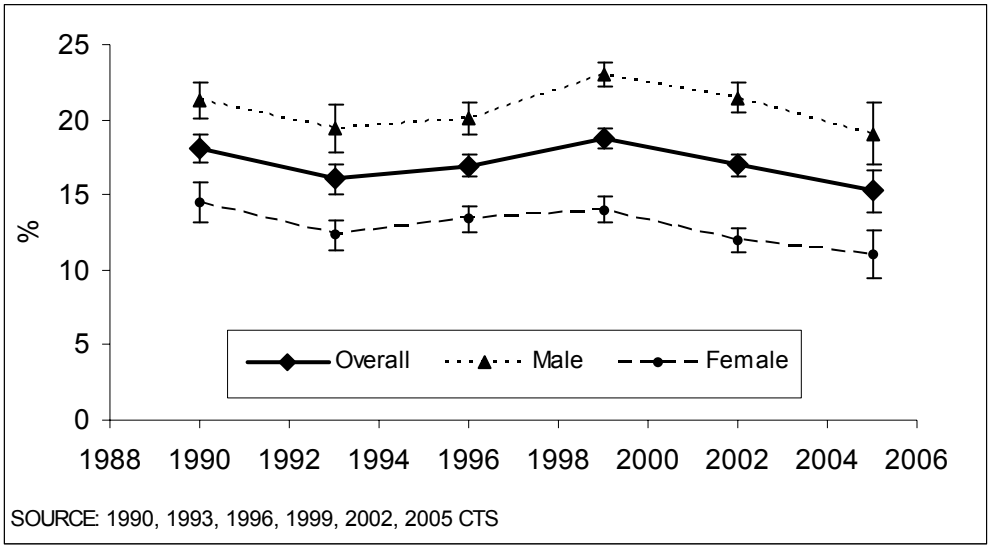
In 1990, 1993, and 1996 the second question was: *Do you smoke cigarettes now?*

Respondents who indicated they had smoked 100 cigarettes in their life are considered established smokers. Those who further indicated that they smoke every day (daily smokers), some days (non-daily smokers) or smoke now are classified as current established smokers. The change in definition in 1999 may have captured a few more non-daily smokers. Former smokers now smoke "not at all."

Prevalence of Current Established Smoking among Young Adults

Figure 2.1 shows the prevalence of current established smoking among young adults (standardized by age, gender, race/ethnicity, and education) overall and among males and females from 1990 to 2005. The numbers plotted in this figure and the others in this section are presented in Appendix Table A.2.1.

Figure 2.1: Current Smoking Prevalence Among Young Adults (18-29 Years), 1990-2005



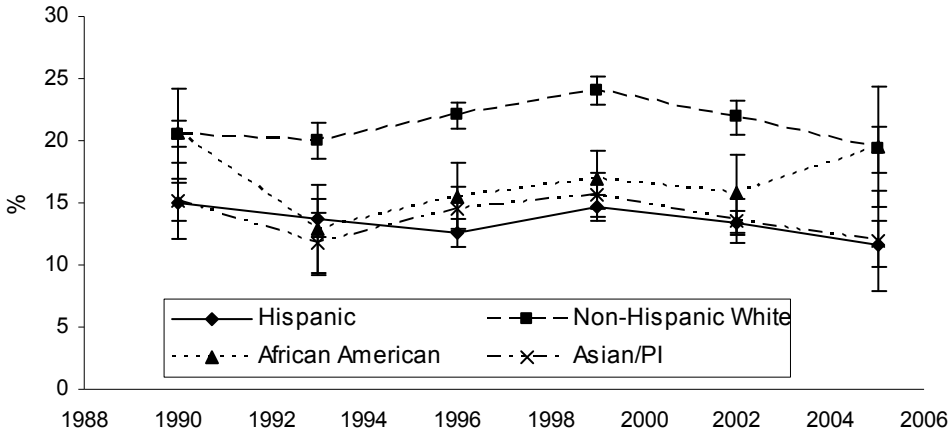
	1990	1993	1996	1999	2002	2005
Overall	18.1	16.1	16.9	18.8	17.0	15.3
Male	21.3	19.4	20.1	23.0	21.4	19.1
Female	14.5	12.3	13.4	14.0	12.0	11.0

Figure 2.1 demonstrates that the prevalence of young adult smoking in California has been quite volatile since the start of the California Tobacco Control Program (CTCP). Initially, this prevalence decreased from 18.1±0.9 in 1990 only to start rising by mid-decade and peak in 1999 at a rate of 18.8±0.6%. Since 1999 there has been a steady decrease in prevalence in this age group to a level of 15.3±1.4% in 2005. This U-shaped pattern throughout the 1990s, followed by a steady decline since 1999, was observed in both genders. For men, smoking prevalence was 21.3±1.2% in 1990, 23.0 ±0.8% in 1999 and 19.1±2.0% in 2005, a 17% decrease since the 1999 peak. For women, smoking prevalence was 14.5±1.3% in 1990. After declining through the early 1990s, it returned to a lower peak of 14.0±0.8% in 1999 from which it declined to 11.0±1.6% by 2005, a 21% decline. In 2005, the current smoking prevalence levels were the lowest observed since the start of CTCP.

Prevalence of Current Established Smoking by Race-Ethnicity

The prevalence of current established smoking is higher in young adults who are Non-Hispanic Whites compared to any other racial/ethnic group and this pattern has been maintained since the early 1990s **(Figure 2.2)**. Among Hispanics and Asian/PIs, time trends in prevalence were similar to the overall pattern, however, smoking prevalence was approximately 40% lower than the level seen among Non-Hispanic Whites. The CTS data does not support a declining trend in young adult African American prevalence, as suggested by national data (Trinidad et al., 2007). Indeed, the 2005 estimate for African Americans is not different from that of non-Hispanic Whites.

Figure 2.2: Current Smoking Prevalence among Young Adults by Race/Ethnicity, 1990-2005



SOURCE: 1990, 1993, 1996, 1999, 2002, 2005 CTS

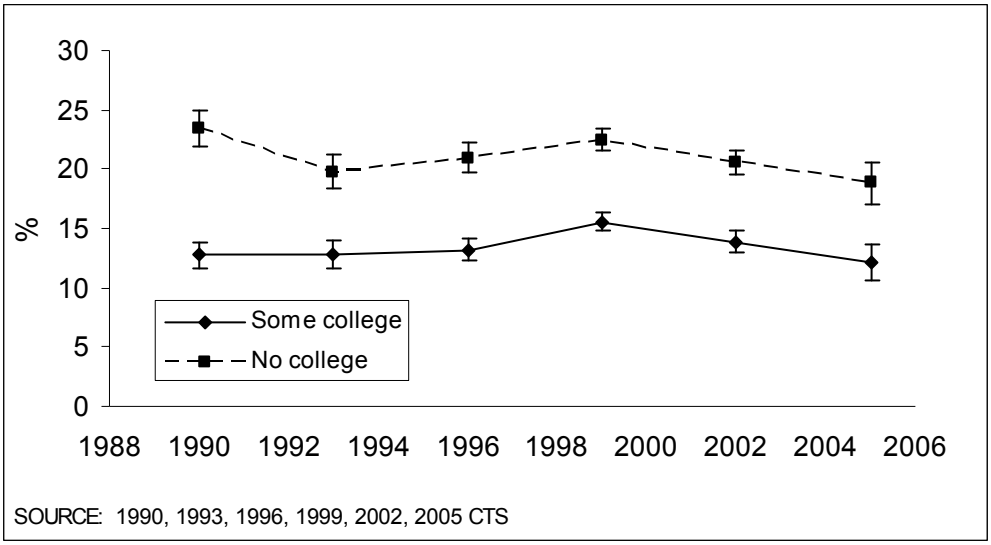
	1990	1993	1996	1999	2002	2005
African American	20.6	12.9	15.5	16.9	15.7	19.6
Asian/PI	15.2	11.7	14.5	15.7	13.5	12.0
Hispanic	15.1	13.8	12.6	14.6	13.4	11.7
Non-Hispanic White	20.5	20.0	22.0	24.1	21.9	19.3

Prevalence of Current Established Smoking by Educational Status

An educational gap in smoking prevalence was first observed shortly after the start of the public health campaign against smoking in 1965 and this gap increased over time (USDHHS, 1989). This gap has also increased in the less affluent compared to the more affluent socio-demographic groups (Schulze & Mons, 2006; Hakkinen et al., 2006; Federico et al., 2006) The strong educational disparity in smoking behavior has been brought about by the higher educated having a lower initiation rate and a higher cessation rate. It has been suggested that a statewide tobacco control program with a major media campaign could stop this gap from increasing further (Macaskill et al., 1992).

Figure 2.3 shows trends in current smoking prevalence (standardized by gender, age and race/ethnicity) among young adults who have attended college and those who have not.

Figure 2.3: Current Smoking Prevalence among Young Adults by Educational Status, 1990-2005



SOURCE: 1990, 1993, 1996, 1999, 2002, 2005 CTS

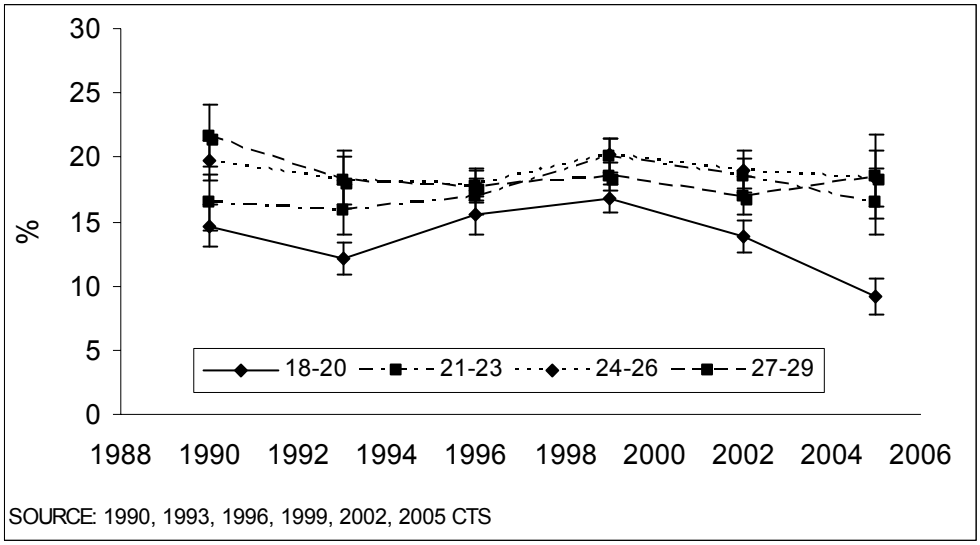
	1990	1993	1996	1999	2002	2005
Some college	12.7	12.7	13.2	15.6	13.9	12.2
No college	23.5	19.8	21.0	22.5	20.5	18.8

Since 1993, trends in smoking prevalence in California appear to be similar among young adults aged 18-29 years for those who have attended college and those who have not. However, prevalence remains much lower among those who have attended college, at 12.2±1.5% in 2005 for those with some college education compared with 18.8% for those with no college experience. Each group experienced a similar decrease in prevalence since 1999, by 3.4 and 3.7 percentage points respectively, which is a 22% decline for those with some college education and a 16% decline for those with no college education. There is no evidence that the educational gap in smoking prevalence is beginning to close.

Prevalence of Current Established Smoking by Age

These changes in prevalence over time could result from changing patterns of initiation, cessation, or both. To address the impact of initiation, we compared the prevalence levels within three-year age groups across all the surveys, standardizing the data by gender, race/ethnicity, and educational attainment **(Figure 2.4)**.

Figure 2.4: Current Smoking Prevalence among Young Adults by Age Group, 1990-2005



SOURCE: 1990, 1993, 1996, 1999, 2002, 2005 CTS

	1990	1993	1996	1999	2002	2005
18-20	14.6	12.2	15.5	16.8	13.8	9.1
21-23	16.5	15.9	17.0	20.0	18.6	16.5
24-26	19.8	18.2	17.9	20.1	19.0	18.4
27-29	21.7	18.3	17.7	18.4	17.0	18.5

Since 1999 there has been a major decline in smoking prevalence in young adults. The age pattern suggests that this was achieved by reduced initiation in previous years.

The prevalence of established smoking was lower among 18-20-year-olds than older age categories, suggesting that the initiation process is not complete by this age. In more recent years, there has not been a difference in prevalence among the 21-23 age group and older age groups. This suggests that delayed initiation may occur only prior to 21 years of age. The observed U-shaped pattern of prevalence throughout the 1990s appears most marked among the 18-20 age group and is not apparent in the oldest age group (27-29 years). Similarly, the decline in prevalence since 1999 appears to be mainly from the decline in prevalence among 18-20-year-olds. Since 1999, prevalence in this age group has declined from 16.8±1.1% to 9.1±1.4%, a factor decline of 46%. The decline in prevalence over this period among 21-23-year-olds was 20.0±1.4% to 16.5±2.5%, a factor decline of 18%. Among 24-26-year-olds, prevalence reduced from 20.1±1.4% to 18.4±2.2%, a factor decline of 8%. Among 27-29-year-olds, prevalence was 18.4±1.1% in 1999 and not different at 18.5±3.2% in 2005. This data strongly suggests that the decline in young adult smoking seen since 1999 is the result of earlier effects in reducing initiation among adolescents, as previously reported (Pierce et al., 2005).

The patterns of change among age groups from 1990-2005 were consistent with national trends during the same period, and also with recent large declines in smoking uptake among California adolescents (Pierce et al., 2005). The early 1990s were the years of the successful Joe Camel advertising campaign and other tobacco industry promotional campaigns that successfully targeted adolescents (DiFranza et al., 1991; Pierce et al., 1998; Pierce et al., 1999). The cohort of young adults aged 18-23 during the peak smoking year 1999 was aged 12-17 years in 1993. Thus they were adolescents during the peak years of the Joe Camel, Camel Cash, and Marlboro Miles tobacco marketing campaigns that targeted adolescents (Arnett & Terhanian,

1998). These two youngest age groups showed a pronounced increase in smoking prevalence from 1993 to the peak in 1999. The two older age groups were 24-29 years in 1999 and were already young adults in 1993, older than the target demographic for the Joe Camel and other promotional campaigns, and these older cohorts did not show the same increase in prevalence.

More recent cohorts of young adults, those aged 18-23 years in 2005, were 12-17 years old in 1999. These most recent 18-23-year-olds came of age in a climate of increasing prevalence of smoke-free homes and other tobacco control efforts in California. As adolescents, this cohort was exposed to the marketing restrictions and negative tobacco industry publicity surrounding the Master Settlement Agreement of 1998 and to national and state tobacco control media campaigns. This cohort has shown steep declines in smoking uptake in California, starting in 1999 for 16-17-year-olds. Thus these declines in adolescent uptake have been consistent with the recent decline in young adult established smoking, particularly among the most recent young adult cohorts.

Delayed initiation of Regular Smoking by Education Level

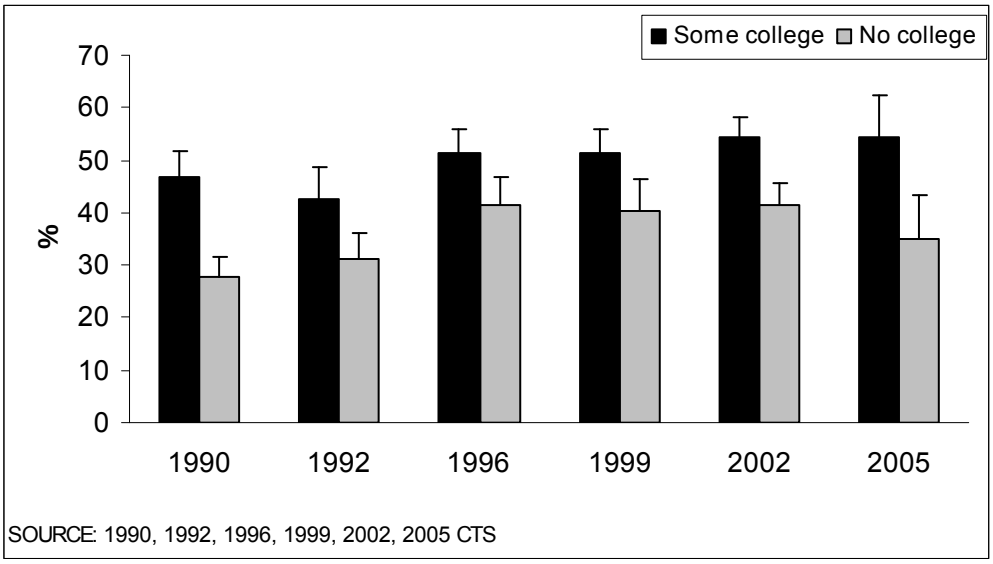
Lantz (2003) noted that people may experiment with cigarettes as adolescents but not become regular smokers until they are older than 18 years. Such an uptake pattern has been supported in most of the population surveys on smoking, starting with the 1955 Current Population Survey (Haenszel & Shimkin, 1956).

All CTS since 1990 included a question for established smokers:

> *How old were you when you began to smoke on a regular basis?* **(D1)**

Thus, we are able to analyze trends in age of regular smoking after 18 years among ever smokers aged 22 through 29 years. For both those with and without college experience, **Figure 2.5** indicates that the proportion of current established smokers who report first smoking regularly after age 18 increased significantly from 1992 to 1996, and has remained elevated since then, at over 50% for those with some college experience. Thus, a substantial proportion of young adult smokers progressed to established smoking after becoming adults. There was no evidence of a decline in this proportion in recent years. Further details on the demographic characteristics of ever-established young adult smokers who started smoking at 18 years or older are presented in Appendix Table A.2.2.

Figure 2.5: Young Adult Established Smokers (ages 22-29) Who Started Smoking "On a Regular Basis" at Age 18 Years or Older, by College Status



	1990	1992	1996	1999	2002	2005
Some college	46.9	42.5	51.5	51.4	54.5	54.4
No college	27.9	31.4	41.4	40.4	41.5	35.1

2. Prevalence of Never Smoking among Recent Birth Cohorts

To further investigate whether reduced initiation might be a major explanation of the declining prevalence among young adults, we consider the proportion who have never experimented at the time of each CTS for a series of three year birth cohorts, the earliest of whom were born between 1976 and 1978 (i.e., age 12-14 at the time of the 1990 CTS) with the most recent cohort including those who were born between 1991 and 1993 and were 12-14 years old at the time of the 2005 CTS. We used data from each of the following CTS: 1990, 1993, 1996, 1999, 2002, and 2005. It should be noted that the 1991-1993 cohort will only have data for 2005 as they were too young to be included in earlier surveys.

We defined experimenters as those who reported having smoked at least one cigarette. The adolescent extended survey asked all respondents:

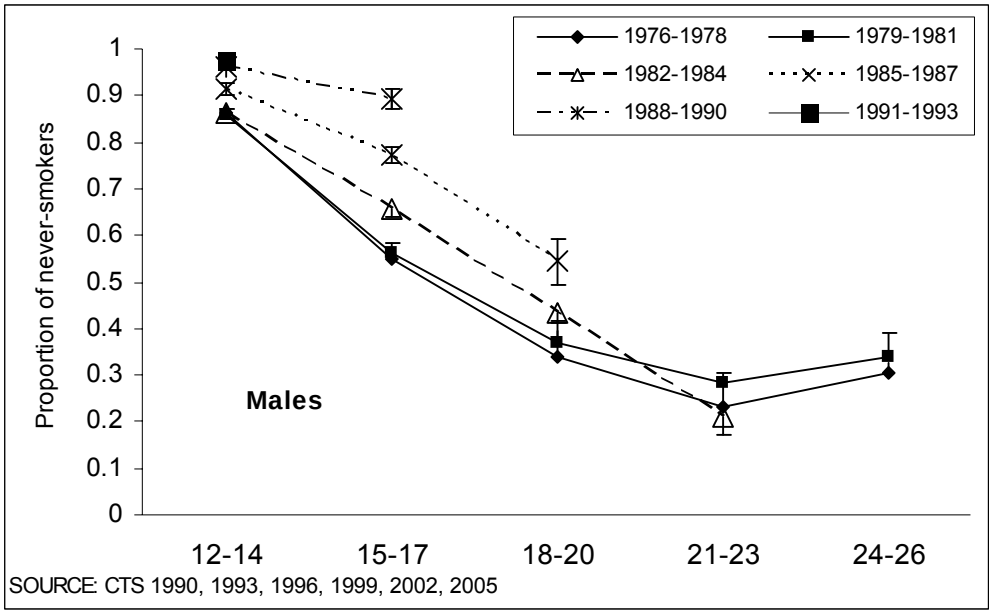
> *Have you ever smoked a cigarette?* **(Q1)**
>
> And the adult extended surveys asked:
>
> *What would you say is the total number of cigarettes that you have ever smoked?* **(B2)**

A never-smoker must have responded either "no" to the adolescent survey question or "zero" to the adult survey question. In this analysis, we limited the analysis to the non-minority white population to avoid confounding from the differential patterns of smoking uptake in other populations. Unfortunately, we did not have a large enough sample size to undertake this analysis for each of these populations separately.

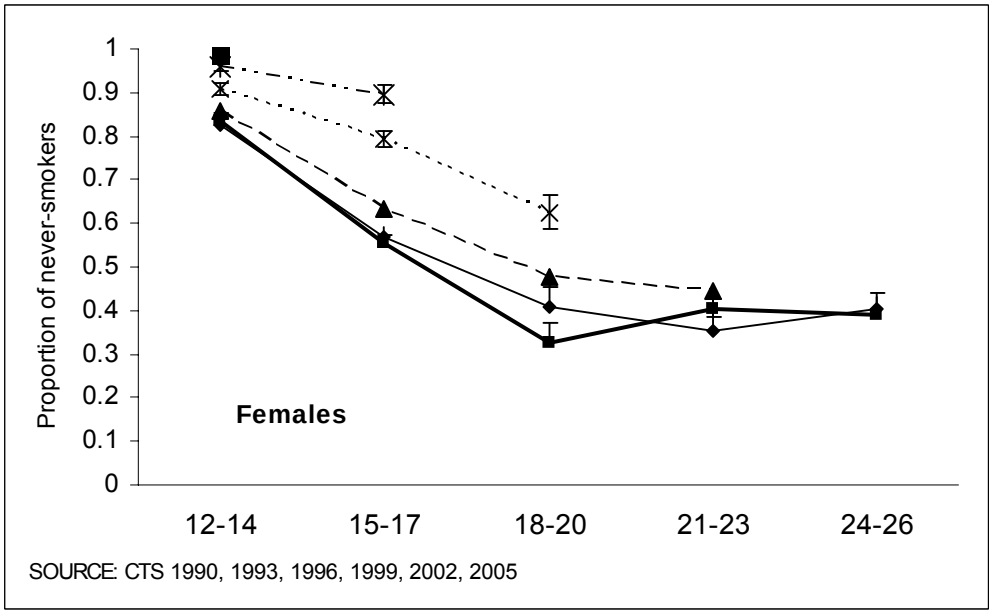
Figure 2.6 presents data from Non-Hispanic White males in the top panel and females in the bottom panel. The Y-axis represents the proportion that has never smoked a cigarette. Most

cohorts have a proportion for each three year age group (X-axis) from 12-14 years through 18-20 years. Each cohort is thus represented by a line. Among women, the two cohorts 1976-1978 and 1979-1981 exhibited essentially the same initiation patterns. Approximately 83-84% had never smoked a cigarette when the cohort was surveyed as 12-14-year-olds. When surveyed as 15-17-year-olds, 56-57% had still never smoked. By age 18-20 years, less than 40% had never smoked and this proportion did not change in the young adult years. The male pattern for these two cohorts was also similar. Approximately 86-87% had never smoked as 12-14-year-olds. This declined to 55-56% by age 15-17 years and to about 34-37% by age 18-20 years. The decrease in never-smoking from one age group to the next reflects new smoking experimentation within the cohort from one survey to the next, assuming no large net effects from immigration/emigration have impacted experimentation rates.

Figure 2.6: Proportion of Never-Smokers among California Adolescents and Young Adults, by Birth Cohort



SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005



SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005

With each successive birth cohort for a given age group, a higher proportion of respondents was never smokers. In 2005, the 18-20 year age group was the 1985-1987 birth cohort. This is the first birth cohort that has a dramatically different experimentation curve from the earlier birth cohorts. In 2005, among women, 62.6% of this birth cohort had never smoked and among men this proportion was only slightly lower at 54.4%. Approximately one quarter of those who had experimented were current established smokers (9.1% from Figure 2.4). When this cohort was surveyed in 2002, the proportion who had never smoked was 79.0% for females and 77.4% for males. Importantly, the next youngest cohort, the 1988-1990 birth cohort, had even higher rates of never smoking at age 15-17 years: 89.7% for women and 89.3% for men.

The dramatic decline in experimentation with successive California birth cohorts should result in continuing major declines in current smoking prevalence.

Projecting these rates to future surveys assumes that experimentation is mainly over by the early 20s and that progression from experimentation to current established smoking is not increasing. Under these two assumptions, we can expect that the observed declining trend in young adult smoking prevalence will continue and get considerably larger in future surveys.

3. Cigarette Consumption Levels among Young Adult Smokers

Most of the decline in current prevalence can be attributed to individuals with the highest consumption rates.

The health consequences of smoking have been shown to be related not only to prevalence but also to the level of consumption. Average cigarette consumption levels among young adult smokers have declined markedly in California as well as in other major areas of the United States since at least 1992 (Al Delaimy et al., 2007). Given that dependence level has always been a major predictor of successful cessation, this could be one of the reasons for the observed increase in successful quitting among this age group across the country (Messer et al., 2007).

The adult extended survey assessed level of cigarette consumption among all current established smokers. In 1990 respondents were asked:

Do you smoke cigarettes now? and Do you smoke everyday or some days?

From 1996, respondents were asked:

Do you smoke cigarettes every day, some days, or not at all? **(B7)**

On all surveys, daily smokers were asked:

How many cigarettes on average do you smoke per day? **(B19)**

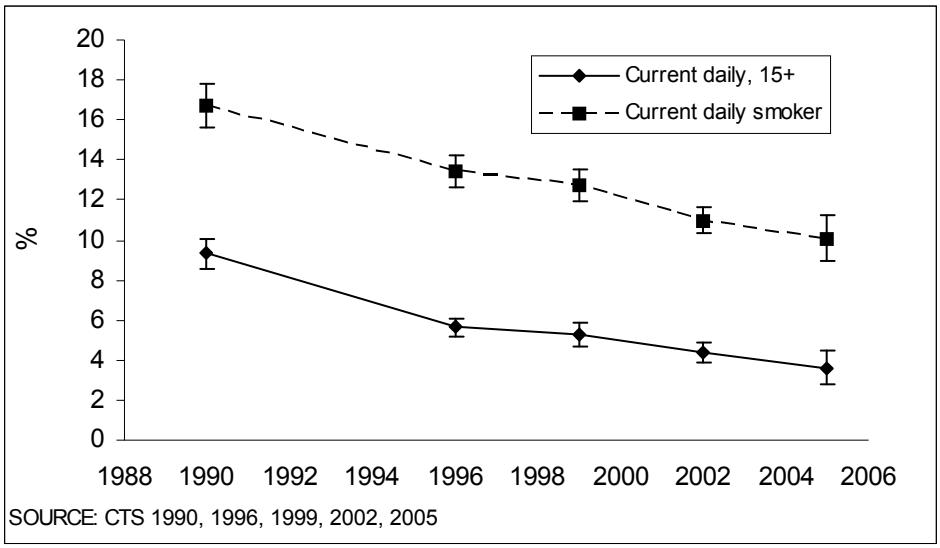
Occasional smokers were asked:

On how many of the past 30 days did you smoke cigarettes? **(B10)**

During the past 30 days, on the days that you <u>did</u> smoke, about how many cigarettes did you usually smoke per day? **(B11)**

Those who smoked more than 15 cigarettes per day are considered moderate-to-heavy smokers. **Figure 2.7** shows the prevalence of current daily smoking among young adults and of current smoking of 15 or more cigarettes/day, from 1990 to 2005.

Figure 2.7: Prevalence of Daily Smoking and Moderate-to-Heavy Smoking Among Young Adults (ages 18-29 years)



SOURCE: CTS 1990, 1996, 1999, 2002, 2005

	Current daily, 15+	Current daily smoker
1990	9.3	16.7
1996	5.6	13.5
1999	5.3	12.7
2002	4.4	11.0
2005	3.6	10.1

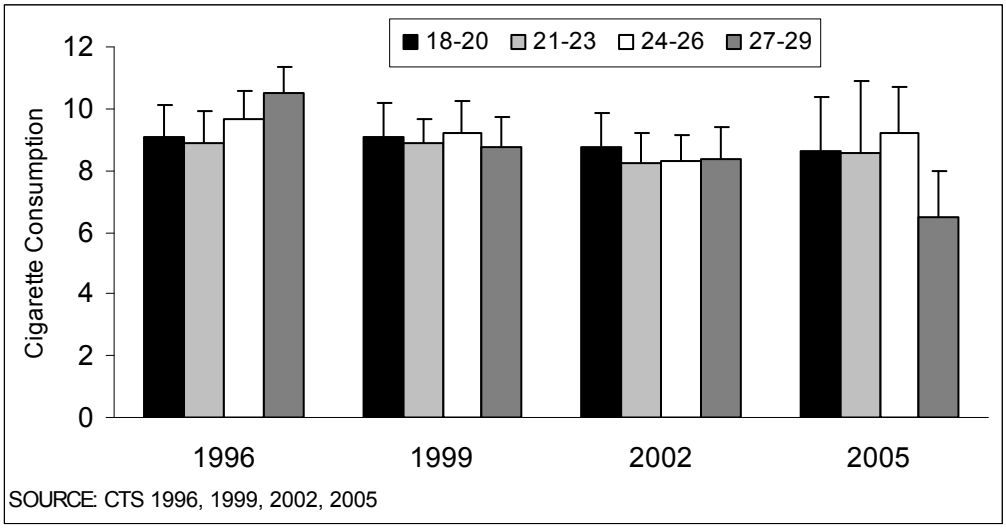
Although California experienced increased rates of current smoking (Figure 2.1) among young adults in the early 1990s along with the rest of the country, the prevalence of smoking at higher consumption levels (15+ cigarettes/day) declined steadily among young adults during this period. Daily smoking has declined by 40% since 1990, and moderate-to-heavy smoking (15+ cigarettes/day) has declined by 61% since 1990. Moderate-to-heavy smoking prevalence decreased from 1990 to 2005 at an average rate of 6% per year. These declines appear to be much greater than the 9% estimated drop in total current smoking prevalence over the same period.

Consistent with these trends, the proportion of moderate-to-heavy young adult current smokers has declined with each successive survey, from 27% in 1996 to 21% in 2005. However the proportion of those with the lowest consumption levels, never-daily smokers, has remained a constant 22% since 1996. These never-daily smokers are likely a mixture of smokers still in the uptake process who have not yet reached their peak consumption level, and smokers who will remain occasional smokers until they quit. It is worth noting that smoking behavior differs among race/ethnic groups, so the trends apparent in Figure 2.7 may be due in part to changes in the ethnic composition of the young adult population in California and in part to changes in smoking behavior among ethnic groups.

Consumption Levels of Current Smokers by Age and Year

Figure 2.8 shows the average number of cigarettes smoked per day among current smokers across age groups of young adults for the years 1996 to 2005. We looked to see whether there was an increase in consumption with age as might be expected as younger smokers develop tolerance. We saw no such consistent effect. In addition, in contrast to the prevalence of smoking, there were no apparent trends over time in consumption levels among the youngest smokers.

Figure 2.8: Consumption Levels among Young Adult Daily Smokers in California, 1996-2005



Age	1996	1999	2002	2005
18-20	9.1	9.1	8.8	8.6
21-23	8.9	8.9	8.3	8.6
24-26	9.7	9.2	8.3	9.2
27-29	10.5	8.7	8.4	6.5

4. Detailed Smoking Status and Future Smoking Risk

Choi et al (2001) devised a 12 point scale demonstrating that both behavioral experience and cognitions about smoking were important predictors of risk of future smoking. Both the level of behavior (never smoker, experimenter, established smoker) and the most recent smoking occurence (> or ≤ 1 year) were important components of the behavioral experience. A person who has not smoked in the past year is labeled as having a high risk cognition if they are not prepared to rule out smoking in any future situation. In this study, each level of behavioral experience was associated with an almost doubling of probability of smoking at the 3-4 year follow-up. Further, having a high risk cognition also approximately doubled the probability.

To ascertain smoking status, the CTS extended interview asked the questions on basic smoking status and number of cigarettes smoked as detailed above. In addition, current non-daily smokers were asked:

Have you ever smoked daily for a period of 6 months or more? **(B16)**

Former smokers were asked:

When did you last smoke regularly? **(B28)**

The 2002 and 2005 surveys (only) asked young adult former smokers additional questions on their smoking cognitions. These were:

When did you last smoke or have a puff on a cigarette? **(B29)**

Do you ever think about smoking and whether you might go back? **(B32)**

Do you think that there is any possible situation in which you might start smoking again? **(B36)**

Experimenters (those who reported having smoked 1-99 cigarettes) were asked:

On how many of the past 30 days did you smoke a cigarette? **(B10)**

You indicated that you are not now a smoker but do you ever have a cigarette once in a while? **(L1)**

How old were you when you had your last cigarette? **(B7a)**

Never-smokers (0 cigarettes in lifetime) and experimenters were asked:

Do you think that you will smoke a cigarette soon? **(L4)**

Do you think you will smoke a cigarette in the next year? **(L5)**

A committed never smoker answered “no” to L4 and “definitely not” to L5.

Table 2.1 provides the detailed categories of smoking status for young adults in both 2002 and 2005 (the only years with questions about smoking cognitions). In this table, there was a significant increase in the proportion of young adults who were committed never smokers in 2005, compared to 2002. The only other statistically significant change was the decrease in the proportion of low risk former experimenters. One possible explanation is that the success of CTCP in reducing smoking experimentation may have been offset by the tobacco industry’s success in reducing the proportion of experimenters who are at low risk to smoke again. Another explanation could be that changes in social norms led those who had only tried a few cigarettes to under-report experimentation.

Current non-smokers who are considered at high risk to smoke in the short term are those who have smoked in the past year and those who have high risk smoking cognitions. In table 2.1, this includes former smokers in rows 4 and 5; experimenters in rows 7 through 9 and susceptible never smokers, (row 11). In 2002, this proportion was 24.6% and in 2005 it was similar at 24.1%. Appendix Tables A.2.3, A.2.4, and A.2.5, present the various smoking levels according to the demographic characteristics of young adults in 2005.

Table 2.1 Detailed Smoking Classification of Young Adult Smokers		
	2002	2005
	% (CI)	% (CI)
1. Current established, daily for 6+ months, ≥15 cigs/d	4.4 (±0.5)	3.6 (±0.8)
2. Current established, daily for 6+ months, < 15 cigs/d	9.9 (±0.7)	9.8(±1.6)
3. Current established, never daily for 6+ months	4.1 (±0.6)	3.8 (±0.9)
4. Former established smoker, quit ≤1 year	2.5 (±0.3)	2.0 (±0.5)
5. Former smoker , quit >1 yr, high risk cognitions or lapse	2.9 (±0.4)	2.6 (±0.6)
6. Former smoker, quit >1 yr, low risk cognitions, no lapse	3.6 (±0.5)	3.9 (±0.9)
7. Current experimenter	6.8 (±0.7)	8.2 (±1.3)
8. Recent experimenter, in last year	4.8 (±0.5)	4.5 (±0.8)
9. Former experimenter, >1 yr, high risk cognitions	3.7 (±0.3)	2.8 (±0.7)
10. Former experimenter, >1 yr, low risk cognitions	14.0 (±0.8)	11.5 (±1.3)
11. Susceptible never-smoker	3.9 (±0.5)	3.9 (±0.7)
12. Committed never-smoker	39.5 (±1.2)	43.4 (±2.2)

5. Smoking Cessation among Young Adults

In this section we compare quitting activity and associated smoking behavior among age groups in California. We also make similar comparisons using national data from the 2003 Tobacco Use Supplement to the Current Population Survey (TUS-CPS).

Since 1996, the California Tobacco Survey has asked current adult smokers:

> *During the past 12 months, have you quit smoking intentionally for one day or longer?* **(C6)**
>
> *In your whole life, have you ever made a serious attempt to quit smoking?* **(D1_a)**
>
> *Have you ever seriously considered quitting?* **(D1_b)**

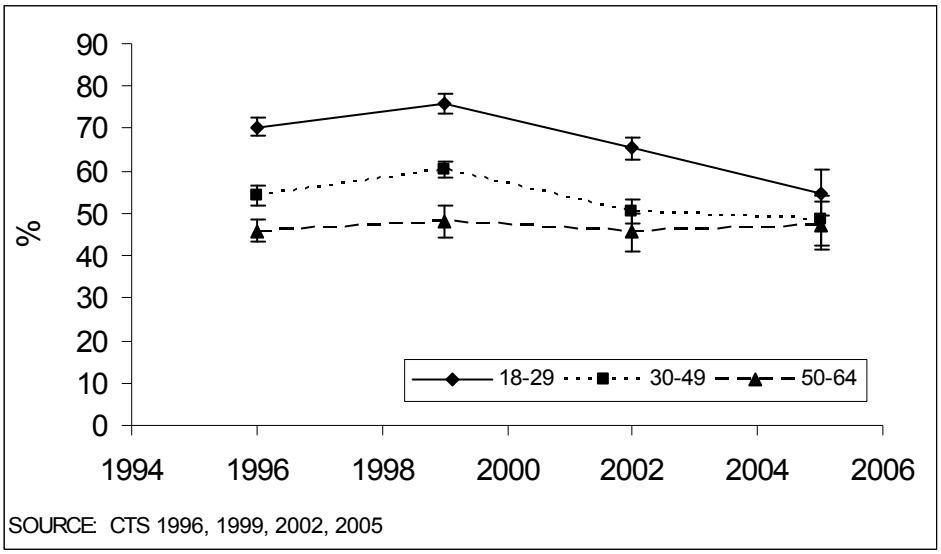
These questions are hierarchical with a 'no' response triggering the next question. The proportion of young adults who indicated that they had at least seriously considered quitting was uniformly high across the past decade (91.1±1.4% in 1996, 93.2±1.4% in 1999, 80.6±2.0% in 2002, and 90.3±2.9% in 2005)

Former smokers were asked:

> *When did you last smoke regularly?* **(B28)**
>
> *Were you smoking at all around this time 12 months ago?* **(C1)**

The proportion of smokers who had made a 1-day quit attempt in the past year included current smokers who reported such an attempt and former smokers who indicated that they had smoked in the past year. **Figure 2.9** compares the proportion of at least 1-day quitters for three age groups of recent Californian smokers: 18-29 years, 30-49 years and 50-64 years.

Figure 2.9: Proportion of Recent California Smokers Who Quit for 1 Day in the Past Year by Age

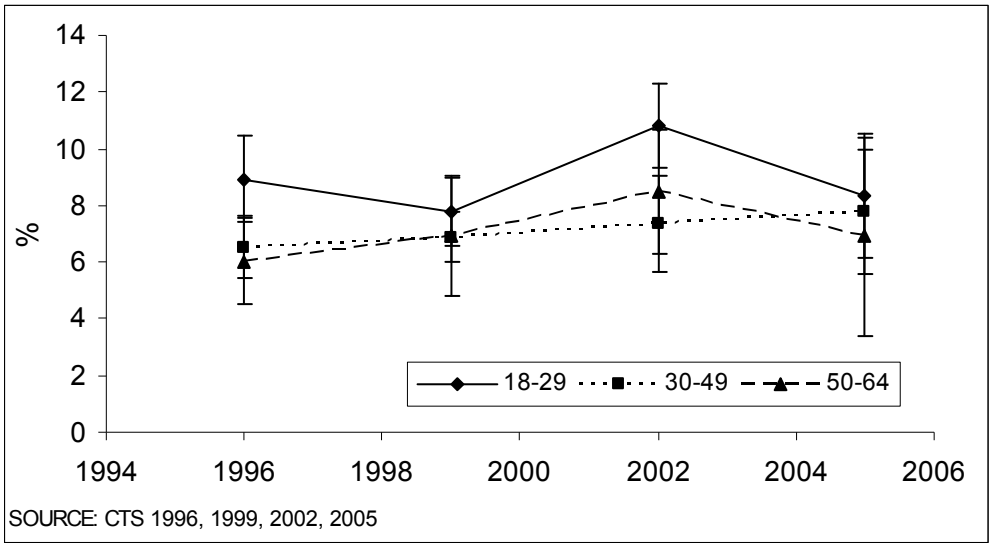


SOURCE: CTS 1996, 1999, 2002, 2005

	1996	1999	2002	2005
18-29	70.4	75.8	65.3	54.8
30-49	54.1	60.4	50.4	48.4
50-64	45.9	48.2	45.6	47.2

The number of quit attempts for at least a day has been constant over the last decade for the population of recent smokers over the age of 50 years. During the 1990s, recent smokers aged 30-49 years were more likely than older smokers to quit for at least a day, however, this advantage was no longer present in either 2002 or 2005. Quitting for at least a day was much more likely in 18-29-year-old recent smokers than either older age group between 1996 and 2002. However, there appears to have been a consistent decline in this proportion from the high of 75.8% in 1999. In 2005, 54.8±5.3% of 18-29-year-old recent smokers reported a quit attempt of at least a day, which was only slightly higher than the proportion in the older two age groups. Appendix Table A.2.6 presents demographics of young adults who made a quit attempt, by smoking level. The proportion of recent California smokers who were quit for at least 90 days at the time of the survey is shown in **Figure 2.10**.

Figure 2.10: Recent Smokers in California Who Were Quit For 3+ Months at Survey, by Age, 1996-2005 CTS

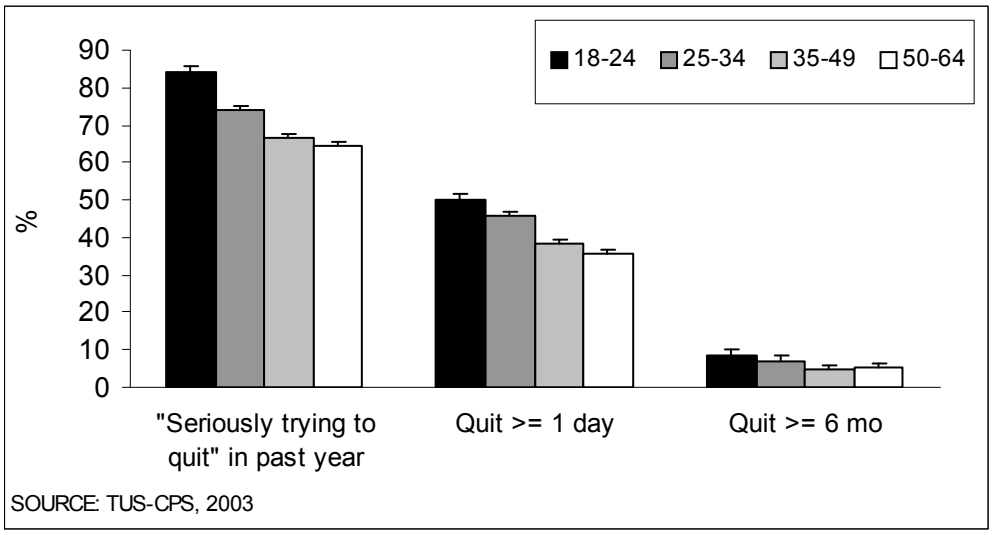


Age	1996	1999	2002	2005
18-29	8.9	7.8	10.8	8.4
30-49	6.5	6.9	7.3	7.8
50-64	6.0	6.9	8.5	6.9

In 1996 and 2002, recent young adult smokers (18-29 years) appeared to have slightly higher proportions who stayed quit for at least 90 days compared to older smokers. However, in 2005, the age difference in this proportion was not statistically significant.

Given that sample size is an issue with this estimate, we also report proportions of quitters from the very large 2003 TUS-CPS coordinated by the National Cancer Institute (31,625 respondents). **Figure 2.11** presents data for 4 separate age groups of recent smokers: 18-24 years, 25-34 years, 35-49 years and 50-64 years. As with the California data, there was a strong age effect for recent smokers reporting that they were seriously trying to quit and also for quit attempts of at least 1 day. While the age differences were smaller for the proportion who quit for at least 6 months, a significantly higher proportion of 18-24-year-olds than 35+ years old were quit for this period.

Figure 2.11: **Recent Once-Daily Smokers Who Tried to Quit Within the Past Year, by Age, 2003 TUS-CPS**



Age	"Seriously trying to quit" in past year	Quit >= 1 day	Quit>= 6 mos.
18-24	84.1	49.8	8.5
25-34	73.9	45.8	7.0
35-49	66.8	38.2	5.0
50-64	64.4	35.5	5.1

6. Predictors of Quitting Success among Young Adult and Older Smokers in California

Because young adults in California and nationally appear to quit at higher rates than older adults, it is of interest to consider potential predictors of quitting success across age.

Smoke-free home: In the 2005 CTS all respondents were asked:

> *What are the smoking rules or restrictions in your home, if any? Would you say smoking is completely banned for everyone, smoking is generally banned for everyone with few exceptions, smoking is allowed in some rooms only, or there are no restrictions on smoking?* **(F1)**

Pharmaceutical aid: Recent smokers who had made a quit attempt within the past year were asked:

> *For this last quit attempt, did you use a nicotine substitute such as nicotine patch, gum, inhalant, any other?* **(C8f)**

> *For this last quit attempt, did you use an antidepressant prescribed by your physician to help you quit, such as Zyban, Prozac, anything else?* **(C8i)**

Nicotine dependence: Current smokers were asked:

> *How soon after you awake in the morning do you usually smoke your first cigarette?* **(B18)**

Table 2.2 compares the prevalence of these potential predictors of successful quitting by age among California smokers in 2005. Each factor shows a strong gradient across age. Adult smokers age 50 years and older were less likely to have a smoke-free home than were young adults under age 30 years, by a factor of 27%.

Among young adults, 16.1±4.1% reported smoking within the first 30 minutes of waking; this was less than half of the proportion of 50-64-year-olds. A large majority of smokers of all ages did not use any assistance on their most recent quit attempt. Among young adults, 13.6±5.3% reported using pharmaceutical aids which was less than half of the proportion of 50-64-year-olds.

Table 2.2
Smoking within 30 Minutes of Waking, Home Bans, Use of Pharmaceutical Aid (NRT or Anti-depressants) by Age, Among Recent Smokers in California (2005 CTS)

	18-29 years	30-49 years	50-64 years
	% (CI)	% (CI)	% (CI)
Total home smoking ban (among recent smokers)	65.0 (±5.8)	58.5 (±6.9)	47.5 (±6.5)
Smoking in first 30 minutes (among current smokers)	16.1 (±4.1)	25.4 (±5.8)	38.0 (±9.0)
Using pharmaceutical aids (among recent smokers with a quit attempt in past year)	13.6 (±5.3)	21.1 (±4.2)	31.1 (±7.3)

Predictors of Quitting Success among Young Adult and Older Smokers in the US

A similar set of questions assessed these three potential predictors of successful quitting in the 2003 national TUS-CPS. The much larger sample size allowed us to consider the association of each of these potential predictors with markers of cessation success. To avoid bias from smokers still in the uptake process in the youngest group, we considered only those smokers with clear evidence of dependence, i.e., those who had smoked daily for at least 6 months. **Table 2.3** presents these national data and is similar to Table 2.2 for California.

Table 2.3
Prevalence of Potential Predictors of Successful Cessation among Ever-Daily Smokers (2003 TUS-CPS)

	Age			
	18- 24 years	25 -34 years	35- 49 years	50- 64years
	% (CI)	% (CI)	% (CI)	% (CI)
Smoke-free home	42.8 (±1.8)	42.7 (±1.3)	31.7 (±0.9)	27.5 (±1.3)
Smoking within first 30 min of waking	43.3 (±2.0)	47.1 (±1.5)	56.3 (±1.1)	59.5 (±1.3)
Use of pharmaceutical aid	9.7 (±1.2)	16.3 (±1.2)	22.4 (±1.1)	25.5 (±1.4)

Nationally, adult smokers age 50 years and older were less likely to have a smoke-free home than were young adults under age 35 years, by a factor of 36%. About three–quarters (73%) as many young adult current smokers were heavily dependent compared to adults over age 50, as measured by the percent who smoke within 30 minutes of waking. Among smokers with a quit

attempt in the past 12 months, fewer than half (38%) as many young adults used pharmaceutical aids as did smokers over age 50. The large majority of ever-daily smokers who made a quit attempt did not use a pharmaceutical aid on their most recent attempt, from 90.3% of young adults compared to 74.5% of adults over age 50.

Table 2.4 shows the proportion of smokers with a recent quit attempt who where abstinent for 6+ months at the time of the 2003 survey. The rows present these abstinence rates for those who reported using a pharmaceutical aid on the most recent quit attempt and for those who did not. Among 35-49-year-olds, the proportion 6+ months abstinent at the time of the survey was significantly higher among those who used a pharmaceutical aid, but this was not true for other age groups.

Table 2.4
Percentage of Recent Ever-Daily Smokers Quit 6+ Months at Survey by Use or No Use of Pharmaceutical Aid and Age (2003 TUS-CPS)

Percentage 6+ mos abstinent at survey, (by use or no use of aid)	18- 24 years % (CI)	25 -34 years % (CI)	35- 49 years % (CI)	50- 64 years % (CI)
Used a pharmaceutical aid	7.3 (±3.7)	8.1 (±2.7)	9.3 (±1.3)	8.3 (±1.7)
Did not use an aid	8.7 (±1.4)	7.9 (±1.0)	5.2 (±0.7)	6.4 (±0.9)

In the national 2003 TUS-CPS, it appeared that the use of a pharmaceutical aid on the most recent quit attempt was associated with increased success only in the 35-49-year-old age group. There was no significant difference in success rates with any other age group. Indeed, among 18-24-year-olds the proportion of recent quitters who were able to stay quit for 6 months was lower among those who used a pharmaceutical aid than those who did not.

Both the California Tobacco Survey and the national Tobacco Use Supplement to the Current Population Survey show a high interest in quitting among smokers. In both surveys, this interest is markedly higher among young adult smokers and appears to be associated with higher rates of longer-term (3+ months or 6+ months) cessation. A possible explanation for this is that young adult smokers were much more likely to live in a smoke-free home and to have lower levels of addiction, both strong predictors of a successful quit attempt in previous studies (Farkas et al., 1996; 1999).

However, young adults were less likely to use pharmaceutical assistance to quit than older smokers, and in all age groups the majority of smokers did not use such assistance on the most recent quit attempt. In addition, the evidence from the national survey supports previous evidence reported from California surveys, indicating that use of pharmaceutical assistance is not associated with successful quitting in young adult smokers – although such an effect was observed in smokers aged 35-49 years. Thus, there is no indication that promoting use of pharmaceutical aids in the young adult population would be associated with an increase in successful cessation.

Summary

Smoking prevalence among young adults in California has followed a U-shaped pattern in the 1990s, first declining before rising to a peak in 1999. Since then there has been a consistent decline to a 2005 prevalence of 15.3±1.4%, a drop of 19% from the 1999 peak.

The major component of this decline would appear to be a decline in smoking initiation in new birth cohorts. The largest decline between 1999 and 2005 (46%) was observed among young adults aged 18-20 years. Among 21-23-year-olds, this decline was much lower at 18%. It was lower still among 24-26-year-olds (8%) and 27-29-year-olds (0%). A review of the experimentation rates among adolescents suggests that this large decline in smoking prevalence will continue for the foreseeable future.

There is considerable evidence that young adults, particularly those aged 18-20 years, are still in the uptake phase of smoking with large proportions of those age 22-29 years reporting that they started smoking regularly between the ages of 18-21 years. This proportion is particularly marked among people who attend college where 54.4% of young adult smokers (aged 22-29) report that they started after the age of 18 years. Among those who did not attend college, this proportion is still high at 35.1% in 2005.

Since the start of the California Tobacco Control Program there has been a large decline in the proportion of daily smokers among young adults and this decline is particularly marked in the proportion of young adults who report smoking more than 15 cigarettes per day.

There has been a significant increase in the proportion of never smokers among young adults. However, this appears to have been offset by a decrease in the proportion of experimenters who are least likely to progress to dependent smoking. Approximately one quarter of young adult non-smokers appear to be at risk of smoking in the near future. This would appear to suggest that the large tobacco industry expenditure that targets young adults (Ling & Glantz, 2002) is successfully maintaining smoking levels among young adults.

In the mid 1990s, interest in quitting among young adult smokers was considerably higher than that observed for older adults. However, this level of interest in quitting has declined significantly since 1999, with 54.8% of young adults now reporting that they made a quit attempt in the past year. Again, this may be evidence of the effectiveness of the recent large increases in tobacco industry expenditure.

Long term quit attempts appear to be marginally higher among young adults than in older adults both in California and nationally. This would appear to be a result of lower level of dependence in young adult smokers and a higher prevalence of smoke-free homes.

Both nationally and in California, the vast majority of recent quitters do not report using a pharmaceutical aid on their most recent quit attempt, although previous reports indicate that up to 50% have tried such an aid on a previous attempt. The national data suggests that promotion of pharmaceutical aids to young adult smokers would not be associated with any increase in long term cessation.

APPENDIX

Chapter 2

Young Adults: Smoking Prevalence, Uptake, Cessation, and Attitudes

1. Current Smoking Prevalence

Appendix Table A.2.1 presents the smoking prevalence of young adults by demographic group, standardized by age, gender, race/ethnicity, and education level. Overall smoking prevalence declined between 2002 and 2005. The decline was significant only for those 18 to 21 years old. African Americans showed an increase, but because of the wide confidence limits for this group, the increase was not significant.

Appendix Table A.2.1
Current Smoking Prevalence among Demographic Subgroups of Young Adults 18-29, Standardized to 2005 Population

	1990 %	1992 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	18.1 (±0.9)	15.7 (±1.3)	16.1 (±1.0)	16.9 (±0.7)	18.8 (±0.6)	17.0 (±0.7)	15.3 (±1.4)
Gender							
Male	21.3 (±1.2)	18.2 (±1.7)	19.4 (±1.6)	20.1 (±1.1)	23.0 (±0.8)	21.4 (±1.0)	19.1 (±2.0)
Female	14.5 (±1.3)	12.8 (±1.6)	12.3 (±1.0)	13.4 (±0.9)	14.0 (±0.8)	12.0 (±0.8)	11.0 (±1.6)
Age							
18-21	16.0 (±1.6)	12.0 (±1.9)	13.3 (±1.1)	15.1 (±1.1)	17.7 (±0.9)	14.8 (±1.1)	10.5 (±1.5)
22-25	17.5 (±1.5)	16.1 (±1.9)	16.6 (±1.7)	17.8 (±1.2)	19.8 (±1.2)	19.1 (±1.3)	18.5 (±2.1)
26-29	21.1 (±1.9)	19.7 (±2.2)	18.9 (±2.0)	17.6 (±1.0)	19.0 (±1.0)	17.5 (±1.2)	17.9 (±2.7)
Race/Ethnicity							
African American	20.6 (±3.6)	14.4 (±4.6)	12.9 (±3.5)	15.5 (±2.7)	16.9 (±2.3)	15.7 (±3.1)	19.6 (±4.9)
Asian/PI	15.2 (±3.1)	10.6 (±2.6)	11.7 (±2.5)	14.5 (±1.7)	15.7 (±1.7)	13.5 (±1.8)	12.0 (±4.0)
Hispanic	15.1 (±1.5)	13.0 (±2.1)	13.8 (±1.5)	12.6 (±1.1)	14.6 (±1.0)	13.4 (±0.9)	11.7 (±1.9)
Non-Hispanic White	20.5 (±1.0)	19.2 (±1.9)	20.0 (±1.4)	22.0 (±1.0)	24.1 (±1.1)	21.9 (±1.3)	19.3 (±1.8)
Education							
Some college	12.7 (±1.1)	11.0 (±1.4)	12.7 (±1.2)	13.2 (±0.9)	15.6 (±0.8)	13.9 (±1.0)	12.2 (±1.5)
No college	23.5 (±1.5)	20.5 (±2.0)	19.8 (±1.4)	21.0 (±1.3)	22.5 (±0.9)	20.5 (±1.0)	18.8 (±1.8)

Appendix Table A.2.2 reports the percentage of young adult ever-established smokers, aged 22-29, who started smoking regularly at age 18 years or older, by demographic group. While the percentages have declined since 2002, none of the declines were significant. Males continued to be more likely than females to start smoking at age 18+ years. Non-Hispanic Whites had the lowest percentage of those who delayed regular smoking until after 18, followed by Hispanics. Those with lower educational attainment were more likely to begin regular smoking before the age of 18 compared to those who completed high school, with those who completed a college degree having the highest percentage of individuals who delayed starting regular smoking until after the age of 18.

Appendix Table A.2.2
Young Adult Ever-Established Smokers, aged 22-29, who Started Smoking Regularly at Age 18+ Years

	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %
Overall	34.2 (±2.8)	34.7 (±3.7)	46.1 (±3.4)	46.0 (±3.8)	48.3 (±2.6)	45.4 (±5.8)
Gender						
Male	36.9 (±3.8)	35.8 (±6.5)	47.5 (±4.5)	49.6 (±5.2)	51.5 (±3.7)	47.8 (±8.1)
Female	31.0 (±3.7)	33.0 (±6.2)	44.2 (±4.5)	41.3 (±5.1)	42.8 (±4.1)	41.5 (±6.4)
Age						
22-25	33.2 (±4.1)	27.5 (±5.8)	43.9 (±4.4)	44.2 (±5.8)	43.8 (±3.4)	40.1 (±7.5)
26-29	35.0 (±4.0)	40.4 (±5.4)	47.8 (±4.6)	47.6 (±4.9)	53.3 (±3.7)	49.4 (±8.6)
Race/Ethnicity						
African American	36.9 (±12.5)	57.8 (±19.4)	50.5 (±14.9)	69.7 (±14.9)	66.7 (±13.0)	66.5 (±23.6)
Asian/PI	38.9 (±12.0)	34.7 (±21.6)	73.7 (±8.9)	62.8 (±10.1)	57.6 (±9.1)	63.5 (±21.3)
Hispanic	33.8 (±7.3)	39.2 (±14.6)	50.0 (±7.6)	51.2 (±6.9)	55.1 (±4.8)	48.2 (±10.3)
Non-Hispanic White	33.5 (±2.7)	31.2 (±5.7)	38.9 (±3.7)	38.2 (±4.0)	40.4 (±3.3)	38.8 (±8.9)
Education						
Less that 12 years	20.9 (±8.0)	24.9 (±11.6)	33.9 (±9.1)	33.8 (±10.5)	37.9 (±6.8)	25.5 (±11.6)
High school graduate	33.4 (±3.7)	36.1 (±9.7)	47.1 (±5.7)	44.4 (±6.6)	44.0 (±5.3)	42.4 (±11.5)
Some college	44.0 (±4.6)	37.8 (±7.1)	48.7 (±5.3)	48.2 (±5.5)	48.0 (±4.8)	50.6 (±8.4)
College graduate	54.1 (±8.2)	55.2 (±12.9)	56.5 (±6.4)	57.5 (±7.2)	65.1 (±5.9)	60.2 (±13.9)

2. Detailed Smoking Status and Future Smoking Risk

Appendix Table A.2.3 shows the percentages of the young adult population who are current established smokers, by demographic group. Males were more likely than females to be current smokers, but the majority of smokers in both genders were occasional or light daily smokers. Rates of never-daily non-daily smoking were highest among the oldest group (aged 26-29 years).

Appendix Table A.2.3
Young Adult Current Established Smokers by Smoking Level and Demographics, 2005
Percentages are of the total young adult population

	Daily, ≥ 15/day %	Daily, < 15/day or once daily %	Non-daily, never daily %
Overall	3.6 (±0.8)	9.8 (±1.6)	3.8 (±0.9)
Gender			
Male	4.9 (±1.5)	11.3 (±2.4)	5.2 (±1.4)
Female	2.1 (±0.6)	8.1 (±1.8)	2.1 (±0.9)
Age			
18-24	3.0 (±1.5)	7.5 (±1.8)	2.9 (±0.9)
22-25	4.0 (±1.1)	10.2 (±2.1)	2.6 (±1.3)
26-29	4.1 (±1.6)	12.5 (±4.0)	6.3 (±2.2)
Race/Ethnicity			
African American	2.7 (±2.2)	20.6 (±10.1)	2.8 (±2.1)
Asian/PI	3.4 (±2.2)	13.4 (±5.9)	4.1 (±3.3)
Hispanic	0.8 (±0.6)	5.4 (±1.7)	4.4 (±1.5)
Non-Hispanic White	6.5 (±1.7)	11.1 (±1.9)	3.3 (±1.4)
Education			
No college	5.1 (±1.5)	10.6 (±2.3)	3.4 (±1.2)
Some college, not current	7.2 (±4.7)	16.0 (±5.8)	4.2 (±3.7)
Part time student	2.4 (±1.7)	12.9 (±6.6)	3.5 (±2.0)
Full time student	1.7 (±0.9)	6.7 (±2.7)	4.4 (±2.3)
College graduate	0.6 (±0.6)	6.8 (±3.4)	4.0 (±2.6)
Marital Status			
Married	3.7 (±1.4)	8.2 (±2.3)	3.1 (±1.9)
Partnered	5.9 (±3.4)	17.0 (±4.8)	3.2 (±2.0)
Divorced/widowed/separated	8.9 (±4.7)	16.0 (±9.2)	3.5 (±3.4)
Single	2.9 (±1.0)	8.7 (±1.7)	4.1 (±1.3)
Employment Status			
Working	4.7 (±1.2)	12.1 (±2.3)	4.6 (±1.3)
Homemaker	1.4 (±1.0)	4.7 (±2.1)	0.5 (±0.6)
Student	0.9 (±0.6)	4.5 (±1.6)	3.0 (±1.7)
Unemployed	6.4 (±3.4)	15.6 (±4.6)	4.2 (±4.4)

Appendix Table A.2.4 shows the percentages of young adults who are not current established smokers. Overall, three-quarters of young adults have never been established smokers, while 8.5% of those who became established smokers were not smoking at the time of the survey. While rates of established smoking increased with age, so did rates of successful (1+ year) quitting, with young adults aged 26-29 years of age significantly more likely than those 18-21 years of age to be successfully quit. Hispanics were most likely, and African Americans were least likely, to refrain from becoming established smokers. Full-time students and college graduates were the most likely not to become established smokers.

Appendix Table A. 2.4
Young Adults Who Are Not Current Established Smokers by Demographic Groups, 2005
Percentages are of total young adult population

	Former established, quit ≤ 1 year %	Former established, quit 1+ year %	Never an established smoker %
Overall	2.0 (±0.5)	6.5 (±1.1)	74.3 (±2.0)
Gender			
Male	2.3 (±0.9)	6.9 (±1.7)	69.4 (±3.3)
Female	1.7 (±0.5)	6.0 (±1.2)	80.0 (±2.3)
Age			
18-21	1.5 (±0.6)	2.5 (±1.1)	82.8 (±2.0)
22-25	2.1 (±0.7)	6.9 (±1.7)	74.2 (±2.6)
26-29	2.6 (±1.4)	11.6 (±3.4)	63.0 (±5.7)
Race/Ethnicity			
African American	2.7 (±1.9)	4.7 (±4.3)	66.5 (±10.0)
Asian/PI	0.3 (±0.4)	6.3 (±3.2)	72.5 (±6.2)
Hispanic	1.1 (±0.5)	5.7 (±1.9)	82.7 (±2.7)
Non-Hispanic White	3.3 (±1.3)	7.8 (±1.9)	68.0 (±3.5)
Education			
No college	1.5 (±0.6)	6.8 (±1.9)	72.6 (±3.0)
Some college, not current	2.6 (±1.5)	7.4 (±2.7)	62.6 (±8.3)
Part time student	5.0 (±3.1)	7.7 (±3.8)	68.5 (±8.8)
Full time student	1.9 (±1.1)	3.4 (±1.0)	82.0 (±3.4)
College graduate	2.3 (±1.9)	7.8 (±3.3)	78.6 (±5.3)
Marital Status			
Married	1.8 (±0.7)	12.1 (±2.9)	71.3 (±4.5)
Partnered	3.4 (±1.7)	7.5 (±3.5)	63.0 (±5.8)
Divorced/widowed/separated	4.3 (±3.3)	6.7 (±4.0)	60.7 (±10.6)
Single	1.7 (±0.8)	4.5 (±1.4)	78.1 (±2.4)
Employment Status			
Working	2.4 (±0.8)	6.9 (±1.7)	69.3 (±3.4)
Homemaker	1.6 (±1.2)	9.0 (±4.3)	82.8 (±4.7)
Student	1.7 (±1.0)	4.1 (±1.5)	85.9 (±2.3)
Unemployed	1.1 (±0.8)	9.4 (±5.5)	63.4 (±8.5)

Appendix Table A.2.5 gives the distribution across risk categories of young adults who are not current established smokers. Females were significantly more likely than males to be committed never smokers, while males were significantly more likely to be experimenters at risk for continued smoking. Hispanics were also likely to be experimenters at risk, as were both full-time and part-time students. Former smokers in this age group are likely to remain at risk of returning to smoking.

Appendix Table A.2.5
Young Adults, Not Current Established Smokers, 2005
Percentages are of the total young adult population

	Former, at risk %	Former, not at risk %	Experimenter, at risk %	Experimenter, not at risk %	Susceptible never smoker %	Committed never smoker %
Overall	4.6 (±0.8)	3.9 (±0.9)	15.5 (±1.7)	11.5 (±1.3)	3.9 (±0.7)	43.4 (±2.2)
Gender						
Male	5.0 (±1.2)	4.2 (±1.3)	19.2 (±2.8)	11.9 (±2.1)	4.3 (±1.0)	34.1 (±3.0)
Female	4.2 (±0.9)	3.5 (±1.0)	11.3 (±2.0)	11.1 (±1.5)	3.5 (±1.2)	54.2 (±3.0)
Age						
18-21	2.5 (±0.7)	1.5 (±0.8)	20.1 (±2.9)	7.0 (±2.4)	6.8 (±1.4)	48.9 (±3.5)
22-25	4.9 (±1.4)	4.1 (±1.3)	15.9 (±3.2)	14.4 (±3.0)	2.2 (±1.4)	41.7 (±4.4)
26-29	7.3 (±2.5)	6.9 (±2.6)	8.8 (±2.2)	14.6 (±2.7)	1.9 (±1.0)	37.7 (±5.0)
Race/Ethnicity						
African American	2.7 (±1.9)	4.7 (±4.3)	10.8 (±5.1)	7.6 (±3.1)	2.4 (±1.2)	45.8 (±8.9)
Asian/PI	3.7 (±2.5)	2.9 (±2.1)	10.4 (±3.8)	5.7 (±2.1)	4.5 (±2.0)	52.0 (±7.0)
Hispanic	3.5 (±1.5)	3.3 (±1.1)	18.2 (±2.6)	13.3 (±2.5)	4.7 (±1.2)	46.4 (±3.8)
Non-Hispanic White	6.4 (±1.6)	4.7 (±1.7)	14.9 (±2.7)	11.9 (±2.2)	2.8 (±0.8)	38.5 (±3.8)
Education						
No college	4.3 (±1.4)	4.0 (±1.0)	14.7 (±2.5)	9.9 (±2.2)	5.4 (±1.3)	42.6 (±3.4)
Some college, not current	6.2 (±2.6)	3.9 (±1.9)	11.4 (±3.5)	14.9 (±4.5)	2.7 (±2.4)	33.5 (±6.3)
Part time student	7.1 (±3.5)	5.6 (±3.6)	17.8 (±5.4)	10.9 (±3.9)	2.0 (±1.5)	37.8 (±8.6)
Full time student	3.4 (±1.2)	1.8 (±0.9)	20.4 (±4.4)	8.6 (±2.7)	3.7 (±1.2)	49.4 (±3.7)
College graduate	5.1 (±2.2)	5.0 (±3.0)	14.3 (±4.2)	16.6 (±3.9)	1.8 (±1.0)	45.9 (±5.7)
Marital Status						
Married	6.8 (±2.2)	7.0 (±2.3)	9.5 (±3.0)	14.1 (±2.6)	2.6 (±1.5)	45.0 (±4.5)
Partnered	5.7 (±2.4)	5.2 (±3.3)	10.5 (±3.6)	14.5 (±4.7)	2.1 (±1.6)	35.8 (±6.7)
Divorced/widowed/separated	6.5 (±3.9)	4.5 (±3.5)	13.9 (±8.7)	12.6 (±8.9)	4.2 (±7.0)	29.9 (±12.8)
Single	3.6 (±1.0)	2.6 (±0.9)	18.7 (±2.3)	10.0 (±2.0)	4.7 (±0.9)	44.8 (±2.9)
Employment Status						
Working	5.2 (±1.2)	4.1 (±1.2)	15.3 (±2.3)	13.9 (±2.2)	3.1 (±0.9)	37.0 (±2.8)
Homemaker	5.5 (±3.8)	5.1 (±2.7)	8.3 (±5.3)	9.9 (±4.4)	3.3 (±3.0)	61.3 (±8.0)
Student	3.3 (±1.2)	2.4 (±1.2)	19.3 (±3.3)	7.1 (±1.5)	5.6 (±1.6)	53.9 (±3.5)
Unemployed	4.4 (±2.9)	6.1 (±4.8)	13.5 (±5.7)	10.2 (±4.1)	4.7 (±2.5)	35.0 (±10.7)

3. Smoking Cessation among Young Adults

Appendix Table A.2.6 presents demographic details on young adult current established smokers who made a quit attempt of at least one day, by smoking level. Heavier smokers were less likely to make a quit attempt, with non-daily ever daily smokers most likely to make one. Non-daily, never daily smokers had quitting rates intermediate between light and moderate to heavy daily smokers. Younger smokers were more likely to have made a quit attempt, with light daily smokers having the highest rate in this age group. African Americans had the highest quitting attempt rate among the racial/ethnic groups, with almost all non-daily, ever daily African Americans attempting a quit. However, quit attempts among moderate to heavy African American smokers were substantially lower than any other group.

Appendix Table A.2.6
Young Adult Current Established Smokers, 2005
Percentage who made a quit attempt in the last year, by consumption level

	Overall %	Daily, 15+ %	Daily < 15 %	Non-daily, Ever Daily %	Non-daily, Never Daily %
Overall	48.6 (±5.4)	38.4 (±10.1)	50.7 (±9.8)	60.0 (±13.7)	44.6 (±11.3)
Gender					
Male	50.4 (±7.7)	38.0 (±14.2)	54.3 (±14.6)	62.7 (±16.3)	47.3 (±14.6)
Female	44.9 (±7.0)	39.5 (±15.7)	45.0 (±11.7)	55.4 (±28.3)	37.0 (±15.4)
Age					
18-21	52.4 (±9.9)	36.2 (±24.9)	60.1 (±13.0)	52.7 (±36.9)	55.3 (±15.6)
22-25	50.0 (±8.5)	42.6 (±12.1)	52.9 (±13.1)	67.3 (±20.2)	28.9 (±18.1)
26-29	44.4 (±9.4)	36.0 (±13.7)	41.6 (±18.3)	58.3 (±26.9)	45.1 (±22.6)
Race/Ethnicity					
African American	58.1 (±17.8)	5.8 (±12.8)	44.9 (±35.7)	95.0 (±10.2)	50.4 (±51.6)
Asian/PI	37.3 (±17.5)	34.0 (±35.4)	51.6 (±36.3)	24.4 (±35.2)	22.6 (±31.0)
Hispanic	47.2 (±11.1)	26.0 (±33.4)	34.9 (±19.1)	64.0 (±20.8)	53.3 (±18.8)
Non-Hispanic White	51.4 (±7.5)	44.1 (±14.0)	58.4 (±10.5)	61.0 (±25.1)	39.1 (±22.2)
Education					
No college	49.6 (±8.1)	34.7 (±13.0)	52.5 (±11.4)	57.9 (±22.1)	57.6 (±21.5)
Some college, not current	52.9 (±18.2)	45.8 (±45.5)	52.8 (±29.2)	82.2 (±18.7)	38.0 (±30.1)
Part time student	50.3 (±25.9)	61.2 (±36.2)	61.9 (±34.0)	25.7 (±44.4)	75.0 (±25.5)
Full time student	43.3 (±13.9)	34.4 (±29.1)	49.9 (±21.6)	86.6 (±20.0)	22.4 (±21.4)
College graduate	44.2 (±20.4)	50.7 (±84.1)	33.8 (±34.1)	62.8 (±40.9)	37.3 (±35.3)

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Chapter 3

Adolescent Smoking Behavior

KEY FINDINGS

- The large declines in adolescent smoking previously associated with the work of the California Tobacco Control Program continued through 2005.
    - Among 16-17-year-olds, the percentage of established adolescent smokers (smoked at least 100 cigarettes in lifetime) declined by a factor of 76.7% between 1996 and 2005, reaching a low of 3.5±1.2% for this age group.
    - In 2005, only 2.9±1.2% of 12-13-year-olds reported having ever smoked, a factor decline of 48.2% from 2002. The percentage of 14-15-year-olds who reported ever smoking was 12.7±2.8%, a factor decline of 31.0% since 2002. Among 16-17-year-olds, 23.9±3.5% reported having ever smoked, a factor decline of 31.9% since 2002.
    - In 2005, 46.5±4.3% of 12-13-year-olds were at very low risk for starting to smoke (committed never smokers who definitely had never been curious about smoking), a factor increase of 22.7% since 2002. For 14-15-year-olds, 35.1±4.6% were at very low risk, a factor increase of 17.8% since 2002. The percentage of 16-17-year-olds at very low risk was 38.9±5.2%, a factor increase of 37.9% since 2002.
- However, there are a number of early warning signs that this decline may not continue into the future.
    - In 2005, among those who had ever been established smokers, the percentage of adolescent former smokers decreased to a low 7.8±4.6%, a significant decline by a factor of 68.0% since 1990.
    - The percentage of adolescents perceiving a benefit to smoking rose significantly to 56.7±3.2% so that it now is similar to that observed in 1993.
    - Adolescent committed never smokers' belief that they could quit easily if they started smoking increased dramatically in 2005 to 44.2±5.7%.
    - The percentage of adolescents who reported having a best friend who smoked appeared to increase in 2005 to 28.3±2.7% from 26.5±1.2.

Chapter 3

Adolescent Smoking Behavior

Introduction

In the United States, the vast majority of smokers (approximately 90%) experiment with cigarettes as adolescents, with many progressing to established smoking before the age of 21 (Gilpin et al., 1999; USDHHS, 1994). Decades of addicted smoking may follow for many of these adolescents (Pierce & Gilpin, 1996), and they may have a lower probability of successfully quitting later in life (USDHHS, 1988). Thus, a major goal of the California Tobacco Control Program is to reduce smoking uptake among adolescents (TEROC, 1991. TEROC, 2000).

The first step in the smoking uptake process involves the development of cognitions that put adolescents at increased risk for starting to smoke (Choi et al., 2001). These adolescents then become curious about smoking and will no longer commit to staying away or refusing cigarettes offered to them (Pierce et al., 1996). A typical initial experience with smoking involves just a few puffs on someone else's cigarette, and although some do not progress beyond this stage, most progress to smoke a whole cigarette (Choi et al., 2002; Flay & Sobel, 1983; USDHHS, 1994). Smoking in adolescence is usually sporadic, generally limited to unmonitored social settings. However, as an adolescent's exposure to smoking increases, the probability increases that the adolescent will become a dependent smoker.

It is commonly accepted that those who have smoked 100 cigarettes in a lifetime can be classified as established smokers, with many showing signs of smoking dependency (Pierce et al., 1998). There is considerable evidence that people who have smoked 100 cigarettes have already started to make repeated, unsuccessful attempts to quit- a criterion for dependence (Pierce et al., 1998). Most who progress to smoking 100 cigarettes continue to increase their consumption and eventually start smoking on a daily basis.

A number of predictors of adolescent smoking initiation have been identified. These include exposure to best friends smoking, lack of strong peer anti-smoking norms, and perceiving benefits to smoking (Gilpin et al., 2005). With declining rates of adolescent smoking in recent years, the relation of these predictors to adolescent smoking initiation may be changing. This chapter examines trends in several known predictors of adolescent smoking in order to provide a glimpse of possible future trends in adolescent smoking.

This chapter focuses on 12-17-year-olds, an age group that has received its own version of the California Tobacco Survey (CTS) since 1990. Section 1 reviews trends in the percentage of never smokers who are at the lowest risk to start smoking. Section 2 of this chapter examines trends in key measures of smoking behavior. Section 3 explores quitting among established smokers. Section 4 focuses on trends in psychosocial antecedents to smoking.

1. Trends in Never Smokers at Lowest Risk of Starting to Smoke

Categorization of the Earliest Stages in the Smoking Uptake Process

Committed never smokers are normally half as likely to experiment with smoking compared to susceptible never smokers. This classification has been shown in a number of longitudinal studies that include self-efficacy and intention-to-smoke questions (Pierce et al., 1996; Choi et al., 2001; Jackson, 1998; Gritz et al., 2003). In the CTS, the following three questions were used for this category:

Do you think in the future you might experiment with cigarettes? **(O27_2)**

If one of your best friends were to offer you a cigarette, would you smoke it? **(O31)**

At any time during the next year do you think you will smoke a cigarette? **(O33)**

Response categories were "definitely yes," "probably yes," "probably not," or "definitely not." Adolescents responding "definitely not" to all three questions were classified as committed never smokers and all other never smokers were considered to be susceptible never smokers.

Curiosity about smoking is one of the most frequent motivations that smokers give for starting to smoke (Cronan et al., 1991; De Micheli & Formigoni, 2002; Pierce et al., 2005; Plummer et al., 2001). One advertising approach noted a compelling reason to encourage experimentation would include a spotlight on the product's benefits, with the goal of making the potential consumer curious about it (Smith & Swinyard, 1998). In the CTS, committed never smokers were further categorized into two groups based on their response to the question:

Have you ever been curious about smoking a cigarette? **(O27_1)**

Again, the response categories were "definitely yes," "probably yes," "probably not," or "definitely not." Adolescents who answered "definitely not" were categorized as never curious committed never smokers. All other committed never smokers were curious committed never smokers.

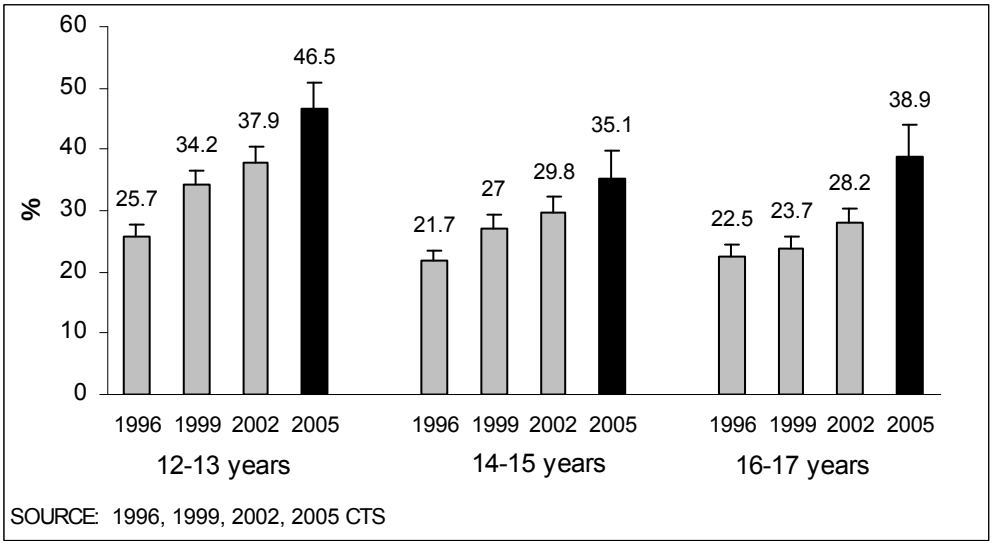
Trends in Committed Never Smokers Who Have Never Been Curious About Smoking

The percentage of adolescents who are committed never smokers who have never been curious about smoking is increasing, especially among 16-17-year-olds.

Trends in the percentage of California adolescents at lowest risk for smoking (committed never smokers who had never been curious about smoking) started in 1996 when the curiosity question was first asked **(Figure 3.1)**. By 2005, almost half (46.5±4.3%) of 12-13-year-olds were in this lowest risk category. This represents a factor increase of 22.7% from just three years earlier in 2002, and a factor increase of 80.9% since 1996 when only about one-quarter of 12-13-year-olds were in this lowest risk category for future smoking. Among 14-15-year-olds in 2005, 35.1±4.6% were in the lowest risk category. This represents an increase by a factor of 17.8% since 2002 and 61.8% since 1996, when only about one-fifth were in this lowest risk category. The most impressive increase in the lowest risk category was observed among 16-17-year-olds. By 2005, 38.9±5.2% were in this category, representing a factor increase of 37.9% from just three years earlier in 2002 when

28.2±2.1% were in this category, and 72.9% since 1996 when slightly over 20% were in the lowest risk category. Thus, there appears to have been a major decline in the influences encouraging adolescent curiosity since 1996 that accelerated between 2002 and 2005.

Figure 3.1: Trends in the Proportion of Adolescents at Lowest Risk to Start Smoking



Appendix Table A.3.1 shows the percentages of adolescent committed never smokers who have never been curious about smoking by demographic subgroups.

2. Trends in Key Measures of Smoking Behavior by Age

The smoking initiation process can take years, with various behavioral markers of smoking uptake differing by age. In the CTS, adolescents are first asked the following question and a positive response is used to classify them as having experimented with cigarettes:

Have you ever smoked a cigarette? **(O1)**

All adolescents who respond negatively to this question are probed further and a positive response to the following question classifies them as a puffer.

Have you ever tried or experimented with smoking, even a few puffs? **(026)**

This chapter defines an ever smoker as a person who has either smoked a cigarette or has puffed on one. All experimenters (not puffers) were asked the following question and classified as an established smoker if they answered yes:

Have you smoked at least 100 cigarettes in your life? **(O4)**

The trends in the percentages of adolescents who were puffers, experimenters, and who had already progressed to established smoking are presented by age in **Figure 3.2**. The exact percentages of ever smokers (experimenters, puffers, and established smokers) for each age group in each survey year are presented in **Table 3.1**. Also, Appendix Tables A.3.2, A.3.3, and A.3.4 show the results in demographic groups of adolescents.

Figure 3.2: Trends in Percentages of Puffers, Experimenters, and Established Smokers by Age Group

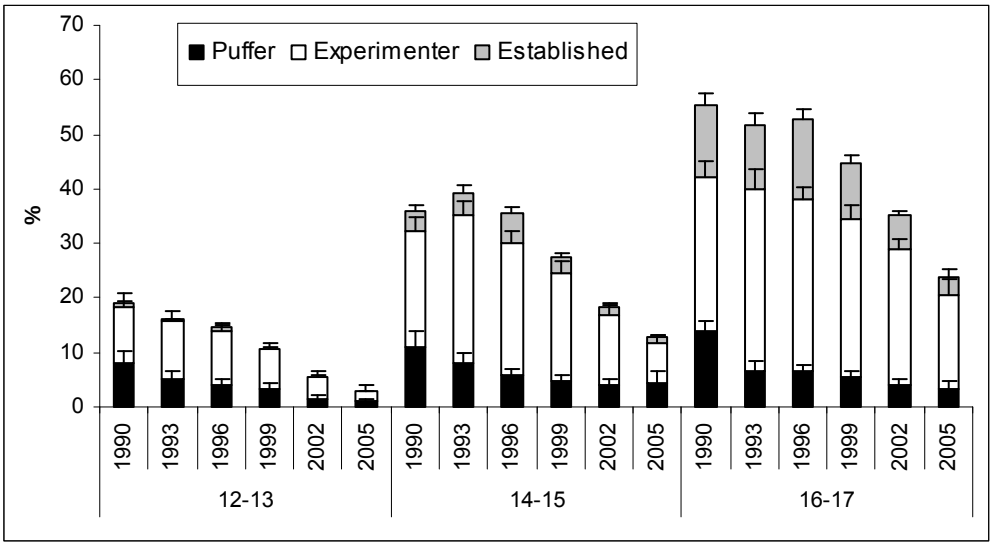


Table 3.1
Trends in Percentages of Puffers, Experimenters, Established Smokers, and Ever Smokers by Age

Age Group	Year	Puffers %	Experimenters %	Established Smokers %	Total Ever Smokers %
12-13	1990	7.9(±2.2)	10.3(±2.6)	0.6(±0.6)	18.9(±2.7)
	1993	7.8(±1.6)	8.1(±1.6)	0.2(±0.1)	16.1(±2.2)
	1996	4.1(±0.9)	9.9(±1.6)	0.6(±0.3)	14.6(±1.9)
	1999	3.4(±1.1)	7.1(±1.4)	0.2(±0.6)	10.7(±1.7)
	2002	1.6(±0.6)	4.0(±1.1)	0.1(±0.1)	5.6(±1.1)
	2005	1.0(±0.6)	1.9(±1.1)	0.1(±0.1)	2.9(±1.2)
14-15	1990	11.0(±2.8)	21.1(±2.7)	3.8(±1.1)	35.9(±3.6)
	1993	13.7(±2.4)	21.4(±2.6)	4.3(±1.2)	39.3(±3.0)
	1996	6.0(±1.1)	24.0(±2.3)	5.4(±1.1)	35.5(±2.2)
	1999	4.7(±1.1)	19.9(±2.0)	2.8(±1.1)	27.3(±2.1)
	2002	4.2(±1.1)	12.5(±1.8)	1.7(±0.7)	18.4(±2.2)
	2005	4.4(±2.2)	7.3(±1.6)	1.1(±0.6)	12.7(±2.8)
16-17	1990	13.8(±2.0)	28.3(±3.1)	13.4(±2.2)	55.4(±2.6)
	1993	11.5(±2.2)	28.3(±3.6)	12.0(±2.2)	51.8(±3.4)
	1996	6.5(±1.3)	31.5(±2.4)	15.0(±1.7)	52.9(±2.6)
	1999	5.5(±1.2)	29.0(±2.5)	10.3(±1.4)	44.7(±2.7)
	2002	4.0(±1.0)	24.9(±1.8)	6.1(±1.0)	35.1(±1.9)
	2005	3.3(±1.3)	17.2(±3.1)	3.5(±1.2)	23.9(±3.5)

Table entries are weighted percentages and 95% confidence limits.
SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005

The percentage of 12-13-year-olds who reported having ever smoked in 2005 was 2.9%, a factor decline of 48.2% from 2002.

As can be seen from Figure 3.2 and Table 3.1, it is clear that there have been dramatic declines in adolescent smoking since the start of the California Tobacco Control Program. Among 12-13-year-olds in 2005, only 2.9±1.2% were ever smokers, representing a factor decline of 48.2% since 2002, when 5.6±1.1% of this age group were ever smokers. The 2005 level also represents an 84.7% decline from the 1990 level, when 18.9±2.7% of this age group had ever smoked. As with past surveys, almost no respondents in the 12-13-year-old age group have been categorized as established smokers.

For 14-15- and 16-17-year-olds, the decline in ever smoking and established smoking started after 1996, occurred rapidly, and continued in 2005.

Similar declines were observed among 14-15-year-olds were present, particularly since 1996. In 2005, 12.7±2.8% of 14-15-year-olds had ever smoked. This represents a factor decline of 31.0% since 2002, when 18.4±2.2% were ever smokers. In 1999, 27.3±2.1% reported that they had ever smoked. Approximately 35-40% reported that they had ever smoked from 1990-1996. The 2005 levels represent a factor decline of 64.5% from the 1990 level. The majority of ever smokers in this age group were experimenters and only a small percentage of those advanced to established smoking.

Among 16-17-year-olds, 23.9±3.5% reported having ever smoked, a factor decline of 31.9% since 2002 and 56.9% since 1990. The percentage of this group who reported ever smoking peaked in 1990 at 55.4±2.6%; there was no significant decline by 1996. After 1996, the percentage declined rapidly, to 35.1±1.9% in 2002. Before 1996, there was no evident trend in the percentage for the established smokers in this age group; the highest estimate was 15.0±1.7% in 1996. Established smoking declined considerably after 1996: 10.3±1.4% in 1999, 6.1±1.0% in 2002, and 3.5±1.2% in 2005, which was a decrease by a factor of 42.6% since 2002.

These results show an extraordinary decline in ever smoking for adolescents in California. The reduction in ever smoking among 12-13-year-olds occurred from 1990-2005, while the decline among the 14-17-year-old age group did not take place until after 1996. The lack of decline in the older age groups indicates that the protective component of the California Tobacco Control Program was particularly effective for the younger age groups, who may have continued to be never smokers as they got older. Lower rates of established smoking in recent years could also be because of delayed uptake (extending the uptake process past the age of 17). To effectively evaluate these adolescents as young adults, future CTS will need to be analyzed.

3. Quitting among Adolescent Established Smokers

As discussed in the introduction section of this chapter, 100 cigarettes in a lifetime is a generally accepted marker of nicotine dependence. Therefore, the analyses of smoking cessation were restricted to adolescent established smokers. The following questions in the CTS focused on recent quitting history:

Think about the last 30 days. On how many of these days did you smoke? **(O6)**

Any smoking (an answer other than zero or none) in the past month characterized an individual as a current smoker. Former smokers (zero or none) were asked:

How long ago did you smoke your last cigarette? **(O7)**

Respondents could answer in hours, days, weeks, months or years. All current adolescent smokers were asked to answer "yes" or "no" to the question:

Have you ever seriously thought about quitting smoking? **(O22)**

Starting in the 1996 survey, all those who responded positively were asked the following:

When was your most recent attempt to quit? **(O24_1)**

Respondents were asked to provide both a month and year. Evidence suggests that the risk of relapse is not minimal until former smokers have quit for at least 12 months (Hughes et al., 2003; Gilpin et al., 1997; Pierce & Gilpin, 2003). Therefore, the above questions were used to divide established smokers in the 1996 to 2005 surveys into five groups: (1) successful quitters (quit > 1 year), (2) former smokers who had quit in the past year, (3) current smokers who had never thought about quitting, (4) current smokers who had thought about quitting but who had not made a quit attempt in the past year, and (5) current smokers with a quit attempt in the past year.

Table 3.2 presents the full quitting history of 14-17-year-old established smokers from the 1996 to 2005 CTS and the categories available from the 1990 and 1993 CTS. The percentages in the table are of all established smokers (blank cells are the years the question was not asked).

Table 3.2
Quitting Behavior among 14-17-year-old Adolescent Established Smokers

	1990 N=368		**1993 N=304**		**1996 N= 419**		**1999 N=290**		**2002 N=167**		**2005 N=89**	
	N	%	N	%	N	%	N	%	N	%	N	%
Former Smokers	72	24.4(±2.7)	44	17.4(±5.7)	74	15.6(±7.7)	57	20.4(±5.7)	37	17.6(±6.1)	13	7.8(±4.6)
Did not smoke in last year			14	7.0 (±2.1)	14	3.3 (±1.5)	21	6.4 (±2.9)	12	4.4 (±2.9)	5	2.8 (±2.6)
Smoked in last year			30	10.4(±4.5)	60	12.3(±3.1)	36	14.0(±6.1)	25	13.2(±5.7)	8	5.0 (±3.6)
Current Smokers	296	75.6(±2.7)	260	82.6(±5.7)	345	84.4(±3.6)	233	79.6(±5.7)	130	82.4(±6.1)	77	92.3(±4.6)
Did not attempt in last year months and did not think of attempting to quit					55	13.3(±3.5)	31	11.8(±4.6)	15	7.8 (±4.4)	16	21.9(±14.7)
Thought about quitting, but did not attempt in last year					9	1.7 (±1.2)	8	2.6 (±1.8)	5	2.7 (±2.6)	9	14.0(±11.2)
Attempted to quit in last year					281	69.3(±4.4)	194	65.2(±6.8)	110	71.9(±7.7)	54	56.4(±17.0)

There was no evidence of improvement in any aspect of quitting among 14-17-year-old established smokers.

By 2005, only 7.8±4.6% of established adolescent smokers aged 14 to 17 years had not smoked in the past month and were classified as former smokers. This represents a discouraging and significant decline by a factor of 68.0% since 1990, when 24.4±2.7% were in this category. Between 1993 and 2005, there was no difference in the percentage of established smokers who had successfully quit smoking for one year. In 2005, the percentage of established smokers who had successfully quit for a year or more was 2.8±2.6%. However, due to small sample sizes and wide confidence limits, there was no significant trend evident in this measure. The percentage of established smokers who were current smokers in 2005 was 92.3±4.6%, a significant increase by a factor of 22.1% since 1990. In 2005, 56.4±17.0% of all established smokers reported that they had made a quit attempt in the past year. Although lower, this was not significantly different from the rate in 1996, 1999 or 2002. While the estimate of the percentage of established smokers who had never thought about quitting appeared to increase from previous years to 21.9±14.7% in 2005, this difference was also not significant.

Although there has been a large decrease in the number of adolescent established smokers (see Section 2, above), quitting behavior among adolescents in 2005 appears to have worsened, highlighting the addictive nature of cigarettes. However, wide confidence intervals limited the precision of some estimates. Nonetheless, this suggests that major progress has been made in reducing adolescent smoking initiation and progression, but efforts to increase successful cessation among adolescents remain very important.

4. Psychosocial Correlates of Adolescent Smoking

Changes in Smoking Risk Factors among Adolescents

The declining rates of adolescent smoking coupled with the increasing proportion of adolescents at the lowest risk to start smoking in recent years (presented in Sections 1 and 2, above) suggest that the psychosocial predictors to adolescent smoking initiation may also be changing. To address this, Gilpin, Lee and Pierce (2005) analyzed data from two longitudinal cohorts of young California adolescent never smokers who participated in the CTS.

The first dataset was from 1993 to 1996, when adolescent smoking was increasing, and the second dataset was from 1996 to 1999, when adolescent smoking was decreasing. The divergent trends in adolescent smoking in these two time periods provided different environments pertaining to smoking and thus present a unique natural experiment in which to explore how the predictors of adolescent smoking might have changed. Never smokers aged 12-15 years were identified from the 1993 and 1996 CTS. Follow-up surveys allowed for the examination and contrast of rates of transition from never smoking to any smoking in each cohort. This allowed for the further examination of known influences on adolescent smoking that might have differed in such environments.

Table 3.3 is adapted from Gilpin, Lee and Pierce (2005) and presents the results for various individual predictors significant in one cohort or the other at $p < 0.05$. Two psychosocial predictors of smoking are presented here as an example: report of smoking among best friends and the presence of peer anti-smoking norms. In the 1993-1996 cohort, among those who reported not being exposed to best friends smoking, 36.3±4.9% transitioned to any smoking by 1996. Of those who reported any best friends smoking, 44.4±7.5% transitioned to any smoking

by 1996. This was not a statistically significant difference. In contrast, in the 1996-1999 cohort, only 23.4±2.9% of those who reported not being exposed to best friends smoking transitioned to any smoking by 1999. This was significantly lower than those who reported any best friends smoking in this cohort, where 42.5±4.2% transitioned to any smoking by 1999. The transition rate to any smoking for the 1996-1999 cohort (when the trend was declining) was 12.9% less compared to the rate of those in the 1993-1996 cohort (when the trend was increasing), among those who did not report exposure to best friends smoking. Of those who reported smoking among their best friends, there was a difference of only 1.9% in the transition rate to any smoking between cohorts.

With regard to the presence of peer anti-smoking norms, in the 1993-1996 cohort, among those who reported the presence of such a norm, 35.5±5.0% transitioned to any smoking by 1996. Of those who reported a lack of anti-smoking norms among their peers, 41.8±5.9% transitioned to any smoking by 1996. This was not a statistically significant difference. In contrast, in the 1996-1999 cohort, only 22.9±3.2% of those who reported a peer anti-smoking norm transitioned to any smoking by 1999. This was significantly lower than those who reported no such norm in this cohort, where 36.9±3.8% transitioned to any smoking by 1999. In this example, the transition rate to any smoking for the 1996-1999 cohort (when smoking rates were declining) for those who reported a peer anti-smoking norm was 12.6% less than those in the 1993-1996 cohort (when smoking was increasing). Of those who reported no peer anti-smoking norms, there was a difference of only 4.9% in the transition rate to any smoking. These analyses were adjusted for demographics and susceptibility to smoking.

These results underscore the preventive effect of the California Tobacco Control Program against adolescent smoking initiation. Those who did not present with a particular risk factor (e.g., no best friends smoking) had even lower rates of transitioning to any smoking in 1996-1999, a period when smoking was already decreasing.

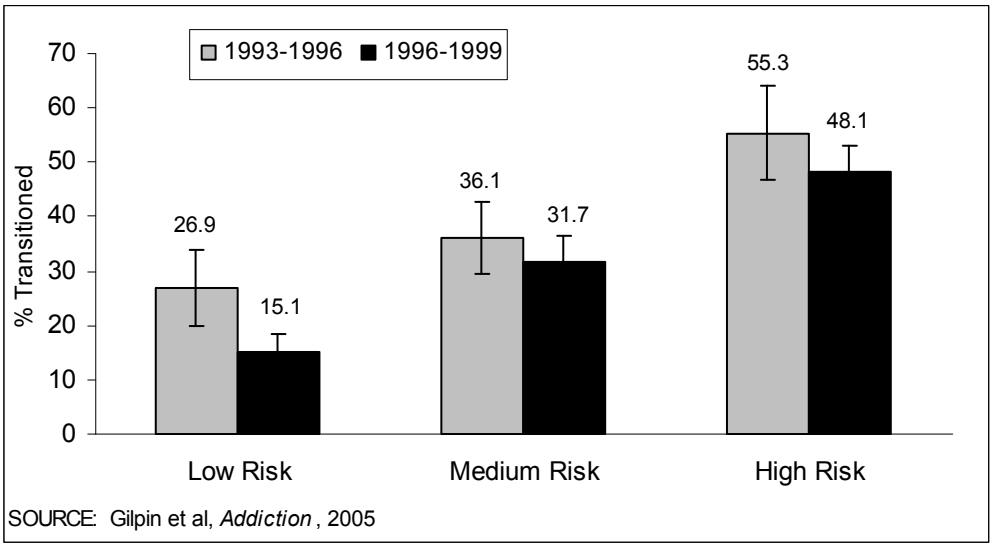
Table 3.3
Transition Rates from Never Smoking to Any Smoking in Two Longitudinal Cohorts of 12- to 15-year-olds (1993-1996 and 1996-1999) by Predictors Significant at p<0.05 in Either Cohort

	1993-1996 N = 1764			1996-1999 N = 2119			
Predictor	**N**	**Transition Rate to Any Smoking % (±95%) CI**	**p-value**	**N**	**Transition Rate To Any Smoking % (±95%) CI**	**p-value**	**Change in Transition Rates**
Smokers among friends							
No	1308	36.3 (±4.9)	0.123	1273	23.4 (±2.9)	<0.001	-12.9
Yes	456	44.4 (±7.5)		846	42.5 (±4.2)		-1.9
Peer anti-smoking norms							
Present	985	35.5 (±5.0)	0.154	957	22.9 (±3.2)	<0.001	-12.6
Lacking	779	41.8 (±5.9)		1162	36.9 (±3.8)		-4.9

Figure 3.3 shows the smoking transition rates by cohort in low-, medium- and high-risk groups, as defined by tertiles of the individual predicted probabilities of transition from a logistic regression model. Compared to the 1993–1996 cohort, low-risk never smokers in the 1996–

1999 cohort showed a significant reduction in transition of 44% (or 15.1% in 1996-99 vs. 26.9% in 1993-96), compared to non-significant reductions of 12% for medium risk and 13% for high-risk never smokers. Thus, it appears that most of the reduction in transition between the two cohorts occurred among adolescents in the low-risk group (i.e., those who were already at low risk to start smoking). This supports the findings presented in Section 2, above, that the California Tobacco Control Program has been particularly effective among younger age groups, who make up most of the low-risk group. Further, these findings highlight the importance of examining psychosocial risk factors for smoking initiation among those who have never smoked a cigarette.

Figure 3.3 Smoking Transition Rates in Two Longitudinal Cohorts of 12-15-year-olds by Risk of Smoking



SOURCE: Gilpin et al, *Addiction* , 2005

Trends in Psychosocial Correlates of Adolescent Smoking

This section focuses on whether important psychosocial antecedents of smoking behavior have changed in a direction and magnitude that might explain the major decreases in adolescent smoking behavior recently observed in California. It would be expected that gradual changes in psychosocial factors would lead to gradual changes in smoking behavior. For these psychosocial antecedents to be considered a key reason for the changes in smoking behavior, they should exhibit similar large and abrupt changes over the survey period that either precedes the behavioral change or be evident as the changes in behavior occurred.

Trends in Never Smokers' Exposure to Best Friends Who Smoke

The decreasing trend since 1996 in the percentage of never smokers who reported exposure to best friends who smoke ended in 2005.

Studies have shown the association between exposure of never smokers to best friends who smoke and later initiation of smoking. Psychosocial theories would predict that changes in the number of never smokers exposed to best friends who smoke should correlate well with changes in initiation behavior.

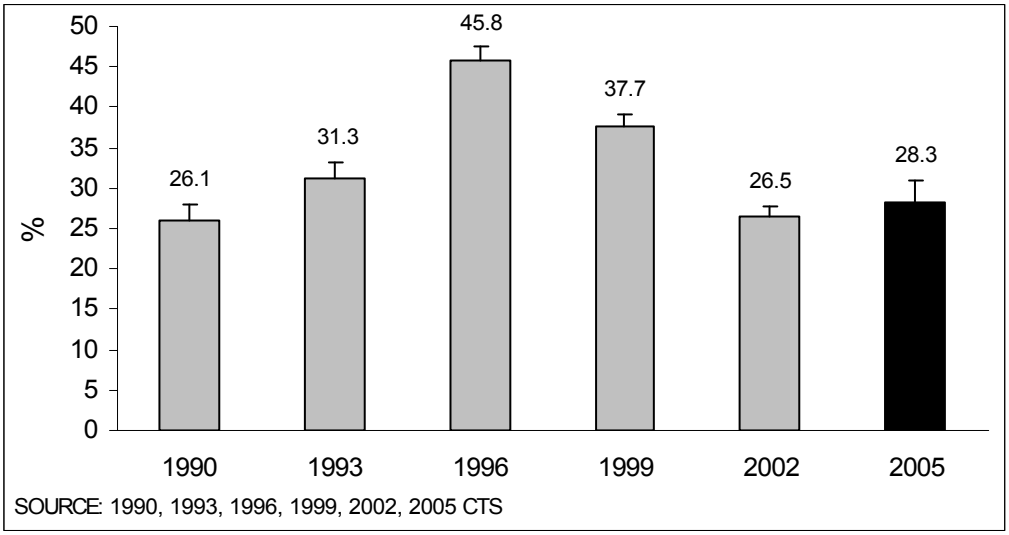
The CTS asked the following questions to elicit exposure to best friends who smoke:

Of your four best male friends, how many of them smoke? **(R6)**

Of your four best female friends, how many of them smoke? **(R9)**

Figure 3.4 presents the percentages of never smokers who reported having at least one best friend (of either gender) who smoked. The percentage of adolescents who reported having a best friend who smoked in 2005 was 28.3±2.7%. This was a non-significant increase from the 2002 level and inconsistent with the decrease in smoking. The trend in this psychosocial variable reflected the trend in actual smoking rates until 2002. In 1990, about one-quarter of never smoking adolescents reported having a best friend who smoked. By 1996, this percentage had increased to approximately 45%. The percentage then began to decline, so by 2002, about one-quarter of adolescents reported having a best friend who smoked.

Figure 3.4: Trends in Adolescent Never Smokers' Exposure to Best Friends Who Smoke



Thus, it appears that this measure of exposure to peer smoking showed considerable change that reflected, to some extent, overall adolescent smoking prevalence trends over this period. The fewer adolescents that smoke, the fewer will say they have friends who smoke. However, since prevalence was much lower in 2002 and 2005 compared to 1990, it would be expected that fewer adolescents would report that their best friends smoked in 2002 and 2005.

Never Smokers' Perceptions of Peer Norms about Smoking

There is considerable evidence that a person's normative expectations are associated with future smoking behavior (USDHHS, 1994). The CTS asked the following questions to elicit adolescent perception of peer group norms:

Do you think people your age care about staying off cigarettes? **(N1)**

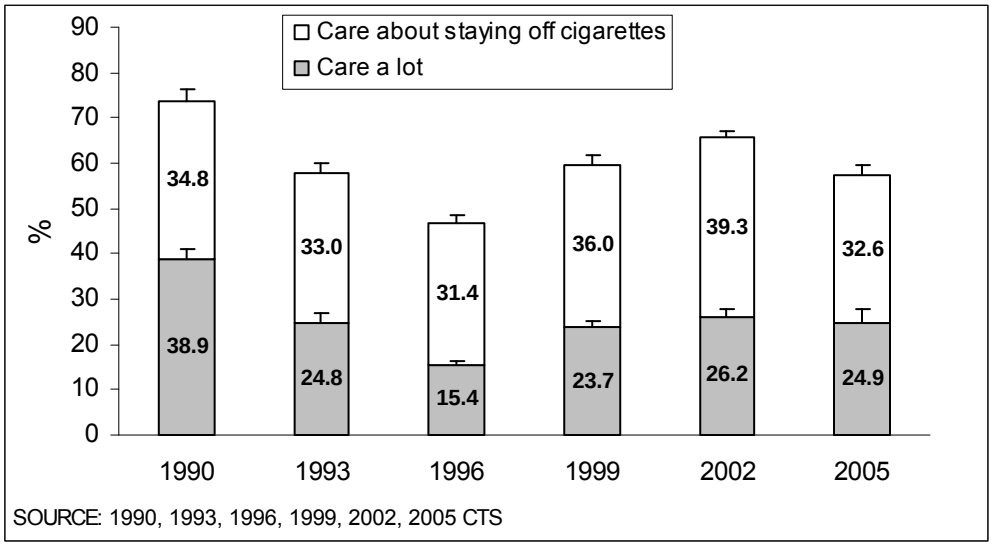
If the response was yes, adolescents were further probed:

Would you say, they care a lot, somewhat or just a little? **(N2)**

After a steady increase since 1996, the percentage of never smokers' who perceived that peers care about staying off cigarettes decreased in 2005.

Figure 3.5 presents the percentages of adolescent never smokers who think that people their age care about staying off cigarettes. In 1990, nearly three-quarters (73.8±1.9%) of adolescents felt that people their age cared about staying off cigarettes, with nearly 40% indicating that they cared a lot about it. These percentages declined through 1996 when less than half of adolescents indicated that people their age cared about staying off cigarettes, and only about 15% felt that they cared a lot about it. These percentages then began to increase so that by 2002, nearly two-thirds of never smokers (65.5±1.7%) reported that their peers cared to some extent, with about one-quarter (26.2±1.5%) saying they cared a lot. Then in 2005 the percentages of adolescents who felt that people their age cared about staying off cigarettes again began to decrease, to 57.4±2.7%. Of this percentage, about one-quarter indicated that they cared a lot about staying off of cigarettes, similar to the 2002 level.

Figure 3.5: Adolescent Never Smokers Who Report That Their Peers Care About Staying Off Cigarettes



These trends appear correlated with reported exposure to best friends who smoked. Again, the change in this variable between 2002 and 2005 does not correspond to the large decline in experimentation or established smoking reported during the period. Also, the 2002 and 2005 levels were significantly lower than the level in 1990, despite less smoking in 2002 and 2005 compared to 1990.

Appendix Tables A.3.5 and A.3.6 present the percentages of adolescent never smokers with best friends who smoke and who perceive that their peers care about staying off cigarettes, respectively, in demographic subgroups.

Trends in Beliefs in Benefits of Smoking

In each CTS, all adolescents were asked to agree or disagree with each of the following statements about potential benefits to smoking:

Smoking can help people when they are bored. **(W3)**

The percentage of adolescent never smokers who perceived a benefit to smoking has increased steadily from 1999 to 2005 and is inconsistent with the trend in smoking prevalence.

Cigarette smoking helps people relax. **(W4)**

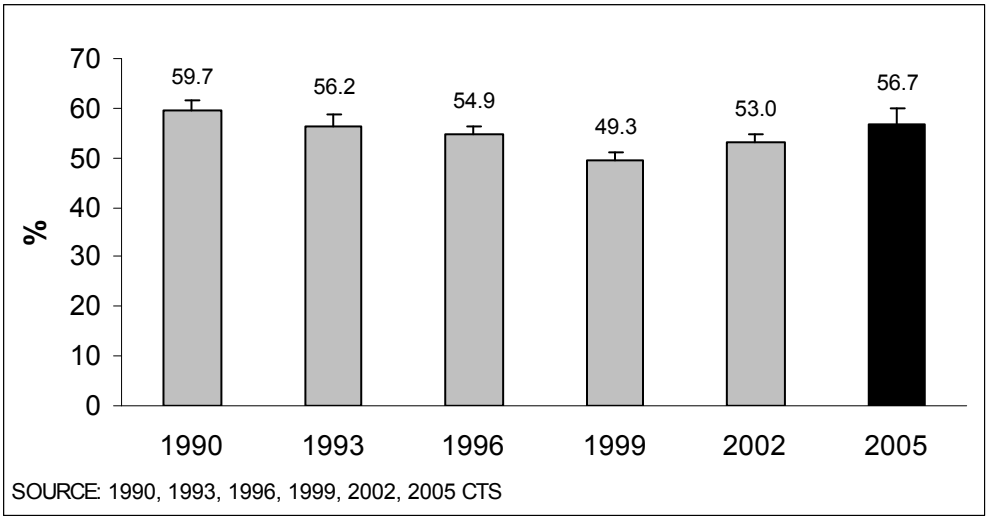
Cigarette smoking helps reduce stress. **(W5)**

Smoking helps people feel more comfortable at parties and in other social situations. **(W6)**

Smoking helps people keep their weight down. **(W7)**

Figure 3.6 presents the percentage of never smokers who perceived at least one of the above potential benefits to smoking in each survey year. Between 1999 and 2005, the percentage perceiving a benefit to smoking rose significantly to 56.7±3.2%, similar to the level in 1993 and inconsistent with the trend in smoking behavior. In 1990, 59.7±1.8% of never smokers thought that at least one of the above benefits was associated with smoking. This percentage decreased slightly each year through 1999, when just under 50% (49.3±1.8%) of adolescents perceived a benefit, before beginning its climb up to the 2005 level.

Figure 3.6: Adolescent Never Smokers Who Perceive Benefits to Smoking



These trends appear correlated with both the reported exposure to best friends who smoked and the never smokers' perceptions of peer norms about smoking described above. Again, the change in this variable between 2002 and 2005 does not correspond to the large decline in experimentation or established smoking reported during the period.

Adolescents' Belief That If They Started Smoking They Could Stop Anytime

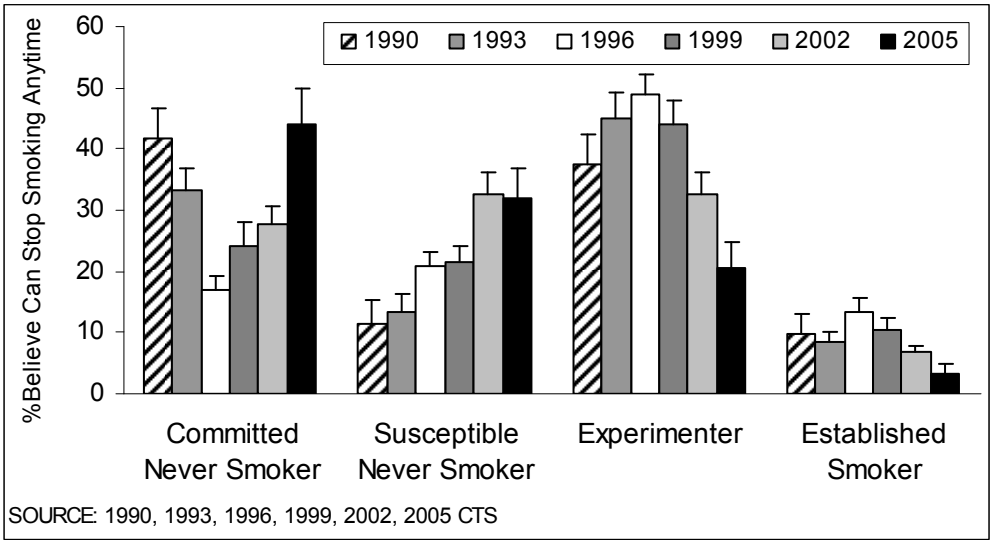
For adolescents who have never smoked a cigarette, their perceived self-efficacy to stop smoking at any time could be associated with smoking later in life. Among those who are either experimenters or established smokers, the perceived efficacy to stop may reflect the addictive nature of cigarettes. In each CTS, all adolescents were asked to agree or disagree with the following statement about their perceived ability to stop smoking:

(If I started to smoke regularly), I could stop smoking anytime I wanted. **(W13)**

The percentage of adolescents who have never smoked but believe they could stop smoking at any time if they started has increased in recent years, in contrast to a decrease in this percentage among experimenters and established smokers.

Figure 3.7 presents the percentage of adolescents who believe that they could stop smoking at any time, by smoking status. Perceived efficacy to quit if they ever started among committed never smokers decreased by more than 50% from 1990 (41.6±5.0%) to 1996 (17.0±2.2%). This percentage began to climb in 1999 and 2002, and increased dramatically by 2005 to 44.2±5.7%, a level similar to that in 1990. Among susceptible never smokers, the perception that they could stop smoking at any time if they started increased from 11.4±3.8% in 1990 to 32.7±3.6% in 2002, and remained at approximately the same level in 2005. Among adolescent experimenters, the perception of being able to stop smoking at any time increased from 37.3±5.0% in 1990 to 48.9±3.2% in 1996, but has since decreased dramatically, to only 20.6±4.2% in 2005. A similar trend was evident among established smokers. The percentage who perceived they could stop smoking at any time reached a high of 13.4±2.2% in 1996 and has since declined to only 3.4±1.4% by 2005.

Figure 3.7: Adolescents' Belief That They Can Stop Smoking Anytime



SOURCE: 1990, 1993, 1996, 1999, 2002, 2005 CTS

	1990	1993	1996	1999	2002	2005
Committed never smoker	41.6	33.1	17.0	24.0	27.9	44.2
Susceptible never smoker	11.4	13.4	20.7	21.6	32.7	31.8
Experimenter	37.3	45.1	48.9	44.0	32.8	20.6
Established smoker	9.6	8.4	13.4	10.5	6.7	3.4

Thus, among those who have never smoked (committed never smokers and susceptible never smokers), the perception that they could stop smoking at any time has increased in recent years. In contrast, the percentage of experimenters and established smokers who perceived they could stop smoking at any time has decreased since 1996. It is also noteworthy that by 2005, the percentage of adolescents who perceive that they could stop smoking at any time declined as their risk for smoking increased (i.e., from committed never smokers to established smokers).

These results suggest that adolescent never smokers (e.g., committed never smokers and susceptible never smokers) may be getting a false sense of the difficulty of quitting smoking. This may be related to the mass marketing of pharmaceutical aids to quit smoking, suggesting that quitting is easily achievable with the help of pharmaceutical aids. However, our examination of this factor in 2005 was inconclusive due to large confidence intervals. Nonetheless, the increasing trend among never smokers suggests that campaigns highlighting the difficulty of quitting smoking may be beneficial.

Summary

Since 1996, adolescent smoking behavior has shown consistent and major declines, with some of the most dramatic declines between 2002 and 2005. The percentage of adolescents at lowest risk of becoming smokers is on the rise across all age groups. It also appears that the California Tobacco Control Program has been effective in preventing the onset of smoking among adolescents, particularly among those at lowest risk. The percentages of puffers, experimenters, established smokers, and ever smokers have all declined over time. Among 12-13-year-olds, ever smoking rates declined consistently from 1990 to 2005. Among 14-17-year-olds, the percentage reporting having ever smoked only declined after 1996.

The decline in the percentage of adolescents who are considered established smokers has not been the result of increased successful quitting. The percentage of adolescent established smokers who were former smokers remained stable between 1990 and 2002 but then showed a significant and discouraging decline in 2005. Improved questions on recent quit attempts were added to the CTS in 1996. Since then, the percentage of established smokers who reported trying to quit in the past year has not changed.

Two predictors of adolescent smoking, peer anti-smoking norm and smoking among best friends, were assessed in relation to transitioning from never smokers to ever smokers. These factors were able to predict a significant change in transitioning, especially among the low risk group of adolescents. Early (1990-1996) trends in the psychological antecedents of adolescent smoking resembled trends in smoking prevalence. However, more recent trends in these antecedents did not closely match trends in the key measures of adolescent smoking uptake. The counterintuitive and increasing trends in the psychosocial antecedents of smoking may be a warning sign of future increases in adolescent smoking rates, through a lagged effect.

Furthermore, the percentage of adolescent never smokers who perceived they could stop smoking at any time has increased in recent years. This is in contrast to a decrease in the percentage of experimenters and established smokers who perceived that they could stop smoking at any time and suggests that adolescent never smokers might not be accurate in their assessments of the difficulty of quitting smoking. More adolescents reported believed benefits to smoking in 2005 compared to 2002. Prevention efforts addressing the above issues are needed to specifically address the adolescents at highest risk.

APPENDIX

Chapter 3
Adolescent Smoking Behavior

1. Trends in Never Smokers at Lowest Risk of Starting to Smoke

Appendix Table A.3.1 presents committed never smokers who have never been curious about smoking in demographic subgroups of adolescents 12-17 years of age. All demographic subgroups showed marked increases since 1990, with prominent increases between 2002 and 2005. In 2005, more girls than boys were classified in this lowest smoking-risk group. Similarly, in 2005, those who reported school performance at average or below were less likely to be in this lowest smoking-risk group compared to those who reported performing much above average.

Table A.3.1
Committed Never Smokers who Have Never Been Curious about Smoking in Demographic Subgroups of Adolescents 12-17 Years of Age

	1996 %	1999 %	2002 %	2005 %	Factor Increase 1996-2005 %
Overall	23.3 (±1.2)	28.4 (±1.1)	32.2 (±1.2)	40.3 (±2.9)	73.0
Age Group					
12-14	24.0 (±1.5)	31.8 (±1.8)	35.4 (±1.9)	42.2 (±3.1)	75.8
15-17	22.6 (±1.8)	24.9 (±1.7)	28.8 (±1.7)	38.1 (±4.4)	68.6
Gender					
Boys	20.7 (±1.5)	26.6 (±1.8)	28.1 (±1.7)	35.1 (±4.1)	69.6
Girls	26.2 (±1.8)	30.3 (±1.9)	36.6 (±2.0)	45.9 (±3.8)	75.2
Race/Ethnicity					
African American	28.5 (±4.4)	36.6 (±4.4)	39.6 (±5.3)	46.6 (±8.9)	63.5
Asian/PI	25.4 (±3.7)	27.3 (±4.8)	30.0 (±5.0)	48.7 (±9.8)	91.7
Hispanic	20.6 (±2.1)	25.0 (±1.7)	27.6 (±2.0)	38.6 (±5.7)	87.4
Non-Hispanic White	23.8 (±1.5)	30.0 (±1.5)	36.9 (±2.0)	39.4 (±3.4)	65.5
School Performance					
Much Above Average	32.6 (±2.7)	40.7 (±3.0)	41.3 (±3.3)	49.8 (±5.8)	52.8
Above Average	23.4 (±1.9)	29.0 (±2.1)	34.1 (±2.4)	41.6 (±3.6)	77.8
Average or Below	17.9 (±1.6)	22.0 (±1.6)	25.1 (±1.7)	33.8 (±5.3)	88.8

2. Trends in Key Measures of Smoking Behavior by Age

Appendix Table A.3.2 presents the ever-smoking trends among 12-14-year-old adolescents. There have been marked decreases since 1990 for all demographic subgroups, with significant decreases for most subgroups between 2002 and 2005. In 2005, ever smoking among girls in this age group was significantly lower compared to boys. Asian/PI adolescents in this age group also reported a lower ever smoking prevalence compared to other racial/ethnic groups. Finally, those who reported school performance of average or below had a higher ever smoking prevalence compared to other students.

Table A.3.2
Ever Smoking in Demographic Subgroups of Adolescents 12-14 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	22.7 (±2.5)	22.1 (±2.1)	19.7 (±1.7)	14.8 (±1.5)	8.0 (±1.1)	5.4 (±1.6)
Gender						
Boys	26.8 (±4.1)	24.1 (±3.0)	21.0 (±2.5)	15.3 (±2.3)	8.2 (±1.6)	6.7 (±2.6)
Girls	18.8 (±2.7)	20.2 (±2.3)	18.2 (±1.9)	14.2 (±2.3)	7.8 (±1.4)	4.0 (±1.5)
Race/Ethnicity						
African American	17.0 (±5.4)	19.7 (±6.7)	16.2 (±5.5)	11.2 (±4.1)	5.5 (±2.6)	7.9 (±8.4)
Asian/PI	15.0 (±6.9)	11.2 (±4.6)	13.9 (±4.3)	8.3 (±4.8)	3.5 (±2.2)	2.6 (±2.0)
Hispanic	22.7 (±2.1)	23.3 (±4.1)	18.6 (±2.9)	17.5 (±3.1)	9.7 (±2.1)	4.4 (±1.6)
Non-Hispanic White	26.3 (±2.3)	23.1 (±2.8)	21.6 (±2.2)	14.8 (±1.4)	8.2 (±1.8)	6.6 (±3.2)
School Performance						
Much Above Average	16.4 (±2.7)	13.2 (±4.2)	12.0 (±2.4)	9.1 (±2.7)	2.2 (±1.1)	3.8 (±3.9)
Above Average	18.8 (±2.0)	19.1 (±3.6)	18.1 (±2.5)	12.6 (±2.7)	5.8 (±1.5)	3.1 (±1.1)
Average or Below	28.9 (±3.0)	28.9 (±3.4)	25.8 (±3.1)	19.2 (±2.7)	13.9 (±2.3)	8.1 (±3.2)

Appendix Table A.3.3 presents the trends in ever smoking among 15-17-year-olds. There have been marked decreases across all demographic subgroups since 1990, with significant decreases for most subgroups between 2002 and 2005. In 2005, Asian/PI adolescents in this age group reported a lower ever smoking prevalence compared to other adolescents. Those who reported average or below school performance had a significantly higher rate of ever smoking than other adolescents.

Table A.3.3
Ever Smoking in Demographic Subgroups of Adolescents 15-17 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	50.9 (±2.8)	49.1 (±2.2)	48.8 (±2.3)	40.0 (±2.5)	31.2 (±1.7)	21.2 (±3.0)
Gender						
Boys	52.1(±3.9)	52.6 (±4.2)	50.9 (±3.1)	41.1 (±3.2)	32.0 (±2.9)	23.8 (±4.8)
Girls	49.7 (±3.8)	45.6 (±3.6)	46.4 (±2.9)	38.8 (±2.9)	30.2 (±2.5)	18.3 (±3.3)
Race/Ethnicity						
African American	46.5 (±5.4)	36.5 (±10.9)	42.8 (±6.6)	31.7 (±6.4)	21.6 (±7.5)	13.6 (±10.7)
Asian/PI	36.3 (±6.9)	35.3 (±9.7)	35.8 (±6.6)	30.5 (±6.2)	24.1 (±5.0)	9.8 (±5.5)
Hispanic	50.2 (±12.1)	48.6 (±6.0)	49.8 (±3.8)	40.1 (±4.1)	33.2 (±5.0)	22.3 (±4.9)
Non-Hispanic White	54.6 (±2.5)	53.5 (±3.2)	52.3 (±3.3)	44.7 (±2.9)	32.8 (±2.8)	23.7 (±4.8)
School Performance						
Much Above Average	37.0 (±2.7)	34.5 (±4.6)	30.8 (±4.2)	27.7 (±5.2)	21.8 (±3.5)	13.8 (±3.9)
Above Average	48.2 (±2.0)	46.3 (±4.5)	47.1 (±3.4)	37.5 (±4.3)	27.4 (±2.9)	16.3 (±3.3)
Average or Below	58.6 (±3.0)	56.2 (±3.4)	59.9 (±3.1)	48.5 (±3.1)	39.4 (±2.9)	28.1 (±7.2)

Appendix Table A.3.4 presents trends in establishing smoking among 15-17-year-olds. Established smoking in this age group has decreased significantly since 1990. There has also been a particularly pronounced decrease among those who reported average or below school performance between 2002 and 2005. In 2005, there were no significant differences between demographic subgroups.

Table A.3.4
Established Smoking in Demographic Subgroups of Adolescents 15-17 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	10.5 (±1.6)	9.9 (±1.5)	12.1 (±1.4)	8.0 (±1.1)	4.6 (±0.6)	2.7 (±0.8)
Gender						
Boys	11.5 (±2.6)	10.5 (±2.2)	12.5 (±2.0)	8.5 (±1.3)	4.7 (±1.1)	2.8 (±1.0)
Girls	9.5 (±1.8)	9.2 (±2.0)	11.7 (±1.8)	7.5 (±1.4)	4.6 (±1.1)	2.6 (±1.4)
Race/Ethnicity						
African American	4.6 (±5.4)	2.5 (±2.7)	5.7 (±3.5)	4.0 (±3.0)	3.0 (±2.4)	2.0 (±2.6)
Asian/PI	7.6 (±6.9)	6.9 (±7.6)	8.3 (±3.4)	5.4 (±3.0)	3.0 (±1.6)	3.1 (±3.5)
Hispanic	7.0 (±2.1)	6.1 (±1.8)	8.1 (±2.0)	6.0 (±1.3)	2.6 (±1.0)	2.0 (±1.5)
Non-Hispanic White	14.4 (±2.3)	13.7 (±2.0)	16.2 (±1.9)	11.1 (±1.8)	7.3 (±1.6)	3.2 (±1.1)
School Performance						
Much Above Average	5.2 (±2.7)	5.2 (±2.6)	5.6 (±1.9)	4.2 (±1.8)	3.5 (±1.6)	2.5 (±1.3)
Above Average	8.2 (±2.0)	9.0 (±2.4)	10.2 (±2.2)	6.8 (±1.8)	3.2 (±0.9)	2.1 (±1.3)
Average or Below	14.5 (±3.0)	12.2 (±2.2)	17.4 (±2.1)	11.1 (±1.7)	6.5 (±1.4)	2.6 (±0.8)

3. Trends in Psychosocial Correlates of Adolescent Smoking

Appendix Table A.3.5 presents the trends among adolescent never smokers who reported having best friends who smoke. There were no significant differences from 2002 to 2005 for any subgroup. This leveling off between 2002 and 2005 followed an increase from 1990 to 1999 that decreased by 2002. Younger adolescents had substantially lower rates of reporting having best friends who smoked, compared to older adolescents.

Table A.3.5
Adolescent Never Smokers who Have Friends who Smoke in Demographic Subgroups

	1990 %	1999 %	1996 %	1999 %	2002 %	2005 %
Overall	25.9 (±1.9)	31.3 (±1.9)	44.9 (±1.8)	37.0 (±1.5)	26.5 (±1.2)	28.3 (±2.7)
Age Group						
12-14	19.0 (±2.6)	22.9 (±2.4)	34.7 (±2.3)	26.1 (±1.9)	16.5 (±1.8)	16.4 (±3.2)
15-17	37.5 (±4.3)	45.5 (±3.5)	61.0 (±2.6)	53.0 (±3.0)	41.0 (±2.3)	43.8 (±4.4)
Gender						
Boys	24.5 (±2.9)	30.6 (±2.6)	42.1 (±2.4)	35.3 (±2.1)	22.7 (±1.8)	23.7 (±4.0)
Girls	27.1 (±2.8)	31.9 (±3.2)	47.8 (±2.2)	38.8 (±2.3)	30.5 (±2.2)	33.1 (±4.2)
Race/Ethnicity						
African American	25.0 (±9.1)	27.0 (±7.7)	48.1 (±5.8)	44.0 (±4.8)	28.5 (±5.5)	34.1 (±10.6)
Asian/PI	20.3 (±6.0)	25.0 (±5.9)	46.9 (±5.1)	34.1 (±6.2)	21.3 (±3.5)	19.8 (±8.3)
Hispanic	27.2 (±4.0)	34.7 (±4.1)	45.6 (±3.0)	38.8 (±3.0)	29.6 (±2.3)	30.5 (±4.7)
Non-Hispanic White	26.4 (±2.7)	31.1 (±2.6)	43.1 (±2.3)	35.0 (±2.5)	24.2 (±1.8)	26.2 (±3.3)
School Performance						
Much Above Average	21.9 (±3.7)	25.6 (±4.3)	40.7 (±3.2)	34.2 (±3.4)	19.2 (±2.4)	23.2 (±5.9)
Above Average	25.6 (±4.2)	30.6 (±3.3)	45.9 (±3.0)	35.8 (±3.1)	26.2 (±2.2)	27.5 (±3.4)
Average or Below	28.3 (±3.4)	35.1 (±3.3)	47.2 (±3.2)	39.9 (±3.0)	32.0 (±2.7)	32.7 (±5.4)

Appendix Table A.3.6 presents the trends among adolescents who reported that their peers cared about staying off cigarettes. This percentage has decreased for all groups compared to 1990. Between 2002 and 2005 there was a significant decrease for all demographic subgroups. However, only Hispanic adolescents showed a significant decline since 2002. Older adolescents (15-17 years old) were less likely to report that their peers cared about staying off of cigarettes compared to younger adolescents (12-14 years old). African American and Hispanic adolescents were less likely to perceive that their peers cared about staying off of cigarettes in 2005. Finally, those who reported average or below school performance had lower rates of reporting that their friends cared about staying off of cigarettes in 2005.

Table A.3.6
Adolescent Never Smokers who Report that Their Peers Care about Staying Off Cigarettes, in Demographic Subgroups

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	73.8 (±1.9)	57.8 (±2.3)	46.8 (±1.5)	59.7 (±1.7)	65.5 (±1.7)	57.4 (±2.7)
Age Group						
12-14	80.3 (±2.6)	62.8 (±2.8)	52.2 (±2.2)	65.9 (±2.1)	70.9 (±2.0)	64.3 (±3.5)
15-17	62.8 (±3.6)	49.3 (±3.9)	38.2 (±3.1)	50.7 (±2.9)	57.9 (±2.6)	48.4 (±4.4)
Gender						
Boys	76.6 (±2.9)	56.6 (±2.7)	49.3 (±2.1)	63.0 (±2.3)	67.6 (±2.3)	59.3 (±4.4)
Girls	71.2 (±2.9)	58.8 (±3.4)	44.2 (±2.3)	56.3 (±2.4)	63.4 (±2.2)	55.5 (±4.5)
Race/Ethnicity						
African American	67.3 (±9.1)	48.4 (±9.2)	38.3 (±6.0)	53.4 (±6.6)	53.8 (±7.1)	52.6 (±9.5)
Asian/PI	78.5 (±5.2)	63.1 (±7.8)	56.0 (±5.8)	69.6 (±6.1)	71.5 (±4.9)	68.4 (±7.6)
Hispanic	70.4 (±3.9)	57.4 (±4.5)	41.4 (±3.3)	51.4 (±2.8)	62.7 (±2.8)	46.9 (±4.1)
Non-Hispanic White	76.6 (±2.5)	59.0 (±3.3)	50.2 (±2.3)	65.5 (±2.6)	69.2 (±2.4)	67.8 (±3.2)
School Performance						
Much Above Average	77.8 (±3.6)	67.2 (±4.5)	54.2 (±3.4)	65.5 (±3.6)	70.4 (±3.2)	65.2 (±5.8)
Above Average	78.5 (±3.6)	58.6 (±3.5)	46.9 (±2.4)	61.5 (±3.7)	68.8 (±2.8)	62.9 (±4.2)
Average or Below	66.9 (±3.6)	51.7 (±4.2)	40.7 (±2.5)	54.6 (±3.4)	58.7 (±2.9)	46.3 (±5.3)

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Media and Marketing Influences on Smoking

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Chapter 4

Media and Marketing Influences on Smoking

KEY FINDINGS

- Recall of anti-smoking advertisements decreased between 2002 and 2005, coinciding with the decline in per capita expenditure on anti-smoking mass media. There were also fewer calls to the California Smokers Helpline in years with lower mass media expenditures.

- Over half of Californians under the age of 40 had a favorite anti-smoking advertisement. Many of the health consequences advertisements made by the California Tobacco Control Program were named as favorites.

- The majority of 15-29-year-olds named “tobacco industry manipulation” advertisements as their favorite. Very few of the California Tobacco Control Program (CTCP) advertisements were nominated in this category by this very important demographic group.

- Ever increasing proportions of Californians decline to nominate a favorite brand of cigarette advertising. This included 75% of 12-14-year-old adolescents in 2005.

- Some of the most popular actors among adolescents in 2005 appeared multiple times smoking in movies between 2000 and 2005. Approximately 23% of 12-14-year-olds and 34% of 15-17-year-olds were exposed to an estimated 10 or more episodes of smoking by popular actors in movies.

- Ever decreasing proportions of Californians are interested in using a tobacco industry promotional item, although there appears to be increasing interest among at-risk smokers. This suggests a change in the industry marketing strategy.

- Bars and clubs that use tobacco industry advertising and promotional products are less likely to enforce California laws establishing a smoke-free workplace.

Chapter 4

Media and Marketing Influences on Smoking

Introduction

There is compelling evidence that media and marketing have a profound influence on tobacco use behavior. Tobacco industry commercials on mass media channels have been shown to be effective in encouraging young people to start smoking (Pollay et al., 1996; Pierce et al., 1994; Pierce et al., 1998; Gilpin et al., in press), and smokers to maintain their consumption levels. Further, the social norms promoted by movie entertainment and other programs have been shown to encourage smoking as a societal normative behavior in various situations (Distefan et al., 1999; Dalton et al., 2003; Sargent, 2005). Anti-smoking advertising on television has been shown to reduce cigarette sales (Warner & Goldenhar, 1989) and to reduce prevalence levels (Dwyer et al., 1986; Pierce et al., 1990). Additionally, such anti-smoking advertising has been shown to discourage young people from starting to smoke (Bauer et al., 2000; Farrelly et al., 2002; Pierce, in press). News coverage of the 1950s scientific studies linking smoking to health consequences was associated with successful quitting, particularly among older smokers (Pierce & Gilpin, 2001).

Tobacco promotional items include tee shirts, baseball caps, duffel bags, key chains, or bottle openers displaying cigarette brand logos. Less obviously branded apparel, such as leather jackets, are usually available only through cigarette catalogs. It has been shown that young people attracted to such products are more likely to become smokers (Evans et al., 1995; Pierce et al., 1998; Sargent et al., 2000; Biener & Siegel, 2000). The Master Settlement Agreement (MSA) banned such items that bear a tobacco product brand name (Tobacco Control Resource Center, 1999), but other strategies by the tobacco industry can make the product easily identifiable with the brand. We wanted to assess if adolescents were still aware of such promotional items and we asked several questions in the California Tobacco Survey (CTS) related to this issue.

The MSA specifically limited tobacco companies to sponsoring one sporting or cultural event per brand in the U.S. each year. However, global satellite coverage of sporting and entertainment events outside the United States can be a source of exposure to such promotions. Another method of tobacco brand name advertisement is sponsorship of athletic, musical, artistic, or other social or cultural event for which payment is made to include the brand name as either the name of the event, or to identify, advertise, or promote the event, or an entrant, participant, or team in the event (Tobacco Control Resource Center, 1999). The Winston Cup NASCAR racing series is one example, but sponsorships can also include local cultural festivals that pay or accept something of value and are then promoted in conjunction with a tobacco brand name. Through the CTS, we are monitoring these event sponsorships by asking participants about their attendance at such events.

In this chapter, we consider the use of the media and marketing by both the tobacco industry and by the California Tobacco Control Program (CTCP) as both struggle to influence the social norms on smoking in California. For CTCP we consider trends in exposure to anti-smoking

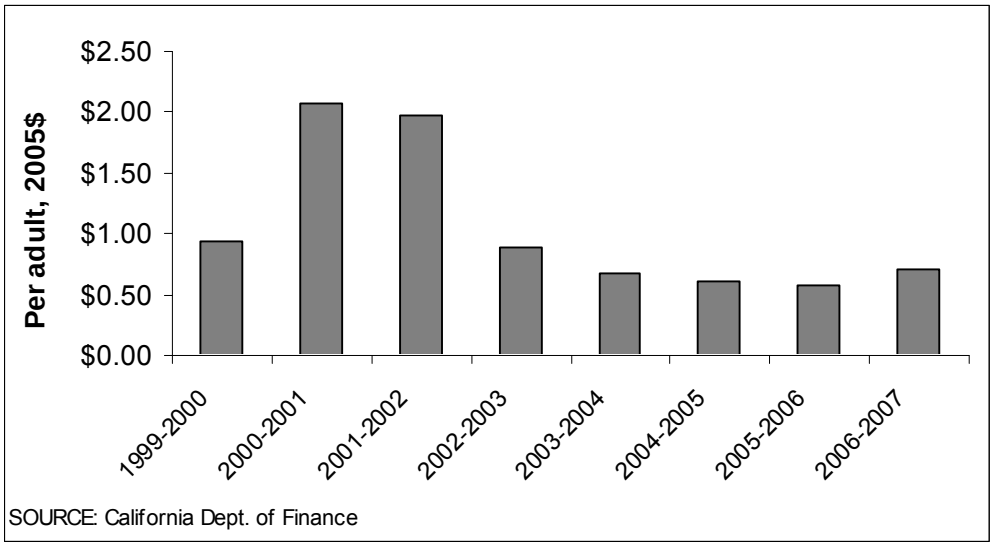
messages as well as actions in response to such messages, such as calls to the California Smokers' Helpline. However, more important than exposure is the salience of the message. For the first time in 2005, the survey included a question on favorite anti-smoking commercial and we report this data. We also assess the top nominated favorite actors and actresses by adolescents and the frequency with which they appeared smoking in movies. There is consistent data on the association between adolescents having a favorite actor/actress who smokes and a higher risk of such adolescents becoming smokers (Distefan et al., 2004; Sargent et al., 2000). Trends in the favorite brand of cigarette advertising have been reported from previous surveys and are extended here. We also include a section on exposure to other tobacco industry advertising and promotions.

1. Expenditures to Encourage and Discourage Cigarette Purchases

The Media Campaign of the California Tobacco Control Program

CTCP can be characterized as media-led. The initial proposition setting up the program (Proposition 99) and the enabling legislation established a separate budget for the media component of CTCP. The conduct of this very public face of the program receives significant political oversight which has resulted in a considerable lack of consistency in year-to-year expenditures. Figure 4.1 presents the per capita (18+ years) media campaign budgets for 1999 through 2007. In the two fiscal years, 2000-2001 and 2001-2002, this media budget was approximately $2 per capita. For the remaining years since 1999, the average budget was considerably less than $1 per capita ($0.73). This was consistent with the level of funding for most years throughout the 1990s. In addition to CTCP funding, there was a large media campaign in 1999 promoting Proposition 10, which successfully instituted a $0.50/pack increase in cigarette excise taxes.

Figure 4.1: Per Capita Budget for California Tobacco Control Media Campaign



SOURCE: California Dept. of Finance

2. Recall of Anti-Tobacco Media in California

The first evidence for the impact of the media campaign is participant unaided recall of anti-smoking messages. In 1996, 1999, 2002, and 2005, the CTS included the following questions to assess recall of anti-tobacco media messages:

In the last month, have you seen anything on TV against smoking? **(I10a) (U20_11a)**

In the last month, have you heard anything on the radio against smoking? **(I10b) (U20_11b)**

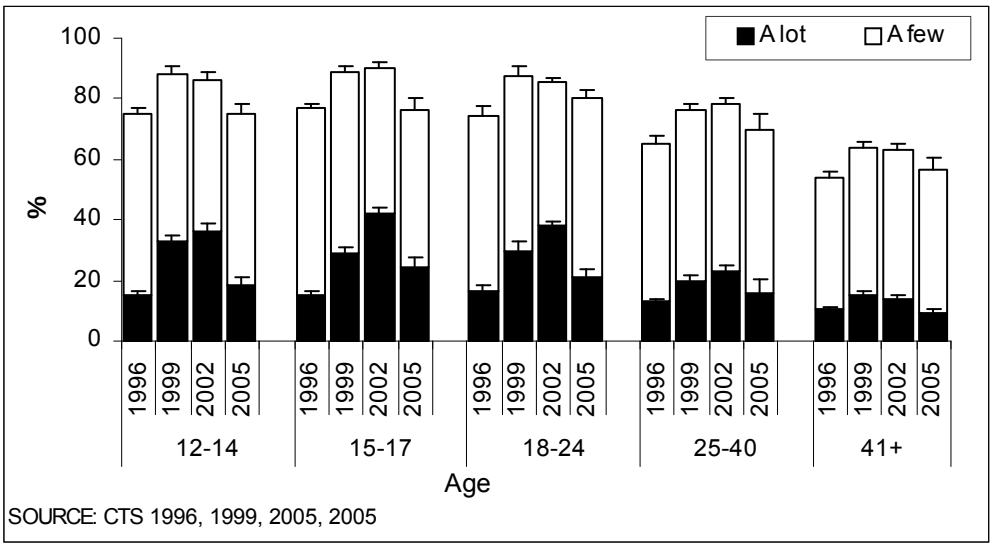
In the last month, have you seen a billboard with a message against smoking? **(I10c) (U20_11c)**

Recall of anti-smoking commercials was lower in 2005 than in previous years. 12-40-year-olds had higher recall than older adults.

Figure 4.2 presents the summary data on recall of anti-smoking commercials from each of the CTS over the past 10 years. The solid box represents the proportion of each age group who indicated that they saw a lot and the total height of the bar are those who report seeing either a few or a lot. As expected from the change in funding for the media campaign, recall of antismoking commercials was much higher in 1999 and 2002 than it was in 1996 or 2005. This change was most marked in young people aged 12 through 24 years. These young age groups also had the highest levels of recall. In particular, recall of anti-smoking commercials was lower in the population over the age of 40 years.

In 2005, approximately 75% of 12-17-year-olds recalled an anti-smoking commercial, compared to 80% for 18-24-year-olds, 70% for 25-40-year-olds and 57% for those over 40. From Appendix Table A.4.1, among 12-17-year-old adolescents between 2002 and 2005, there was a drop of 14.2% in any recall of billboards, 19.5% in any recall of radio and 12.4% in any recall of television commercials. Compared with 1996, the year of the lowest media campaign budget of the entire tobacco control program, the recall of a lot of commercials was 18.3% higher for 12-14-year-olds, 62.3% higher for 15-17-year-olds, 31.7% higher for 18-24-year-olds and 20.8% higher for 25-40-year-olds. Among those over 40 years old, recall of “a lot” of commercials decreased from 10.3% to 8.9%.

Figure 4.2: Adolescents, Young Adults, and Older Adults Seeing Anti-Smoking Ads on TV in the Last Month



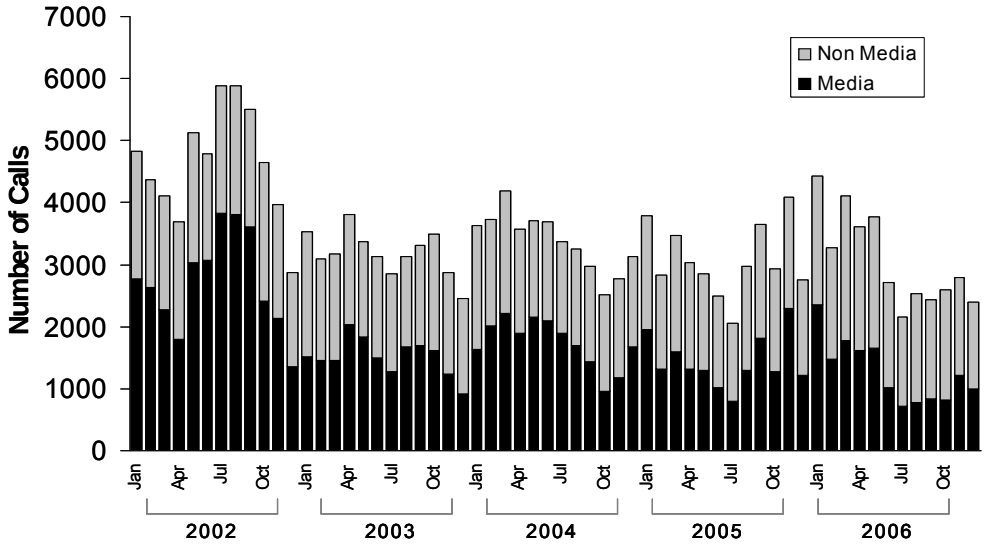
	A Few				A Lot			
Age	1996	1999	2002	2005	1996	1999	2002	2005
12-14	59.4	55.4	50.1	56.6	15.3	33.1	36.2	18.1
15-17	61.7	59.5	47.8	51.9	15.1	29.1	42.0	24.5
18-24	58.4	57.3	47.7	58.9	16.1	29.9	37.9	21.2
25-40	52.2	56.5	54.9	54.2	13.0	20.1	23.2	15.7
41+	43.9	49.1	49.5	47.9	10.3	14.9	13.6	8.9

3. Calls to the California Smokers' Helpline

One goal of the media campaign in CTCP is to encourage smokers to seek help to quit. The Program supports a centralized telephone Smokers' Helpline to provide assistance and information to smokers thinking about quitting. Counseling services through the Helpline have been shown to double the probability of a smoker quitting successfully. The total calls in 2002 (~57,000) were higher than in other years which averaged 42,000 calls each year (Zhu et al., 2002).

Helpline staff collects information on what led each caller to make the contact. **Figure 4.3** presents the calls to the California Smokers Helpline from 2002 through 2006. The number of these calls that came from a media prompt is also presented. The grey shading indicates calls that were not attributed primarily to the media campaign and the black components of the bar represent those calls that were attributable to the media. Monthly, from 2002 through 2006, the Helpline consistently received over 2000 calls seeking assistance. The highest number of calls per month (~5,800) was received in 2002 at the time of the largest CTCP media budget. Thus, the majority of the observed fluctuations in monthly calls related to differences in media promotion of the Helpline from 700 calls/month to 3,800 calls/month, over a 5-fold difference. Calls to the Helpline in recent years are significantly below those of the peak year of 2002.

Figure 4.3: Incoming Calls to Helpline by Month and Whether Prompted by Media or Non-media Factors. January 2002 – December 2006



Source: California Smokers' Helpline (unpublished data)

4. Favorite Anti-Smoking Advertisement

One measure of estimating the salience of the different tobacco control messages to different population sub-groups is to ask participants the following open-ended question:

What is your favorite ad against smoking? **(I10d)**

This question was only asked in the 2005 CTS. The open-ended responses were coded by a UCSD staff member and the resultant codes were checked with media program staff at CTCP and with a staff member from the media team at the American Legacy Foundation (ALF).

The naming of a favorite advertisement is an indication of which message the individual felt was strongest and most compelling. It is important to note that messages can be enormously influential in impacting smoking behavior, even if they do not get named as a "favorite". For example, in the Sydney, Australia, campaign the most memorable commercial was the health consequences commercial entitled "Sponge," however the commercial that led to the most calls for assistance was one that modeled an action response to seeing the "Sponge" commercial (Pierce et al., 1986). This had a much lower salience or recall level.

Appendix Table A.4.2 presents the six major groups used for these open-ended responses. The most frequently nominated "favorite" category was labeled "health consequences" of smoking with 37% of all responses in this category. The most popular commercial was the "Debi" tracheotomy commercial representing 39.9% of these responses (15% of all responses). This was followed by a general recall of images of lung cancer or other diseases (29.8%). A second set of respondents (23%) indicated that their favorite message was one which drew attention to tobacco industry manipulation. The majority of commercials under this heading were developed by ALF and included recall of the logo of their campaign ("Truth"). Among the

commercials that were developed for CTCP, a total of 9.0% were for the Ken Lane commercials, with the commercial called “Nicotine sound-bites” a distant second.

Commercials on tobacco industry manipulation were the most salient to young adults aged 15-29 years.

The third most prevalent response to the “favorite” question was a general anti-smoking, such as “no smoking” symbols (17%). The fourth category was messages having to do with secondhand smoke, which made up 13% of all responses. The commercial that was named most within this category (22.2%) involved a pregnant mother and baby smoking. Such a commercial is not among recent commercials produced by CTCP. This was followed by CTCP commercials “Bubbles” (13%) and the testimony of a smoker on the impacts of secondhand smoke (11%).

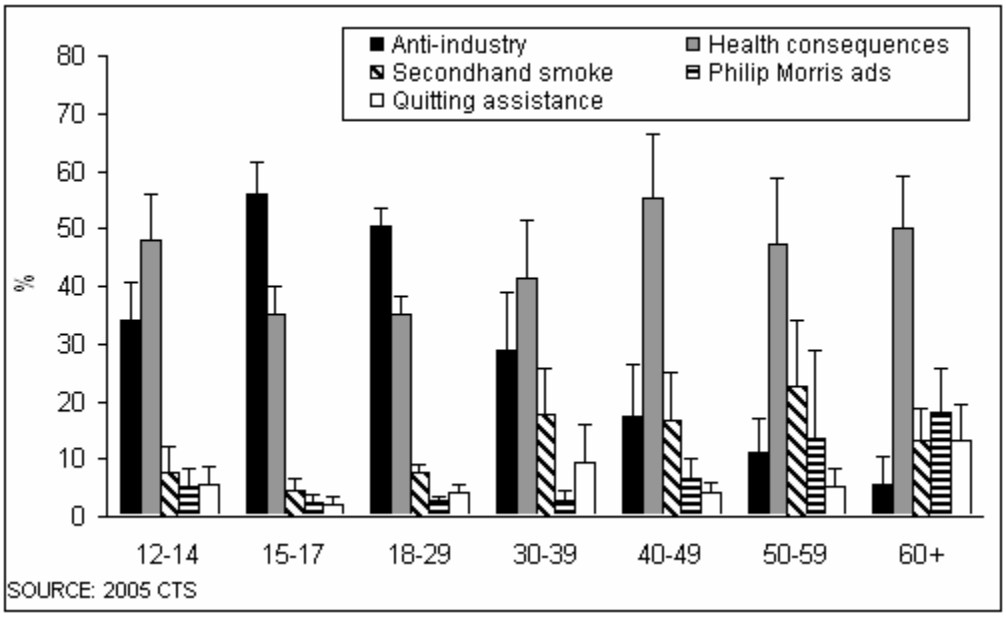
The fifth category included commercials prepared by the tobacco industry, which made up 5% of responses. The most nominated commercial was the “Talk to your kids” series by Philip Morris. The final category of favorite commercials included those that advertised cessation assistance, which also account for 5% of all recalls. Commercials advertising the Helpline were named the most (27%) followed by commercials for NRT/Patch (20%).

Favorite Anti-Smoking Commercials by Age

The salience of each of these messages for each age group is presented in **Figure 4.4**. “Health consequences” commercials were most commonly cited as the favorite anti-smoking commercial among 12-14-year-old adolescents; this group was 10 percentage points higher than the second most commonly nominated group. “Health consequences” commercials were also the most commonly nominated “favorite” for adults over the age of 30 years, 10 percentage points higher than the next choice for adults aged 30-39 years increasing to over 30 points higher for those aged 65 years and older.

Tobacco industry manipulation commercials were the most commonly nominated “favorite” for adolescents aged 15-17 years, where they were 60% more popular than the “health consequences” advertisements and for 18-29-year-olds where they were 15 percentage points higher than “health consequences” commercials. While not the most popularly nominated for those aged 12-14 or 30-39 years, approximately 30% of people in these categories nominated tobacco industry manipulation commercials as their favorite. These commercial appeared to have much less appeal for people over the age of 40.

Figure 4.4: Favorite Type of Anti-Smoking Ad by Age in 2005



	Age						
	12-14	15-17	18-29	30-39	40-49	50-59	60+
Anti-industry	34.0	55.9	50.4	28.8	17.2	11.3	5.6
Health consequences	47.8	35.0	35.2	41.3	55.3	47.2	50.0
Secondhand smoke	7.5	4.6	7.5	17.6	16.8	22.5	13.3
Philip Morris ads	5.2	2.4	2.7	2.7	6.6	13.6	18.1
Quitting assistance	5.4	2.1	4.3	9.6	4.1	5.4	13.2

Second-hand smoke commercials were twice as popular among adults aged 30 through 60 years compared to other age brackets. These were consistently ranked the third most favorite commercial except for those aged 50-59 years, for whom it was the second favorite.

Commercials funded by the tobacco industry were particularly salient for adults over the age of 50 years, with 18% of individuals over 60 nominating them as their "favorite," along with 14% of individuals aged 50-59 years. These advertisements appeared to have little salience for young people aged between 15 and 39 years. It is interesting that 5% of 12-14-year-olds nominated these commercials as their "favorite."

5. Favorite Brands of Cigarette Advertising

Adolescent Exposure to Tobacco Industry Advertisement in Small Stores

To assess adolescents' exposure to tobacco advertising at small stores in their neighborhoods, the 1996, 1999, 2002, and 2005 CTS asked the following question:

> *In the last 12 months, when you visited a small store near where you live, how often have you seen…advertisements for brands of cigarettes or chewing tobacco? Would you say often, sometimes, or never?* **(U20_12a)**

There has been no appreciable change in the reported level of exposure to cigarette advertisements in small stores among adolescents since 1996. In 2005, 83.5±2.3% of

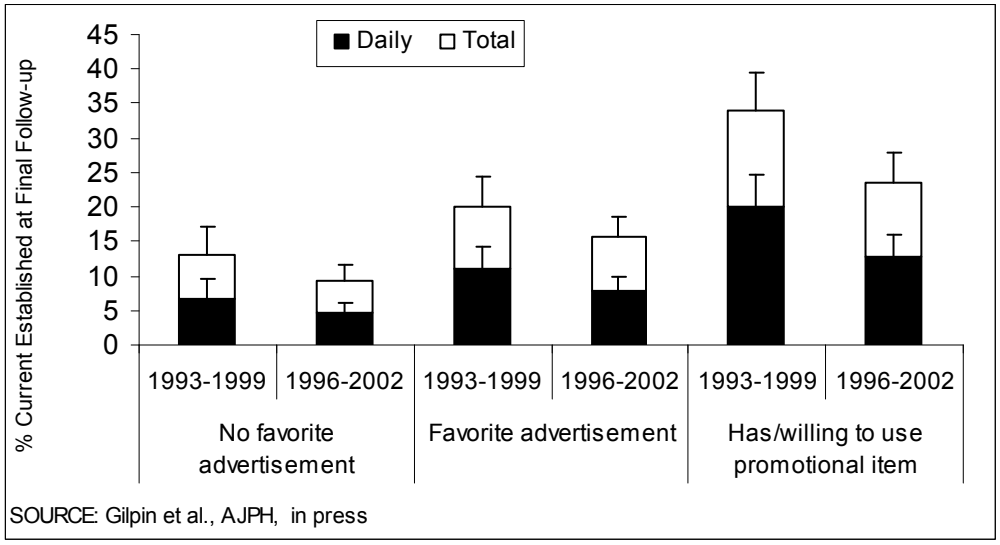
adolescents aged 12-14 years reported seeing tobacco advertisements in small stores; in 1996 this rose slightly to 84.2±1.7%. For 15-17-year-old adolescents the corresponding percentages were 88.0±2.6% in 2005, and 88.6±1.4% in 1996. Therefore, more effective efforts to limit exposure of adolescents to tobacco advertisements in small stores are needed.

Favorite Advertisements of Adults and Adolescents

Adolescent receptivity to tobacco industry promotions has been defined using the "hierarchy of effects" paradigm. In these studies, a moderate level of receptivity is assessed when an individual indicates an emotional attachment to the message such as indicating that it is a favorite. (Evans et al., 1995) The highest level of receptivity is assessed when the respondent indicates that they are prepared to identify with the message such as wearing it on a piece of clothing. In multiple studies, receptivity to tobacco industry advertising and promotions has been demonstrated to be associated with smoking initiation. (Pierce et al., 1998; Biener & Siegel, 2000; Sargent et al., 2000; Choi et al., 2001; Lovato et al., 2003)

In a 6-year follow-up of California adolescents identified in either the 1993 or 1996 CTS, we determined that receptivity during early adolescence is associated with adult established smoking (Gilpin et al., in press). Despite the lower smoking rates of the second cohort (a success of tobacco control interventions), the odds of receptive 12-15-year-olds becoming adult smokers were similarly significant in the two study cohorts **(Figure 4.5)**.

Figure 4.5: Current Established Smokers among Young Adults (18-21 years) by Level of Receptivity to Tobacco Advertising and Promotions at Baseline when they were Young Adolescents (12-15 years)



SOURCE: Gilpin et al., AJPH, in press

	No favorite advertisement		Favorite advertisement		Has/Willing to use promotional item	
	1993-1999	1996-2002	1993-2002	1996-2002	1993-1999	1996-2002
Total	6.4	4.8	8.7	7.9	13.7	10.7
Daily	6.7	4.5	11.2	7.8	20.1	12.7

The 1992, 1993, 1996, 1999, 2002, and 2005 adolescent CTS and the 1992, 1996, 1999, 2002, and 2005 adult CTS asked the following question:

> *What is the name of the cigarette brand of your favorite cigarette advertisement?* **(I13) (U12)**

While respondents could name any cigarette brand, Marlboro and Camel accounted for approximately 90% of brand responses in each survey year. Accordingly, we report only results for these two brands as well as the "have no favorite cigarette advertisement." **Figure 4.6** presents the brand of the favorite ad nominated by respondents in the 1992/1993, 1996, 1999, 2002, and 2005 CTS by age group (top panel-Camel, middle panel-Marlboro, bottom panel-no favorite advertisement).

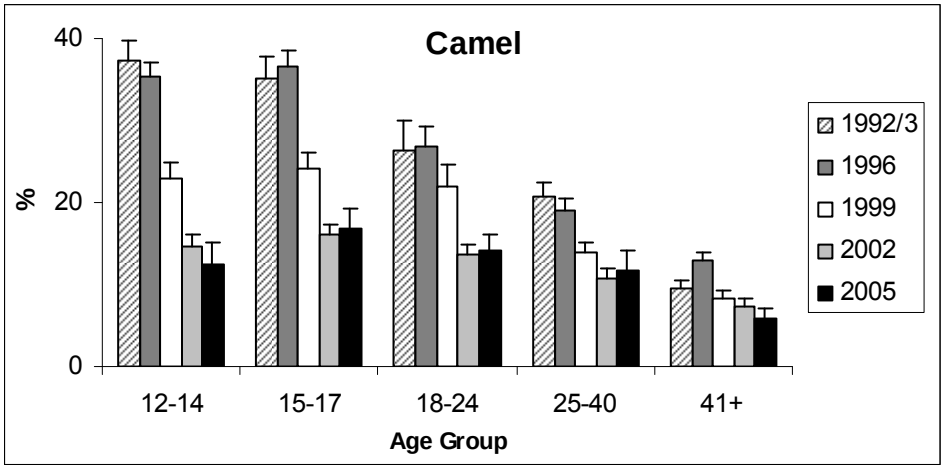
One of the most striking effects was the decline in the nomination of Camel as the favorite brand of cigarette advertising. Between 1992 and 1996, over one third of adolescents under age 18 years nominated this as their favorite cigarette advertisement. Removal of the Joe Camel cartoon advertising, formalized in the Master Settlement Agreement, led to a dramatic decline in this response across all age groups, but particularly in the young. However, in 2005, 12.5±2.6% of 12-14-years-olds, 16.9±2.5% of 15-17-year-olds and 14.2±1.8% of 18-24-year-olds were still nominating this brand as their favorite (see Appendix Table A.4.3).

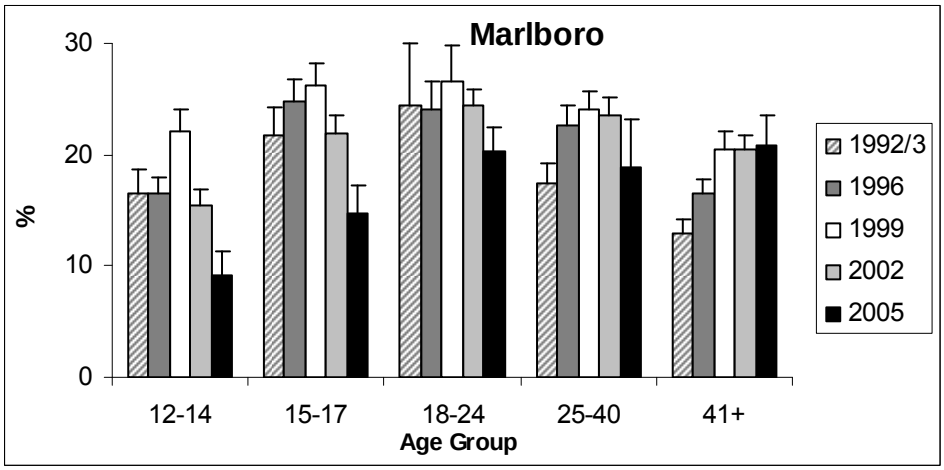
The effect of the MSA was not nearly so marked on the nomination of Marlboro as a favorite cigarette advertisement. In 1992-1993, 16.6±2.0% of 12-14-year-olds and 21.7±2.5% of 15-17-year-olds nominated this brand as their favorite. By 2005, these proportions were 9.2±2.2% and 14.7±2.5%, slightly below the responses for the Camel brand. However, the Marlboro brand was much more popular than Camel among adult smokers; in this group there was no apparent decline following the Master Settlement Agreement.

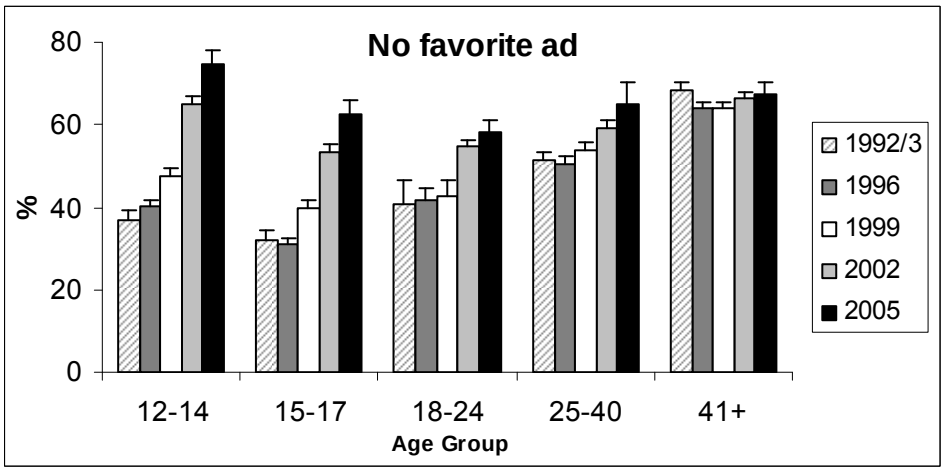
The effect of tobacco control interventions, including the MSA can be seen most dramatically in those who indicated that they had no favorite cigarette advertisement. Among 12-14-year-olds, less than 40% were in this category in the first half of the 1990s; this proportion has continued to increase since 1996 so that 74.5±3.7% were not prepared to name a favorite brand in 2005. This represents a 14.3% increase over the proportion in 2002. Among 15-17-year-olds, the proportion without a favorite cigarette advertisement increased from 30% in the early 1990s to 62.8±3.4% in 2005. This proportion has increased by 17.5% since 2002. A similar trend for increases in this proportion was also seen in adults aged 18-40 years. However, there was no change in the proportion of adults over 40 who indicated that they had no favorite cigarette advertisement. This proportion has remained consistently around two-thirds of the population since 1990.

The proportionate increases in reporting no favorite cigarette advertisement between 1999 and 2005 were as follows: a factor of 56.2% for 12-14-year-olds, a factor of 57.4% for 15-17-year-olds, a factor of 36.2% for young adults 18-24 year olds, and a factor of 20% for adults 25-40 years old.

Figure 4.6: Favorite Cigarette Advertisement for Adolescents, Young Adults and Older Adults







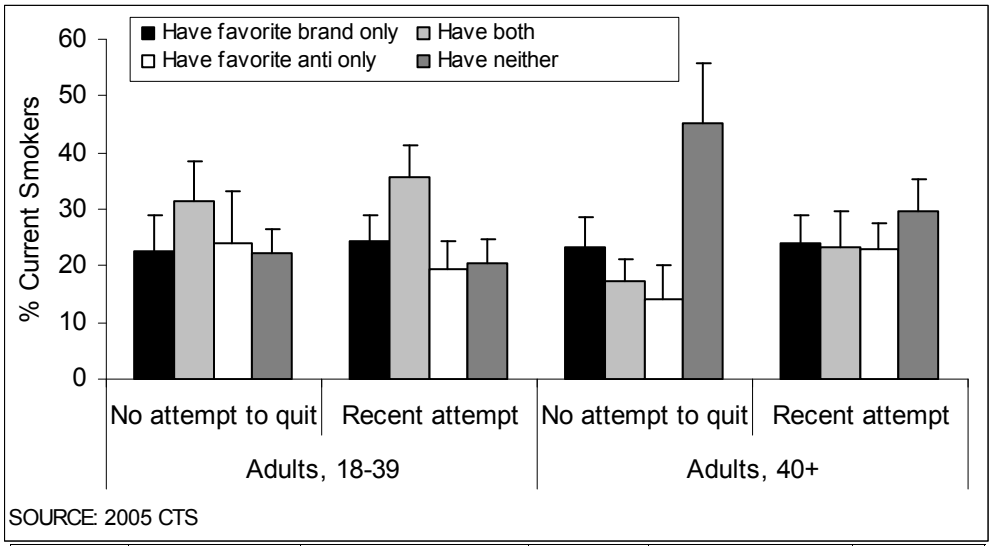
SOURCE: 1992/3, 1996, 1999, 2002, 2005 CTS

6. Combination of Favorite Cigarette Brand Advertisements and Favorite Anti-smoking Advertisements by Smoking Status and Age

It is possible that having a favorite cigarette brand and having a favorite anti-smoking commercial compete as influences on smokers' quitting practices. Given the saliency of the tobacco industry manipulation message among those under, but not over, 40 years, we present the combination of favorite reporting for two age groups, those under and those over 40 years. There was a strong age effect in the reporting of favorite advertisements. In 2005, the proportion of the 18-39-year-old population who had neither an anti- nor a pro-smoking favorite advertisement was 29.5±3.3% which was much lower than the 38.9±3.5% for those over 40 years old. The proportion who had only a favorite cigarette brand without a favorite antismoking commercial was approximately the same in both age groups (18-39 yrs: 14.1±1.6%; 40+yrs: 15.7±2.5%). The proportion of those who had both an anti- and a pro- smoking favorite advertisement was fairly similar across age groups (18-29 yrs: 23.0±3.4%, 40+yrs: 19.5±3.3%). The proportion who only had an anti-smoking favorite commercial was higher in the younger age group (33.4±3.8%) compared to the 40+ age group (25.9±3.6%).

Among smokers, the highest proportion (approximately one third) of those under age 40 years reported having both a favorite pro- and anti-smoking advertisement **(Figure 4.7)**. Approximately 20% reported having neither a pro- or anti-smoking favorite advertisement. There were no strong differences between those smokers who made a recent attempt to quit and those who did not in their reporting of favorite advertisements. Among those over the age of 40, those without a recent quit attempt were much less likely to report having a favorite anti-smoking commercial (31.5%) than a favorite brand of cigarette advertising (40.8%) and the highest proportion (45.0%) indicated that they had neither a favorite pro- or anti- smoking advertisement. Those who reported a recent attempt to quit were much more likely to report having a favorite anti-smoking advertisement (46% vs. 31% for no recent attempt).

Figure 4.7: Combination of Favorite Cigarette Brand and Anti-smoking Advertisements among Those who Smoked in the Past Year



SOURCE: 2005 CTS

Age		Have favorite brand only	Have both	Have favorite anti only	Have neither
18-39	No attempt to quit	22.6	31.3	24.0	22.1
	Recent attempt	24.4	35.8	19.5	20.3
40+	No attempt to quit	23.4	17.4	14.1	45.0
	Recent attempt	24.1	23.3	22.8	29.8

7. Exposure to Smoking in Movies of Favorite Actors

A large national random sample of young teens (aged 10-14 years) demonstrated that those who were most exposed to smoking in movies were 2.6 times more likely to start smoking than those in the lowest category of exposure (Sargent, 2005). There are now two longitudinal studies that demonstrate that young adolescents whose favorite movie stars smoke on screen or who are exposed to a large number of movies portraying smokers are more likely to start smoking (Tickle et al., 2001; Distefan et al., 2004). We asked the following questions of all adolescents in 2005:

Name your two favorite male actors **(Y21a)**

Name your two favorite female actresses **(Y21b)**

In response to these questions, the average California teen nominated 2.5 actors or actresses as their favorite. The top 20 actors and actresses in each category are listed in **Table 4.1** along with the proportion of teens who nominated them. Thus, Angelina Jolie was the most popular actress and was nominated by 14.6% of teens. The most popular actor was Johnny Depp who was nominated by 8.9% of teens.

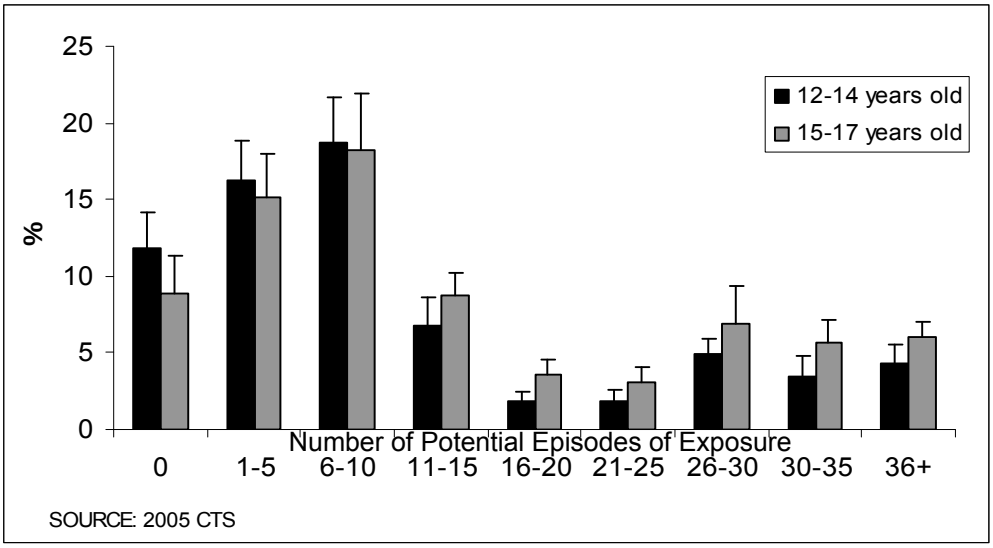
Table 4.1
Adolescents' Favorite Actors and Actresses by Rank

Favorite Actress			Favorite Actor		
Name	**% of teens**	**Smoking Exposures 2000-2005**	**Name**	**% of teens**	**Smoking Exposures 2000-2005**
ANGELINA JOLIE	14.6	2	JOHNNY DEPP	8.9	29
JENNIFER ANISTON	6.7	0	BRAD PITT	7.1	6
JULIA ROBERTS	5.7	2	JIM CARREY	6.2	7
JESSICA ALBA	4.8	0	ORLANDO BLOOM	5.4	0
REESE WITHERSPOON	4.4	0	ADAM SANDLER	5.4	1
HALLE BERRY	4.1	0	TOM CRUISE	4.7	0
JENNIFER LOPEZ	4.1	0	WILL SMITH	3.0	0
HILARY DUFF	2.5	0	DENZEL WASHINGTON	2.3	12
CAMERON DIAZ	2.5	3	VIN DIESEL	2.1	6
DREW BARRYMORE	2.5	3	TOM HANKS	2.0	0
KEIRA KNIGHTLEY	2.4	0	CHAD MICHAEL MURRAY	1.7	1
NICOLE KIDMAN	2.1	15	WILL FERRELL	1.7	6
RACHEL MCADAMS	1.9	1	GEORGE CLOONEY	1.4	0
SANDRA BULLOCK	1.9	9	ROBIN WILLIAMS	1.4	0
KIRSTEN DUNST	1.8	0	ASHTON KUTCHER	1.3	3
LINDSAY LOHAN	1.8	0	MEL GIBSON	1.2	9
JESSICA SIMPSON	1.8	0	BRUCE WILLIS	1.0	1
JENNIFER GARNER	1.4	0	CHRIS ROCK	1.0	2
NATALIE PORTMAN	1.3	2	PAUL WALKER	1.0	0
CATHERINE ZETA-JONES	1.1	11	MATT DAMON	0.9	1

We used the large Dartmouth database of smoking in movies, which allowed a calculation of the number of smoking episodes for each actor/actress in all of their movies from 2000-2005 (see Appendix Table A.4.4). The number of smoking exposures for each actor/actress is the total number of times that each one smoked in movies between 2000 and 2005. Of the most popular actresses, Nicole Kidman, Sandra Bullock and Catherine Zeta-Jones had the most smoking episodes. Among the men, Johnny Depp, Denzel Washington and Mel Gibson had the most

smoking episodes. We summed the number of smoking events from 2000 to 2005 for the favorite actors and actresses named by each adolescent to estimate the adolescent's exposure to smoking in the movies. The proportion of Californians who had no exposure to smoking in movies was 11.8±2.4% for 12-14-year-olds and 8.9±2.4% for 15-17-year-olds (**Figure 4.8**). The proportion of 12-14-year-olds with an estimated 11+ exposures was 23% compared to 34% for those aged 15-17 years.

Figure 4.8: Adolescents According to the Number of Potential Episodes of Exposure to Smoking from Movies, 2005



8. Cigarette Promotional Items

Possession and Willingness to Use Promotional Items

To assess ownership and willingness to use cigarette brand promotional items, the 1996, 1999, 2002, and 2005 CTS asked the following questions: Some tobacco companies offer promotional items identified with their brands, such as clothing and bags that the public can buy or receive for free. In the past 12 months have you . . .

Exchanged coupons for an item with a tobacco brand name or logo on it? **(I14d a) (U15a)**

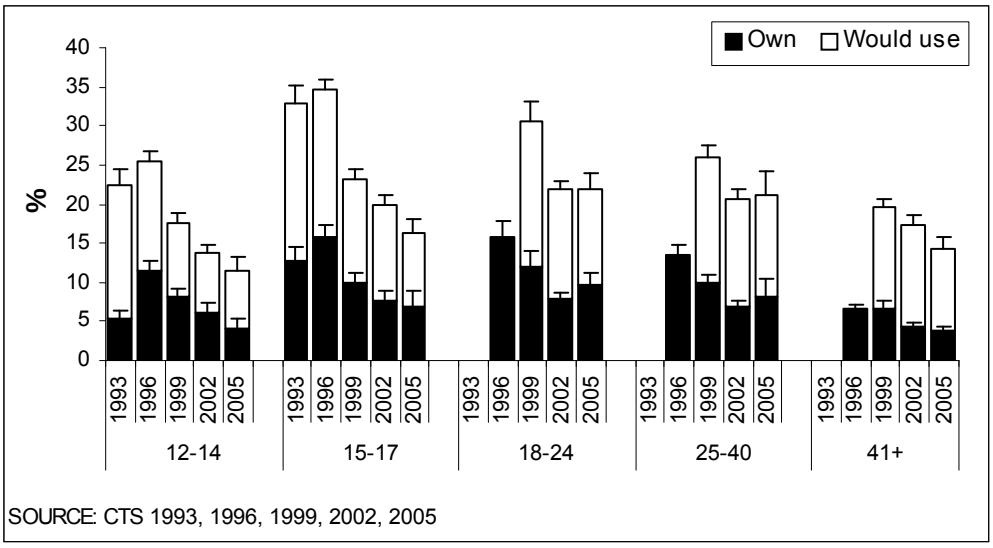
Received as a gift or for free, any item with a tobacco brand name or logo on it? **(I14d b) (U15b)**

Purchased any item with a tobacco brand name or logo on it? **(I14d c) (U15c)**

Do you think you would ever use a tobacco industry promotional item such as a t-shirt? **(I14g_i) (U20)**

The question regarding willingness to use a tobacco promotional item was also asked of adults beginning in 1999. **Figure 4.9** shows the percentages of adolescents, young adults, and older adults who have (shaded portion of the bars) or would be willing to use (open portion of bars) a tobacco promotional item.

Figure 4.9: Adolescents, Young Adults, and Older Adults Willing to Use a Tobacco Promotional Item.



SOURCE: CTS 1993, 1996, 1999, 2002, 2005

	Own					Would Use				
	1993	1996	1999	2002	2005	1993	1996	1999	2002	2005
12-14	5.4	11.5	8.1	6.2	4.2	17.1	13.9	9.6	7.5	7.3
15-17	12.8	15.8	9.8	7.5	6.9	20.0	18.9	13.3	12.3	9.4
18-24		15.9	11.9	7.9	9.7			18.8	14.1	12.2
25-40		13.6	9.9	6.8	8.1			16.2	13.9	13.9
41+		6.5	6.6	4.2	3.7			13.1	13.2	10.5

There was a major decline in both the possession and willingness to use tobacco promotional items starting in 1996, particularly among adolescents. However, while there has been a major decline, there is still significant residual usage. The proportion who reported owning a tobacco promotional item in 2005 was 4.2 ± 1.2% and 6.9 ± 1.9% among 12-14- and 15-17-year-olds respectively. These proportions were somewhat lower than in 2002. No such decline was observed among adults aged 18-40 years. In 2005, the pattern of ownership by age remained the same with 12-14-year-olds reporting higher ownership levels than adults over 40. For each age group, there appeared to be significant interest in using such an item among those who did not possess one. Having or being willing to use an item (total height of bar) did not decline between 2002 and 2005 for those aged 18 through 40 years. Appendix Tables A.4.5 and A.4.6 give the demographic breakout of adolescents who have or are willing to use tobacco promotional items.

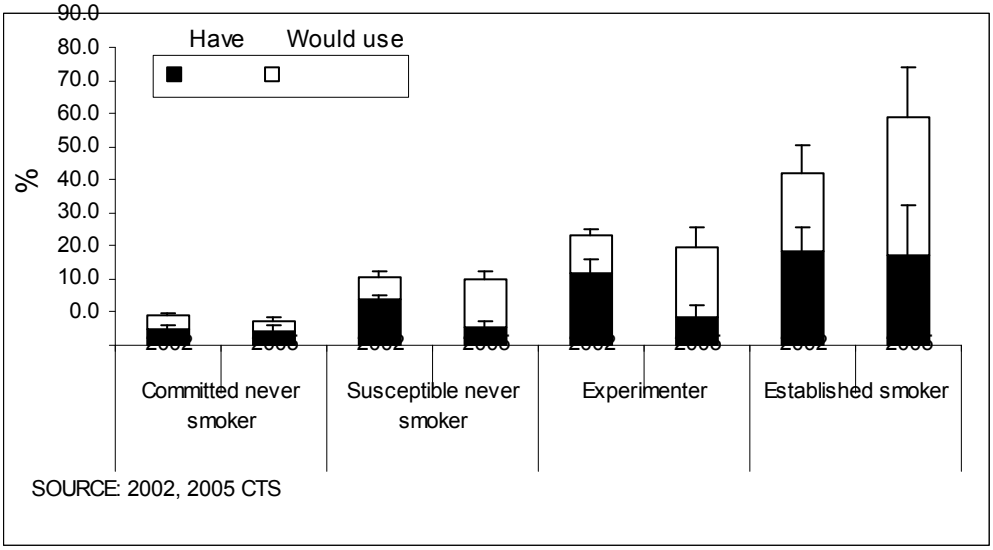
Between 2002 and 2005, interest in using tobacco industry promotional items increased among adolescent established smokers.

Interest in Promotional Items among Adolescents by Risk of Future Smoking

In both 2002 and 2005, ownership and interest in tobacco industry promotional items were strongly associated with the risk of future smoking (see **Figure 4.10**). Established smokers were the only group in which possession did not decline between 2002 and 2005. Possession or willingness to use a promotional item increased from 52.1% in 2002 to 68.7% in 2005 among

established smokers. Willingness to use an item increased in all groups except committed never smokers, almost doubling between 2002 and 2005. Ownership and interest in using increased with each uptake level in each year. However, between 2002 and 2005, ownership among both susceptible never smokers and experimenters declined significantly.

Figure 4.10: Adolescent Interest in Promotional Items 2005



		Committed never smoker	Susceptible never smoker	Experimenter	Established smoker
Would Use	2002	4.1	7.1	11.4	23.5
	2005	3.1	14.3	21.2	41.3
Have	2002	5.0	13.7	21.8	28.6
	2005	4.3	5.5	8.4	27.4

In 2005, 3.4±0.9% of adolescents were given a tobacco industry promotional item, 1.6±0.5% obtained one with a coupon exchange and 1.5±0.4% purchased one. There were major declines in each way of obtaining an item since 1996. This suggests that the emphasis of the current tobacco industry marketing strategy may be on current smokers with a goal of promoting consumption and preventing quitting rather than promoting progression among experimenters.

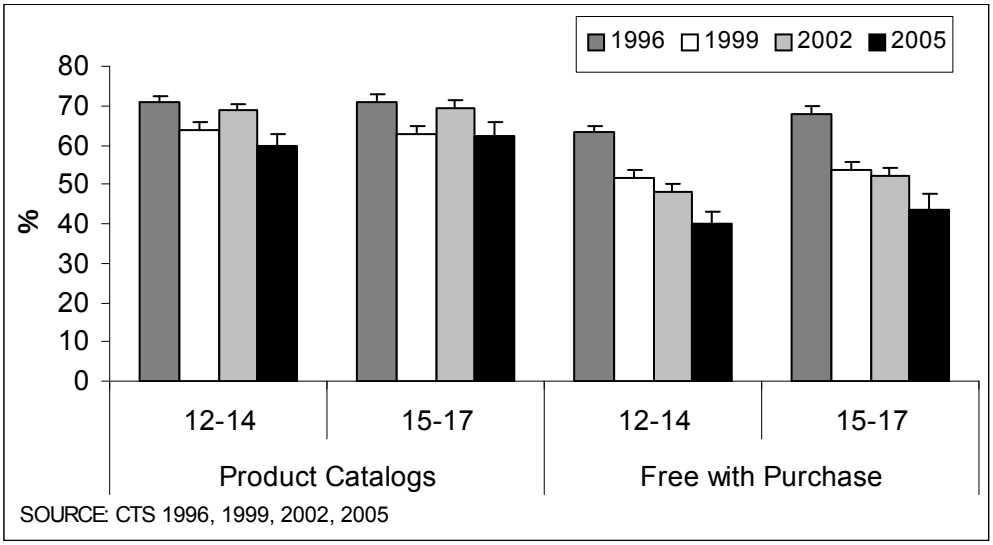
Adolescent Exposure to Tobacco Industry Promotional Item Catalogs and Offers

The 1996, 1999, 2002, and 2005 CTS asked adolescents the following questions on their recall of promotional item marketing in small neighborhood stores:

> *In the last 12 months, when you visited a small store near where you live, how often have you seen…* **(U20_12)**
>
> > *…Catalogs for cigarette promotional products?* **(U20_12 b)**
> >
> > *…Free promotional product offers with a cigarette purchase?* **(U20_12c)**

Figure 4.11 presents the percentage of adolescents who saw catalogs and free promotional product offers with purchase in the last year (at least sometimes) in small stores near where they lived.

Figure 4.11: Adolescents Who Saw Promotional Items Advertised in Small Stores



	Age	1996	1999	2002	2005
Product catalogs	12-14	70.8	63.6	68.7	59.7
	15-17	70.9	63.0	69.2	62.4
Free with purchase	12-14	63.4	51.6	48.1	40.2
	15-17	68.0	53.5	52.3	43.6

Adolescents still have a high level of exposure to tobacco industry promotional items.

Although adolescent exposure to promotional item catalogs appears to have decreased from the 1996 high, approximately 60% of all adolescents were still exposed in 2005. However, there were significant declines in the proportion of adolescents who were exposed to free promotional items with purchase, particularly between 2002 and 2005. In 12-14-year-olds this decline was from 48.1±1.9% to 40.2±3.1% and for 15-17-year-olds, it was 52.3±1.7% to 43.6±3.8%. However, in 2005, more than 40% of all adolescents were exposed to this inducement to purchase cigarettes.

9. Tobacco Company Brand Name on Mass Media

Tobacco Logos at Sports Events Seen on Television

The 1996, 1999, 2002, and 2005 CTS asked all adults and adolescents the following question:

> *In the last year, how often have you seen a sports event on television in which you saw a logo of a tobacco product? Would you say very often, a few times, rarely, or not at all?* **(I14i) (U20_11)**

The frequency of seeing such a tobacco logo on television very often decreased in all subgroups to less than 10%. In 2005, 8.2±1.8% reported seeing such ads, compared to

18.9±1.1% in 1996, a factor decline of 57%. A full breakout for adolescents seeing these events very often, by demographic characteristics, is given in Appendix Table A.4.7.

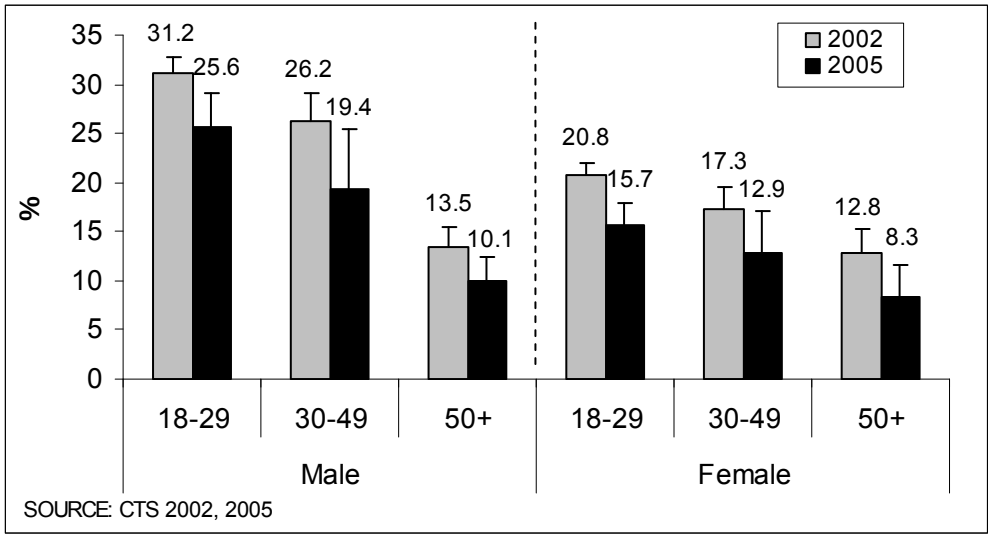
Tobacco Brand Name Event Sponsorships

The 2002 and 2005 CTS asked adults the following question:

> *In the last year, how often have you attended an event sponsored entirely or in part by a tobacco company?* **(I14k)**

Compared to 2002, there was a general decline in 2005 in the percentage of adult males and females who attended events sponsored by the tobacco industry **(Figure 4.12)**. A quarter (25.6±1.5%) of young adult males (18-29 years) attended an event sponsored by a tobacco company in 2005. Younger adults and males were more likely to attend such events.

Figure 4.12: Adults Who Attended an Event Sponsored by a Tobacco Company in the Last Year



SOURCE: CTS 2002, 2005

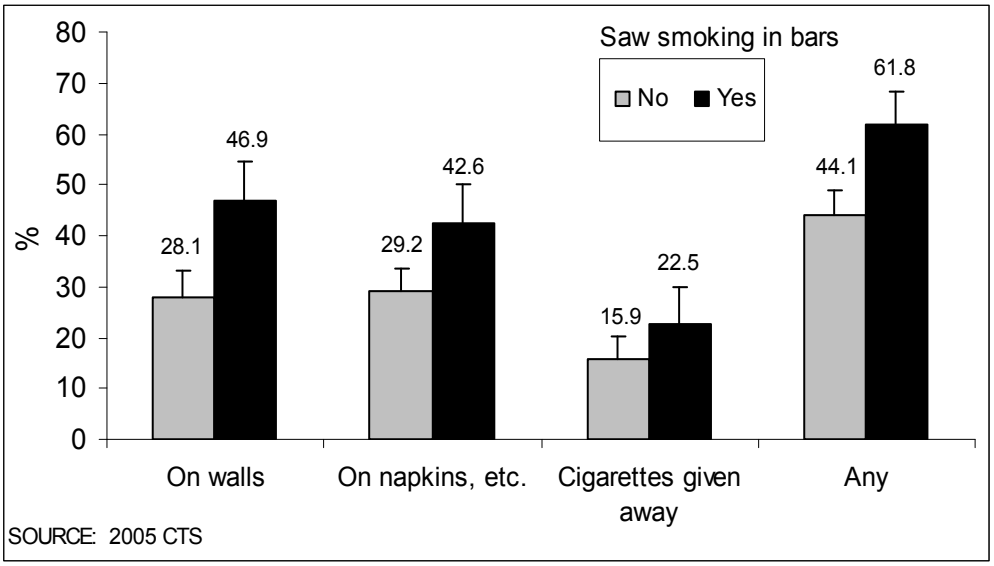
Advertising and Promotions in Bars and Clubs

The 2002 and 2005 CTS asked young adults about their experiences at clubs and bars:

> *Do you see people smoking indoors?* **(L24a)**
>
> *Do you see people smoking directly outside the door or on patios?* **(L24b)**
>
> *Have you seen cigarette advertisements in bars or clubs on the walls or furniture?* **(L24c)**
>
> *Have you seen cigarette advertising on napkins, coasters, giveaways?* **(L24d)**
>
> *Have you seen cigarettes been given away by a tobacco company representative?* **(L24e)**
>
> *Have you been to a club or bar even sponsored by a tobacco company?* **(L24f)**

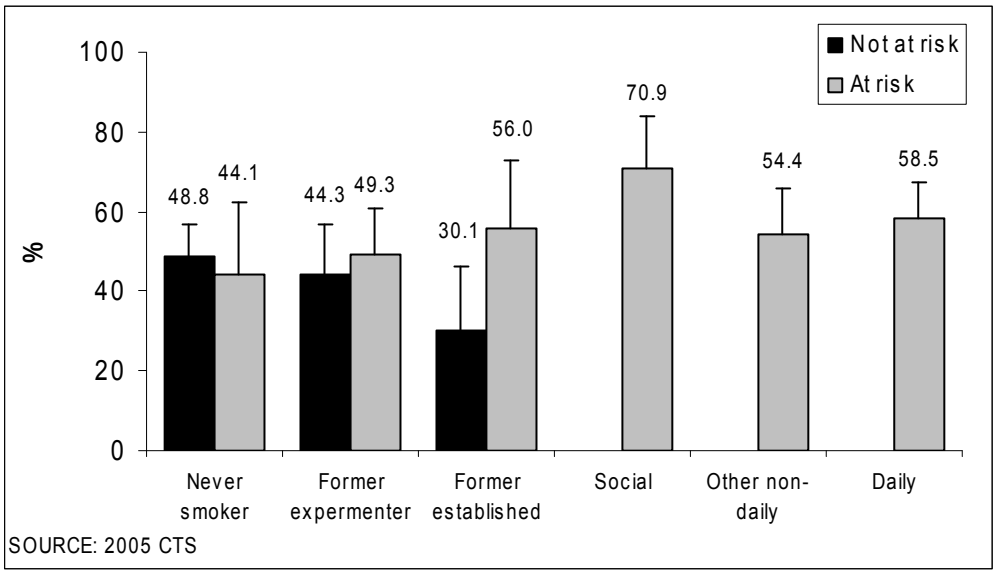
Among the 29.9±2.0% of young adults (aged 18-29 years) who patronized bars and clubs at least sometimes, a high 42±4.0% reported seeing smoking inside the bar/club, a clear infringement of the state law. Those who reported seeing violations of the smoke-free workplace law were also much more likely to report exposure to tobacco industry promotions such as free cigarettes or advertising on walls or on napkins, etc... **(Figure 4.13)**. This suggests that bars/clubs that use cigarette advertising and promotional items may be lax in their enforcement of the smoke-free workplace law.

Figure 4.13: Young Adult Bar/Club Patrons Who Saw Tobacco Promotions According to Presence or Absence of Smoking in Bars



Recall of tobacco industry advertising and promotions within bars/clubs was high in all groups but was particularly high among social smokers and former smokers at risk to return to smoking **(Figure 4.14)**. This suggests that tobacco industry marketing in bars and clubs could be an important contributing factor in promoting young adult smoking, particularly among former smokers.

Figure 4.14: Young Adult Recall of at Least one Promotion in Bars and Clubs by Smoking Status and their Risk of Smoking



Summary

The tobacco industry continues to rapidly increase their expenditures on advertising and promotion, ostensibly to counteract the decline in cigarette sales that has been seen across the nation but particularly in California. In 2002, the combination of a high per capita media budget for the California campaign and the national American Legacy Foundation (ALF) campaign led to high recalls of anti-smoking advertising. Neither this level of expenditure nor this level of recall was maintained in 2005.

The media effect of encouraging smokers to seek help to quit from the California Smokers' Helpline also declined from 2002 levels. Assistance-seeking was relatively constant across the years 2003-2005, although it appears that it may have dropped in the latter half of 2006.

Older smokers who were not trying to quit were less likely to name a favorite anti-smoking advertisement. Over half the younger-aged population (less than 40 years) reported having a favorite anti-smoking advertisement, which was higher than the rates for the older population. Among people over 40 years, as well as in 12-14-year-old adolescents, anti-smoking commercials with health consequences messages were the most likely to be recalled as their favorite. However, the majority of adolescents aged 15-17 years and young adults 18-29 years nominated a tobacco industry manipulation advertisement as their favorite anti-smoking advertisement. The majority of these advertisements were from the ALF campaign rather than the California media campaign.

Over the 15 years since the start of CTCP, there has been a major increase in the proportion of the population who reported having no favorite brand of cigarette advertising. This has been particularly marked among the 12-14 age group where this proportion was 75% in 2005. However, there was considerable exposure to smoking by their favorite actor/actress among Californian adolescents in 2005.

Although there has been a major decline in interest in using a cigarette promotional item since 1996, there is still significant residual interest (>15%) particularly in people aged 15-39 years. Among adolescents there appears to be an increasing interest among smokers suggesting that the tobacco industry may have changed their marketing strategy from encouraging initiation to retaining current smokers.

High exposure of tobacco industry promotional items to adolescents remained via catalogs, generally available in small stores, and free “product with purchase of cigarettes” offers. While there is evidence that the free product offers are declining, over 40% of adolescents reported seeing this tactic in 2005. Over 40% of adolescents also reported seeing brand logos on televised sporting events in the past year, although the proportion seeing such logos often decreased to less than 10%. Bars and clubs who display tobacco industry advertising and promotions are more likely to have lax enforcement of the smoke-free workplace law. Recall of advertising and promotions in bars and clubs was high among former smokers at risk of relapse and among social smokers.

APPENDIX

Chapter 4
Media and Marketing Influences in Smoking

1. Recall of Anti-Tobacco Media in California

Appendix Table A.4.1 shows the adolescents' exposure to anti-tobacco messages in various media by demographic subgroups. Overall, there were significant declines in exposure to messages in all media between 2002 and 2005. Recall of anti-tobacco messages was lowest for radio. Susceptible never smokers had the highest recall of messages on billboards or the radio, while smokers had the highest recall for messages on TV. African American recall of messages on TV declined significantly in 2005; their recall of TV messages was substantially lower than that of other racial/ethnic groups.

Table A.4.1
Adolescents' Exposure to Anti-Tobacco Messages
(saw at least a few commercials against in last month)

	Billboards				Radio			
	1996 %	1999 %	2002 %	2005 %	1996 %	1999 %	2002 %	2005 %
Overall	58.0 (±1.5)	73.7 (±1.4)	69.3 (±1.2)	55.1 (±2.4)	44.2 (±1.3)	56.1 (±1.5)	52.5 (±1.4)	33.0 (±2.4)
Gender								
Male	59.7 (±1.9)	76.0 (±1.8)	72.3 (±2.0)	57.9 (±3.4)	40.8 (±1.9)	52.1 (±1.9)	48.8 (±2.0)	32.8 (±3.4)
Female	56.1 (±2.2)	71.3 (±2.1)	66.1 (±2.0)	52.0 (±3.3)	48.0 (±2.1)	60.4 (±2.4)	56.4 (±1.9)	33.3 (±3.0)
Age								
12-14	58.0 (±1.8)	75.9 (±1.8)	71.5 (±1.5)	56.5 (±3.2)	41.8 (±2.3)	55.3 (±2.0)	51.4 (±2.1)	31.9 (±2.8)
15-17	58.0 (±2.0)	71.4 (±2.4)	66.8 (±1.8)	53.6 (±3.7)	46.7 (±1.8)	56.9 (±2.2)	53.5 (±2.2)	34.3 (±3.7)
Race/Ethnicity								
African American	60.4 (±4.9)	76.0 (±4.9)	72.5 (±4.8)	47.7 (±9.5)	52.0 (±4.8)	53.0 (±6.4)	58.9 (±5.5)	23.4 (±9.4)
Asian/PI	57.5 (±5.0)	75.8 (±4.2)	64.4 (±5.2)	54.6 (±7.5)	46.0 (±4.5)	59.3 (±5.8)	54.5 (±4.5)	30.7 (±6.2)
Hispanic	61.2 (±2.9)	72.3 (±2.3)	69.5 (±2.0)	56.9 (±4.0)	44.2 (±2.9)	56.1 (±3.0)	53.6 (±2.4)	35.8 (±3.6)
Non-Hispanic White	55.7 (±1.5)	74.2 (±1.7)	70.0 (±1.9)	54.5 (±3.8)	42.6 (±1.5)	55.9 (±2.1)	49.1 (±2.2)	32.5 (±3.0)
School Performance								
Much better than average	59.2 (±3.2)	74.9 (±3.3)	70.6 (±3.1)	59.6 (±5.1)	43.1 (±2.6)	57.2 (±4.1)	55.3 (±2.5)	32.8 (±5.1)
Better than average	58.3 (±1.8)	74.2 (±2.4)	70.2 (±1.9)	55.7 (±4.1)	45.7 (±2.3)	55.9 (±2.4)	53.4 (±2.5)	32.4 (±3.6)
Average and below	57.0 (±2.3)	72.6 (±2.0)	67.6 (±2.4)	51.8 (±4.1)	43.5 (±2.4)	55.8 (±2.5)	49.9 (±2.3)	33.8 (±4.1)
Smoking Status								
Committed never smoker	55.7 (±2.5)	73.3 (±2.5)	67.5 (±2.3)	54.4 (±3.9)	44.7 (±2.0)	55.1 (±2.7)	52.3 (±2.3)	33.1 (±3.3)
Susceptible never smoker	58.2 (±2.4)	74.6 (±2.6)	72.0 (±2.0)	57.2 (±3.3)	42.6 (±2.7)	56.3 (±2.4)	53.3 (±2.4)	33.6 (±4.0)
Combined experimenter and established smoker	59.9 (±2.3)	73.2 (±2.3)	67.5 (±3.0)	52.0 (±6.1)	45.5 (±2.7)	57.3 (±2.9)	51.0 (±3.0)	31.2 (±5.2)

Table A.4.1 (cont'd)
Adolescents' Exposure to Anti-Tobacco Messages
(saw at least a few commercials against in last month)

	TV				Billboards, radio or TV			
	1996 %	1999 %	2002 %	2005 %	1996 %	1999 %	2002 %	2005 %
Overall	75.8 (±1.3)	88.5 (±1.0)	88.0 (±0.9)	75.6 (±2.4)	90.8 (±1.0)	96.7 (±0.5)	96.0 (±0.5)	88.6 (±1.8)
Gender								
Male	77.2 (±1.9)	89.8 (±1.4)	88.6 (±1.1)	75.3 (±3.7)	91.6 (±1.2)	96.8 (±0.9)	96.1 (±0.7)	88.4 (±2.9)
Female	74.1 (±1.8)	87.2 (±1.6)	87.5 (±1.5)	75.8 (±3.6)	89.9 (±1.4)	96.6 (±0.7)	96.0 (±0.7)	88.8 (±2.4)
Age								
12-14	74.7 (±1.8)	88.5 (±1.5)	86.3 (±1.5)	74.7 (±3.3)	90.1 (±1.3)	96.8 (±0.7)	95.8 (±0.7)	88.4 (±2.3)
15-17	76.8 (±1.5)	88.6 (±1.2)	89.8 (±1.1)	76.5 (±3.5)	91.5 (±1.3)	96.7 (±0.8)	96.3 (±0.6)	88.8 (±2.7)
Race/Ethnicity								
African American	69.5 (±4.8)	84.9 (±4.2)	91.9 (±2.3)	66.9 (±9.2)	92.0 (±3.8)	95.3 (±2.6)	97.5 (±1.4)	81.7 (±7.6)
Asian/PI	79.5 (±3.4)	91.4 (±3.5)	88.0 (±3.0)	78.3 (±7.0)	92.4 (±2.5)	97.5 (±2.5)	95.6 (±1.8)	89.4 (±3.7)
Hispanic	75.8 (±2.2)	87.7 (±1.6)	88.6 (±1.8)	74.8 (±4.4)	91.3 (±1.7)	96.5 (±0.9)	96.1 (±0.9)	89.7 (±3.2)
Non-Hispanic White	75.6 (±1.7)	89.0 (±1.3)	86.8 (±1.1)	76.3 (±3.4)	89.9 (±1.3)	96.8 (±0.8)	95.8 (±0.8)	88.2 (±2.8)
School Performance								
Much better than average	76.9 (±2.8)	90.4 (±2.1)	88.2 (±1.9)	77.8 (±5.2)	91.2 (±1.6)	97.1 (±1.7)	95.8 (±1.3)	90.3 (±2.9)
Better than average	78.0 (±2.0)	89.2 (±1.4)	89.7 (±1.3)	80.3 (±2.2)	91.9 (±1.6)	96.6 (±0.9)	97.0 (±0.7)	90.6 (±1.9)
Average and below	73.0 (±2.1)	87.0 (±1.3)	86.3 (±1.3)	69.7 (±4.4)	89.5 (±1.5)	96.7 (±0.8)	95.3 (±0.9)	85.6 (±3.6)
Smoking Status								
Committed never smoker	74.7 (±2.3)	87.2 (±1.7)	87.7 (±1.6)	74.7 (±3.2)	89.8 (±1.7)	95.7 (±1.1)	95.3 (±1.0)	88.5 (±2.2)
Susceptible never smoker	76.5 (±2.1)	89.2 (±1.7)	88.3 (±1.4)	75.9 (±3.6)	91.0 (±1.5)	97.1 (±0.9)	96.9 (±0.8)	88.3 (±2.6)
Combined experimenter and established smoker	76.0 (±2.1)	89.5 (±1.7)	88.3 (±1.7)	78.1 (±5.9)	91.5 (±1.4)	97.8 (±0.8)	96.0 (±1.4)	89.8 (±5.5)

Appendix Table A.4.2 shows the most popular anti-smoking ads, as described by adults and adolescents. Ads presenting the health consequences of smoking were most commonly cited as a favorite ad, with 'Debi' ("the lady with the hole in her throat") mentioned more often than any other ad. Among ads which attacked the tobacco industry, the "Truth" campaign ads were most frequently cited as favorites.

Table A.4.2
Most popular ads, by category, with weighted % in category

I. General anti-smoking message: 17%
15.2% - Don't smoke/no smoking
6.2% - No smoking sign (circle and slash)
5.8% - PSA: Actors/actresses speaking against smoking
3.3% - Above the Influence, ONDC: person turning into fish or monkey when smoking

II. Tobacco industry manipulation message: 23%
49.7% - Truth (misc or no campaign specified)
9.0% - CDHS: Ken Lane series (boardroom/sitcom)
7.8% - Truth: Protests in front of tobacco co (several)
6.9% - Truth: "Body bags"

II.B. *Of all the ALF "Truth" ads in the tobacco industry manipulation category, the distribution was:*
59.8% - Truth (misc or no campaign specified)
9.4% - Truth: Protests in front of tobacco co (several)
8.3% - Truth: "Body bags"
5.3% - Truth: "Replacement smokers" (mannequins), "1200" and "Drop dead" (Lying in street representing dying)
3.1% - Truth: Methane - "Marlboro cows" and "Dogwalker" (cows and dog feces) (108)

II.C. *Of all the CDHS ads in the tobacco industry manipulation category, the distribution was:*
64.0% - CDHS: Ken Lane series (boardroom/sitcom)
22.8% - CDHS: "Nicotine soundbites" (Tobacco companies lie)
4.8% - CDHS(Spanish): "Puppet" Woman as puppet
4.7% - Dead fish (possibly "Hooked", CDHS)

III. Health consequence: 37%
39.9% - CDHS: "Debi"/tracheotomy
29.8% - Images of lung cancer or other physical effects
4.6% - CDHS: Limp cigarette/impotence
2.9% - # deaths due to smoking - counter - billboard in LA, Truth "Every 8 Seconds" and "Daily Dose"

IV. Secondhand smoke: 13%
22.2% - Pregnant mother and baby smoking
13.3% - CDHS: "Bubbles" (Blowing bubbles)
10.7% - CDHS: Testimony, smoker whose non-smoking wife died of lung cancer
5.8% - CDHS: series, "Kitchen", "Living Room" -Man smoking with pregnant wife or child in room

V. Commercials funded by the tobacco industry: 5%
53.2% - PM: Talk to your kids, they will listen
17.2% - Philip Morris anti-smoking ad
12.0% - PM: Never too soon to talk/mother and baby
4.8% - PM:"We Card" campaign

VI. Quitting assistance: 5%
26.5% - CDHS: 1-800-NOBUTTS (specific mention)
20.0% - NRT/Patch (commercial ad)
14.6% - CDHS: "Training to quit"
4.9%- CDHS: "Quitting takes practice" (cartoon)

2. Favorite Brands of Cigarette Advertising

Appendix Table A.4.3 shows the favorite cigarette advertisement for adolescents and adults. This table reports values for Camel and Marlboro only, as they were by far the most popular brands. There was an increase in 2005 in all age groups of the percentage stating they had no favorite cigarette brand; this increase was significant among adolescents. There was a significant decrease in the percentage naming Marlboro as their favorite ad in those under the age of 25. The popularity of Camel remained at about the same levels in 2005 as in 2002; this left Camel preferred over Marlboro among adolescents.

Table A.4.3
Favorite Cigarette Advertisement

	%	%	%	%	%	Factor Change from 1992/1993	Factor Change from 2002
Camel							
Age	**1992/3**	**1996**	**1999**	**2002**	**2005**		
12-14	37.4 (±2.3)	35.4 (±1.6)	23.0 (±1.8)	14.7 (±1.5)	12.5 (±2.6)	-66.7	-14.8
15-17	35.1 (±2.7)	36.6 (±2.0)	24.2 (±1.8)	16.1 (±1.3)	16.9 (±2.5)	-51.9	4.8
18-24	26.4 (±3.6)	26.8 (±2.5)	22.0 (±2.7)	13.7 (±1.1)	14.2 (±1.8)	-46.3	3.6
25-40	20.7 (±1.6)	19.0 (±1.6)	13.9 (±1.4)	10.8 (±1.3)	11.6 (±2.5)	-43.8	8.2
41+	9.4 (±1.1)	12.8 (±1.0)	8.2 (±0.9)	7.4 (±0.9)	5.9 (±1.2)	-37.6	-20.1
Marlboro							
Age	**1992/3**	**1996**	**1999**	**2002**	**2005**		
12-14	16.6 (±2.0)	16.5 (±1.5)	22.1 (±2.0)	15.5 (±1.3)	9.2 (±2.2)	-44.7	-40.8
15-17	21.7 (±2.5)	24.9 (±1.9)	26.3 (±2.0)	21.9 (±1.7)	14.7 (±2.5)	-32.0	-32.6
18-24	24.5 (±5.5)	24.1 (±2.5)	26.6 (±3.2)	24.5 (±1.3)	20.3 (±2.2)	-17.0	-17.0
25-40	17.4 (±1.5)	22.7 (±1.7)	24.0 (±1.7)	23.6 (±1.6)	18.8 (±4.4)	8.3	-20.2
41+	12.9 (±1.4)	16.5 (±1.2)	20.5 (±1.7)	20.5 (±1.2)	20.9 (±2.6)	62.4	1.7
No Favorite							
Age	**1992/3**	**1996**	**1999**	**2002**	**2005**		
12-14	37.0 (±2.4)	40.1 (±1.7)	47.7 (±2.0)	65.2 (±2.0)	74.5 (±3.7)	101.1	14.3
15-17	31.8 (±2.5)	31.0 (±1.7)	39.9 (±2.2)	53.4 (±2.0)	62.8 (±3.4)	97.4	17.5
18-24	40.7 (±5.9)	41.8 (±2.9)	42.8 (±3.5)	54.8 (±1.5)	58.3 (±2.9)	43.3	6.3
25-40	51.5 (±2.1)	50.4 (±2.0)	53.9 (±1.6)	59.0 (±2.0)	65.1 (±5.2)	26.5	10.4
41+	68.2 (±1.9)	63.8 (±1.8)	64.1 (±1.6)	66.3 (±1.5)	67.6 (±2.8)	-0.9	1.9

3. Exposure to Smoking in Movies of Favorite Actors

Appendix Table A.4.4 presents data from the Dartmouth database on smoking in movies (courtesy of J. D. Sargent) for the actors and actresses respondents to the 2005 CTS reported as their favorites. For each actor, the number of nonsmoking and smoking roles they had between 2000 and 2005, and between 2003 and 2005 are reported, as well as the total number of smoking episodes each actor performed in those periods.

Appendix A.4.4
Portrayal of Smoking and Non-Smoking Characters by Actors

	2000 - 2005			2003 - 2005		
	Character portrayals		Number of smoking episodes	Character portrayals		Number of smoking episodes
Actor name	Smokers	Non-smokers		Smokers	Non-smokers	
ADAM SANDLER	1	9	1	0	4	0
AMANDA BYNES	0	2	0	0	1	0
ANGELINA JOLIE	1	8	2	1	6	2
ANNETTE BENING	0	1	0	0	1	0
ARNOLD SCHWARZENEGGER	1	2	1	0	1	0
ASHTON KUTCHER	1	6	3	0	5	0
BEN AFFLECK	2	7	4	2	2	4
BEYONCE KNOWLES	0	2	0	0	1	0
BRAD PITT	2	6	6	0	4	0
BRUCE WILLIS	1	8	1	1	4	1
CAMERON DIAZ	2	6	3	1	2	2
CARMEN ELECTRA	0	1	0	0	1	0
CATE BLANCHETT	0	6	0	0	3	0
CATHERINE ZETA-JONES	3	6	11	1	4	2
CHAD MICHAEL MURRAY	1	2	1	1	2	1
CHARLIZE THERON	3	4	38	1	2	32
CHRIS ROCK	2	5	2	1	2	1
CHRIS TUCKER	0	1	0	0	0	0
COLIN FARRELL	2	4	3	2	3	3
COURTENEY COX	0	1	0	0	0	0
DAKOTA FANNING	0	7	0	0	6	0
DAVE CHAPPELLE	0	1	0	0	0	0
DEMI MOORE	0	1	0	0	1	0
DENZEL WASHINGTON	3	4	12	2	1	3
DREW BARRYMORE	2	5	3	0	4	0
DUSTIN HOFFMAN	2	4	2	2	4	2
EDDIE MURPHY	2	12	2	1	2	1
EMMA THOMPSON	0	2	0	0	1	0
EMMA WATSON	0	4	0	0	2	0
FREDDIE PRINZE, JR.	0	5	0	0	1	0
GEORGE CLOONEY	0	9	0	0	5	0
HALLE BERRY	0	8	0	0	5	0
HARRISON FORD	1	2	1	0	1	0
HEATH LEDGER	1	3	12	1	1	12
HELEN HUNT	0	3	0	0	0	0
HILARY DUFF	0	6	0	0	6	0
HILARY SWANK	0	3	0	0	2	0
JACK BLACK	2	6	4	1	3	3
JACK NICHOLSON	2	2	14	1	1	3
JACKIE CHAN	1	5	1	0	3	0
JAKE GYLLENHAAL	3	1	17	2	1	13
JAMIE FOXX	2	3	27	2	2	27
JENNIFER ANISTON	0	5	0	0	4	0
JENNIFER CONNELLY	1	3	7	1	2	7
JENNIFER GARNER	0	4	0	0	3	0

Appendix A.4.4
Portrayal of Smoking and Non-Smoking Characters by Actors

	2000 - 2005			2003 - 2005		
	Character portrayals		Number of smoking episodes	Character portrayals		Number of smoking episodes
Actor name	Smokers	Non-smokers		Smokers	Non-smokers	
JENNIFER LOPEZ	0	8	0	0	3	0
JENNIFER LOVE HEWITT	2	1	7	0	1	0
JESSICA ALBA	0	3	0	0	3	0
JESSICA BIEL	0	4	0	0	3	0
JESSICA SIMPSON	0	1	0	0	1	0
JIM CARREY	4	4	7	2	2	2
JOHN TRAVOLTA	5	2	22	4	0	18
JOHNNY DEPP	4	5	29	2	4	13
JOSH HARTNETT	2	2	2	0	1	0
JUDE LAW	3	5	22	2	3	17
JULIA ROBERTS	2	6	2	1	3	1
JULIA STILES	2	4	8	1	3	4
KATE BOSWORTH	0	2	0	0	1	0
KATE HUDSON	4	2	10	3	2	9
KATE WINSLET	0	3	0	0	3	0
KATIE HOLMES	0	3	0	0	2	0
KEANU REEVES	2	6	24	1	3	14
KEIRA KNIGHTLEY	0	5	0	0	5	0
KIRSTEN DUNST	0	7	0	0	5	0
LEONARDO DICAPRIO	4	0	14	1	0	1
LINDSAY LOHAN	0	4	0	0	4	0
MARTIN LAWRENCE	0	6	0	0	2	0
MATT DAMON	1	9	1	0	5	0
MATTHEW MCCONAUGHEY	3	2	9	1	1	1
MEG RYAN	2	2	8	0	1	0
MEL GIBSON	2	3	9	0	0	0
MIKE MYERS	0	8	0	0	3	0
MORGAN FREEMAN	1	10	6	1	6	6
NATALIE PORTMAN	1	4	2	1	2	2
NICOLAS CAGE	6	3	45	3	0	38
NICOLE KIDMAN	3	5	15	1	4	9
ORLANDO BLOOM	0	7	0	0	5	0
PARIS HILTON	0	1	0	0	1	0
PAUL WALKER	0	5	0	0	2	0
PIERCE BROSNAN	2	1	7	1	1	5
QUEEN LATIFAH	1	5	6	0	4	0
RACHEL MCADAMS	1	6	1	0	5	0
RAVEN SYMONE	0	1	0	0	0	0
REESE WITHERSPOON	0	6	0	0	4	0
ROBERT DE NIRO	3	9	26	0	4	0
ROBIN WILLIAMS	0	3	0	0	1	0
RUSSELL CROWE	2	3	8	0	2	0
SALMA HAYEK	1	1	14	0	1	0
SANDRA BULLOCK	1	6	9	0	2	0
SARAH MICHELLE GELLAR	0	3	0	0	2	0
SCARLETT JOHANSSON	2	4	4	2	4	4
SEAN CONNERY	0	2	0	0	1	0
SUSAN SARANDON	0	5	0	0	3	0
TOM CRUISE	0	7	0	0	3	0
TOM HANKS	0	7	0	0	4	0
UMA THURMAN	0	4	0	0	4	0
VIN DIESEL	1	5	6	1	2	6
WILL FERRELL	3	4	6	3	2	6
WILL SMITH	0	7	0	0	4	0

4. Cigarette Promotional Items

Appendix Table A.4.5 shows the percentage of adolescents who obtained a tobacco brand promotional item by demographic subgroup. While all groups showed substantial declines from 1996, the decline appears to have slowed or stopped in some subgroups. Non-Hispanic Whites were most likely to have such an item in 2005, and possession of such items increased in this group between 2002 and 2005. Those who performed better or much better than average in school also increased in item ownership in 2005, reversing the trend of lowest ownership in these groups. Committed never smokers showed a slight but non-significant increase in item ownership, as did established smokers, who remain by far the most likely to own promotional items. Experimenters and susceptible never smokers showed non-significant decreases in tobacco brand promotional item ownership.

Appendix Table A.4.5
Adolescents who obtained Tobacco Brand Promotional Items in the Last Year

	1996 %	1999 %	2002 %	2005 %	Factor change from 1996	Factor change from 2002
Overall	13.7 (±1.1)	8.9 (±0.8)	6.8 (±0.8)	5.5 (±1.1)	-59.9	-19.9
Gender						
Male	16.1 (±1.8)	10.8 (±1.3)	8.0 (±1.2)	6.5 (±1.1)	-60.0	-19.1
Female	10.9 (±1.2)	6.9 (±1.0)	5.6 (±0.9)	4.4 (±1.8)	-59.6	-21.6
Age						
12-14	11.5 (±1.3)	8.1 (±1.1)	6.2 (±1.1)	4.2 (±1.2)	-63.9	-32.9
15-17	15.8 (±1.6)	9.8 (±1.3)	7.5 (±1.3)	6.9 (±1.9)	-56.1	-8.2
Race/Ethnicity						
African American	11.9 (±3.8)	7.9 (±3.0)	7.5 (±3.3)	5.0 (±3.6)	-58.4	-33.7
Asian/PI	14.1 (±3.7)	8.3 (±3.1)	5.9 (±2.0)	4.5 (±3.2)	-68.1	-24.1
Hispanic	12.5 (±2.0)	8.6 (±1.5)	7.4 (±1.4)	5.4 (±1.5)	-57.1	-27.7
Non-Hispanic White	14.1 (±1.1)	9.3 (±1.1)	5.8 (±0.9)	6.0 (±1.9)	-57.5	3.5
School Performance						
Much better than average	10.3 (±1.5)	7.1 (±1.8)	4.9 (±1.4)	5.6 (±3.0)	-45.5	14.9
Better than average	13.3 (±1.8)	8.3 (±1.5)	5.7 (±1.1)	5.8 (±1.5)	-56.8	0.7
Average and below	15.8 (±1.8)	10.4 (±1.4)	9.0 (±1.5)	5.1 (±1.2)	-67.5	-43.0
Smoking Status						
Committed never smoker	7.1 (±1.1)	4.7 (±1.0)	4.1 (±0.7)	4.3 (±1.7)	-39.6	5.1
Susceptible never smoker	11.1 (±1.7)	8.3 (±1.4)	7.1 (±1.2)	5.5 (±1.9)	-50.0	-22.4
Experimenter	18.6 (±2.5)	14.0 (±2.6)	11.4 (±2.1)	8.4 (±3.6)	-54.8	-26.4
Established smoker	40.9 (±5.2)	29.5 (±6.9)	23.5 (±8.0)	27.4 (±15.0)	-33.1	16.3

Appendix Table A.4.6 shows adolescents' willingness to use a tobacco brand promotional item, by demographic group. Willingness to use an item has declined substantially for all groups since 1996, and continued to decline for committed never smokers. However, the decline appears to have ceased for susceptible never smokers and experimenters, and may have reversed for established adolescent smokers. Among racial/ethnic groups, African Americans showed the strongest decline since 2002, and are now least likely to be willing to use such an item. Hispanics remain most likely to be willing to use an item. Older adolescents remain significantly more likely than younger ones to be willing to use an item, and males continue to be significantly more likely than females to use an item.

Appendix Table A.4.6
Adolescent Willingness to Use a Tobacco Brand Promotional Item

	1996 %	1999 %	2002 %	2005 %	Factor change from 1996	Factor change from 2002
Overall	23.4 (±1.1)	14.7 (±1.1)	11.5 (±1.0)	9.6 (±1.1)	-117.6	-16.8
Gender						
Male	28.4 (±1.7)	19.5 (±1.7)	15.1 (±1.5)	12.8 (±1.9)	-109.5	-15.3
Female	17.8 (±1.7)	9.5 (±1.3)	7.7 (±1.1)	6.0 (±1.8)	-132.0	-21.7
Age						
12-14	19.0 (±1.5)	11.6 (±1.3)	8.9 (±1.1)	7.7 (±1.7)	-118.1	-13.1
15-17	27.7 (±1.6)	17.9 (±1.5)	14.3 (±1.6)	11.5 (±1.9)	-116.2	-19.2
Race/Ethnicity						
African American	18.1 (±3.8)	11.4 (±3.1)	10.6 (±3.5)	5.9 (±4.8)	-134.6	-44.7
Asian/PI	22.7 (±5.0)	14.2 (±3.5)	8.6 (±2.3)	8.5 (±4.6)	-124.5	-0.6
Hispanic	25.0 (±2.8)	17.3 (±2.3)	13.4 (±1.3)	10.2 (±2.2)	-117.5	-23.4
Non-Hispanic White	23.2 (±1.6)	12.9 (±1.3)	9.8 (±1.5)	8.8 (±2.1)	-123.2	-10.1
School Performance						
Much better than average	16.4 (±2.2)	11.6 (±1.9)	7.8 (±1.5)	7.8 (±3.2)	-104.5	0.4
Better than average	22.9 (±1.9)	12.9 (±1.7)	10.3 (±1.6)	8.3 (±1.9)	-126.5	-19.3
Average and below	27.7 (±1.9)	17.8 (±1.9)	14.7 (±1.7)	11.8 (±2.0)	-114.5	-20.0
Smoking Status						
Committed never smoker	10.9 (±1.5)	7.6 (±1.5)	5.0 (±1.0)	3.1 (±0.8)	-143.1	-38.2
Susceptible never smoker	22.8 (±2.0)	16.2 (±1.7)	13.7 (±1.5)	14.3 (±2.3)	-74.7	4.2
Experimenter	32.6 (±2.2)	20.3 (±3.1)	21.8 (±4.2)	21.2 (±6.1)	-69.3	-2.8
Established smoker	52.8 (±5.4)	40.5 (±6.1)	28.6 (±6.9)	41.3 (±15.5)	-43.4	44.3

5. Tobacco Company Brand Name on Mass Media

Appendix Table A.4.7 presents data on adolescents seeing a tobacco logo "very often" on a sports event by demographics. Such reports continued to decline across the board in 2005. The decline from 2002 to 2005 was significant for both genders and age groups, and for Non-Hispanic Whites, those whose school performance was better than average or average and below, and for susceptible never smokers and experimenters. Males were slightly more likely than females, and older adolescents were more likely than younger ones, to have seen tobacco logos in televised events in the last year, but these differences were not significant. African Americans were least likely to report seeing a tobacco logo on a televised sports event.

Appendix Table A.4.7
Adolescents Reporting Seeing a Tobacco Logo on a Televised Sports Event "Very Often" in the Last Year

	1996 %	1999 %	2002 %	2005 %	Factor change from 1996	Factor change from 2002
Overall	18.9 (±1.1)	12.1 (±1.0)	12.9 (±0.9)	8.2 (±1.8)	-56.4	-36.6
Gender						
Male	22.0 (±1.9)	14.4 (±1.4)	14.8 (±1.6)	8.8 (±2.3)	-60.1	-40.5
Female	15.4 (±1.3)	9.5 (±1.4)	11.0 (±1.6)	7.6 (±2.3)	-50.6	-31.0
Age						
12-14	17.9 (±1.6)	10.2 (±1.1)	12.4 (±1.2)	7.2 (±2.0)	-59.5	-41.6
15-17	19.8 (±1.5)	14.0 (±1.4)	13.5 (±1.3)	9.3 (±2.9)	-53.2	-31.4
Race/Ethnicity						
African American	16.6 (±3.6)	13.4 (±4.3)	11.9 (±3.7)	5.3 (±4.3)	-68.3	-55.7
Asian/PI	16.0 (±3.1)	11.1 (±3.5)	8.3 (±3.2)	6.5 (±3.4)	-59.5	-22.2
Hispanic	16.3 (±1.7)	10.4 (±1.4)	13.5 (±1.5)	9.1 (±3.5)	-44.1	-32.4
Non-Hispanic White	21.8 (±1.6)	13.8 (±1.6)	14.3 (±1.5)	8.0 (±2.0)	-63.4	-44.2
School Performance						
Much better than average	20.7 (±2.5)	14.4 (±2.6)	13.0 (±2.2)	9.0 (±4.1)	-56.7	-30.7
Better than average	18.8 (±1.8)	11.7 (±1.7)	13.3 (±1.7)	8.3 (±2.1)	-56.1	-37.9
Average and below	17.8 (±1.5)	11.2 (±1.3)	12.6 (±1.4)	7.7 (±2.4)	-56.9	-38.9
Smoking Status						
Committed never smoker	18.1 (±2.0)	11.9 (±1.4)	12.7 (±1.6)	8.4 (±2.7)	-53.7	-33.9
Susceptible never smoker	17.7 (±1.8)	10.9 (±1.4)	12.7 (±1.7)	8.2 (±2.1)	-53.8	-35.6
Experimenter	20.4 (±2.6)	13.9 (±2.7)	14.6 (±2.6)	7.1 (±3.0)	-65.3	-51.3
Established smoker	23.0 (±5.0)	15.3 (±4.7)	12.8 (±6.0)	9.9 (±7.1)	-57.0	-22.5

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Chapter 5

Access and Ease of Purchasing Cigarettes among Adolescents

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Chapter 5

Access to Cigarettes among Adolescents

KEY FINDINGS

- Perceptions among adults that enforcement of laws banning tobacco sales to minors has been inadequate have consistently declined. Nevertheless, in 2005 54.3±3.1% still believed that enforcement was inadequate.

- Adolescents seem to be avoiding age restrictions on cigarette purchases by becoming familiar with local stores that do not enforce the restrictions. As a result, less than a third of adolescents under the age of 18 years reported being asked for an ID when they last purchased cigarettes, while the youngest adults reported almost twice that percentage.

- The perception among never smoking adolescents that cigarettes would be easy to obtain continues to decline. In 2005, only 39.8±2.5% of never smokers thought it would be easy to get cigarettes, a decline of 31.3% from 1990. However, older adolescents were much more likely to believe it is easy to obtain cigarettes than the youngest adolescents.

- The perception among adolescents that it would be easy to purchase cigarettes did not change significantly in 2005 compared to 2002. Older and more established adolescent smokers were more likely to believe it would be easy to buy cigarettes.

- Since 1996, susceptible adolescent never smokers have been consistently more likely to be offered cigarettes than are committed never smokers. In 2005, 31.3±3.3% of susceptible never smokers were offered cigarettes compared to 24.8±3.6% of committed never smokers.

- Adolescents continue to get most of their cigarettes from social sources, with 61.9±6.4% reporting that others gave them cigarettes, while 23.0±5.3% reported that others buy cigarettes for them. Most adolescents are given cigarettes by friends, but there has been a significant shift to rely on friends 18 years of age and older rather than friends below the age of 18 years.

Chapter 5
Access to Cigarettes among Adolescents

Introduction

Limiting the sale of tobacco products to minors is a strategy that is part of comprehensive tobacco control programs and local tobacco control initiatives. Part of this effort involves sting operations using underage decoys against tobacco retailers suspected of selling tobacco to minors. This strategy also involves efforts to cut off the social sources that minors depend on to get tobacco products. The intention is to stress the importance of keeping tobacco products out of the hands of adolescents. This can be done through community-based initiatives and educational campaigns as well as public media campaigns alerting communities about the illegality of selling to minors. In the California Tobacco Control Program (CTCP), this strategy served to communicate the seriousness of the tobacco problem to the public.

However, little is known about the direct effectiveness of controlling illegal sales to minors on their consumption levels. Some studies have failed to find any effect of control of sales to minors on cigarette consumption by these age groups (Fitchenberg & Glantz, 2002; Rigotti et al., 1997; Stead & Lancaster, 2000). Others argue that restricting sales of cigarettes to minors will only increase their reliance on alternative social sources of cigarettes rather than decrease overall consumption (Difranza & Coleman, 2001; Forester et al., 1998). Relying solely on social sources is indicative of a less addictive behavior (Leatherdale, 2005). That is why most established adolescent smokers purchase the cigarettes with a false ID or by asking others to buy it for them (Emery et al., 1999; Levinson et al., 2002). It is not clear if the regular use of cigarettes by established smokers explains their reliance on a more regular commercial source of cigarettes or whether they become regular smokers after they gain access to a regular source of cigarettes by purchasing them. A study in Minnesota found that adolescents primarily obtained their cigarettes and alcohol from social sources (Harrsion et al., 2000). They advocate targeting social sources of cigarettes to adolescents rather than the illegal sales of cigarettes to them. However, a recent Cochrane review concludes that measures to stop retailers from selling cigarettes to youth can lead to a large decrease in the number of outlets selling tobacco to youth (Stead & Lancaster, 2005). Sustaining such compliance by retailers is another challenge, according to the review. There is no single measure to achieve complete compliance of retailers, but enforcement was shown to be much more effective in reducing illegal sales than education of retailers (Stead & Lancaster, 2005).

The process of limiting access of adolescents to cigarettes from the commercial sources in any community involves several stages. The first stage is finding the legal background to make retailers accountable by law for selling to minors whether through local ordinances or state-wide legislation. In California, this is done through the STAKE (Stop Tobacco Access to Kids Enforcement) Act and Penal code 308(a). The second and more difficult stage is enforcing these laws and obtaining the cooperation of the community and law enforcement agencies. Enforcement of the STAKE Act is done by the California Department of Public Health (CDPH) Food and Drug Branch, while the 308(a) penal code is enforced by local police. Fines for violating either law range from $200 to $6000. The third stage is monitoring the influence of enforcement on sales to minors, which is done through surveys such as the California Youth Tobacco Purchase Survey. According to the California Youth Tobacco Purchase Surveys, there has been an overall decline in selling cigarettes to minors since 1995 when 37% of retailers

reportedly sold them to minors, but recently there has been a slight increase in the percentage of adolescents who reported getting cigarettes when they attempted to purchase them (from 10.2% in 2005 to 13.2% in 2006) (CDHS, 2006). It is more difficult to assess the impact of enforcement on actual overall consumption of cigarettes in adolescents.

In this chapter, we discuss different aspects related to access of youth to cigarettes. In Section 1, we describe the perceptions among adults of the adequacy regarding enforcement of laws prohibiting sales to adolescents in addition to the adolescents' use of false IDs and retailers' request for proof of age. In Section 2, we assess the perceptions of adolescents about the ease of getting cigarettes. In Section 3, we report on how adolescents get their cigarettes, and in Section 4 we determine what venues they get their cigarettes from.

1. Illegal Sales of Tobacco to Minors

Adult Perceptions of Enforcement Activities

In 2005, 54.3% of adults felt that the enforcement of laws banning tobacco sales to minors has been inadequate.

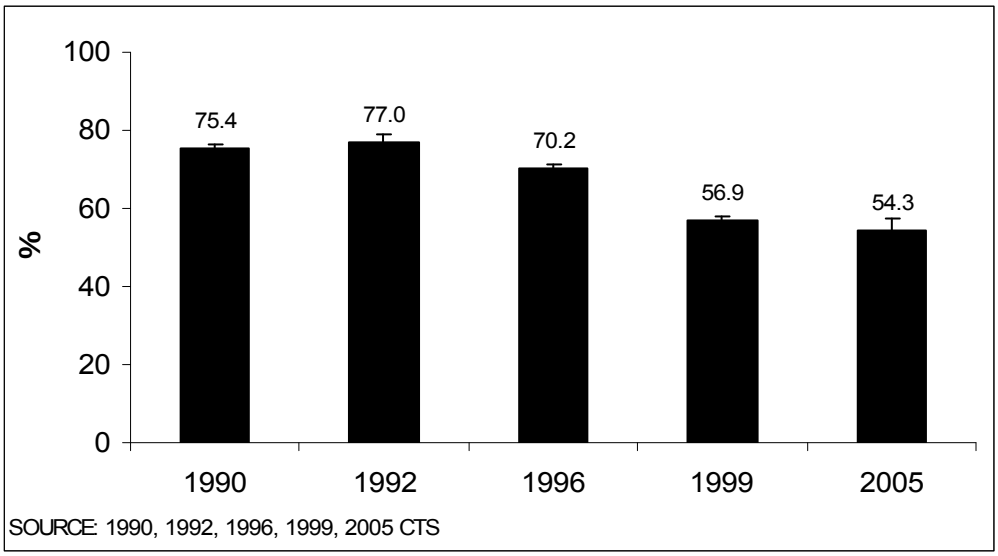
Enforcement of laws that make it illegal for tobacco retailers to sell to minors is challenging, and depends on the community and the local ordinances in place as well as the cooperation of local law enforcement agencies. Sting operations are usually utilized to assess and enforce the laws banning sales to minors. The perception of local community members is a measure of the need to put more effort into enforcement or enact new legislation. We included a question addressing this issue in our California Tobacco Survey (CTS).

Starting in 1990, the adults responding to the survey were asked:

> *Do you think the laws banning the sale of tobacco products to minors have been adequately enforced?* **(H9)**

As shown in **Figure 5.1**, despite a consistent decline in the perception of adults regarding inadequate enforcement of laws banning sales to minors, there is still a large proportion of people who think these laws are not adequately enforced. In 2005, 54.3±3.1% of respondents did not think these laws were adequately enforced which was comparable to the percentage in 2002. However, this was a 28% decline from 1990 when 75.4±0.9% believed the laws had not been adequately enforced. Among all age groups, the elderly (65+) were most likely to believe the laws have been inadequately enforced, while those with the lowest education level and smokers were the least likely to believe the laws have been inadequately enforced (Appendix Table A.5.1).

Figure 5.1: Adults Who Believe Laws Banning Sales of Tobacco to Minors Have Not Been Adequately Enforced



Possession of Fake Identification (ID) Cards

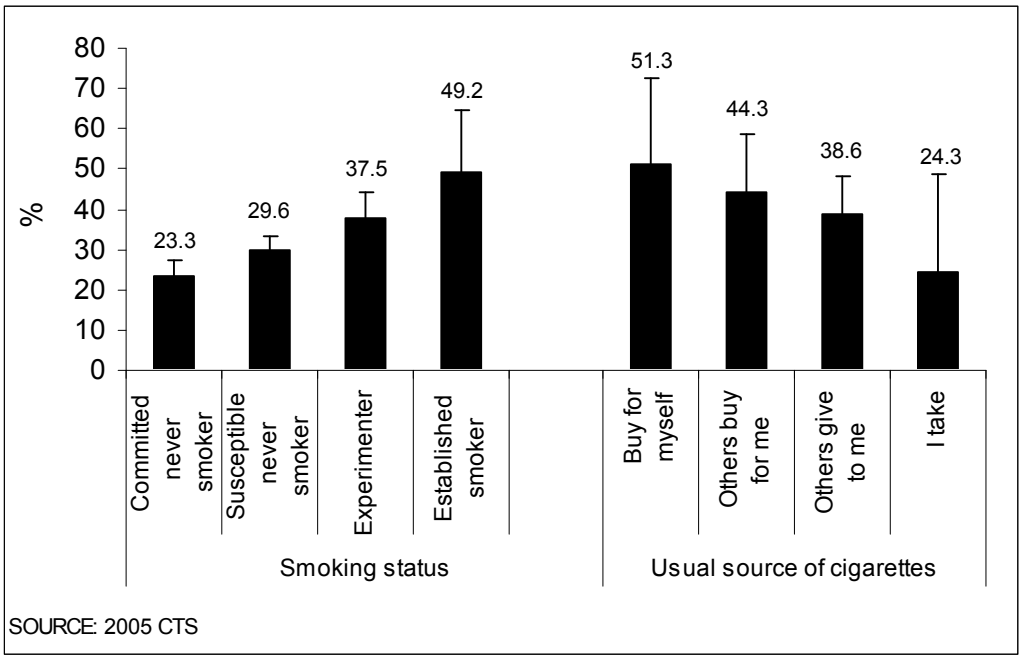
Minors can get their cigarettes by the use of falsified identification documents. It is well known among teens that having a false identification (ID) card is the way to get alcohol as well as tobacco (Levinson et al., 2002). In such cases, the retailers might be led to believe that they are selling to adults rather than minors. However, a recent analysis has shown that the manipulative measures of faking an ID were less important than a clerk's behavior in selling cigarettes to minors (Klonoff & Landrine, 2004). Study findings suggest that many clerks do not ask for ID (Shelton et al., 1995; Landrine et al., 1996; DiFranza & Libretti, 1999).

Rather than directly ask adolescents if they had a false ID, we asked the question indirectly by asking the following:

How many friends do you know who have a fake ID? **(O33_2)**

As shown in **Figure 5.2**, the percentage of adolescents who report having at least one friend with a fake ID is directly related to being an established smoker and whether they buy the cigarettes themselves rather than getting them from someone else. Almost half of established adolescent smokers know someone who has a fake ID (49.2±15.5%) compared to only 23.3±3.9% of committed never smokers, more than a two-fold difference. Similarly, smokers who buy cigarettes themselves are more likely to know someone with a fake ID compared to smokers who take cigarettes from others (Figure 5.2). If we assume that smokers who know someone with a fake ID are more likely to have a fake ID or to ask their friends with fake IDs to buy for them, this reinforces the notion that established smokers tend to obtain fake IDs to have regular access to commercial sources of cigarettes. However, due to the wide confidence intervals for these percentage values, they have to be interpreted with caution.

Figure 5.2: Percentage of Adolescents with at Least One Friend with a Fake ID According to Smoking Status and Usual Source of Cigarettes, 2005 CTS

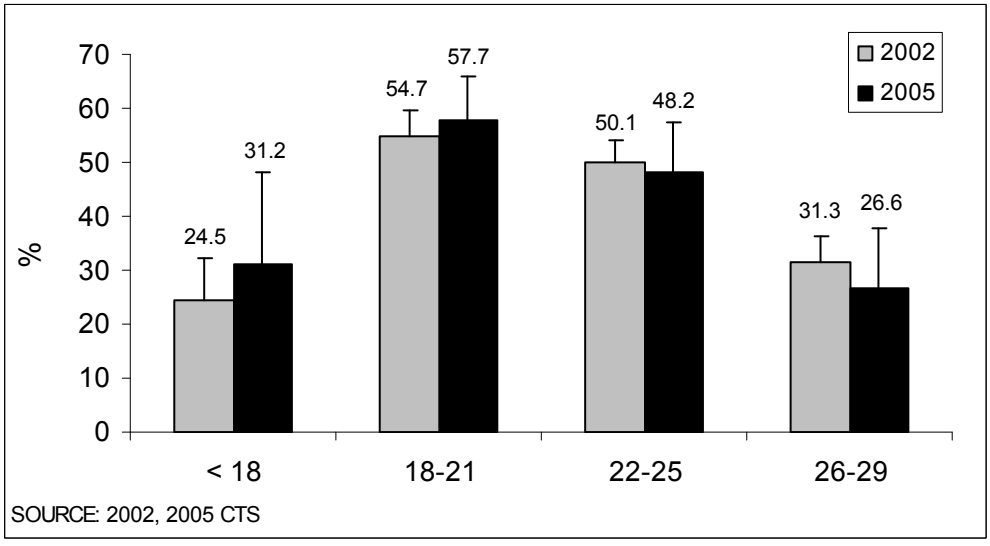


Request by Retailers for Identification (ID)

Access laws require that merchants not sell to any individual under the age of 18. To determine what percentage of adolescents and young adult smokers are actually asked about their ID when they buy cigarettes, the following question was asked in 2002 and 2005:

> *The last time you wanted to buy cigarettes, were you asked to show proof of age?* **(L15)**

Figure 5.3: Ever Buyers of Cigarettes who were Asked for Identification the Last Time they Wanted to Buy Cigarettes According to their Age

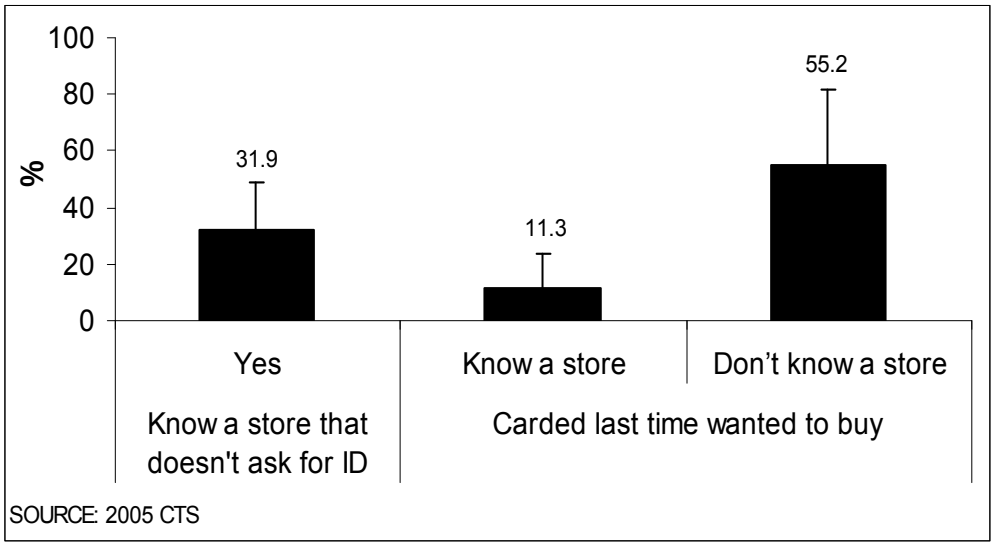


The distribution of those asked for identification cards is shown in **Figure 5.3** according to age. It is interesting that adolescents below 18 years were less likely to be asked for proof of age than individuals who were 18-21 years of age. In 2005, 31.2±17.0% below 18 years were asked for identification while 57.7±8.4% of those who were 18-21 years old were asked for ID (Appendix Table A.5.2). Beyond the 18-21-year-old age group, the frequency of being asked for proof of age decreases with age, as shown in the figure. There were no significant differences in these percentages between 2002 and 2005. A possible explanation for the lower percentage of adolescents being asked for identification compared to young adults is that adolescents are selective in purchasing cigarettes from retailers known not to ask for proof of age. Adolescents know it is against the law to purchase cigarettes and will be selective about the stores they use to purchase them. The fact that close to 43% of young adults who might look underage were not asked for an ID suggests a large percentage of retailers are not asking for identification. Such retailers are probably frequented by adolescents more than others. However, because of the wide confidence intervals for some of the findings, these results should be interpreted with caution. To determine whether or not adolescents were aware of stores that did not check for proof of age for cigarette purchases, adolescents in 2005 were asked:

Do you know any store near you that sells cigarettes without checking IDs? **(O33_3)**

A total of 31.9±17.0% of adolescents reported knowing a store near them that does not ask for an ID **(Figure 5.4)**. When the question was stratified according to whether or not an adolescent reported being asked for an ID the last time he/she wanted to buy cigarettes, it was clearly evident that those who knew of a store that did not ask for ID were less likely to report being asked for an ID. Only 11.3±12.0% of adolescents who bought cigarettes were asked for an ID if they knew a store that does not require ID, while 55.2±26.3% of the adolescents who did not report knowing a store were asked for an ID. This is comparable to the 57.7% of young adults who were asked for an ID (Figure 5.3 above).

Figure 5.4: Knowledge of Stores Not Asking for ID and Frequency of Carding among Adolescent Ever-Buyers



2. Adolescents' Perceived Ease of Obtaining Cigarettes

Since future established smoking is usually determined by behaviors and experience during the adolescent and teenage years, we have established questions about perceptions of access to cigarettes that are indicators of the willingness, vulnerability and social norms among CTS participants in this age group.

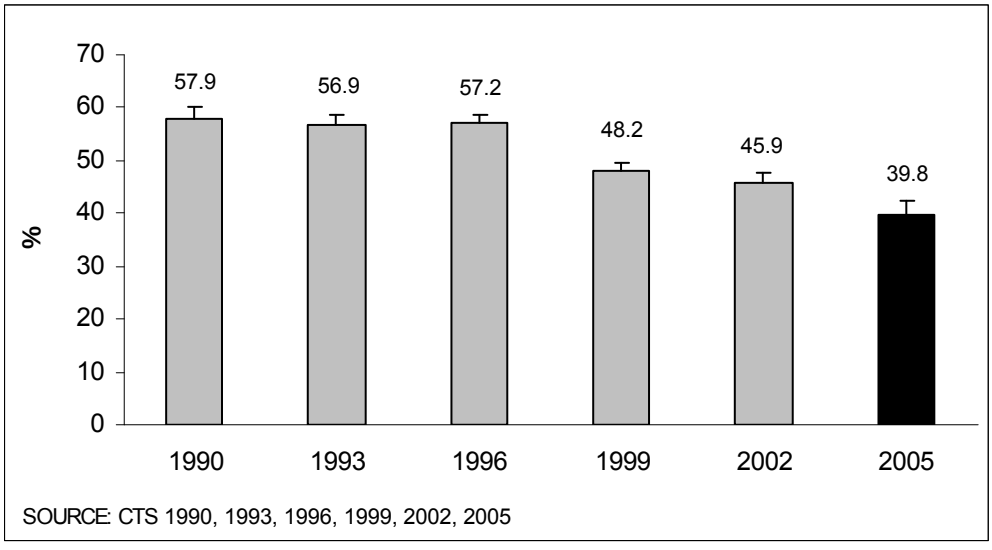
Perceptions among Adolescent Never Smokers about the Ease of Getting Cigarettes

From 1990 through 2005, adolescent never smokers were asked the following question:

> *Do you think it would be easy or hard for you to get cigarettes if you wanted some?* **(O33A)**

As shown in **Figure 5.5**, there has been a consistent decline in the perception by adolescents that it would be easy to get cigarettes. In 2005, only 39.8±2.5% of never smokers thought it would be easy for them to get cigarettes if they wanted to (Appendix Table A.5.3). This was a decline by a factor of 31.3% compared to 1990 when we first asked this question. Between 2002 and 2005 there was a significant decline in this perception. Although this decline over time was consistent for all age groups of adolescents (12-13, 14-15, and 16-17), the older adolescents were much more likely than the younger adolescents to believe it would be easy to access cigarettes (Appendix Table A.5.3). In 2005, 68.6±6.6% of 16-17-year-old adolescents thought it would be easy to get cigarettes compared to only 16.3±2.8% of 12-13-year-old adolescents. Adolescents of Hispanic ethnicity were less likely to believe it was easy to get cigarettes compared to other ethnic groups.

Figure 5.5: Never Smokers Who Think It Would Be Easy to Get Cigarettes



Perceptions among Adolescents about the Ease of Purchasing Cigarettes

In 1996, we added the following question to the adolescent survey to specifically assess how easy they thought it would be to purchase cigarettes:

Do you think it would be easy, somewhat difficult, or hard for you to buy…

A pack of cigarettes?

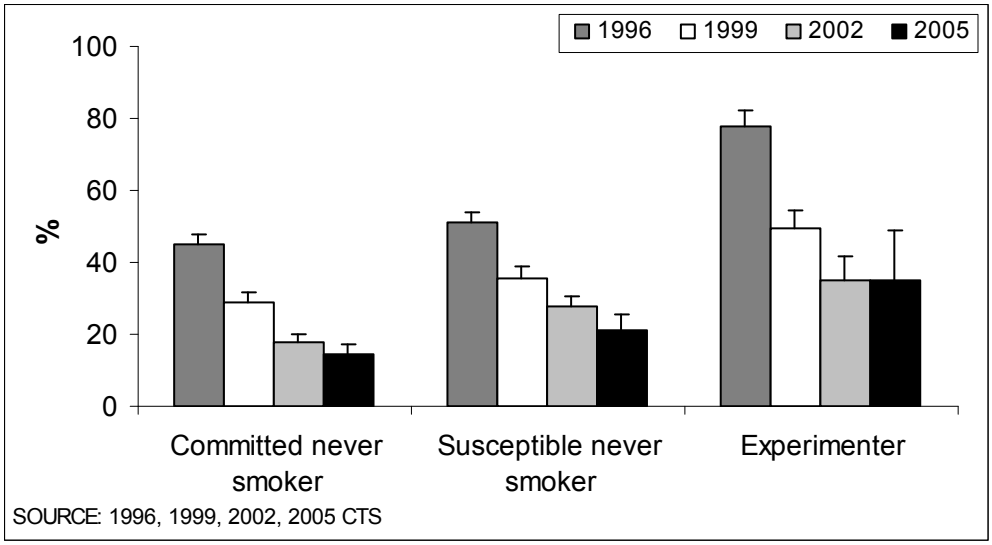
A few cigarettes [not a pack or carton]? (O33_1)

Between 2002 and 2005, there was no significant change in the percent of adolescents who thought it would be easy to purchase cigarettes.

We further assessed this question according to age group and current smoking status. Purchasing few cigarettes was more common among the younger age group (12-14 years old). Because this is illegal in California, those in the younger age group may purchase them from friends or certain stores that are familiar to them. However, older adolescents (15-17 years old) were more likely to purchase a pack. Therefore, we analyzed the data separately for those two age groups and by smoking experience within each age group.

Appendix Table A.5.4 shows that in 2005 among 12-14-year-olds, 18.2±2.6% perceived that it would be easy to buy a few cigarettes, a significant decrease by a factor of 23.4% from 2002, and by a factor of 66.6% from 1996 when the question was first asked.

Figure 5.6: Perception of Ease of Buying a Few Cigarettes (ages 12-14)



SOURCE: 1996, 1999, 2002, 2005 CTS

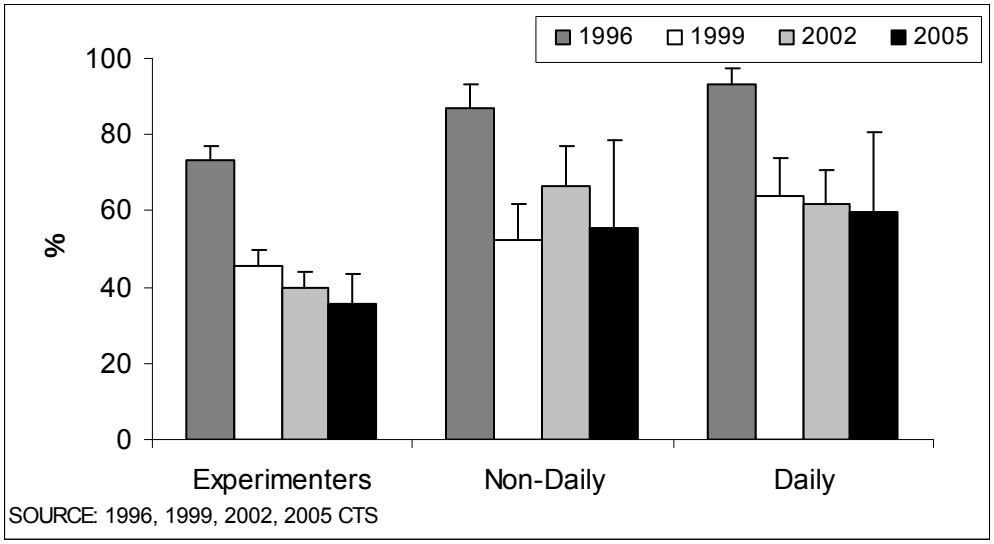
	1996	1999	2002	2005
Committed never smoker	44.7	29.1	17.6	14.3
Susceptible never smoker	51.1	35.7	27.7	21.3
Experimenter	78.0	49.6	34.8	34.8

In Figure 5.6, the perception among young adolescents is presented according to smoking status. All groups showed a significant decline in 2005 compared to 1996. Among experimenters there was no change between 2002 and 2005. Experimenters continue to be more likely to believe that it would be easy for them to buy a few cigarettes, which may reflect

their experience in obtaining them. In 2005, committed and susceptible never smokers in the young adolescent age group declined in their perception of the ease of buying a few cigarettes compared to 2002.

Among 15-17-year-olds in 2005, 29.6±3.0% thought it would be easy to buy a pack of cigarettes (Appendix Table A.5.5), which was not significantly lower than the percentage in 2002 (34.2±1.9%). As **Figure 5.7** shows, the trends are similar to young adolescents according to how experienced or established they were as smokers. Daily and non-daily smokers were much more likely to perceive it easy to buy a pack compared to experimenters. There was a significant decline between 1996 and 2005, but this decline was not significant between 2002 and 2005 in any group of smokers.

Figure 5.7: Perception among Smokers that it is Easy to Buy a Pack (ages 15-17)



	1996	1999	2002	2005
Experimenters	73.2	45.7	39.9	35.8
Non-Daily	86.8	52.5	66.6	55.6
Daily	93.4	63.7	61.7	59.5

3. Adolescent Sources of Cigarettes

Adolescent never smokers were less likely than smokers to believe that cigarettes were easy to buy (Figure 5.5), but a large proportion still believed they were easy to get (Figure 5.7). It is important to know the sources from which adolescents are getting such cigarettes, according to their current smoking status.

Sources for Never Smokers

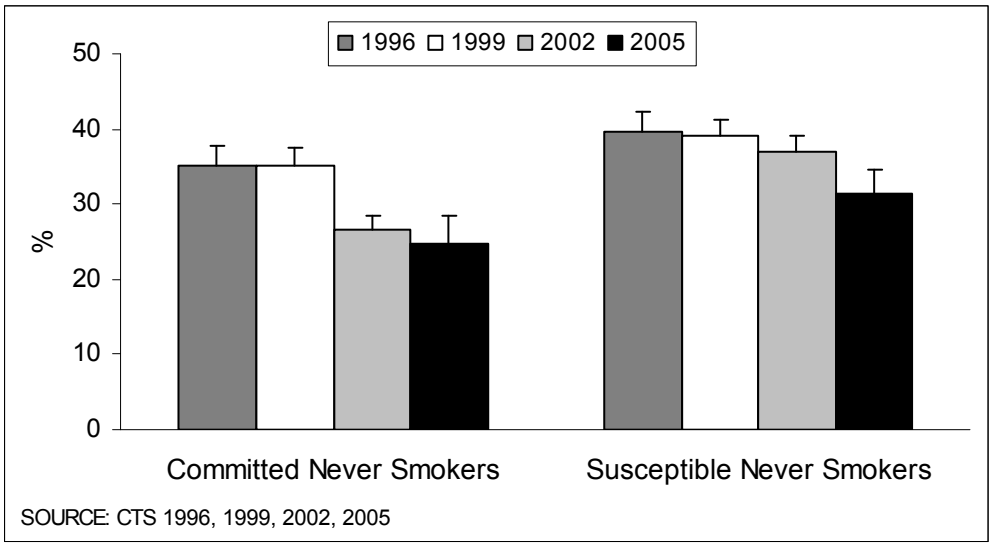
Starting with the 1996 CTS, all adolescent never smokers were asked the following question:

Have you ever been offered a cigarette? **(O 27_1a)**

Figure 5.8 shows the percentage of committed and susceptible never smokers who were offered cigarettes since 1996 when the question was asked. There was a significant decline between 1996 and 2005 in the percentage of committed (29.5% factor decline) and susceptible

(21% factor decline) never smokers who were offered cigarettes. In 2005, 24.8±3.6% of committed never smokers reported being offered a cigarette, a slight, non-significant decline from 2002. For susceptible never smokers, offers declined substantially in 2005 (31.3±3.3%) compared to 2002 but were still higher than offers reported by committed never smokers. Overall, 27.3±2.4% of never smokers were offered cigarettes in 2005.

Figure 5.8: Adolescent Committed and Susceptible Never Smokers Offered Cigarettes



	1996	1999	2002	2005
Committed never smokers	35.2	35.1	26.5	24.8
Susceptible never smokers	39.6	39.2	36.9	31.3

Appendix Table A.5.6. presents the data regarding the offer of a cigarette according to demographic characteristics. As expected, older adolescents were more likely to be offered cigarettes since there are more smokers among older age groups. Hispanics and those adolescents who reported their school performance as average or below average were more likely to report being offered a cigarette.

Sources for Ever Smokers

Since 1996, the CTS asked all adolescent ever smokers (excluding puffers) the following question:

> *Which of the following <u>best</u> describes how you <u>usually</u> {get/got} <u>most</u> of the cigarettes that you {smoke/smoked}?* **(O18ab)**
>
> *I {buy/bought} them myself*
>
> *Someone in my home {buys/bought} them for me,*
>
> *Someone in my home {gives/gave} them to me,*
>
> *I {take/took} them from someone in my home without permission,*
>
> *Other people {buy/bought} them for me,*

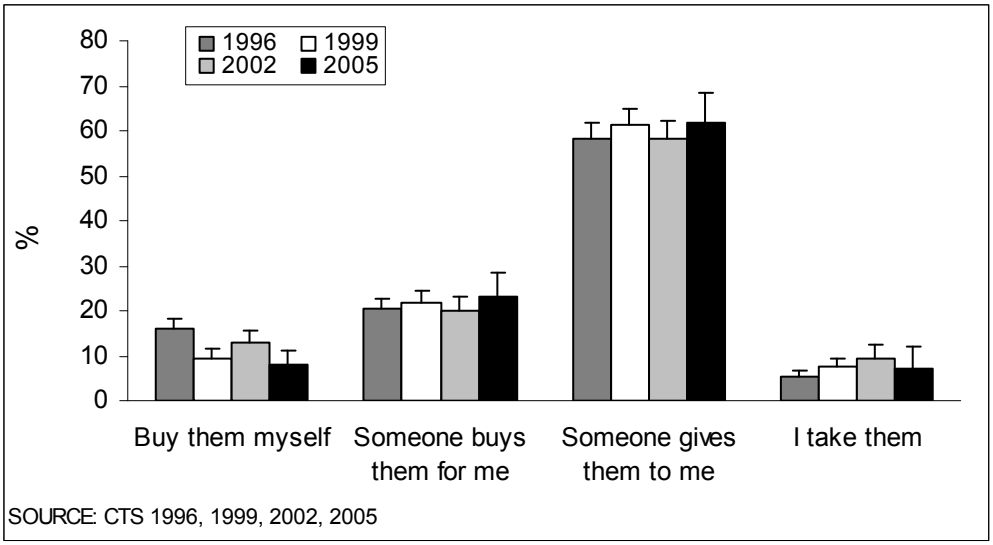
Other people {give/gave} them to me,

I {take/took} them from other people without permission, or

I {take/took} them from a store without permission?

As presented in **Figure 5.9**, these responses were grouped into four categories: (1) buy them myself, (2) someone buys them for me, (3) someone gives them to me, and (4) I take them. We found that among adolescent ever smokers, most obtained their cigarettes from social sources ("Someone gives them to me") and the second most important source was: "Someone buys them for me"

Figure 5.9: Adolescents' Usual Source of Cigarettes



	1996	1999	2002	2005
Buy myself	16.1	9.3	12.7	7.8
Someone buys for me	20.2	21.9	19.8	23.0
Someone gives to me	58.4	61.3	58.2	61.9
I take them	5.3	7.5	9.3	7.3

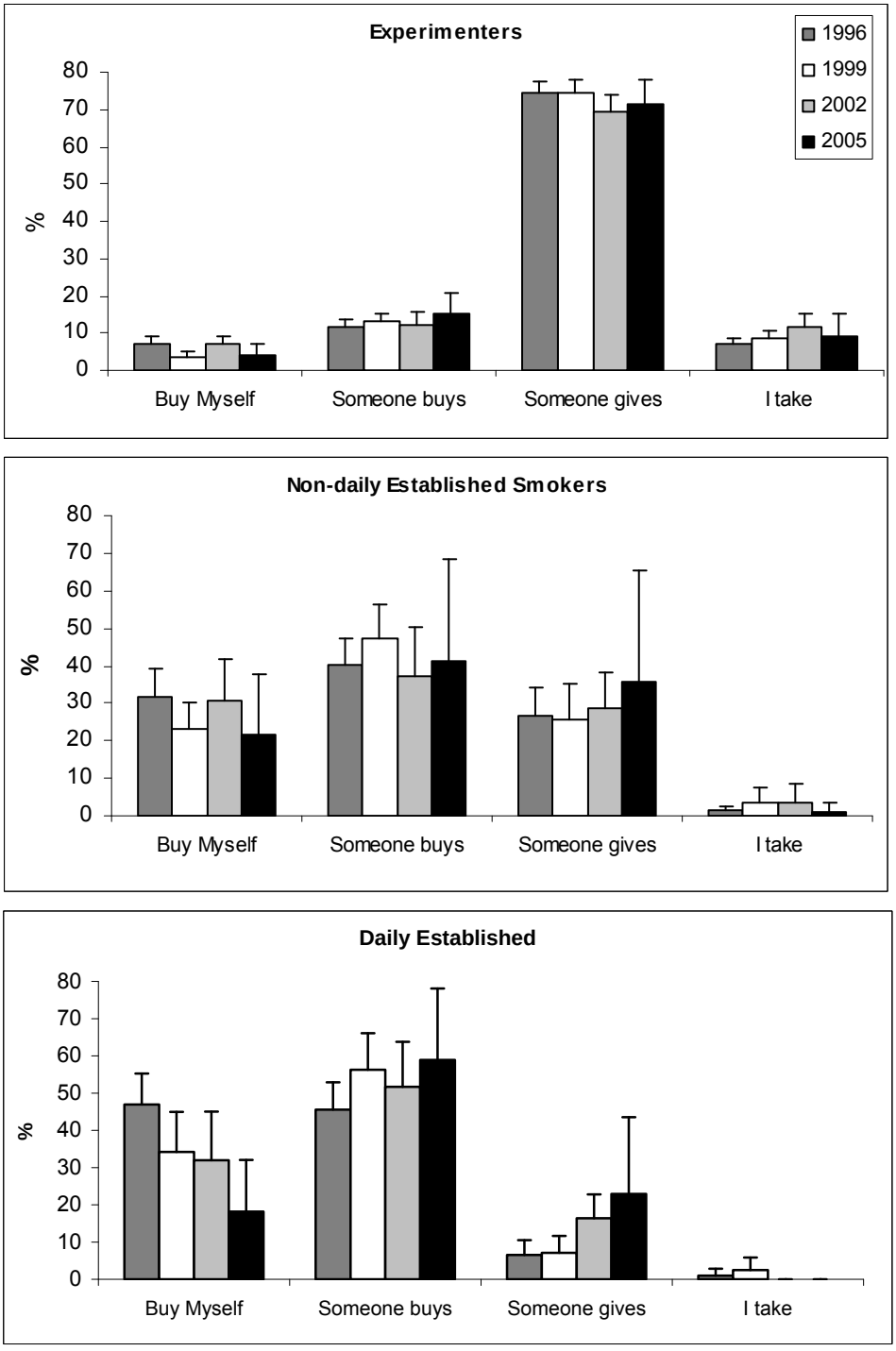
Adolescents continue to get most of their cigarettes from social sources.

This has not changed significantly since 1996, and most adolescent ever smokers reported that someone gave them the cigarettes rather than that they took them or purchased them. However, there has been a significant decline in reports of adolescents buying cigarettes themselves between 1996 and 2005 (a 52% factor decline).

We then analyzed these responses according to level of smoking **(Figure 5.10)**. We found that the more regular or addicted smoker the adolescent was, the more likely it was that they purchased the cigarettes themselves or through someone else. Experimenters who only smoke a cigarette now and then and are not yet established were inclined to get them from someone else. These trends have not changed over time, with the exception of established smokers who appear to be relying less on purchasing cigarettes themselves and relying more on someone else giving the cigarettes to them. This is likely a reflection of more restriction on youth tobacco purchases. In 2005, approximately 20% of both occasional and daily established adolescent smokers reported that they usually bought their own cigarettes, and 41.4±27.3% of occasional

and 58.9±19.2% of daily established smokers reported that others usually bought cigarettes for them. The data plotted in Figure 5.10 are tabulated in Appendix Table A.5.7.

Figure 5.10: Usual Source of Cigarettes by Level of Smoking Experience
Data plotted are presented in Appendix Table A.5.7



SOURCE: CTS 1996, 1999, 2002, 2005

Who is Providing Cigarettes to Adolescent Smokers?

Adolescents who get their cigarettes from others comprise a major portion of the established smokers (Figure 5.10). We attempted to identify these other sources for tobacco control and educational purposes. In 1999 and again in 2005, we investigated these sources further with the following questions:

Who was the person who usually {bought/gave} you cigarettes? **(018ac)**

About how old is this person who usually {bought/gave} you cigarettes? **(O18ad)**

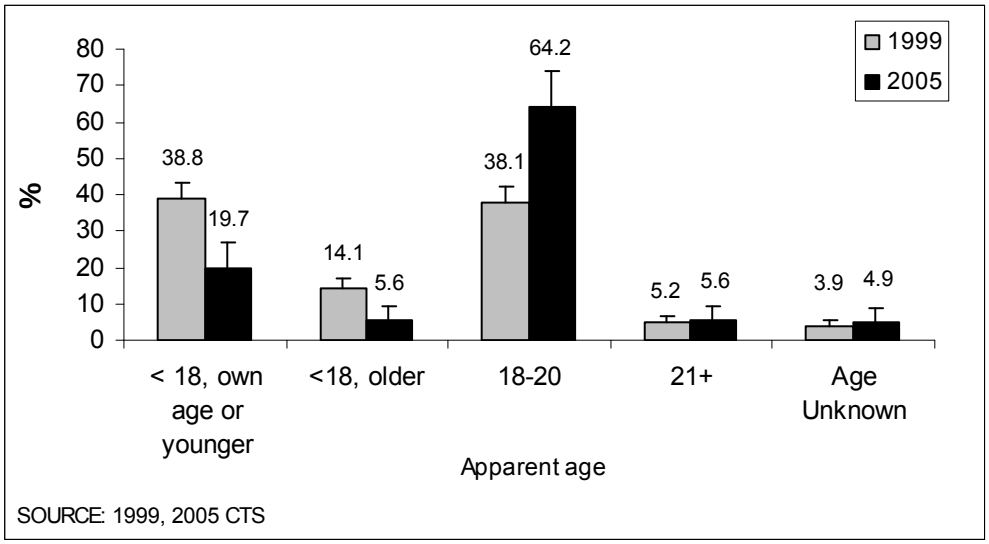
Table 5.1 shows the distribution of people who provided adolescents with cigarettes in 1999 and 2005, according to their relationship to the adolescent. "Another friend" was the major non-commercial source of cigarettes to adolescents. In both 1999 and 2005, approximately 80% of adolescents reported that other friends were the ones who gave or bought them cigarettes. In 2005, 72.9%±5.9 of adolescents whose cigarettes were provided by social sources were given the cigarettes rather than having others buy cigarettes for them.

Table 5.1
Relationship of Those Providing Cigarettes

	1999 %	2005 %
Who Provides Cigarettes		
Brother or sister	3.0 (±1.1)	6.0 (±4.9)
Parent or guardian	1.6 (±0.9)	2.7 (±4.3)
Another family member	2.7 (±1.1)	0.8 (±0.9)
Boyfriend or girlfriend	4.7 (±1.6)	4.8 (±4.6)
Another friend	79.6 (±3.0)	80.8 (±8.1)
Strangers	8.5 (±2.2)	5.0 (±2.8)

Figure 5.11 shows the age distribution of friends (the major social source of cigarettes) who provided cigarettes. There is a clear shift in the age of friends who provided cigarettes to adolescents. In 2005, the majority of adolescents reported getting their cigarettes from friends who were 18-20 years of age (64.2±9.7%) compared to a much lower percent of adolescents in 1999 when the question was last asked (38.1 ±4.0%) (Appendix Table A.5.8). Similarly, in 2005, a smaller proportion of adolescents reported getting cigarettes from friends who were under 18 years or younger and were the same age or younger than the adolescent (19.7±6.9%) compared to 1999 (38.8±4.5%).

Figure 5.11: Age Distribution of Friends who Provided Adolescents with Cigarettes



4. Usual Places of Purchase for Adolescent Smokers

In order to address the effectiveness of restrictions of selling cigarettes to adolescents we wanted to identify their regular places of purchase. Therefore, we asked adolescent smokers who said they buy their own cigarettes whether they often, sometimes, or never bought cigarettes from each of the following outlet types: supermarkets, small neighborhood grocery stores, convenience stores or gas stations, discount tobacco stores, other discount stores such as Wal-Mart, liquor stores, vending machines, or some other location. The discount stores were included for the first time in 1999.

Gas stations, liquor stores, and small grocery stores were the most likely places for adolescents to purchase cigarettes.

As shown in **Table 5.2**, in each year, gas stations were the most popular venue with adolescent cigarette buyers who identified them as the places where they "often" bought cigarettes. Similar to previous years, in 2005 this was followed by liquor stores and small groceries. Lower percentages of adolescents reported getting cigarettes from liquor stores and more obtained them from tobacco discount and other discount stores. However, the confidence intervals are wide and this should be interpreted with caution.

Table 5.2 Types of Stores Where Adolescent Ever Buyers Purchase Cigarettes				
	1996 %	1999 %	2002 %	2005 %
Supermarket	6.3 (±1.9)	5.9 (±2.8)	3.9 (±3.2)	4.5 (±5.6)
Small Grocery	25.7 (±4.3)	26.4 (±5.8)	25.0 (±7.7)	23.0 (±13.2)
Gas Station	47.0 (±5.2)	44.1 (±7.2)	58.3 (±7.5)	43.2 (±16.6)
Tobacco Discount Stores		6.3 (±2.6)	11.4 (±5.5)	16.7 (±19.0)
Other Discount Stores		2.2 (±2.8)	1.7 (±2.2)	4.4 (±7.1)
Liquor Stores	44.4 (±5.0)	41.3 (±7.2)	45.4 (±8.5)	29.8 (±15.2)
Drug Stores	4.9 (±2.4)	4.7 (±3.0)	8.7 (±6.1)	8.1 (±9.6)
Vending Machine	6.3 (±2.5)	2.2 (±2.3)	1.1 (±1.5)	0.0 (±0.0)
Other	7.9 (±2.9)	10.0 (±4.5)	4.9 (±4.3)	10.8 (±8.8)

Based on the Youth Tobacco Purchase Survey in 2006, the highest percentages of adolescents purchased their cigarettes from gas stations, produce markets and other venues, followed by doughnut shops discount/gift stores, and deli/meat markets (CDHS, 2006). The categorization of the purchase venues in the Youth Tobacco Purchase Survey was different from our categorization and could explain the differences in results.

Purchasing to Avoid Taxes or ID Verifications

Similar to adults, adolescent smokers were asked about purchasing over the internet or from Indian Casinos to determine whether these are important sources of cigarettes for them, as they can bypass ID requirements or state excise taxes. Specifically, all ever smokers who said they bought cigarettes in the last year were asked the following:

> *Did you ever buy cigarettes over the Internet?* **(O18aa) (1999-2005)**
>
> *Please tell me if you often, sometimes, or never {buy/bought} cigarettes from . . . casinos or Indian reservations?* **(O19a) (new in 2005)**

Only one adolescent responded positively to each of these questions in 2005. Adolescents have not reported purchasing cigarettes over the internet in previous surveys. While the low numbers of purchasers may prevent us from detecting purchasing from these venues, it appears that adolescent smokers did not utilize these resources of cheap cigarettes where ID verification may not be required.

Summary

The percentage of adults who think enforcement of illegal sales to minors is inadequate has consistently declined, but more than half of those adults in 2005 still believed that enforcement was inadequate. Although the use of fake IDs is very common among adolescents and could explain how adolescents have access to cigarettes, the major determinant of access to cigarettes was the behavior of retailers. Furthermore, adolescent smokers who have regular access to cigarettes have identified the store retailers who do not ask for ID and therefore reported a much lower percentage of ID verification in their last attempted purchase than the rest of the adolescent population. More enforcement and fines for retailers who sell cigarettes to adolescents are needed.

The perception among adolescents of their ability to access cigarettes is an indirect indicator of the success of enforcement against selling cigarettes. Apparently, older adolescents (aged 15-17 years) and adolescents with any smoking experience found ways to get cigarettes since they were much more likely to perceive that it was easy to get cigarettes compared to never smokers and those who were not established smokers. This could also explain the shift in getting cigarettes through social sources from friends older than 18 years old in 2005 compared to getting them from friends younger than 18 years old in 2002. The older adolescents and adult friends who provide them with cigarettes should be the target of a specific media and educational campaign.

Never smokers are still being offered cigarettes. Approximately a quarter of committed never smokers and a third of susceptible never smokers reported being offered cigarettes in 2005. Most adolescent smokers continued to obtain their cigarettes from someone else providing them rather than by purchasing the cigarettes themselves. More established smokers obtained their cigarettes through purchase, either by having someone else purchase cigarettes for them or by buying the cigarettes themselves. Therefore, more regular smokers relied on consistent access to cigarettes through purchase rather than the irregular source of being given cigarettes. Adolescents did not prove to be utilizing alternative sources, such as the Internet, and reported primarily using gas stations, liquor stores and tobacco discount stores.

Adolescents' access to tobacco in 2005 did not decline significantly compared to 2002 but there were indications that more successful enforcement against the sale of tobacco to adolescents was making it more difficult for adolescents to access cigarettes. Nevertheless, much more is needed to reduce the very large percentage of retailers who do not check IDs when selling tobacco. Similarly, more education is needed to target the social sources of cigarettes to those adolescents.

APPENDIX

Chapter 5

Access to Cigarettes among Adolescents

1. Adult Perception of Law Enforcement

Table A.5.1 presents the percentage of adults who believe laws banning the sale of tobacco products to minors have not been adequately enforced (this question was not asked in 1993 or in 2002). In 2005, perceptions that these laws were not adequately enforced were fairly consistent across demographic groups. Asian/Pacific Islanders have been less likely to believe enforcement was inadequate, as have those with less than a high-school education. Older adults (65+) were more likely to believe enforcement has been inadequate. Current smokers were significantly less likely to believe enforcement was inadequate than were never smokers or former smokers.

Appendix Table A.5.1
Adults who Believe Laws Banning Sales of Tobacco Products to Adolescents Have not been Adequately Enforced

	1990 %	1992 %	1996 %	1999 %	2005 %
Overall	75.4 (±0.9)	77.0 (±1.7)	70.2 (±1.2)	56.9 (±1.1)	54.3 (±3.1)
Gender					
Male	76.8 (±1.4)	78.0 (±3.0)	69.4 (±1.5)	57.3 (±1.4)	51.8 (±4.0)
Female	74.0 (±1.4)	76.1 (±1.9)	70.9 (±1.5)	56.5 (±1.5)	56.8 (±3.4)
Age					
18-24	77.2 (±2.0)	78.4 (±6.6)	68.1 (±3.2)	55.1 (±4.0)	55.9 (±3.3)
25-44	77.0 (±1.2)	77.2 (±2.1)	68.9 (±1.8)	54.3 (±1.6)	52.5 (±6.7)
45-64	74.9 (±2.0)	78.7 (±2.5)	73.4 (±2.1)	60.2 (±2.4)	52.8 (±4.1)
65+	68.8 (±3.2)	72.4 (±4.1)	70.2 (±3.4)	60.0 (±3.5)	61.2 (±5.1)
Race/Ethnicity					
African American	76.1 (±3.8)	79.5 (±4.6)	70.9 (±3.9)	61.0 (±4.4)	56.1 (±5.9)
Asian/PI	64.7 (±4.6)	68.7 (±5.9)	56.6 (±4.4)	50.1 (±4.4)	49.7 (±5.5)
Hispanic	70.2 (±2.2)	73.0 (±4.0)	67.4 (±2.8)	46.7 (±2.2)	52.7 (±7.4)
Non-Hispanic White	78.4 (±1.0)	79.3 (±1.6)	73.6 (±1.1)	62.5 (±1.4)	56.4 (±2.9)
Education					
Less than 12 years	68.6 (±2.5)	70.1 (±6.4)	64.0 (±3.3)	42.5 (±3.7)	46.4 (±8.5)
High school graduate	74.9 (±1.6)	76.2 (±2.6)	67.7 (±2.0)	56.7 (±2.3)	56.5 (±4.7)
Some college	78.9 (±1.5)	81.2 (±1.7)	72.1 (±2.2)	60.8 (±2.0)	56.5 (±4.5)
College graduate	79.9 (±1.4)	81.5 (±2.5)	75.3 (±1.7)	63.7 (±1.9)	56.1 (±3.7)
Smoking Status					
Never smoked	76.0 (±1.6)	77.8 (±2.1)	72.1 (±1.7)	58.1 (±1.7)	57.3 (±4.6)
Former smoker	77.1 (±1.7)	79.2 (±2.6)	71.7 (±1.9)	61.2 (±1.7)	54.3 (±4.5)
Current smoker	71.6 (±1.2)	72.0 (±2.6)	62.2 (±1.5)	46.9 (±1.6)	41.6 (±3.0)

Table A.5.2 shows some demographic breakout for adolescents and young adults (< 30 years old) who were asked to show identification the last time they wanted to purchase cigarettes. While the percentage of adolescents (<18 years of age) increased from 2002 to 2005, less than one third were asked for identification. Females were significantly more likely to be asked than males in both years. Non-Hispanic Whites were least likely to be asked. Incidence of being asked declined with increased smoking experience; this may have been because more experienced smokers tend to be older, or because they tend to purchase at the same store, where clerks may become familiar with them, or where they know they are unlikely to be asked for identification.

Table A.5.2
Adolescents and Young Adults (< 30 years old) Asked to Show ID Last Time They Wanted to Buy Cigarettes

	2002 %	2005 %
Overall	44.9 (±2.6)	43.4 (±5.4)
Gender		
Male	41.1 (±3.6)	39.3 (±5.5)
Female	52.3 (±3.6)	52.2 (±8.3)
Age		
< 18	24.5 (±7.8)	31.2 (±17.0)
18-21	54.7 (±5.0)	57.7 (±8.4)
22-25	50.1 (±3.9)	48.2 (±9.3)
26-29	31.3 (±5.1)	26.6 (±11.2)
Race/Ethnicity		
African American	40.8 (±14.9)	41.0 (±23.9)
Asian/PI	47.7 (±8.6)	49.3 (±18.0)
Hispanic	49.2 (±5.9)	51.8 (±10.3)
Non-Hispanic White	41.3 (±2.9)	37.6 (±7.5)
Smoking Stauts		
Experimenter	54.2 (±7.7)	49.4 (±16.1)
Occasional smoker	46.5 (±4.9)	44.2 (±10.0)
Daily smoker	42.3 (±3.4)	41.4 (±6.9)

2. Adolescents Who Think Cigarettes are Easy to Obtain

Table A.5.3 shows the percentage of adolescent never smokers who perceived that cigarettes were easy to obtain according to demographic subgroup. Overall, there was a significant decline between 2002 and 2005. Although all demographic subgroups showed declines, the decline was not significant for older adolescents (16-17 years old), males, or for those who perceived their school performance as better or much better than average; the only race/ethnic group whose decline was significant was Hispanics.

A.5.3
Adolescent Never Smokers Who Think It is Easy to Get Cigarettes

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	57.9 (±2.2)	56.9 (±1.9)	57.2 (±1.4)	48.2 (±1.4)	45.9 (±1.9)	39.8 (±2.5)
Gender						
Male	61.2 (±3.2)	57.4 (±2.8)	58.0 (±2.0)	48.7 (±2.3)	44.0 (±2.4)	40.5 (±4.3)
Female	54.8 (±3.0)	56.5 (±3.0)	56.3 (±2.2)	47.2 (±2.6)	47.9 (±2.5)	39.1 (±3.7)
Age						
12-13	37.7 (±4.3)	36.1 (±3.4)	36.6 (±2.6)	26.2 (±1.8)	23.5 (±2.6)	16.3 (±2.8)
14-15	64.8 (±3.6)	67.6 (±3.0)	66.1 (±3.1)	53.2 (±3.2)	52.8 (±3.1)	42.1 (±4.6)
16-17	86.8 (±3.1)	84.1 (±3.6)	81.9 (±3.1)	78.4 (±3.8)	73.4 (±3.2)	68.6 (±6.6)
Race/Ethnicity						
African American	56.6 (±9.9)	62.1 (±7.7)	59.3 (±5.6)	48.9 (±4.7)	45.5 (±6.5)	44.5 (±10.4)
Asian/PI	51.5 (±9.2)	48.0 (±6.9)	53.0 (±5.3)	44.4 (±6.5)	41.3 (±5.0)	38.3 (±10.4)
Hispanic	57.2 (±3.9)	53.0 (±4.5)	50.0 (±2.5)	43.7 (±3.2)	42.5 (±3.0)	34.3 (±4.3)
Non-Hispanic White	59.7 (±2.0)	60.5 (±2.1)	63.8 (±2.1)	53.0 (±2.5)	51.7 (±2.6)	46.5 (±3.7)
School Performance						
Much better than average	61.7 (±5.6)	56.9 (±4.7)	61.3 (±3.0)	50.4 (±3.2)	45.9 (±3.3)	40.8 (±5.9)
Better than average	58.0 (±3.8)	58.6 (±3.0)	59.5 (±2.4)	49.5 (±2.9)	48.8 (±2.7)	41.5 (±3.8)
Average and below	55.7 (±3.8)	55.3 (±3.6)	51.3 (±2.4)	45.1 (±2.7)	42.8 (±3.2)	37.4 (±4.6)

Table A.5.4 shows the demographic breakout of adolescents (all smoking status groups) who thought it would be easy to buy a few cigarettes. Although the perception that it is easy to buy a few cigarettes declined in all groups, the declines between 2002 and 2005 were significant only for younger adolescents (aged 12-14 years) and females. With the exception of older adolescents (aged 15-17 years), perceptions that it would be easy to buy a few cigarettes declined to rates of less than half the levels in 1996. Younger adolescents were less than half as likely to believe they could buy even a few cigarettes than were older adolescents (18.2±2.6% vs. 44.9±3.6%).

Table A.5.4
Adolescents Who Think It is Easy to Buy a Few Cigarettes

	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1996-2005 %	Factor Decrease 2002-2005 %
Overall	69.1 (±1.2)	47.4 (±1.3)	36.1 (±1.3)	31.0 (±2.2)	55.2	14.1
Gender						
Male	68.8 (±1.8)	49.9 (±1.7)	36.7 (±1.8)	33.1 (±2.9)	51.9	9.8
Female	69.5 (±1.6)	44.8 (±2.0)	35.5 (±2.0)	28.7 (±3.6)	58.7	19.1
Age						
12-14	54.5 (±1.6)	35.0 (±1.9)	23.8 (±1.7)	18.2 (±2.6)	66.6	23.4
15-17	83.8 (±1.5)	60.2 (±2.2)	49.4 (±2.2)	44.9 (±3.6)	46.4	9.0
Race/Ethnicity						
African American	69.1 (±4.2)	51.3 (±5.7)	35.4 (±5.6)	30.4 (±8.3)	56.0	14.1
Asian/PI	64.0 (±3.0)	42.8 (±4.3)	35.0 (±3.9)	30.0 (±8.5)	53.2	14.5
Hispanic	64.6 (±2.6)	46.1 (±2.4)	34.9 (±2.3)	29.7 (±3.5)	54.0	14.8
Non-Hispanic White	73.5 (±1.6)	49.3 (±2.1)	37.6 (±1.9)	32.9 (±3.1)	55.2	12.5
School Performance						
Much better than average	65.6 (±2.6)	47.3 (±3.0)	34.6 (±2.7)	28.2 (±3.8)	57.1	18.6
Better than average	71.6 (±2.1)	47.5 (±2.6)	36.2 (±2.4)	32.2 (±3.9)	55.0	11.0
Average and below	68.9 (±2.0)	47.5 (±2.1)	36.9 (±2.6)	31.6 (±2.9)	54.1	14.2

Table A.5.5 presents the results (all smoking status groups) for demographic groups of adolescents who thought it would be easy to buy a pack of cigarettes. All groups except Asian/Pacific Islanders showed decreases from 2002, but the decreases were significant only for younger adolescents (12-14 years old), females, Hispanics, and those who perceived their school performance as average or below. Younger adolescents were significantly less likely than older ones to believe they could buy a pack of cigarettes, but there were no other significant differences between groups in 2005.

Table A.5.5.
Adolescents Who Thought It Would be Easy to Buy a Pack

	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1996-2005 %	Factor Decrease 2002-2005 %
Overall	51.5 (±1.4)	26.7 (±1.3)	21.7 (±1.0)	17.6 (±1.6)	65.9	19.1
Gender						
Male	52.4 (±1.9)	28.0 (±2.0)	22.1 (±1.6)	19.5 (±2.8)	62.8	11.7
Female	50.6 (±1.8)	25.4 (±1.8)	21.3 (±1.6)	15.5 (±2.4)	69.4	27.5
Age						
12-14	33.3 (±2.2)	13.1 (±1.5)	10.1 (±1.4)	6.5 (±1.6)	80.5	36.0
15-17	69.8 (±1.9)	40.8 (±1.9)	34.2 (±1.9)	29.6 (±3.0)	57.6	13.4
Race/Ethnicity						
African American	55.3 (±4.9)	28.2 (±4.8)	22.7 (±4.7)	17.1 (±9.2)	69.1	24.7
Asian/PI	43.1 (±4.6)	26.8 (±4.7)	18.2 (±3.4)	19.3 (±7.7)	55.3	-6.1
Hispanic	46.2 (±2.8)	24.9 (±2.1)	21.2 (±2.0)	15.0 (±2.3)	67.4	29.0
Non-Hispanic White	56.5 (±1.9)	28.1 (±1.8)	23.3 (±1.6)	19.8 (±2.5)	65.0	15.3
School Performance						
Much better than average	49.1 (±2.6)	27.4 (±3.2)	20.6 (±2.1)	16.8 (±3.5)	65.7	18.5
Better than average	52.7 (±2.3)	26.9 (±1.9)	20.3 (±1.7)	18.6 (±3.1)	64.8	8.3
Average and below	51.9 (±2.2)	26.2 (±2.3)	23.7 (±1.7)	17.1 (±3.0)	67.0	27.7

3. Adolescent Never Smokers Offered a Cigarette

Table A.5.6 shows the percentage of adolescent never smokers offered a cigarette by demographic categories. While the decline from 2002 to 2005 was significant overall, it was significant within subgroups only for Non-Hispanic Whites and those whose self-perceived school performance was better than average. Older adolescents continued to be more likely to be offered a cigarette than younger ones. While males were still more likely to be offered a cigarette than females, this gap is closing. In 2005, Hispanics were by far the most likely ethnic group to be offered cigarettes. Those with better school performance continued to be less likely to be offered a cigarette.

Table A.5.6.
Adolescent Never Smokers Offered a Cigarette

	1996 %	1999 %	2002 %	2005 %
Overall	37.4 (±1.8)	37.0 (±1.7)	31.5 (±1.4)	27.5 (±2.4)
Gender				
Male	40.1 (±2.2)	39.1 (±2.2)	33.1 (±1.9)	28.2 (±3.6)
Female	34.7 (±2.4)	34.8 (±2.5)	29.8 (±2.3)	26.7 (±3.5)
Age				
12-13	21.5 (±2.0)	20.8 (±2.3)	16.0 (±2.0)	12.7 (±2.7)
14-15	44.6 (±2.9)	41.7 (±3.0)	34.7 (±2.9)	28.7 (±4.7)
16-17	56.3 (±3.4)	58.5 (±3.3)	52.6 (±3.8)	45.4 (±5.7)
Race/Ethnicity				
African American	41.1 (±6.3)	41.1 (±5.5)	34.0 (±5.4)	19.9 (±9.5)
Asian/PI	27.5 (±4.6)	28.4 (±5.1)	22.4 (±5.1)	17.1 (±6.0)
Hispanic	42.1 (±3.3)	41.7 (±2.8)	36.4 (±3.3)	34.0 (±5.1)
Non-Hispanic White	36.2 (±2.2)	34.5 (±2.6)	29.1 (±2.1)	24.1 (±2.5)
School Performance				
Much better than average	33.5 (±2.9)	30.2 (±3.4)	24.4 (±2.6)	22.5 (±5.8)
Better than average	38.0 (±2.5)	34.3 (±2.5)	31.4 (±2.3)	25.4 (±3.3)
Average and below	39.9 (±2.9)	43.7 (±2.9)	36.7 (±2.7)	33.2 (±4.4)

Usual Source of Cigarettes

Table A.5.7 presents the time trends of usual source of cigarettes to adolescents according to the level of smoking

Table A.5.7.
Usual Source of Cigarettes

	1996 %	1999 %	2002 %	2005 %
Buy myself				
Experimenter	7.3 (±1.6)	3.7 (±1.4)	6.9 (±2.1)	4.2 (±3.1)
Occasional Established	31.6 (±7.7)	23.2 (±7.0)	30.8 (±11.1)	21.7 (±15.8)
Daily Established	46.9 (±8.3)	34.2 (±10.8)	32.0 (±13.1)	18.2 (±13.9)
Someone buys for me				
Experimenter	11.6 (±2.0)	13.1 (±2.1)	12.3 (±3.6)	15.2 (±5.3)
Occasional Established	40.1 (±7.2)	47.4 (±9.1)	37.1 (±13.1)	41.4 (±27.3)
Daily Established	45.6 (±7.3)	56.3 (±9.8)	51.7 (±12.1)	58.9 (±19.2)
Others Give				
Experimenter	74.3 (±3.1)	74.4 (±3.6)	69.2 (±4.8)	71.3 (±6.6)
Occasional Established	26.9 (±7.3)	25.7 (±9.4)	28.6 (±9.7)	35.7 (±29.9)
Daily Established	6.5 (±4.0)	7.1 (±4.5)	16.4 (±6.4)	22.9 (±20.6)
I take				
Experimenter	6.8 (±1.7(	8.8 (±2.1)	11.6 (±3.8)	9.3 (±5.8)
Occasional Established	1.4 (±1.3)	3.8 (±3.8)	3.5 (±4.9)	1.1 (±2.3)
Daily Established	1.0 (±1.9)	2.5 (±3.4)	0.0 (±0.0)	0.0 (±0.0)

Table A.5.8 shows a shift in the age of those providing cigarettes to adolescents to older ages in 2005 compared to 1999. In 2005, 69.1% reported that strangers who provided cigarettes were 21 years old or over, compared to only 39.5% in 1999. Similarly, 64.2% of adolescents reported that friends who provided them cigarettes in 2005 were 18 to 20 years old compared to 38.1% of adolescents who reported this in 1999.

Appendix Table A.5.8
Age distribution of social sources of cigarettes to adolescents

	<18 years, own age or younger		<18 years, older		18-20 years		21+ years		Age Unknown	
	1999 %	2005 %	1999 %	2005 %	1999 %	2005 %	1999 %	2005 %	1999 %	2005 %
Family member	15.4 (±9.7)	2.7 (±5.7)	8.0 (±10.2)	1.5 (±3.3)	30.7 (±12.7)	41.6 (±47.2)	44.3 (±14.9)	53.1 (±43.4)	1.7 (±3.3)	1.1 (±2.4)
Friend	38.8 (±4.5)	19.7 (±6.9)	14.1 (±3.1)	5.6 (±3.6)	38.1 (±4.0)	64.2 (±9.7)	5.2 (±1.5)	5.6 (±3.5)	3.9 (±1.7)	4.9 (±4.1)
Stranger	0.6 (±1.1)	0.0 (±0.0)	0.0 (±0.0)	8.2 (±17.2)	32.4 (±12.3)	19.9 (±14.8)	39.5 (±15.4)	69.1 (±21.5)	27.5 (±13.1)	2.8 (±5.8)
Others buy	4.3 (±2.1)	0.0 (±0.0)	2.8 (±2.8)	0.0 (±0.0)	57.5 (±6.7)	74.9 (±11.9)	25.4 (±6.4)	20.3 (±10.8)	10.1 (±4.6)	4.8 (±5.3)
Others give	45.6 (±5.1)	24.0 (±8.2)	16.7 (±3.6)	7.7 (±4.4)	27.7 (±4.2)	51.5 (±12.9)	5.3 (±2.1)	11.8 (±9.7)	4.7 (±2.1)	5.1 (±4.9)

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Chapter 6

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Chapter 6

Smoke-free Schools: Tobacco Education and Policy Compliance

KEY FINDINGS

- The percentage of students who recalled having had a class on the health risks of smoking decreased from 80.1±1.0% in 2002 to 73.4±2.3% in 2005, a level similar to that 15 years earlier in 1990. This decrease was particularly pronounced for adolescents 12-13 years old.

- The percentage of students who believed that classes on the health risks of smoking were effective remained stable (from 54.4±1.9% in 2002 to 56.7±2.8% in 2005). However, the perceived effectiveness of these classes has been greatest among 12-13-year-olds.

- Approximately one-fifth (19.6±2.5%) of students in 2005 reported seeing someone smoking on school property in the past two weeks. More than twice as many public school students as private school students (21.3±2.8% vs. 8.4±3.3%) reported seeing smoking.

- Approximately two-thirds, 65.1±2.7%, of students reported that students who are caught smoking in school would receive a suspension. This percentage was higher in public schools (67.0±2.9%) than private schools (53.0±8.3%).

- Students' perception that teachers smoke on school grounds has remained stable. In 2005, 13.3±3.3% of students perceived that teachers smoked at school, similar to the level in 2002 (13.0±1.3). However, over twice the percentage of private school students reported seeing teachers smoke on school grounds compared to public school students: 26.0±9.9% vs. 12.0±3.2% in 2005.

- The vast majority of all students supported a complete ban on smoking on school grounds (91.6±1.4% in 2005). Of current smokers, 69.8±10.7% expressed this preference in 2005.

- Approximately three-fourths (74.5±3.0%) of non-smokers and two-thirds (67.6±10.0%) of current smokers reported that smokers complied with smoke-free school policies in 2005.

Chapter 6

Smoke-free Schools: Tobacco Education and Policy Compliance

Introduction

School-based prevention efforts are a major component of comprehensive community-based tobacco control programs. Prior to inception of the California Tobacco Control Program (CTCP), school-based smoking prevention consisted primarily of bans on student smoking on school grounds (Pentz et al., 1989; USDHHS, 2000). Anti-tobacco program funding became available to schools if they were tobacco-free as of July 1, 1995, as part of Assembly Bill 99 legislation that was passed in 1991. Further, since 1995, California has required school-based anti-tobacco education for grades 4-8.

Students are generally a captive audience for health educators and tobacco control advocates. The anti-tobacco programming in schools, in the form of the Tobacco Use Prevention Education (TUPE) program, is an integral component of CTCP. TUPE provides entitlement funds to public schools for tobacco education in grades 4-8, and competitive grants for tobacco education in grades 9-12 (Fishbein et al., 1998). Because of TUPE, by 2005, nearly all adolescents should have been exposed to a smoking prevention lesson in school, especially those in grades 4-8. However, passage of the No Child Left Behind Act in 2002 increased focus on standardized testing for students, particularly in the areas of math and reading. Students are tested every year from grades 3-8 (typically ages 8-13) and then again in high school. This focus could affect the frequency of classes that highlight the health effects of smoking. Furthermore, limiting the amount of time dedicated to educating adolescents about the health effects of smoking could attenuate effectiveness of such classes. In this chapter, students' recall and opinions of such lessons are described.

The importance of school-based smoking prevention lies in the fact that most smokers initiate and become addicted to smoking in their adolescent school years. The school environment is important to the establishment of social norms for adolescents, as students learn and reinforce social norms among themselves. Another important factor is the presence of teachers as role models for many students. Research has shown that students' perceptions of their teachers' smoking on school grounds undermine support for no-smoking policies in schools (Trinidad, et al., 2005). Based on evidence indicating that school staff influence student smoking, many states have become increasingly interested in encouraging their school districts to ban smoking in schools. Because TUPE funds were available only to public schools, there may be marked differences between public and private school students' perceptions of smoking on school grounds. This chapter examines the extent to which students believe that their peers and teachers comply with the school smoking ban, students' support for smoke-free school grounds, and perceived compliance with smoke-free school policies.

Continued follow-up and evaluation of the progress of tobacco control in schools among students and teachers is an integral part of understanding the dynamics of change in the social norms and perceptions of students about tobacco use. The lack of progress in some aspects,

such as the frequency and effectiveness of tobacco education classes, could trigger plans to adjust current approaches.

In this chapter, we attempt to address some of the above issues among school-age participants in the California Tobacco Survey (CTS). Section 1 analyzes students' exposure to anti-smoking curricula and the perceived effectiveness of such curricula. Section 2 examines trends in student compliance with school smoking regulations. Section 3 examines trends in perceptions of teachers' smoking. Section 4 analyzes trends in students' support for smoke-free school grounds.

1. Classes on the Health Risks of Smoking

Trends in Smoking Health Risk Classes at Schools: 1990-2005

In 2005, the percentage of students who had taken a course in which the health risks of smoking were discussed decreased substantially, especially among young adolescents.

As discussed above, because of the TUPE component of CTCP, nearly all students in 2005 should have had a class that discussed the health dangers of smoking. To assess the extent to which students recalled having been exposed to such curriculum, the 1990, 1993, 1996, 1999, 2002 and 2005 CTS asked the following:

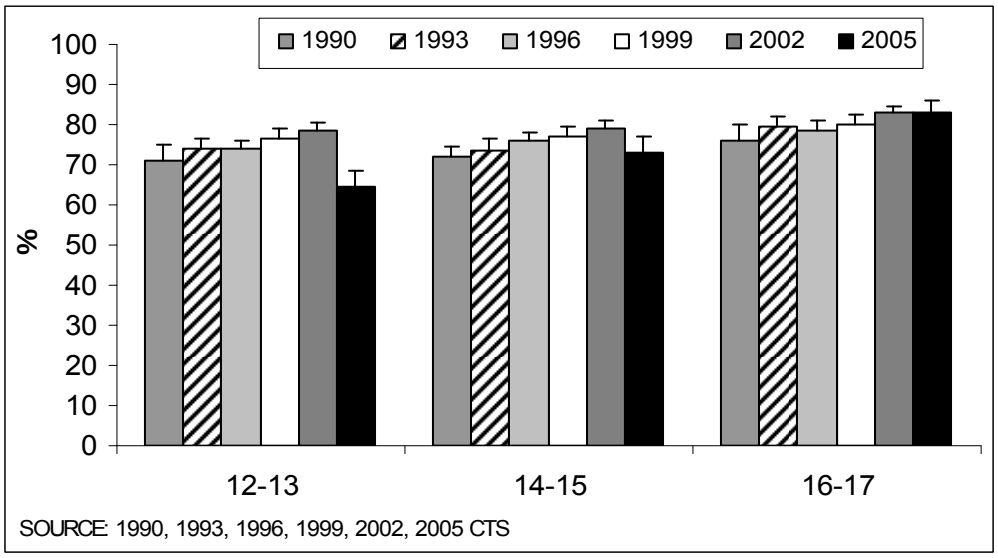
> *Have you ever taken a class or course at school in which the health risks of smoking were discussed?* **(X8)**

The question did not address a specific time when the students would have taken the course on the health risks of tobacco because there is no uniform time period or grade in which such a curriculum should be delivered. The goal was to assess any recall by students of having a class to estimate the percentage of students exposed to such classes during their school years.

In 2005, the percentage of adolescents who recalled ever having such a class was 73.4±2.3%. This percentage was similar to the level in 1990, which was 72.9±1.8%. After steadily increasing in each CTS survey from 1990 to 2002, when the level of recall was 80.1±1.0%, the decrease in recall for 2005 represents a 15-year setback.

Figure 6.1 shows that older adolescent age groups were more likely to report having taken a class on the health risks of smoking, and that the decline was evident among younger age groups of adolescents. The question in the CTS did not specify a time period for which such a class was taken. Older adolescents, who had more years of schooling, may have recalled classes from a period when they were more prevalent. Thus, among 16-17-year-olds, the recall of such classes has shown an increasing trend that has leveled off since 2002. Among 14-15-year-olds, there was an increasing trend from 1990-2002 that declined non-significantly in 2005. After a steady increase from 71.0±3.8% in 1990 to 78.5±2.1% in 2002, the percentage of 12-13-year-olds who recalled a class on the health dangers of smoking fell dramatically to 64.4±4.1% in 2005. This represents a factor decrease of 18% and is well below the starting level in 1990.

Figure 6.1: Students Who Recall Taking a Class on the Health Dangers of Smoking, by Age



	12-13	14-15	16-17
1990	71.0	71.8	76.2
1993	73.8	73.5	79.6
1996	74.0	76.0	78.3
1999	76.4	77.2	80.2
2002	78.5	79.1	82.9
2005	64.4	73.2	83.1

Recall of such classes was lower among those who reported performing at average or below in school in 2005. The percentages of students who recalled having a class on the health risks of smoking, analyzed by demographics, school performance, and school type, are presented in Appendix Table A.6.1.

Adolescent Perception of Health Class Effectiveness in Deterring Smoking, by Age

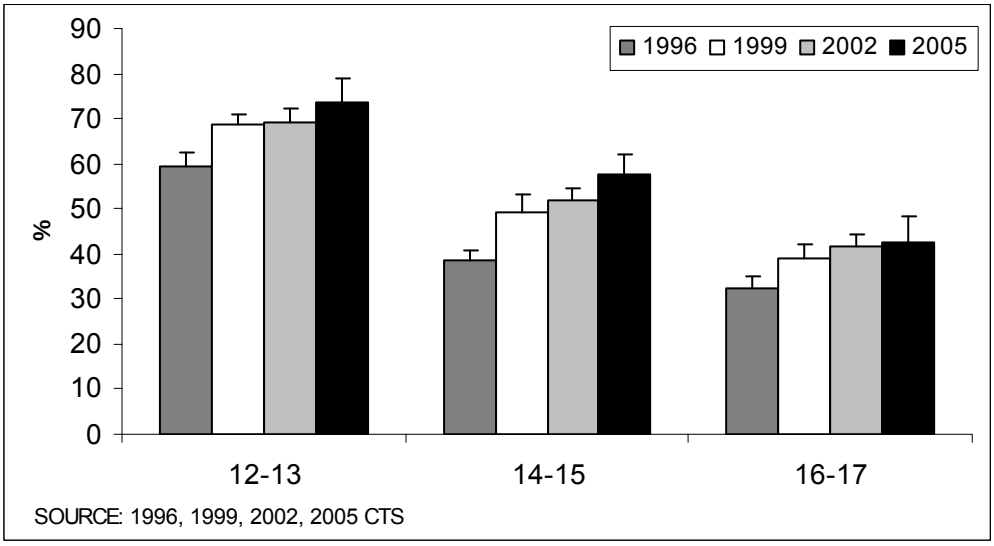
In 2005, younger students were more likely to perceive that the health classes on smoking were effective.

To measure the impact of classes on the health dangers of smoking, adolescents were asked about their perceptions regarding the effectiveness of such classes in deterring smoking. Respondents to the 1996, 1999, 2002 and 2005 CTS who reported having a class on the health effects of smoking, were asked the following:

> *Do you think that kids who took the class are more against smoking, less against smoking, or there is no change in attitude toward smoking as a result of taking the class?* **(X8a)**

Among students who recalled taking a class on the health risks of smoking, in 2005, 56.7±2.8% believed that the class was effective in deterring students against smoking. This represents a factor increase of 32% since 1990, when only 43.1±1.6% of students reported this. **Figure 6.2** presents the perceived effectiveness of such classes by age group. Despite the decline in recall of taking classes on the health risks of smoking (presented in Figure 6.1 above), there was an increasing trend in the perceived effectiveness of such classes evident among 12-13-year-olds and 14-15-year-olds. Thus, the classes appeared to be most effective among younger adolescents.

Figure 6.2: Students Who Think That Peers Are more Against Smoking after Taking the Class on the Health Effects of Smoking, by Age



	1996	1999	2002	2005
12-13	59.5	68.5	69.1	73.6
14-15	38.6	49.4	51.8	57.6
16-17	32.2	39.0	41.5	42.4

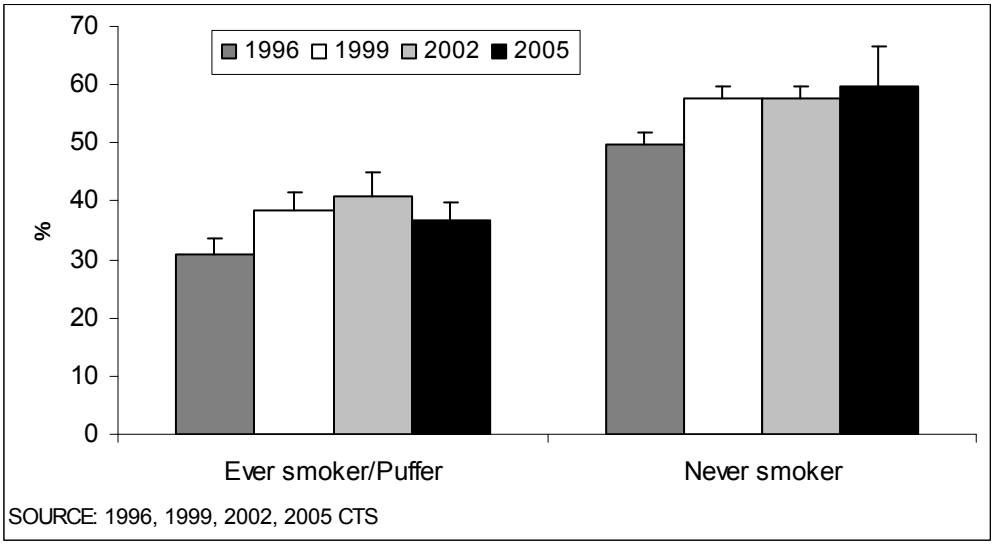
Appendix Table A.6.2 shows that students who reported performing at average or below average in school were less likely to perceive that the class on the health effects of smoking was effective. The table presents data on the perceived effectiveness of classes on the health effects of smoking by demographics.

Adolescent Perception of Health Class Effectiveness in Deterring Smoking, by Smoking Status

Perceptions of the effectiveness of health classes on smoking have been level since 1999, and remain higher among non-smokers.

Adolescents' perceptions regarding the effectiveness of classes on the health dangers of smoking were associated with whether they had ever smoked. **Figure 6.3** shows that 59.7±6.7% of never smokers in 2005 perceived that the class was effective. The percentage of never smokers who perceived class effectiveness has been level since 1999 at slightly under 60%. Among adolescent ever smokers, this percentage was 36.8±3.1% in 2005, a non-significant change from 1999.

Figure 6.3: Students Who Think That Peers Are More Against Smoking After Taking the Class on the Health Effects of Smoking, by Smoking Status



	1996	1999	2002	2005
Ever smoker/Puffer	30.8	38.3	40.7	36.8
Never smoker	49.8	57.6	57.6	59.7

2. Student Compliance with Smoke-free School Policies

Perceived Compliance with Smoke-free School Policies

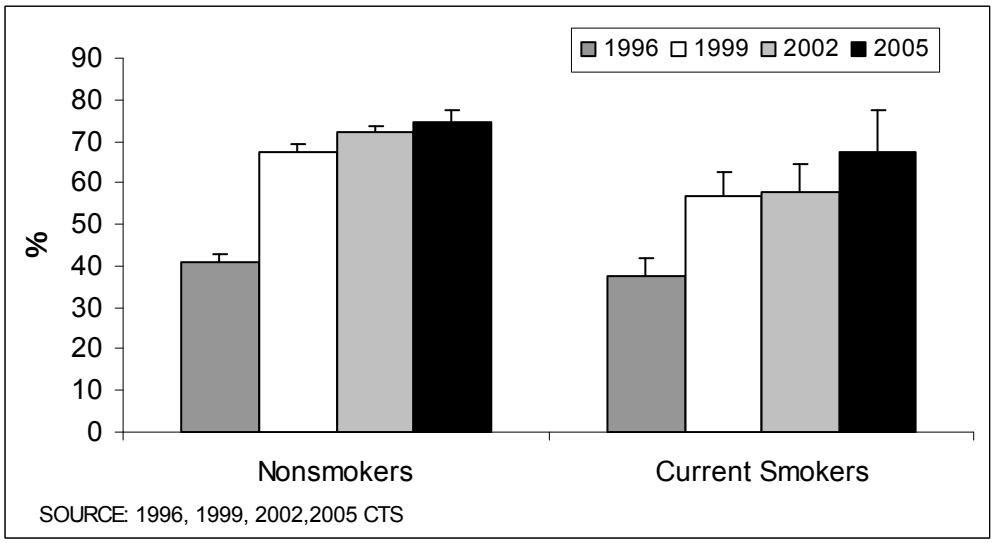
Approximately 75% of non-smokers and 68% of current smokers reported that smokers complied with smoke-free school policies in 2005.

This section assessed trends in students' perceived compliance with smoke-free school policies. The 1996, 1999, 2002 and 2005 CTS asked students the following question to ascertain the level of compliance with the law banning smoking on school grounds:

> *How many students who smoke obey the rule prohibiting smoking on school property?* **(X3A)**

Figure 6.4 shows the percentage of adolescents who perceived that most or all students who smoked obeyed the rule not to smoke on school property. By 2005, almost three-fourths (74.5±3.0%) of non-smoking students believed that the school smoking ban was generally obeyed. As expected, perceived compliance among smokers was lower compared to non-smokers in each CTS year, but approximately two-thirds (67.6±10.0%) reported compliance in 2005. Regardless of smoking status, the primary increase in perceived compliance occurred between 1996 and 1999, with an increasing trend since 1999.

Figure 6.4: Students Who Believe Most or All Students Who Smoke Obey the Rule Not to Smoke on School Property



	1996	1999	2002	2005
Nonsmokers	41.1	67.5	72.2	74.5
Current smokers	37.4	57.0	57.7	67.6

Among girls, there was a significant increase in reporting that most or all students obey the school no-smoking rule from 2002 to 2005 (Appendix Table A.6.3). In 2005, older adolescent age groups reported lower compliance with the smoke-free school policies among students who smoked. Those who performed worse in school also reported lower compliance. Appendix Table A.6.3 also presents percentages of adolescents who perceived that students who smoked obeyed the rule prohibiting smoking on school grounds by demographics and school type.

Witnessing Smoking at School

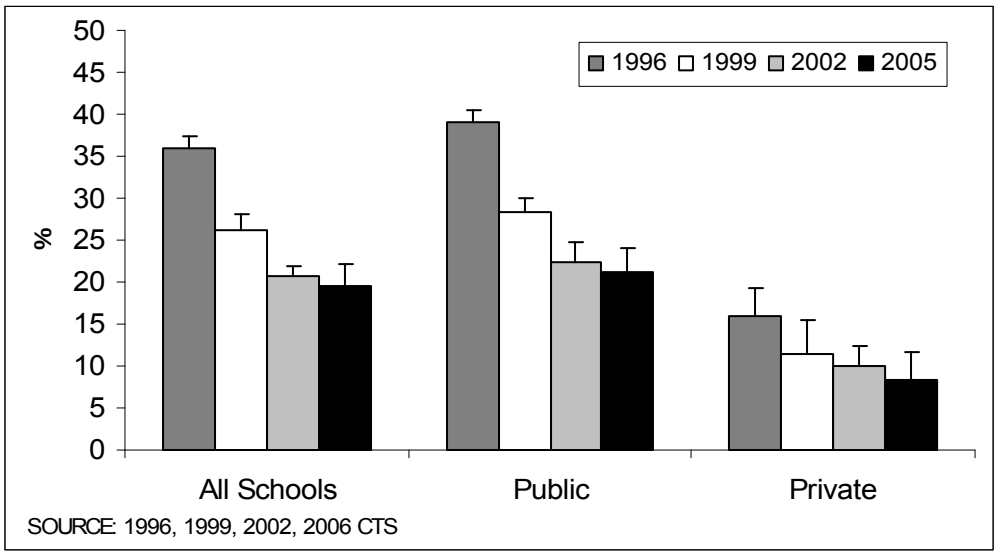
In 2005, 19.6% of adolescents had witnessed someone smoking at school in the past 2 weeks, roughly equivalent to the level in 2002.

Another measure of compliance with smoke-free policies at schools is whether students have witnessed others smoking at school. The 1996, 1999, 2002 and 2005 CTS asked adolescents the following question:

> *During the past 2 weeks have you seen anyone smoking on school property?* **(X5b)**

Figure 6.5 shows that in 2005, 19.6±2.5% of adolescents had witnessed someone smoking at school in the past 2 weeks. In 1996, 36.0±1.5% of students had seen someone smoking at school; this declined to 26.3±1.7% by 1999 and further declined to 20.8±1.2% by 2002. Thus, the 2005 level was roughly equivalent to the level in 2002. These levels were consistent with the increased perception of compliance presented above. Reporting seeing anyone smoking on school property varied depending on whether students attended public or private school. In each year, including 2005, over twice as many public school students reported seeing anyone smoking on school property, compared to private school students (21.3±2.8% vs. 8.4±3.3% in 2005). There has been a decreasing trend since 1996 for both school types.

Figure 6.5: Students Who Have Seen Anyone Smoking in School in the Last Two Weeks



	1996	1999	2002	2005
All schools	36.0	26.3	20.8	19.6
Public	39.0	28.3	22.3	21.3
Private	16.0	11.4	10.4	8.4

Appendix Table A.6.4 presents percentages of adolescents who have seen anyone smoking on school grounds in the past 2 weeks, analyzed by demographics, school performance and school type. Although there were declines between 2002 and 2005, none were statistically significant. However, there have been large declines since 1996 across all groups. In 2005, a smaller percentage of younger adolescents (12-13-year-olds) reported seeing anyone smoke in school compared to older adolescent age groups.

Student Perceptions of Consequences of Being Caught Smoking on School Grounds

A new question in the 2005 CTS asked:

What happens to students who are caught smoking on school grounds? **(X9)**

Approximately two-thirds (65.1±2.7%) of students reported that students who get caught smoking on school grounds would receive a suspension. This percentage was higher in public schools (67.0±2.9%) compared to private schools (53.0±8.3%). Of all students surveyed, 11±1.5% reported that parents would be called in if a student were caught smoking in school, and 8.1±1.6% reported that detention would be a consequence.

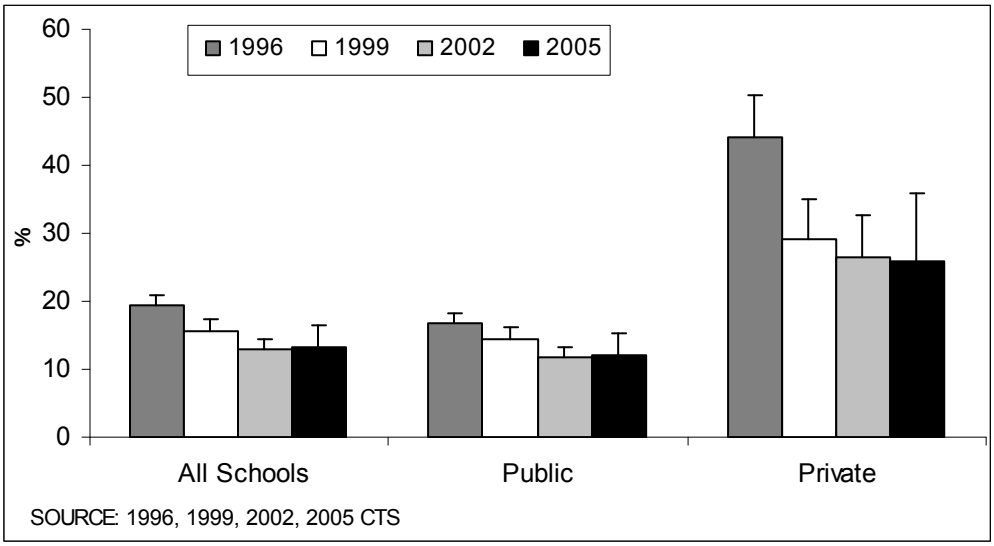
3. Trends in Student Perceptions of Teachers Smoking in School

Teachers are role models for students and therefore it is expected that smoking by a teacher will have an impact on the students. Thus, adolescents' perceptions of teachers' smoking behavior are very important. In the 1996, 1999, 2002 and 2005 CTS, all students were asked the following question:

As far as you know, do any teachers smoke on your school's grounds? **(X6a)**

Figure 6.6 illustrates that the percentage of students who reported that any teachers smoked on school grounds did not decline from 2002 to 2005. The perception that teachers smoked on school grounds did decline significantly from 19.4±1.4% in 1996 to 15.7±1.8% in 1999, and further to 13.0±1.3% in 2002. However, the decline halted in 2005, at 13.3±3.3%.

Figure 6.6: Students Who Perceived that Teachers Smoke in School



	1996	1999	2002	2005
All schools	19.4	15.7	13.0	13.3
Public	16.7	14.4	11.7	12.0
Private	44.2	29.2	26.4	26.0

The percentage of students who reported that any teachers smoked on school grounds did not decline from 2002 to 2005. Over twice as many students in private schools reported teachers smoking compared to public schools.

Perception of teachers' smoking differed significantly between private and public school students. In 2005, the percentage of private school students who reported seeing teachers smoke on school grounds was 26.0±9.9% compared to 12.0±3.3% for public school students, a ratio of approximately two to one. In 1996, nearly 3 times as many private school students reported teachers smoking on school grounds compared to public school students. This ratio decreased so that by 1999, only about twice as many students in private schools reported teachers smoking in school compared to public school students. This difference remained relatively constant in 2002 and in 2005. Because the State did not appropriate funds for school-based TUPE interventions in private schools, the lack of specific training for teachers in private schools may have led to less awareness of the importance of modeling non-smoking behaviors

to students. Furthermore, public schools are required to have a smoke-free campus, but private schools are not. The perception of teachers smoking in school has been associated with decreased support for smoke-free school grounds (Trinidad, et al., 2005).

Appendix Table A.6.5 shows that there were no significant changes between 2002 and 2005 in students' perception of teachers smoking between or within demographic subgroups.

4. Student Support for Smoke-free School Grounds

Students' preferences for smoke-free school grounds can be an indicator of social norms regarding smoking in schools. To assess students' support for smoke-free policies, the 1993, 1996, 1999, 2002 and 2005 CTS asked adolescents the following question:

> Do you think that all smoking by anyone should be banned on school grounds at all times, including meetings and sporting events? **(X7)**

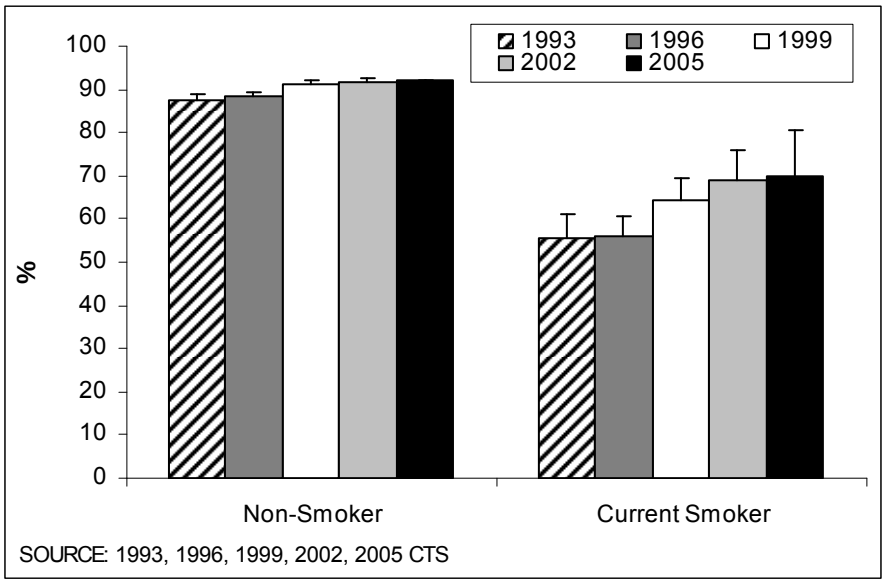
The vast majority of all students (91.6%), and over two-thirds of smokers (69.8%) supported a complete ban on smoking on school grounds in 2005.

The wording of this question was designed to maximize the number of adolescents who would disagree, thus providing a conservative estimate of student support for policies restricting smoking in school. Nonetheless, in 2005, an overwhelming majority of students (91.6±1.4%) supported a policy prohibiting smoking at any time on school grounds, about equal with both 1999 and 2002, and up from about 84% in both 1993 and 1996.

Support for banning smoking on school grounds has been consistently high among non-smokers. Support among those who have smoked in the past 30 days (current smokers) has increased substantially since 1996 (Figure 6.7). Figure 6.7 illustrates that, in 2005, over two-thirds of current smokers (69.8±10.7%) supported smoke-free school grounds. In 1996, only a slight majority of smokers (55.8±4.7%) favored a ban on smoking on school grounds; this increased to 69.1±6.8% by 2002. The level in 2005 was not significantly different from 2002.

Although no-smoking policies have been required since 1995 for schools to qualify for anti-tobacco program funding, the increase in support for smoke-free schools among current smokers suggests that CTCP had positively influenced smoking social norms in schools. However, the relative flattening in support for this policy among smokers between 2002 and 2005 suggests that additional efforts may be necessary to increase support for this policy among students who smoke.

Figure 6.7: Student Belief that Smoking Should be Banned on School Grounds, by Smoking Status



	1993	1996	1999	2002	2005
Nonsmokers	87.4	88.2	91.2	91.6	92.2
Current smokers	55.7	55.8	64.4	69.1	69.8

Appendix Table A.6.6 shows that there were no significant changes between 2002 and 2005 for all demographic subgroups. In 2005, support for smoke-free school grounds was lower among those who reported performing at average or below in school.

Summary

The decline in student recall regarding taking a class on the health risks of tobacco is of particular concern, as it represents a major setback. Younger students were most likely to benefit from such classes and unfortunately, this decline was especially pronounced among this group, to levels even below 1990. Efforts to increase the presence of such classes in schools may be necessary, as are efforts to determine the causes of the declines. School reactions to the No Child Left Behind Act might have conflicted with the implementation of classes that emphasized the health risks of tobacco use, but this question cannot be answered using the current data.

After steady increases up to 2002, indicators of compliance with smoke-free school policies appeared to slow in progress by 2005. Further, although significantly fewer students perceived that their teachers were smoking on school property in 2002 than in earlier years, the percentage in 2005 was similar to that in 2002. These could be early signs of a loss of the momentum gained since the late 1990s.

Although private school students were less likely to report seeing students smoke on school grounds, they were more likely to report seeing teachers smoke on school grounds. This is of concern as research has shown that seeing teachers smoke on school grounds is associated with less support for smoke-free school policies. The difference between public and private school students in seeing teachers smoke on school grounds is noteworthy. It suggests that

TUPE funds awarded to public schools and the requirement of smoke-free policy in these schools has contributed to the lower percentage of students observing their teachers smoking.

Encouragingly, in 2005, almost all students believed that smoking should be banned on school property for everyone at all times. Current smokers were less likely to hold this opinion than nonsmokers in 2005, and the level of support among smokers was similar to that in 2002. The relative flattening in support for this policy among smokers in 2005 suggests that additional efforts may be necessary to increase support for this policy among students who smoke.

APPENDIX

Chapter 6

Smoke-free Schools: Tobacco Education and Policy Compliance

1. Classes on the Health Risks of Smoking

A.6.1 presents percentages of students who recalled having a class on the health risks of smoking, analyzed by demographics, school performance, and school type. Between 2002 and 2005, across age groups, the largest decrease in recall of having a class on the health risks of smoking was present among the youngest group, 12-13-year-olds. While there was also a significant decline among 14-15-year-olds, there was no significant decline among 16-17-year-olds. Recall of such classes was lower among those who reported average or below school performance in 2005.

Table A.6.1
Students Who Recall Having a Class on the Health Risks of Smoking

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	72.9 (±1.8)	75.5 (±1.8)	76.1 (±1.3)	77.8 (±1.4)	80.1 (±1.0)	73.4 (±2.3)	-8.4
Gender							
Male	73.0 (±2.3)	76.8 (±2.5)	75.2 (±1.9)	76.8 (±2.1)	78.8 (±1.7)	73.1 (±1.4)	-7.2
Female	72.9 (±2.5)	74.2 (±2.3)	77.0 (±1.6)	79.0 (±1.7)	81.5 (±1.6)	73.8 (±3.6)	-9.4
Age							
12-13	71.0 (±3.8)	73.8 (±2.9)	74.0 (±2.1)	76.4 (±2.4)	78.5 (±2.1)	64.4 (±4.1)	-18.0
14-15	71.8 (±2.9)	73.5 (±3.2)	76.0 (±2.1)	77.2 (±2.4)	79.1 (±1.9)	73.2 (±3.9)	-7.5
16-17	76.2 (±3.6)	79.6 (±2.6)	78.3 (±2.5)	80.2 (±2.1)	82.9 (±1.7)	83.1 (±3.0)	0.2
Race/Ethnicity							
African American	73.3 (±7.8)	75.4 (±6.3)	70.4 (±5.2)	74.0 (±5.6)	74.3 (±6.2)	68.3 (±9.9)	-8.1
Asian/PI	77.1 (±5.2)	74.5 (±4.9)	78.6 (±3.7)	77.9 (±4.5)	80.7 (±4.2)	78.6 (±6.5)	-2.6
Hispanic	66.1 (±4.3)	69.7 (±2.5)	69.9 (±3.0)	74.0 (±2.7)	77.0 (±2.0)	69.8 (±4.8)	-9.4
Non-Hispanic White	77.0 (±1.6)	79.4 (±2.1)	80.3 (±1.5)	82.2 (±1.5)	83.9 (±1.5)	77.9 (±3.0)	-7.2
School Performance							
Much better than average	79.3 (±3.1)	79.8 (±3.4)	79.9 (±2.4)	79.8 (±3.0)	84.0 (±2.2)	75.9 (±5.1)	-9.6
Above average	75.5 (±2.8)	77.2 (±2.5)	78.8 (±1.7)	81.4 (±1.9)	81.4 (±1.6)	78.7 (±1.9)	-3.3
Average or below	68.0 (±2.9)	72.4 (±2.4)	71.3 (±2.0)	73.7 (±2.6)	76.5 (±1.7)	67.0 (±3.8)	-12.4
School							
Public			76.4 (±1.4)	78.1 (±1.5)	80.9 (±1.0)	74.5 (±1.2)	-7.9
Private, Religious			75.3 (±3.9)	77.4 (±4.9)	74.3 (±4.3)	66.1 (±9.4)	-11.0
Private, Non-religious			73.4 (±8.0)	77.4 (±6.5)	74.9 (±8.2)	68.7 (±14.2)	-8.3

Table A.6.2 presents percentages of students who believed that the class on the health effects of smoking was effective, analyzed by school type, as well as by demographics and school performance. In 2005, older adolescent age groups were less likely to perceive that the class was effective. This perception was also lower among those who reported average or below school performance in 2005.

Table A.6.2
Students Who Believed That the Class on the Health Effects of Smoking Was Effective

	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	43.1 (±1.6)	52.3 (±1.8)	54.4 (±1.9)	56.7 (±2.8)	4.2
Gender					
Boys	45.7 (±1.9)	55.0 (±2.5)	56.7 (±2.8)	59.8 (±3.5)	5.5
Girls	40.3 (±2.3)	49.4 (±2.5)	51.9 (±2.3)	53.3 (±4.1)	2.7
Age					
12-13	59.5 (±3.1)	68.5 (±2.5)	69.1 (±3.1)	73.6 (±5.2)	6.5
14-15	38.6 (±2.2)	49.4 (±3.7)	51.8 (±2.7)	57.6 (±4.3)	11.2
16-17	32.2 (±3.0)	39.0 (±3.0)	41.5 (±2.8)	42.4 (±5.8)	2.2
Race/Ethnicity					
African American	41.4 (±5.8)	52.0 (±5.8)	53.2 (±6.9)	47.4 (±15.7)	-10.9
Asian/PI	46.3 (±5.7)	56.6 (±6.3)	55.9 (±4.6)	55.6 (±10.0)	-0.5
Hispanic	42.5 (±3.3)	51.5 (±2.6)	55.7 (±3.4)	55.7 (±5.0)	0.0
Non-Hispanic White	43.4 (±2.4)	51.5 (±2.6)	53.6 (±2.3)	59.3 (±4.1)	10.6
School Performance					
Much better than average	47.3 (±3.4)	58.2 (±3.7)	61.2 (±3.8)	57.6 (±7.6)	-5.9
Above average	44.9 (±3.1)	54.0 (±2.9)	56.5 (±2.9)	61.2 (±4.2)	8.3
Average or below	38.3 (±2.5)	47.5 (±2.9)	47.5 (±2.9)	51.0 (±4.4)	7.4
School					
Public	47.8 (±1.6)	51.7 (±2.1)	53.8 (±2.0)	56.4 (±2.9)	4.8
Private, Religious	50.5 (±4.7)	60.7 (±7.0)	62.8 (±5.3)	61.6 (±11.0)	-1.9
Private, Non-religious	37.0 (±12.3)	49.3 (±8.9)	48.1 (±8.5)	52.4 (±17.6)	8.9

2. Student Compliance with Smoke-free School Policies

Table A.6.3 shows the perception that most or all students obey the school no-smoking rule for demographic subgroups, school performance, and school type. Among girls, there was a significant increase in reporting that most or all students obey the school no-smoking rule from 2002 to 2005. In 2005, older adolescent age groups reported lower compliance with smoke-free school policies among students who smoked. Those who performed worse in school also reported lower compliance. Since 1996, larger percentages of students from private, non-religious schools reported that students who smoked obeyed the rule not to smoke on school property compared to students from public schools. The 2002 and 2005 surveys showed the same trend.

Table A.6.3
How Many Students Who Smoke Obey the Rule Not to Smoke on School Property?

	1996 %	1999 %	2002 %	2005 %	Factor Increase 2002-2005 %	Factor Increase 1996-2005 %
All Students	40.7 (±1.4)	66.7 (±1.5)	71.5 (±1.4)	74.3 (±2.9)	3.9	82.6
Gender						
Male	40.5 (±1.9)	67.0 (±2.0)	74.7 (±1.8)	74.5 (±3.5)	-0.3	84.0
Female	40.9 (±2.0)	66.4 (±2.2)	68.0 (±1.3)	74.0 (±4.2)	8.8	80.9
Age						
12-13	46.1 (±2.4)	80.0 (±2.4)	81.8 (±2.2)	84.9 (±3.3)	3.8	84.2
14-15	37.7 (±2.6)	62.0 (±2.6)	66.6 (±2.8)	72.6 (±5.4)	9.0	92.6
16-17	38.3 (±2.5)	57.7 (±2.8)	64.9 (±2.7)	65.1 (±5.5)	0.3	70.0
Race/Ethnicity						
African American	38.3 (±5.0)	65.2 (±5.4)	65.7 (±5.0)	69.1 (±7.5)	5.2	80.4
Asian/PI	34.5 (±4.3)	61.4 (±4.8)	74.2 (±4.4)	78.2 (±7.5)	5.4	126.7
Hispanic	39.6 (±2.9)	63.0 (±2.5)	66.8 (±2.4)	69.0 (±5.5)	3.3	74.2
Non-Hispanic White	43.3 (±2.0)	72.5 (±2.0)	76.5 (±2.1)	81.3 (±1.5)	6.3	87.8
School Performance						
Much above average	42.9 (±2.3)	71.3 (±3.6)	78.4 (±2.6)	80.9 (±4.7)	3.2	88.6
Above average	43.0 (±2.4)	71.3 (±2.2)	72.8 (±2.4)	76.9 (±4.0)	5.6	78.8
Average or below	37.1 (±2.1)	60.4 (±2.2)	66.0 (±2.6)	67.5 (±5.3)	2.3	81.9
School						
Public	38.4 (±1.5)	64.7 (±1.6)	69.3 (±1.6)	71.9 (±3.3)	3.8	87.2
Private, Religious	44.1 (±7.9)	70.6 (±9.3)	81.3 (±5.8)	85.1 (±7.0)	4.7	93.0
Private, Non-religious	60.0 (±5.2)	88.6 (±4.0)	91.3 (±3.2)	93.2 (±4.4)	2.1	55.3

Table A.6.4 presents percentages of adolescents who have seen anyone smoking on school grounds in the past 2 weeks, analyzed by demographic subgroups, school performance, and school type. There have been large declines since 1996 across all groups. Although there were declines between 2002 and 2005, none were statistically significant. In 2005, a smaller percentage of younger adolescents (12-13-year-olds) reported seeing anyone smoke in school compared to older adolescents. Students from private religious schools were more likely than students from private non-religious schools to report seeing smoking in school from 1996 to 2002 and, although there remained a difference in 2005 it was not statistically significant.

Table A.6.4
Students Who Have Seen Anyone Smoking at School in the Past 2 Weeks

	1996 %	1999 %	2002 %	2005 %	Factor Increase 2002-2005 %	Factor Increase 1996-2205 %
All Students	36.0 (±1.5)	26.3 (±1.7)	20.8 (±1.2)	19.6 (±2.5)	-5.8	-45.6
Gender						
Male	37.0 (±2.1)	27.3 (±2.5)	20.3 (±2.1)	20.0 (±3.8)	-1.5	-45.9
Female	34.9 (±2.1)	25.2 (±1.8)	21.4 (±1.6)	19.1 (±3.4)	-10.7	-45.3
Age						
12-13	12.3 (±2.0)	7.5 (±1.7)	8.3 (±1.3)	6.5 (±2.0)	-21.7	-47.2
14-15	44.2 (±2.4)	33.2 (±2.8)	23.9 (±2.4)	23.0 (±4.6)	-3.8	-48.0
16-17	51.1 (±2.3)	38.3 (±2.6)	31.8 (±2.5)	29.6 (±4.8)	-6.9	-42.1
Race/Ethnicity						
African American	35.1 (±5.2)	27.1 (±6.2)	26.9 (±5.7)	19.4 (±3.4)	-27.9	-44.7
Asian/PI	41.7 (±4.1)	31.0 (±5.7)	17.9 (±3.3)	13.2 (±4.0)	-26.3	-68.3
Hispanic	32.2 (±2.9)	24.4 (±2.4)	20.3 (±2.2)	21.5 (±5.0)	5.9	-33.2
Non-Hispanic White	37.0 (±1.8)	26.7 (±2.0)	20.6 (±1.9)	18.5 (±2.8)	-10.2	-50.0
School Performance						
Much better than average	35.5 (±3.3)	26.5 (±3.2)	17.0 (±2.2)	18.7 (±4.5)	10.0	-47.3
Above average	36.1 (±2.6)	24.2 (±2.4)	20.0 (±2.2)	18.1 (±2.9)	-9.5	-49.9
Average or below	36.3 (±2.1)	28.2 (±3.1)	24.0 (±2.1)	21.8 (±2.5)	-9.2	-39.9
School						
Public	39.0 (±1.5)	28.3 (±1.8)	22.3 (±1.3)	21.3 (±2.8)	-4.5	-45.4
Private, Religious	25.2 (±6.9)	20.2 (±7.7)	17.3 (±5.2)	13.2 (±7.4)	-23.7	-47.6
Private, Non-religious	13.7 (±3.7)	7.9 (±4.0)	7.3 (±1.5)	6.4 (±3.9)	-12.3	-53.3

3. Trends in Student Perceptions of Teachers Smoking in School

Table A.6.5 presents percentages of adolescents who perceived that teachers smoked on school grounds, analyzed by demographics, school performance, and school type. There were no significant changes between 2002 and 2005 for all subgroups. Due to large confidence intervals in 2005, no differences between subgroups were statistically significant.

Table A.6.5
Students Who Perceive That Teachers Smoke On School Grounds

	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	19.4 (±1.4)	15.7 (±1.8)	13.0 (±1.3)	13.3 (±3.3)	2.3
Gender					
Male	20.9 (±2.4)	16.6 (±2.8)	12.9 (±2.2)	14.6 (±4.9)	13.2
Female	17.9 (±2.0)	14.8 (±1.8)	13.1 (±1.7)	12.1 (±3.6)	-7.6
Age					
12-13	16.1 (±2.7)	14.0 (±2.9)	13.8 (±3.2)	10.2 (±4.4)	-26.1
14-15	16.3 (±2.1)	12.7 (±2.2)	9.4 (±1.9)	10.0 (±3.4)	6.4
16-17	24.6 (±2.6)	19.4 (±2.7)	15.7 (±2.3)	17.4 (±6.1)	10.8
Race/Ethnicity					
African American	26.5 (±6.9)	24.1 (±6.0)	14.5 (±5.3)	17.3 (±13.1)	19.3
Asian/PI	17.3 (±4.6)	17.4 (±5.2)	11.8 (±4.1)	16.4 (±8.6)	39.0
Hispanic	19.4 (±3.1)	15.1 (±2.4)	14.6 (±2.7)	12.3 (±5.8)	-15.8
Non-Hispanic White	18.7 (±1.8)	14.1 (±2.2)	12.4 (±1.9)	12.7 (±3.7)	2.4
School Performance					
Much better than average	18.7 (±2.6)	13.7 (±3.4)	14.3 (±2.8)	12.3 (±5.2)	-14.0
Above average	19.5 (±2.1)	15.8 (±2.7)	12.2 (±2.3)	14.7 (±4.4)	20.5
Average or below	19.8 (±2.2)	16.6 (±2.8)	13.0 (±2.1)	12.8 (±6.4)	-1.5
School					
Public	16.7 (±1.4)	14.4 (±1.8)	11.7 (±1.4)	12.0 (±3.2)	2.6
Private, Religious	44.1 (±7.1)	29.3 (±7.3)	29.6 (±8.1)	25.9 (±12.6)	-12.5
Private, Non-religious	44.5 (±11.0)	29.0 (±9.8)	18.7 (±9.8)	26.4 (±13.9)	41.2

4. Student Support for Smoke-free School Grounds

Table A.6.6 presents percentages of adolescents who preferred that smoking be banned on school grounds, analyzed by demographics, school performance, and school type. There were no significant changes between 2002 and 2005 for any subgroup. In 2005, support for smoke-free school grounds was lower among those who reported average or below school performance.

Table A.6.6
Students Who Preferred That Smoking be Banned on School Grounds

	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	84.8 (±1.3)	84.4 (±1.1)	89.2 (±0.8)	90.5(±0.9)	91.6(±1.4)	1.2
Gender						
Male	84.3 (±2.1)	84.1 (±1.7)	89.1 (±1.1)	89.8(±1.4)	90.3(±2.2)	0.6
Female	85.4 (±2.0)	84.8 (±1.3)	89.3 (±1.5)	91.3(±1.2)	93.0(±1.8)	1.9
Age						
12-13	90.9 (±2.0)	90.4 (±1.5)	92.2 (±1.4)	92.1(±1.6)	92.7(±2.4)	0.7
14-15	83.6 (±2.7)	84.3 (±2.3)	90.1 (±1.5)	90.7(±1.6)	92.4(±2.1)	1.9
16-17	79.0 (±2.7)	78.3 (±2.6)	84.9 (±2.0)	88.5(±1.6)	89.4(±3.3)	1.0
Race/Ethnicity						
African American	84.1 (±6.2)	86.9 (±3.7)	90.7 (±3.4)	92.6(±3.2)	94.8(±2.9)	2.4
Asian/PI	86.0 (±5.4)	88.8 (±2.5)	88.2 (±3.2)	92.2(±2.3)	94.5(±3.2)	2.5
Hispanic	86.7 (±2.6)	82.3 (±2.1)	86.2 (±1.7)	88.3(±1.7)	88.6(±2.9)	0.3
Non-Hispanic White	83.5 (±1.6)	84.2 (±1.6)	91.7 (±1.0)	92.2(±1.1)	93.3(±1.5)	1.2
School Performance						
Much above average	88.7 (±2.8)	89.2 (±1.9)	90.0 (±2.1)	91.6(±1.8)	95.6(±1.9)	4.4
Above average	84.7 (±2.1)	86.0 (±1.6)	90.6 (±1.6)	92.1(±1.3)	94.0(±1.6)	2.1
Average or below	83.4 (±2.2)	80.1 (±2.0)	87.4 (±1.8)	88.4(±1.7)	86.8(±1.5)	-1.8
School						
Public		84.6 (±1.2)	89.0 (±0.8)	90.6(±0.9)	91.7(±1.5)	1.2
Private, Religious		85.4 (±2.6)	92.7 (±3.1)	90.4(±2.6)	90.9(±5.0)	0.6
Private, Non-religious		75.2 (±7.0)	87.3 (±5.7)	90.9(±4.4)	90.7(±8.8)	-0.2

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Chapter 7

A Summary of Racial/Ethnic Differences

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Chapter 7

A Summary of Racial/Ethnic Differences

KEY FINDINGS

African Americans

- Between 1990 and 2005, adult smoking prevalence in all racial/ethnic groups showed greater than 20% declines, with African Americans having a 28.3% factor decline in smoking prevalence.

- Across California Tobacco Surveys, overall smoking prevalence for African American adults has been consistently higher than for Non-Hispanic Whites.

- For the period 1999-2005, African American smokers seemed to report a higher percentage of one-day quit attempts compared with Non-Hispanic Whites. However, the percentage of African American smokers who successfully quit for 90 days was not different from Non-Hispanic Whites.

- During the period 1999-2005, a lower percentage of African American smokers reported a total household ban on smoking compared with Non-Hispanic Whites and other racial/ethnic groups.

Asian/Pacific Islanders (Asian/PI)

- Between 1990 and 2005, adult smoking prevalence for Asian/Pacific Islanders (Asian/PIs) declined by a factor of 22.5% (from 14.2±1.1% to 11.0±2.1%).

- In 2005, smoking prevalence for Asian/PI women (6.5±2.3%) was less than half the prevalence for Non-Hispanic White women (13.1±0.7%) and Asian/PI men (16.1±2.7%).

- Smoking prevalence in Asian/PI women during the period 1999-2005 was significantly higher in women who spoke English at home compared to those who did not (7.6±1.3% vs. 3.6±1.4%). An inverse association was found for Asian/PI men, but did not reach statistical significance.

- For the period 1999-2005, the percentage of Asian/PI smokers making a quit attempt of at least one day was significantly higher than that for Non-Hispanic Whites. The percentage of Asian/PI smokers making a quit attempt of 90 days or longer was higher than for Non-Hispanic Whites, but not significantly.

Hispanics

- Since 1990, the largest factor decline in overall adult smoking prevalence was seen among Hispanics (-32.6%). Since 1990, the largest factor decline in female adult smoking prevalence was seen among Hispanic women, -41.6% (from 11.7±1.3% to 6.8±1.0%), which contributed to the overall decline in Hispanic smoking.

- In 2005, smoking prevalence among Hispanic women (6.8±1.0%) was approximately half the prevalence seen in Non-Hispanic White women (13.1±0.7%) and less than half the prevalence in Hispanic men (16.7±1.8%).

- Smoking prevalence during the period 1999-2005 was significantly higher among Hispanic women who spoke English at home compared to those who did not (12.2±1.5% vs. 5.4±1.1%). The same pattern was not seen in Hispanic men.

- During the period 1999-2005, a higher percentage of Hispanic smokers than Non-Hispanic White smokers reported a quit attempt for at least one day. Similarly, a higher percentage of Hispanic smokers than Non-Hispanic White smokers reported quitting for 90 days or more.

- As in previous surveys, in 2005, a lower percentage of Hispanic indoor workers reported smoke-free workplaces compared with Non-Hispanic Whites. Similarly, a higher percentage of non-smoking Hispanic indoor workers reported exposure to secondhand smoke in their workplace in the past two weeks compared with Non-Hispanic Whites.

Chapter 7
A Summary of Racial/Ethnic Differences

Introduction

The racial/ethnic composition of the United States (U.S.) population is becoming more diverse. In the 2000 Census, 12.5% of the U.S. population considered themselves Hispanic (of any race), 12.3% Black or African American, and 3.6% Asian (U.S. Census Bureau, 2001). According to U.S. Census Bureau projections, by the year 2050, 24.4% of the U.S., population will be Hispanic, 14.6% Black, and 8.0% Asian (U.S. Census Bureau, 2004). Estimates of the 2005 population show that California is already one of the most diverse states in the country. In California, 35.2% of the population identified themselves as Hispanic (of any race), 6.7% as Black or African American, and 12.2% as Asian (U.S. Census Bureau, 2007).

As population demographics change, there has been a growing awareness of the health disparities experienced by racial/ethnic groups. In 1998, the Surgeon General's Report examined tobacco use in four racial/ethnic groups: African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics (USDHHS, 1998). This report found that the patterns of tobacco use varied among the different groups. Furthermore, the report concluded that "no single factor determines patterns of tobacco use among racial/ethnic minority groups; these patterns are the result of complex interactions of multiple factors, such as socioeconomic status, cultural characteristics, acculturation, stress, biological elements, targeted advertising, price of tobacco products, and varying capacities of communities to mount effective tobacco control initiatives" (USDHHS, 1998). In 2004, the Centers for Disease Control and Prevention (CDC) published a series of articles describing the health disparities experienced by racial/ethnic minority populations and found that these groups bear a disproportionate burden of disease, injury, premature death, and disability (CDC, 2004a; CDC, 2004b; CDC 2005). Similar to the Surgeon General's report, the CDC noted the multiple factors that contribute to disparities. These include: socioeconomic factors, lifestyle behaviors (e.g., tobacco use), social environment, and access to clinical preventive services.

Within a racial/ethnic group, there may also be health disparities based on factors such as acculturation status. Acculturation is a complex concept with varying definitions. One definition of acculturation put forth by Unger et. al. is "the process by which foreign-born individuals and their children acquire and accommodate the values, beliefs, language, customs, and mannerisms of the new country in which they live, including health behaviors such as dietary choices, physical activity patterns, and substance abuse" (Unger et. al., 2000, pg.403). In this chapter, the effects of acculturation on smoking prevalence in Asian/Pacific Islanders (Asian/PIs) and Hispanics will be examined using English language use as a proxy for acculturation. Studies have shown that English language use can be a valid and reliable measure of acculturation level (Marin et. al., 1987; Unger et. al., 2000). Prior studies have shown that Asian/PI, women with a higher level of acculturation have a higher smoking prevalence (Carr et. al., 2005a; Carr et. al., 2005b; Tang et. al., 2005). The opposite effect may be seen in Asian/PI men; the more acculturated Asian/PI men tend to have a lower smoking prevalence than those who are less acculturated. Other studies have shown that a higher level of acculturation is associated with higher smoking prevalence in Hispanic women, but not necessarily in Hispanic men (Bethel and Schenker, 2005; Trinidad et al., 2006).

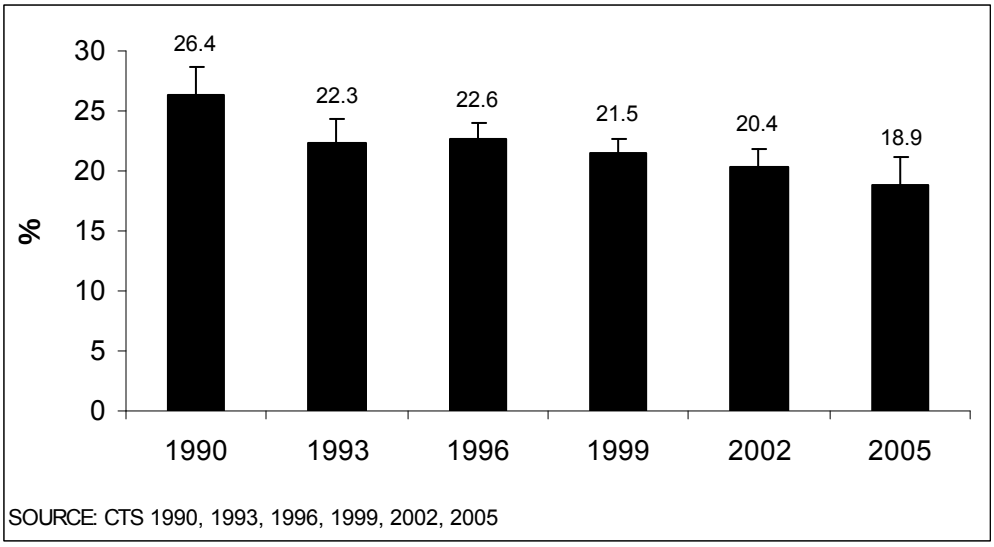
The goal of this chapter is to highlight a few of the racial/ethnic differences in tobacco use in California. In the previous chapters, when reporting on the overall sample, data were weighted to the U.S. Census California distribution of race/ethnicity to be representative of California and results were presented according to each racial/ethnic group. In most instances, the data in this chapter have been included in the appendices of earlier individual chapters (also see Al-Delaimy, et. al., 2006). However, in this chapter, key results for African Americans, Asian/PIs and Hispanics are presented in more detail. The specific topics presented may differ between racial/ethnic groups. Because of small sample sizes (for groups other than Non-Hispanic White), these results should be interpreted with caution. Conclusions regarding trends over time in a specific racial/ethnic group or between groups are limited and may not always be statistically significant. For a few of the analyses in this chapter, data from the 1990 California Tobacco Survey (CTS) is compared with aggregated data from the 1999, 2002, and 2005 CTS to improve the sample sizes and the ability to draw conclusions. Detailed tables are provided in the chapter appendix and technical report for further information.

1. African Americans

Overall Adult Smoking Prevalence

Each racial/ethnic group showed greater than a 20% decline in adult smoking prevalence between 1990 and 2005; specifically, African Americans had a 28.3% factor decline between 1990 and 2005 and a 7.3% factor decline between 2002 and 2005 (**Figure 7.1**, Appendix Table A.7.1). In 2005, African Americans overall continued to have the highest adult smoking prevalence (18.9±2.2%) among the four primary racial/ethnic groups analyzed in the CTS.

Figure 7.1: Adult Smoking Prevalence among African Americans, 1990-2005



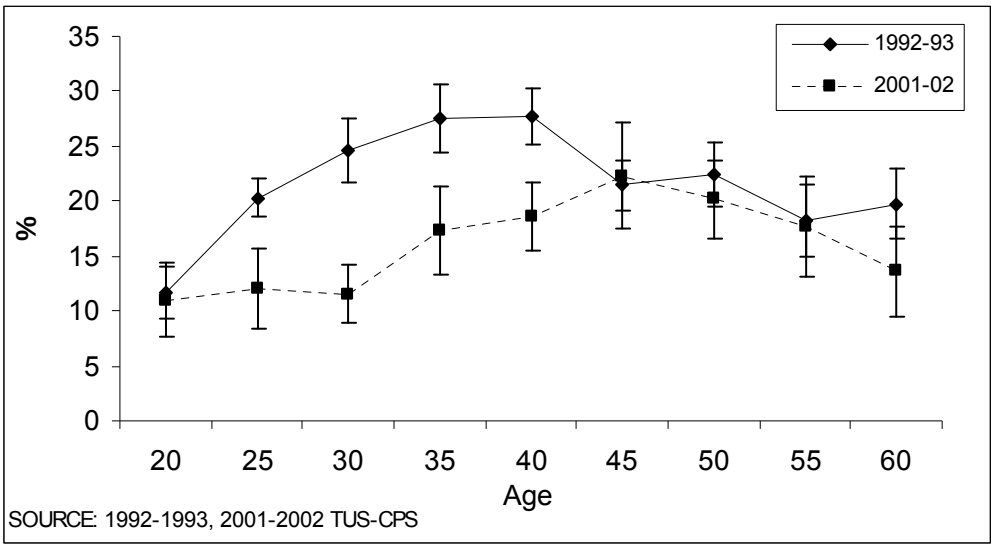
Adult Smoking Prevalence by Gender

Adult smoking prevalence by gender revealed that African American men (21.0±3.2%) had a higher smoking prevalence than did African American women (17.1±2.8%) in 2005. This was consistent with the gender differences seen in other racial/ethnic groups, although less pronounced than the differences seen in Asian/PIs and Hispanics (Table A.7.2, Table A.7.3).

Adult Smoking Prevalence by Age

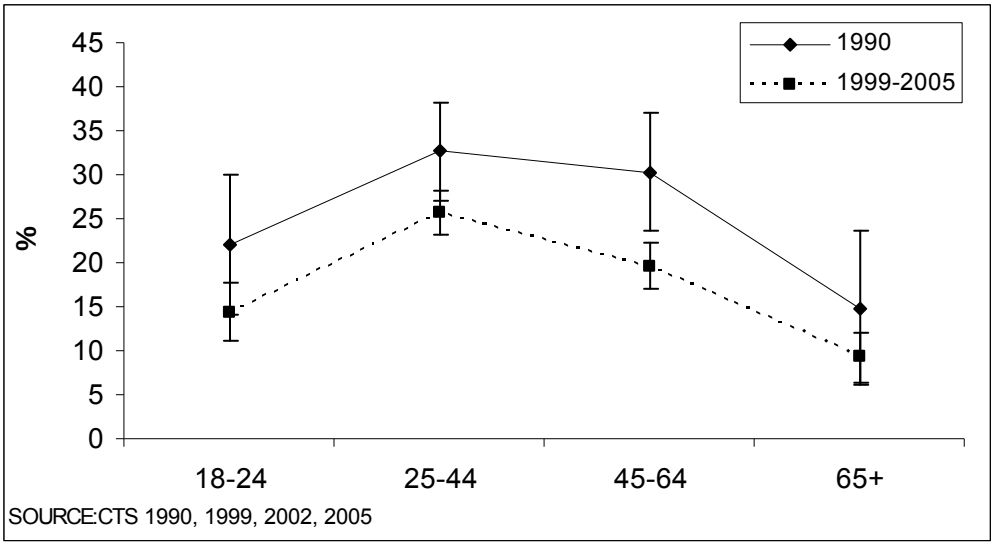
In the past, smoking prevalence for African American adults has been higher than for Non-Hispanic Whites adults (USDHHS, 1998). However, recent data suggest this trend is changing (CDC, 2004c). Using data from the Tobacco Use Supplements to the Current Population Survey (TUS-CPS), a recent study examined national trends in African American smoking prevalence. Results of this study suggest that more recent cohorts of African Americans appear to have taken up smoking at lower rates than older cohorts (Trinidad et. al., in press). **Figure 7.2** shows the unadjusted prevalence of daily smoking by age for African Americans for the 1992-1993 and 2001-2002 surveys. In the 1992-1993 survey, the peak age range of daily smoking started earlier (35-40 years) and the prevalence was higher (28%) compared with the 2001-2002 survey (45-50 years and 22%, respectively). Similarly, prevalence increased sharply between ages 20 and 30 in the 1992-1993 survey, but in 2001-2002, the prevalence only began climbing at age 35. These changing patterns of prevalence with age show that, on a national level, recent younger African American cohorts have daily smoking rates much lower than those of earlier cohorts.

Figure 7.2: Prevalence of Daily Smoking by Age among African Americans in the United States (Unadjusted)



Using CTS data, an analysis by age for African Americans shows that, over time, adult smoking prevalence has declined among all age groups of African Americans in California **(Figure 7.3)**. Comparing 1990 CTS data with aggregated 1999-2005 CTS data, smoking prevalence has declined by a factor of approximately 35% in 18-24 year-olds, 45-64 year-olds and in the 65 and over group. The 25-44-year-old group had a 21.7% factor decline during that time. For unclear reasons, California did not experience the same shift in peak age and cohort effect in African Americans as was seen on a national level. The reasons for this difference require further investigation.

Figure 7.3: African American Smoking Prevalence in California by Age Groups



Age	18-24	25-44	45-64	65+
1990	22.1 (±8.0)	32.7 (±5.5)	30.3 (±6.7)	14.8 (±8.7)
1999-2005	14.4 (±3.3)	25.6 (±2.5)	19.6 (±2.6)	9.3 (±2.8)

Use of Other Tobacco Products

To examine trends in current use of other tobacco products, data from the 1990 CTS was compared with aggregated data from the 1999-2005 CTS (Table A.7.5). The data is presented for adult males only because tobacco use other than cigarettes is uncommon in females. During the period 1999-2005, the rates of chewing tobacco/snuff, tobacco pipe and cigar use among African American men were lower than the rates for their Non-Hispanic White counterparts (Table A.7.5). The prevalence of chewing tobacco/snuff use was 1.9±1.7% in African Americans compared with 3.2±0.4% in Non-Hispanic Whites. The current use of tobacco pipes was 0.8±0.6% in African Americans compared with 1.5±0.3% in Non-Hispanic Whites and the use of cigars was 7.6±2.1% in African Americans compared with 9.9±1.0% in Non-Hispanic Whites.

Smoking Cessation

During the period 1999-2005, the percentage of smokers making a quit attempt of at least one day was significantly higher for African Americans than for Non-Hispanic Whites (66.6±4.0% vs. 54.6±1.2%) (Table A.7.7). However, the percentage of smokers with a quit attempt of 90 days or longer was similar for African Americans and Non-Hispanic Whites from 1999-2005 (11.3±2.6% vs. 12.8±1.0%) (Table A.7.8). A previous study of African American and Non-Hispanic White smokers in California showed successful cessation of 5+ years was lower among African American adults than among Non-Hispanic Whites, especially in the older age groups (Trinidad, et. al., 2005). This difference in cessation may contribute to the continued higher prevalence of adult smoking in African Americans.

Beginning in 1992, data was collected regarding the prevalence of total household smoking bans in smokers. Data from the 1999, 2002 and 2005 surveys were combined to improve sample sizes. For the period 1999-2005, African American smokers were less likely to have a total home smoking ban compared with Non-Hispanic White smokers (39.8±6.2% vs.

47.3±1.4%) or other racial/ethnic groups (Table A.7.10). However, over time, African American smokers have shown a significant increase in total home smoking bans, from 9.3±3.9% in 1992 to 39.8±6.2% in 1999-2005.

Exposure to Secondhand Smoke

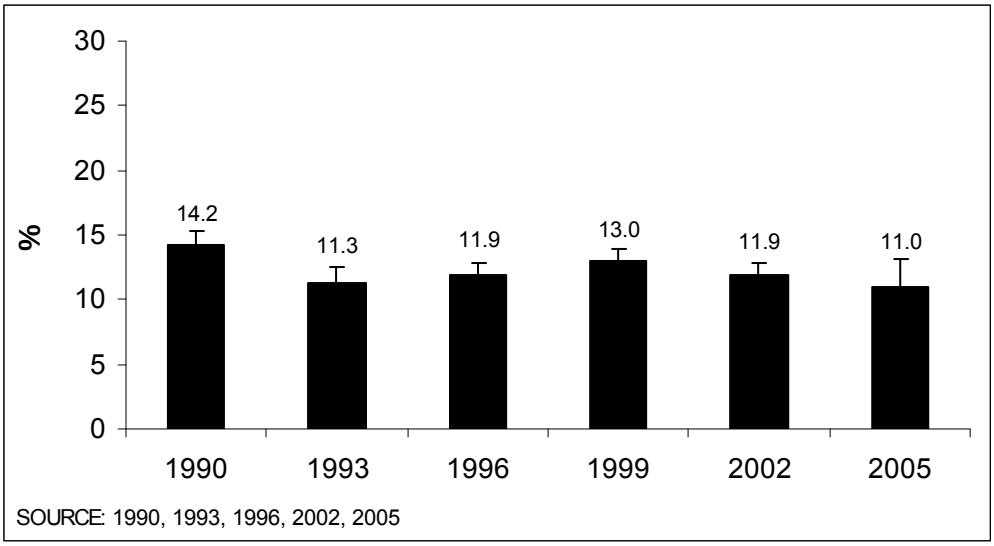
Among African American adults overall (both smokers and non-smokers) during the period 1999-2005, a lower percentage of African Americans (72.0±2.3%) reported that their homes were completely smoke-free compared with Asian/PIs (77.5.2±2.2%), Hispanics (78.3±2.9%), and Non-Hispanic Whites (75.3±1.0%) (Table A.7.19). However, since 1992, African Americans have shown a large factor increase from 46.4±7.0% in 1992 to 72.0±2.3% in 1999-2005. A study conducted in 2000-2001 using a broader national sample examined personal space restrictions (i.e., home and car bans) among African Americans (King et al, 2005). In this study, 62% of all participants had a total home ban and 73.6% of participants living in the West (including California) had a total home ban.

2. Asian/Pacific Islanders (Asian/PIs)

Overall Adult Smoking Prevalence

Overall adult smoking prevalence for Asian/PIs declined by 22.5%, from 14.2±1.1% in 1990 to 11.0±2.1% in 2005 (**Figure 7.4,** Table A.7.1). In 2005, Asian/PIs had a lower adult smoking prevalence than did Non-Hispanic Whites, 11.0±2.1% compared with 14.5±0.6%, respectively.

Figure 7.4: Adult Smoking Prevalence for Asian/PIs, 1990-2005

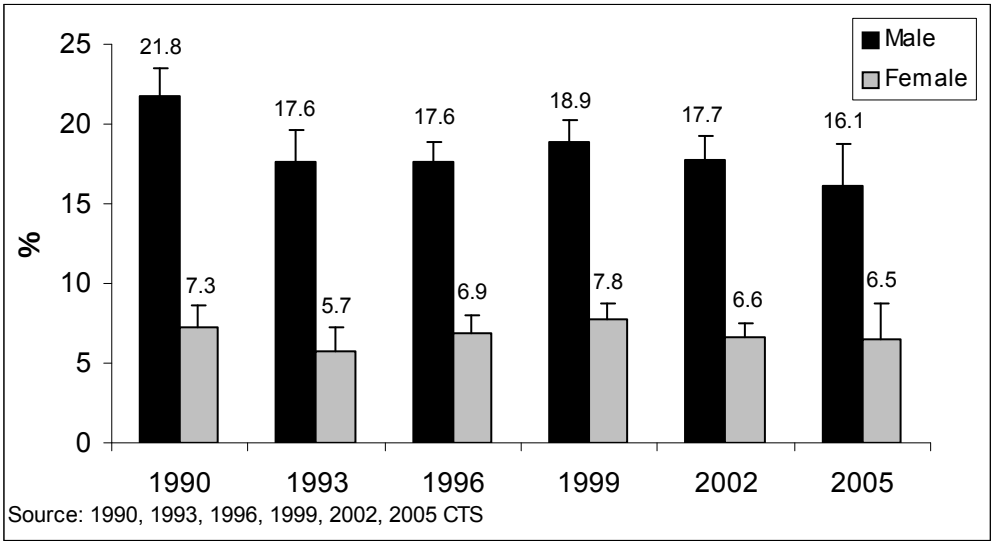


Adult Smoking Prevalence by Gender

A closer examination by gender shows different patterns in smoking prevalence between Asian/PI men and women. In 2005, Asian/PI men had a smoking prevalence similar to Non-Hispanic White men, 16.1±2.7% compared with 16.0±0.9% (Table A.7.2). In contrast, across surveys, smoking prevalence in Asian/PI women has been about half the prevalence for Non-Hispanic White women. For example, in 2005, only 6.5±2.3% of Asian/PI women were current

smokers compared with 13.1±0.7% of Non-Hispanic White women (Table A.7.3). Furthermore, over time, smoking prevalence for Asian/PI women has remained less than half the rate seen for Asian/PI men (**Figure 7.5**). In 2005, 6.5±2.3% of Asian/PI women were current smokers compared to 16.1±2.7% of Asian/PI men.

Figure 7.5: Adult Smoking Prevalence among Asian/Pacific Islanders by Gender



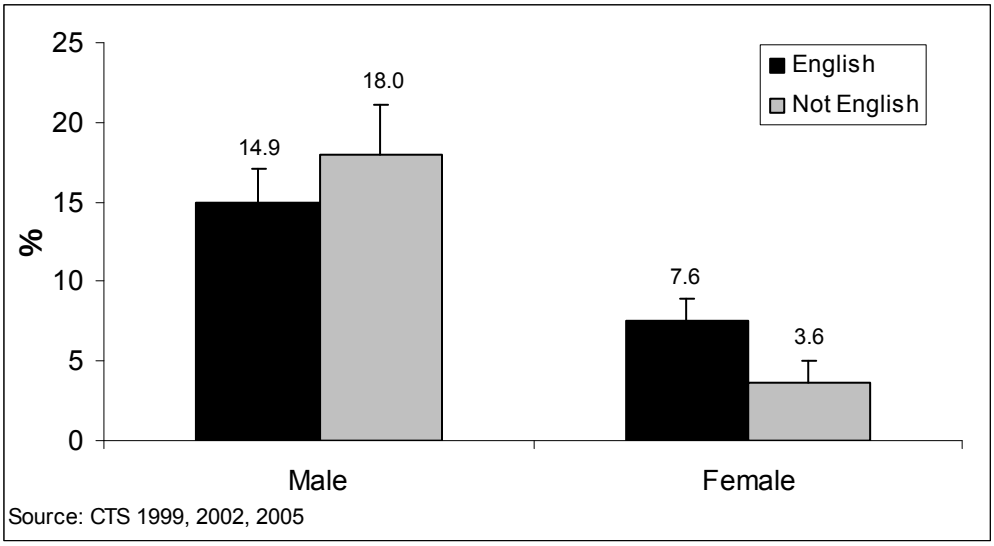
Adult Smoking Prevalence by English Language Use

To examine the effect of acculturation in the CTS survey, English language use at home was used as a proxy for acculturation status. Adult participants were asked:

> What language do you usually speak at home? **(J13)**

In this analysis, data from the 1999, 2002, and 2005 surveys was combined because of small sample sizes (**Figure 7.6).** Asian/PI men who spoke English at home had a slightly lower smoking prevalence than those who did not speak English at home, but this difference was not statistically significant (14.9±2.2% vs. 18.0±3.1%, respectively). For Asian/PI women, smoking prevalence was significantly higher for those who spoke English at home compared with those who did not (7.6±1.3% vs. 3.6±1.4%, respectively). A potential limitation of this analysis is that the CTS is only given in English and Spanish, not in Asian languages.

Figure 7.6: Smoking Prevalence by Language Spoken at Home among Asian/PIs (1999-2005)



	Male	Female
English	14.9 (±2.2)	7.6 (±1.3)
Not English	18.0 (±3.1)	3.6 (±1.4)

Use of Other Tobacco Products

To examine trends in current use of other tobacco products, data from the 1990 CTS was compared with aggregated data from the 1999-2005 CTS (Table A.7.5). The data are presented for adult males only because tobacco use other than cigarettes is uncommon in females. As for other tobacco use, during the period 1999-2005, current use of chewing tobacco/snuff, tobacco pipes or cigars for Asian/PI men was less than half the rates reported for Non-Hispanic White men (Table A.7.5). Only 0.7±0.3% of Asian/PIs used chewing tobacco/snuff compared with 3.2±0.4% of Non-Hispanic Whites. Similarly, only 0.6±0.4% of Asian/PIs smoked tobacco pipes compared with 1.5±0.3% of Non-Hispanic Whites, and 3.9±0.9% of Asian/PIs smoked cigars compared with 9.9±1.0% of Non-Hispanic Whites.

Smoking Cessation

During the period 1999-2005, the percentage of Asian/PIs making a quit attempt of at least one day was significantly higher than that for Non-Hispanic Whites (61.9±4.5% vs. 54.6±1.2%) (Table A.7.7). The percentage of Asian/PI smokers who made a quit attempt of 90 days or longer was higher than that for Non-Hispanic White smokers (61.9±4.5% vs. 54.6±1.2% respectively), but the difference was not statistically significant.

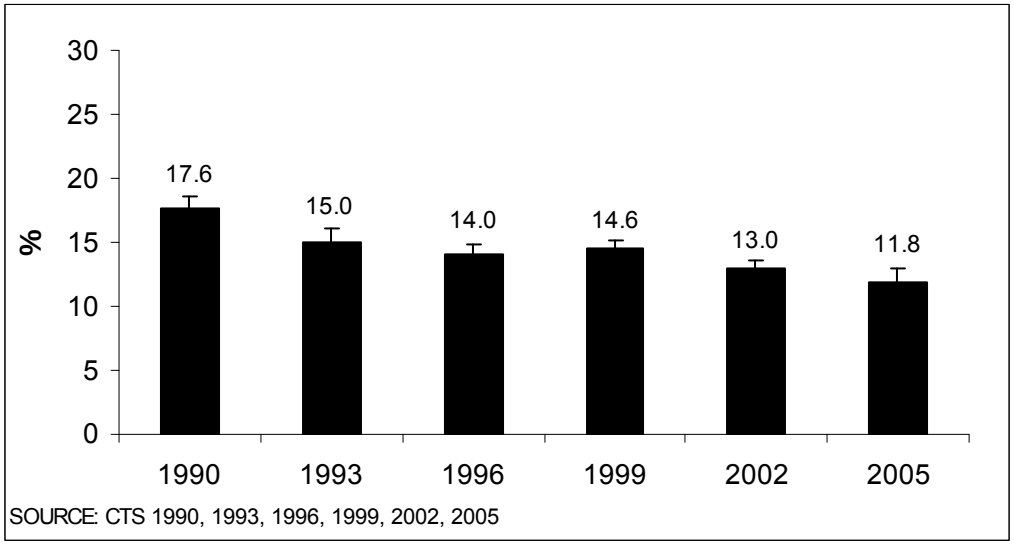
Across survey years, the percentage of Asian/PI smokers who used Nicotine Replacement Therapy (NRT) during their last quit attempt did not follow a consistent pattern. This may in part be due to the small sample size of Asian/PI smokers in each survey. The percentage using NRT was 11.9±6.6% in 1996, 7.1±3.3% in 1999, 19.4±9.0% in 2002, and 5.6±4.4% in 2005. In 2005, the percentage of Asian/PIs who used NRT during their last quit attempt was significantly lower than the percentage for Non-Hispanic Whites (5.6±4.4% vs. 25.5±3.8%) (Table A.7.11).

3. Hispanics

Overall Adult Smoking Prevalence

Between 1990 and 2005, the largest factor decline in overall adult smoking prevalence was seen for Hispanics (-32.6%) (Table A.7.1). In 1990, 17.6±1.0% of Hispanic adults were current smokers compared with 11.8±1.1% in 2005 **(Figure 7.7)**. In 2005, adult smoking prevalence for Hispanics (11.8±1.1%) was similar to that for Asian/PIs (11.0±2.1%) and significantly less than the prevalence for African Americans (18.9±2.2%) and Non-Hispanic Whites (14.5±0.6%).

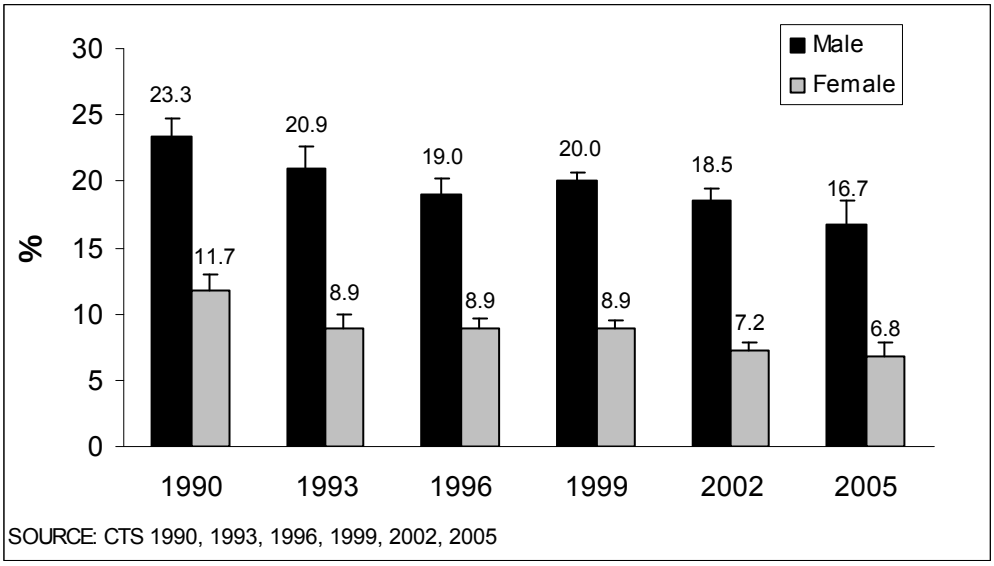
Figure 7.7: Adult Smoking Prevalence for Hispanics, 1990-2005



Adult Smoking Prevalence by Gender

An examination of adult smoking prevalence by gender illustrated that, between 1990 and 2005, the factor decline among Hispanic men (-28.2%) was similar to that for Non-Hispanic White men (-25.0%) (Table A.7.2). Since 1990, the largest factor decline in female adult smoking prevalence has been for Hispanic women (-41.6%), from 11.7±1.3% in 1990 to 6.8±1.0% in 2005 (Table A.7.3). This drop in female smoking prevalence may have contributed to the large factor decline seen for overall Hispanic smoking prevalence. In 2005, smoking prevalence for Hispanic women (6.8±1.0%) was similar to that for Asian/PI women (6.5±2.3%) and was approximately half the prevalence seen in African-American (17.1±2.8%) and Non-Hispanic White (13.1±0.7%) women. Furthermore, across survey years, smoking prevalence for Hispanic women has been approximately half the rate of that for Hispanic men (**Figure 7.8**).

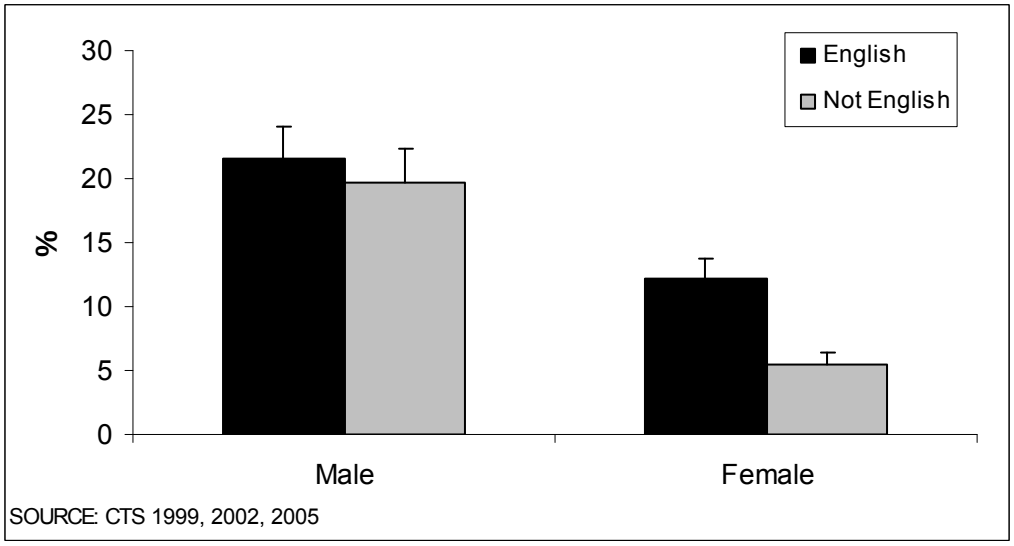
Figure 7.8: Adult Smoking Prevalence among Hispanics by Gender



Adult Smoking Prevalence by English Language Use

With English language use at home as an indicator of acculturation status, an analysis of smoking prevalence indicated no significant difference between Hispanic men who spoke English at home compared with those who did not (**Figure 7.9**). In contrast, smoking prevalence was significantly higher for Hispanic women who spoke English at home compared with those who did not (12.2±1.5% compared with 5.4±1.1%).

Figure 7.9: Smoking Prevalence by Language Spoken at Home in Hispanics (1999-2005)



	Male	Female
English	21.6 (±2.5)	12.2 (±1.5)
Not English	19.7 (±2.6)	5.4 (±1.1)

Use of Other Tobacco Products

To examine trends in current use of other tobacco products, data from the 1990 CTS was compared with aggregated data from the 1999-2005 CTS (Table A.7.5). The data are presented for adult males only because tobacco use other than cigarettes is uncommon in females. Overall, since 1990, there have been declines in the use of chewing tobacco/snuff and tobacco pipes. As previously presented in Volume 1 of the 2005 CTS report, the overall prevalence of cigar use increased in the early 1990s and has been stable in recent years (Al-Delaimy et. al., 2006). During the period 1999-2005, the prevalence of current other tobacco use for Hispanic men was less than half the prevalence seen for Non-Hispanic White men. Current use of chewing tobacco/snuff was 0.8±0.4% for Hispanic men compared with 3.2±0.4% in Non-Hispanic White men and use of tobacco pipes was 0.7±0.3 for Hispanic men and 1.5±0.3% in Non-Hispanic White men. Similarly, only 4.3±0.7% of Hispanic men used cigars compared with 9.9±1.0% of Non-Hispanic White men. The estimates of other tobacco use for Hispanic men were similar to those seen in Asian/PI men.

Smoking Cessation

In 1999-2005, a significantly higher percentage of Hispanic smokers compared to Non-Hispanic White smokers quit for at least a day (65.3±4.3% vs. 54.6±1.2%). Similarly, during that same time period, a significantly higher percentage of Hispanics than Non-Hispanic Whites quit for 90 days or more (16.7±2.4% vs. 12.8±1.0%) (Table A.7.7, Table A.7.8).

Across survey years, Hispanic smokers were significantly less likely than Non-Hispanic White smokers to have used nicotine replacement therapy (NRT) during their last quit attempt. In 2005, 9.7±4.4% of Hispanic smokers compared with 25.5±3.8% of Non-Hispanic White smokers used NRT during their last quit attempt (Table A.7.11). Hispanic smokers were also less likely than Non-Hispanic Whites to receive physician advice to quit smoking (Table A.7.12). In 1996, a significantly lower percentage of Hispanic smokers reported receiving physician advice compared with Non-Hispanic smokers (40.0±3.9% vs. 54.5±1.7%). This difference between racial/ethnic groups persisted until 2002, but in 2005 was no longer statistically significant because of wide confidence intervals. In 2005, 52.3±9.7% of Hispanic smokers reported receiving physician advice compared with 64.6±3.4% of Non-Hispanic White smokers. A similar result has been observed in other population-based studies (CDC, 1993; Levinson et. al., 2004; Houston et. al., 2005). The likelihood of receiving physician advice may be influenced by consumption level, socioeconomic factors, insurance status, access to healthcare, and cultural factors (e.g. language barrier).

Exposure to Secondhand Smoke

Analysis of reported exposure to secondhand smoke showed that a lower percentage of Hispanic indoor workers had smoke-free workplaces compared with Non-Hispanic White indoor workers (90.9±5.0% of Hispanics compared with 97.2±1.6% of Non-Hispanic Whites) (Table A.7.17). Also, a higher percentage of non-smoking Hispanic indoor workers reported exposure to secondhand smoke in their workplaces in the past two weeks compared with their Non-Hispanic White counterparts (23.3±13.8% of Hispanics vs. only 9.2±2.3% of Non-Hispanic Whites) (Table A.7.18).

Data from national surveys showed that the prevalence of smoke-free workplaces varied among demographic subgroups (USDHHS, 2006). Of note, the percentage of indoor workers (aged 18

or older) who reported smoke-free workplace policies was lower in Hispanics compared with Non-Hispanic Whites, Blacks or Asians, which was consistent with the CTS results. This lower percentage of smoke-free workplaces may be complicated by other factors such as gender, occupational status (white collar vs. blue collar or service worker), age, and educational attainment.

Summary

As the population of the U.S. becomes more diverse, awareness of racial/ethnic disparities in health and the development of programs to address these disparities become more critical. Looking ahead, the national public health agenda, as put forth in Healthy People 2010, has two overarching goals: (1) increase quality and years of healthy life, and (2) eliminate health disparities (USDHHS, 2000). Similarly, one of the main objectives of the California Tobacco Control Program has been and continues to be the elimination of disparities and achievement of parity in all aspects of tobacco control (TEROC, 2006). With this perspective in mind, the goal of this chapter was to highlight key findings across different racial/ethnic groups that might assist with future tobacco control planning.

African Americans

Between 1990 and 2005, overall adult smoking prevalence for African Americans showed a factor decline of 28.3%. In 2005, smoking prevalence among African Americans continued to be higher than for Non-Hispanic Whites and other racial/ethnic groups. The CTS prevalence data on smoking for African Americans by age showed a generalized decline across each age group, whereas the national data showed a cohort effect where younger African Americans were less likely to initiate smoking. Because of small sample sizes and different age categorization in the CTS, the national trends could not be replicated. Further studies are needed to address these findings.

Also of note were the trends in African American smoking cessation. Although a higher percentage of African Americans than Non-Hispanic Whites made a quit attempt of one day or longer, by 90 days abstinence, the percentages were the same. A previous study of African American and Non-Hispanic White smokers in California showed successful cessation of 5+ years was lower among African American adults than among Non-Hispanic Whites, especially in the older age groups (Trinidad, et. al., 2005). Thus, sustained cessation was not maintained by African Americans and may have also contributed to their higher smoking prevalence compared with Non-Hispanic Whites. In addition, African American smokers were less likely to have a total home smoking ban compared with Non-Hispanic Whites and other racial/ethnic groups. Home bans are an important tobacco control measure for at least two reasons. First, home bans limit the exposure of non-smokers to secondhand tobacco smoke and its adverse effects. Second, home bans have been shown to affect smoking behavior positively by increasing quit rates (Gilpin et. al., 1999). Although there has been an increase in the percentage of African American smokers with total home bans, this may be another area of focus for the African American community.

Asian/Pacific Islanders (Asian/PIs)

Adult smoking prevalence in Asian/PIs declined by 22.5% between 1990 and 2005. In 2005, Asian/PIs had the lowest overall smoking prevalence (11.0±2.1%) among the four major racial/ethnic groups analyzed, but there were significant differences in smoking prevalence

within this collective group. Gender was one factor that affected smoking prevalence. In 2005, Asian/PI men had a smoking prevalence similar to Non-Hispanic White men. In contrast, Asian/PI women had about half the prevalence of Non-Hispanic White women and of Asian/PI men. Acculturation status also affected smoking rates. An analysis found that English spoken at home was associated with higher smoking prevalence for Asian/PI women but slightly lower smoking prevalence for Asian/PI men. Finally, there is outside evidence that smoking prevalence may differ by Asian/PI subgroups (CDC, 2004c). Although the small sample sizes in the 2005 CTS did not allow analysis by subgroup, other studies of California smokers have found variation by subgroup. For example, in 2004, separate surveys conducted by the California Department of Health Services found that 7.7% of Chinese Californians were current smokers compared to 15.3% of Korean Americans (Carr, et. al., 2005a; Carr et. al., 2005b). These many factors need to be considered in future tobacco control research and outreach to Asian/PIs.

Hispanics

Between 1990 and 2005, adult smoking prevalence for each major racial/ethnic group in California showed a decline greater than 20%. The largest factor decline in overall prevalence was seen for Hispanics (-32.6%). Contributing to this overall drop was the large decline seen for Hispanic women during that time period (-41.6%). In the 2005 survey, as in previous surveys, smoking prevalence for Hispanic women was approximately half the prevalence seen for Non-Hispanic White women and for Hispanic men. However, Hispanics cannot be considered a homogeneous group and many different social and cultural factors can affect health behaviors. For example, an analysis by language use found that Hispanic women who spoke English at home had a significantly higher smoking prevalence than those who did not. In planning future tobacco control measures, such differences need to be taken into consideration and programs should be tailored to the different subgroups.

Also notable was Hispanics' exposure to secondhand smoke at work. Although the percentage of Hispanic indoor workers with smoke-free workplaces has increased over time and may be nearing saturation level, in 2005, this percentage was lower for Hispanics than for other racial/ethnic groups. Furthermore, the percentage of Hispanic indoor workers reporting exposure to secondhand smoke in the past 2 weeks was greater than for other racial/ethnic groups. In 2006, the Surgeon General's Report concluded that homes and workplaces were the predominant locations for exposure to secondhand smoke (USDHHS, 2006). The report also found that establishing smoke-free workplaces was the only effective way to ensure that secondhand smoke exposure did not occur in the workplace. Thus, the continued implementation of workplace bans may be an area for improvement in the Hispanic population.

Finally, of note were trends in smoking cessation for Hispanics. During the period 1999-2005, a higher percentage of Hispanic smokers made a quit attempt of at least one day compared with Non-Hispanic White smokers. Similarly, Hispanic smokers were more likely than Non-Hispanic White smokers to have successfully quit for 90 days or more. On the other hand, Hispanics were less likely than Non-Hispanic Whites to have used NRT during their last quit attempt or to have received physician advice to quit. Further research is needed regarding these cessation patterns.

APPENDIX

Chapter 7
A Summary of Racial/Ethnic Differences

Note: This appendix includes extra tables that are not necessarily highlighted in the body of the chapter.

1. Trends in Adult Tobacco Use in California (Volume I, Chapter 2)

Overall Trends

Table A.7.1 shows the overall standardized adult smoking prevalence by race/ethnicity. Since 1990, there has been an overall decline in adult smoking prevalence of 28.0%. All racial/ethnic groups showed greater than a 20% declines in prevalence; the largest factor decline was seen in Hispanics (-32.6%). African-Americans continued to have the highest adult smoking prevalence followed by Non-Hispanic Whites, Hispanics and Asian/PIs.

Table A.7.1
Standardized Adult Smoking Prevalence by Race/Ethnicity (Screener Data)

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1990-2005 %	Factor Change 2002-2005 %
Overall	19.0 (±0.4)	17.0 (±0.5)	16.3 (±0.4)	16.6 (±0.3)	15.1 (±0.3)	13.7 (±0.5)	-28.0	-9.2
African American	26.4 (±2.3)	22.3 (±2.1)	22.6 (±1.4)	21.5 (±1.1)	20.4 (±1.4)	18.9 (±2.2)	-28.3	-7.3
Asian/PI	14.2 (±1.1)	11.3 (±1.3)	11.9 (±0.9)	13.0 (±0.9)	11.9 (±0.9)	11.0 (±2.1)	-22.5	-7.1
Hispanic	17.6 (±1.0)	15.0 (±1.1)	14.0 (±0.8)	14.6 (±0.5)	13.0 (±0.6)	11.8 (±1.1)	-32.6	-8.7
Non-Hispanic White	19.9 (±0.4)	18.9 (±0.6)	17.6 (±0.3)	18.0 (±0.4)	16.3 (±0.4)	14.5 (±0.6)	-26.9	-11.0

Trends by Gender

Table A.7.2 shows the trends in standardized smoking prevalence for adult males. In 2005, overall adult male smoking prevalence was 16.7±0.9%. African-Americans had the highest adult male smoking prevalence (21.0±3.2%) compared with other racial/ethnic groups, which had smoking rates around 16%. However, all racial/ethnic groups had significant and similar declines (around 25%) from 1990-2005.

Table A.7.2
Standardized Adult Smoking Prevalence by Race/Ethnicity - Males (Screener data)

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1990-2005 %	Factor Change 2002-2005 %
Overall	22.7 (±0.5)	20.6 (±0.8)	19.4 (±0.5)	20.1 (±0.5)	18.7 (±0.5)	16.7 (±0.9)	-26.4	-11.0
African American	28.9 (±2.7)	25.8 (±2.8)	24.6 (±1.8)	24.8 (±1.9)	23.5 (±1.9)	21.0 (±3.2)	-27.1	-10.3
Asian/PI	21.8 (±1.7)	17.6 (±2.0)	17.6 (±1.3)	18.9 (±1.4)	17.7 (±1.5)	16.1 (±2.7)	-26.4	-9.4
Hispanic	23.3 (±1.4)	20.9 (±1.7)	19.0 (±1.2)	20.0 (±0.7)	18.5 (±1.0)	16.7 (±1.8)	-28.2	-9.8
Non-Hispanic White	21.4 (±0.5)	20.1 (±0.8)	19.2 (±0.4)	19.7 (±0.6)	18.3 (±0.6)	16.0 (±0.9)	-25.0	-12.3

Table A.7.3 presents the trends in standardized prevalence for adult females. Across surveys, smoking prevalence for Asian/PI and Hispanic women has been much lower than African American and Non-Hispanic White women. Furthermore, the rates for Asian/PI and Hispanic women have been half the rates of their male counterparts within the same racial/ethnic group. Since 1990, all racial/ethnic groups have seen a decline in female smoking, with the largest factor decline among Hispanic women (-41.6%).

Table A.7.3
Standardized Adult Smoking Prevalence by Race/Ethnicity - Females (Screener data)

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1990-2005 %	Factor Change 2002-2005 %
Overall	15.6 (±0.7)	13.8 (±0.6)	13.3 (±0.4)	13.3 (±0.3)	11.7 (±0.4)	10.8 (±0.5)	-30.7	-7.4
African American	24.2 (±2.8)	19.4 (±2.2)	20.9 (±1.9)	18.6 (±1.3)	17.8 (±1.7)	17.1 (±2.8)	-29.5	-3.9
Asian/PI	7.3 (±1.3)	5.7 (±1.5)	6.9 (±1.1)	7.8 (±0.9)	6.6 (±0.9)	6.5 (±2.3)	-11.0	-1.6
Hispanic	11.7 (±1.3)	8.9 (±1.1)	8.9 (±0.8)	8.9 (±0.6)	7.2 (±0.6)	6.8 (±1.0)	-41.6	-5.8
Non-Hispanic White	18.5 (±0.8)	17.7 (±0.7)	16.2 (±0.4)	16.4 (±0.4)	14.5 (±0.6)	13.1 (±0.7)	-29.0	-9.5

Consumption Levels among Adult Smokers

Table A.7.4 presents consumption levels among current smokers in 2005 by race/ethnicity. Non-Hispanic White smokers had the highest prevalence of heavy smokers (i.e. 25+ cigarettes/day) and lowest prevalence of occasional, non-daily smokers compared with other racial/ethnic groups.

Table A.7.4
Adult Consumption Level by Race/Ethnicity (2005)

	Heavy (25+) (n=354) %	Moderate (15-24) (n=1246) %	Light (<15) (n=1415) %	Occasional (n=928) %
Overall	7.2 (±1.3)	27.9 (±3.7)	36.5 (±3.0)	28.3 (±3.1)
African American	3.0 (±2.5)	13.2 (±6.2)	56.1 (±12.7)	27.7 (±11.3)
Asian/PI	3.8 (±5.3)	15.7 (±6.5)	43.4 (±9.9)	37.0 (±11.9)
Hispanic	1.8 (±1.3)	20.2 (±13.6)	37.7 (±9.2)	40.3 (±8.6)
Non-Hispanic White	11.3 (±2.3)	37.0 (±3.2)	31.1 (±2.5)	20.6 (±2.6)

Current Tobacco Use

Table A.7.5 shows the prevalence of current tobacco use (i.e., within the last 30 days) among adult males, including any tobacco product, cigarettes, cigars, tobacco pipes, and chewing tobacco/snuff. Because the use of tobacco products other than cigarettes is primarily seen in males, the analysis by racial/ethnic groups is presented for males only. Data from the 1990 CTS is compared with aggregated data from the 1999, 2002, and 2005 surveys to improve sample sizes.

Table A.7.5
Use of Tobacco Products (Males Only)

	Any Tobacco Product %	Cigarettes %	Cigars %	Tobacco pipe %	Chewing tobacco/snuff %
1990					
Overall	29.0 (±1.2)	23.8 (±0.9)	4.8 (±0.7)	2.4 (±0.3)	3.5 (±0.5)
African-American	33.7 (±5.4)	30.9 (±5.3)	2.6 (±1.4)	1.8 (±1.4)	1.5 (±1.1)
Asian/PI	21.9 (±4.1)	19.7 (±4.1)	2.5 (±1.9)	1.6 (±1.6)	0.8 (±0.6)
Hispanic	24.4 (±2.3)	21.8 (±2.1)	3.3 (±1.3)	0.7 (±0.5)	1.5 (±1.0)
Non-Hispanic White	30.7 (±1.6)	23.8 (±1.1)	5.6 (±0.7)	3.0 (±0.5)	4.8 (±0.7)
1999-2005					
Overall	25.4 (±0.7)	19.5 (±0.5)	7.4 (±0.5)	1.1 (±0.2)	2.1 (±0.3)
African-American	28.6 (±3.0)	23.3 (±2.6)	7.6 (±2.1)	0.8 (±0.6)	1.9 (±1.7)
Asian/PI	19.1 (±1.8)	16.1 (±1.5)	3.9 (±0.9)	0.6 (±0.4)	0.7 (±0.3)
Hispanic	23.6 (±1.8)	20.4 (±1.7)	4.3 (±0.7)	0.7 (±0.3)	0.8 (±0.4)
Non-Hispanic White	26.9 (±1.2)	18.7 (±0.7)	9.9 (±1.0)	1.5 (±0.3)	3.2 (±0.4)

Hookah Use

Table A.7.6 presents ever-use of hookahs for adults overall. A question about hookah use was asked for the first time in the 2005 survey. Ever-use of hookahs was higher among Non-Hispanic Whites than other racial/ethnic groups, but small sample sizes limit conclusions.

Table A.7.6
Hookah Ever-Use (All)

	2005 %	N
Overall	5.0 (±0.6)	1,055
African American	3.1 (±1.6)	41
Asian/PI	3.5 (±1.3)	75
Hispanic	2.3 (±0.6)	142
Non-Hispanic White	6.9 (±1.0)	753

2. Smoking Cessation (Volume 1, Chapter 3)

Smokers in the Last Year Who Made a Quit Attempt of 1 or More Days

Table A.7.7 shows the percentage of smokers who made a quit attempt for a day or longer in the last year by race/ethnicity. Data from 1990 was compared with aggregated data from the 1999, 2002, and 2005 surveys. During the period 1999-2005, the percentage of smokers making a quit attempt of at least one day was significantly lower among Non-Hispanic Whites (54.6±1.2%) than other racial/ethnic groups.

Table A.7.7
Smokers in the Last Year who Made a Quit Attempt of at Least One Day (Includes Current and Former Smokers)

	1990 %	1999-2005 %
Overall	52.9 (±1.5)	58.5 (±1.2)
African-American	64.4 (±6.5)	66.6 (±4.0)
Asian/PI	57.1 (±9.2)	61.9 (±4.5)
Hispanic	64.0 (±4.9)	65.3 (±4.3)
Non-Hispanic White	48.3 (±1.5)	54.6 (±1.2)

Smokers in the Last Year Who Made a Quit Attempt of 90 Days or Longer

Table A.7.8 shows the percentage of smokers who made a quit attempt of 90 days or longer in the last year by race/ethnicity. In contrast to the previous table, during the period 1999-2005, the percentage of smokers making a quit attempt of 90 days or longer was similar in African-Americans and Non-Hispanic Whites (11.3±2.6% vs. 12.8±1.0%).

Table A.7.8
Smokers in the Last Year who had a Quit Attempt of 90 Days or Longer (Includes Current and Former Smokers)

	1990 %	1999-2005 %
Overall	10.9 (±1.1)	13.7 (±0.9)
African-American	13.5 (±5.6)	11.3 (±2.6)
Asian/PI	11.8 (±3.8)	15.8 (±3.8)
Hispanic	13.4 (±3.2)	16.7 (±2.4)
Non-Hispanic White	10.0 (±0.9)	12.8 (±1.0)

Self-Efficacy (2005)

Table A.7.9 presents the reported self-efficacy of current smokers for different racial/ethnic groups. The CTS has a single measure of self-efficacy in most of the surveys. Current smokers were asked:

> *How sure are you that you could refrain from smoking for at least one month? Would you say very sure, somewhat sure, somewhat unsure, or very unsure?* **(B27)**

Smokers who responded "very sure" were categorized as having a high level of self-efficacy.

In 2005, an additional question was asked:

> *If someone offered a lot of money to motivate you to quit and stay quit for 6 months, how sure are you that you would win this money?* **(B26a_1)**

This additional question increased the length of the time off smoking (to the minimum criteria for successful quitting) and introduced the possibility of a significant financial incentive. The responses from both self-efficacy questions were combined into an index. Respondents who were very sure that they would be successful on both questions were categorized as having high self-efficacy. Those who were very sure on at least one of the questions were categorized with an intermediate level of self-efficacy and those who were not "very sure" on either question were categorized as having a low level of self-efficacy. (Taken from Volume I by Al-Delaimy et. al, 2006) In 2005, the percent of smokers in each racial/ethnic group with high efficacy was similar. The wide confidence intervals limit conclusions about differences between racial/ethnic groups.

Table A.7.9
Self-Efficacy Among Current Smokers by Race/Ethnicity, 2005

	High Efficacy %	Intermediate Efficacy %	Low Efficacy %
Overall	41.4 (±3.5)	30.0 (±4.2)	28.6 (±2.6)
African American	41.8 (±19.0)	34.6 (±14.9)	23.6 (±11.4)
Asian/PI	42.4 (±11.2)	23.4 (±8.2)	34.2 (±10.7)
Hispanic	44.1 (±8.7)	33.7 (±12.3)	22.3 (±6.5)
Non-Hispanic White	39.6 (±3.0)	27.5 (±2.6)	32.9 (±2.8)

Current Smokers with a Total Home Ban

Table A.7.10 shows the percentage of current smokers with a total home ban on smoking. Questions regarding home bans were first asked in the 1992 CTS Data from 1992 is compared with aggregated data from 1999-2005 to improve sample sizes. All racial/ethnic groups reported an increase in total home bans since 1992. During the period 1999-2005, African American smokers were less likely than other racial/ethnic groups to have a total home ban on smoking.

Table A.7.10
Current Smokers with a Total Home Ban on Smoking by Race/Ethnicity

	1992 %	1999-2005 %
Overall	19.4 (±1.8)	51.8 (±1.6)
African American	9.3 (±3.9)	39.8 (±6.2)
Asian/PI	19.6 (±7.8)	60.7 (±4.3)
Hispanic	30.4 (±6.5)	63.5 (±3.7)
Non-Hispanic White	18.0 (±2.1)	47.3 (±1.4)

Smoking Cessation Assistance

Table A.7.11 presents the percentage of smokers in the past year that used nicotine replacement therapy (NRT) during their last quit attempt by race/ethnicity. In 2005, Non-Hispanic Whites were significantly more likely than Asian/PI and Hispanic smokers to have used NRT during their last quit attempt.

Table A.7.11
Percentage of Smokers in the Past Year Who Used NRT on their Last Quit Attempt by Race/Ethnicity

	1996 %	1999 %	2002 %	2005 %	Factor Change 1996-2005 %
Overall	13.7 (±1.2)	15.1 (±1.4)	18.1 (±1.5)	18.8 (±3.0)	36.9
African American	8.8 (±3.8)	9.7 (±4.1)	17.7 (±6.1)	19.5 (±12.1)	121.9
Asian/PI	11.9 (±6.6)	7.1 (±3.3)	19.4 (±9.0)	5.6 (±4.4)	-52.8
Hispanic	6.0 (±1.9)	7.6 (±2.5)	6.7 (±1.9)	9.7 (±4.4)	60.1
Non-Hispanic White	17.8 (±1.5)	20.4 (±1.9)	23.9 (±2.1)	25.5 (±3.8)	43.0

Physician Advice for Smoking Cessation

Table A.7.12 presents the percentage of smokers who were advised by their physician to quit smoking during the last year or in the year before they quit. All racial/ethnic groups showed an increase in the percentage of smokers who received physician advice. Across time, Hispanic smokers were least likely to be advised to quit smoking compared with other racial/ethnic groups. In 2005, the difference between Hispanic smokers and Non-Hispanic White smokers was not statistically significant, in contrast to previous survey years.

Table A.7.12
Physician Advice to Quit Among Smokers in the Last Year who Visited a Physician

	1996 %	1999 %	2002 %	2005 %	Factor Change 1996-2005 %
Overall	51.9 (±1.7)	55.3 (±2.2)	59.3 (±1.9)	62.6 (±3.5)	20.6
African American	58.4 (±6.3)	56.5 (±6.8)	64.6 (±6.2)	65.4 (±10.1)	12.0
Asian/PI	50.3 (±8.7)	52.6 (±9.3)	60.8 (±8.3)	67.2 (±11.5)	33.7
Hispanic	40.0 (±3.9)	46.5 (±4.6)	50.4 (±4.8)	52.3 (±9.7)	30.5
Non-Hispanic White	54.5 (±1.7)	58.3 (±2.0)	61.3 (±2.3)	64.6 (±3.4)	18.5

3. Price Sensitivity and Taxes (Volume 1, Chapter 4)

Average Price per Pack Bought by California Smokers

Table A.7.13 shows the self-reported average price per pack of cigarettes paid by smokers in different racial/ethnic groups. In 2005, Asian/PI and Hispanic smokers paid significantly more per pack than Non-Hispanic Whites. African Americans paid more than Non-Hispanic Whites, but the difference was not statistically significant.

Table A.7.13
Average Price per Pack Bought by California Smokers by Race/Ethnicity (2005 $)

	1996 %	1999 %	2002 %	2005 %	Factor change 2002-2005 %
Overall	2.39 (±0.02)	3.84 (±0.03)	4.17 (±0.03)	3.88 (±0.05)	-7.0
African American	2.46 (±0.05)	3.93 (±0.09)	4.33 (±0.10)	3.95 (±0.28)	-8.8
Asian/PI	2.50 (±0.05)	3.96 (±0.09)	4.26 (±0.17)	4.09 (±0.15)	-4.0
Hispanic	2.55 (±0.05)	3.98 (±0.060)	4.37 (±0.07)	4.07 (±0.10)	-6.9
Non-Hispanic White	2.32 (±0.03)	3.76 (±0.03)	4.06 (±0.04)	3.75 (±0.05)	-7.6

Average Monthly Expenditures on Cigarette by California Smokers

Table A.7.14 presents the average monthly expenditure on cigarettes by race/ethnicity. Non-Hispanic Whites spent significantly more per month than other racial/ethnic groups. This may be related to higher consumption levels in Non-Hispanic Whites compared with other groups.

Table A.7.14
Average Monthly Expenditures on Cigarettes by California Smokers by Race/Ethnicity (2005 $)

	1996 %	1999 %	2002 %	2005 %	Factor change 2002-2005 %
Overall	48.40 (±1.20)	73.43 (±1.89)	73.03 (±2.04)	65.82 (±3.96)	-9.9
African American	42.25 (±3.14)	61.34 (±4.83)	68.98 (±6.53)	54.53 (±10.92)	-20.9
Asian/PI	43.76 (±6.86)	63.41 (±8.04)	59.38 (±6.78)	47.70 (±9.52)	-19.7
Hispanic	30.40 (±2.52)	46.09 (±3.28)	48.56 (±4.02)	51.19 (±13.72)	5.4
Non-Hispanic White	55.55 (±1.17)	85.78 (±2.46)	85.33 (±2.90)	78.12 (±4.29)	-8.4

Percentage of Smokers Worried About Money Spent on Cigarettes

Table A.7.15 shows the percentage of smokers worried about money spent on cigarettes by race/ethnicity. Coinciding with the rise in price between 1996 and 1999, there was an increase in the percentage of smokers in all groups worried about the money spent on cigarettes. The large confidence intervals in 2005 limit conclusions about recent trends.

Table A.7.15
Percentage of Smokers Worried About Money Spent on Cigarettes

	1996 %	1999 %	2002 %	2005 %
Overall	35.1 (±1.3)	52.5 (±1.9)	51.7 (±1.6)	46.5 (±3.9)
African American	34.5 (±4.3)	46.9 (±6.2)	55.2 (±6.1)	62.1 (±12.0)
Asian/PI	38.4 (±8.1)	52.7 (±7.2)	51.7 (±9.1)	38.0 (±11.2)
Hispanic	36.9 (±2.7)	52.3 (±4.5)	48.1 (±3.7)	41.3 (±10.4)
Non-Hispanic White	33.8 (±1.5)	53.2 (±2.1)	52.6 (±1.8)	47.5 (±3.8)

Locations Where Smokers Buy Their Cigarettes

Table A.7.16 shows the locations where smokers buy their cigarettes by race/ethnicity. Across time, all racial/ethnic groups were most likely to purchase their cigarettes from a convenience store/gas station. For groups other than Non-Hispanic Whites, the second most common location was a liquor/drug store. For Non-Hispanic Whites, tobacco discount stores were the second most common place they bought cigarettes.

Table A.7.16
Locations Where Smokers Buy Their Cigarettes by Race/Ethnicity

	Convenience store/ gas station %	Supermarket %	Liquor/ drug store %	Tobacco discount store %	Other discount stores %	Non-taxed sources %	Other sources %
1999							
Overall	45.1 (±1.8)	8.9 (±1.1)	16.8 (±1.6)	14.6 (±1.2)	5.7 (±0.6)	5.4 (±0.8)	3.6 (±0.6)
African American	50.9 (±7.3)	7.5 (±3.2)	21.8 (±5.1)	8.1 (±3.2)	3.5 (±2.2)	3.0 (±1.9)	5.2 (±3.0)
Asian/PI	49.2 (±6.8)	8.2 (±2.8)	16.1 (±4.4)	12.0 (±5.1)	7.9 (±4.8)	4.1 (±2.9)	2.5 (±1.9)
Hispanic	45.2 (±4.1)	6.4 (±2.1)	27.8 (±4.4)	9.2 (±2.7)	3.0 (±1.3)	4.3 (±1.4)	4.1 (±1.3)
Non-Hispanic White	43.2 (±1.8)	10.1 (±1.1)	12.3 (±1.3)	17.6 (±1.5)	7.1 (±0.7)	6.3 (±0.9)	3.4 (±0.7)
2002							
Overall	48.3 (±1.9)	5.5 (±0.7)	16.2 (±1.2)	15.6 (±1.1)	5.1 (±0.7)	6.3 (±0.6)	3.0 (±0.5)
African American	45.9 (±5.3)	5.3 (±2.5)	18.6 (±3.4)	17.0 (±4.0)	2.5 (±1.6)	5.3 (±2.6)	5.4 (±2.8)
Asian/PI	50.8 (±7.7)	4.6 (±2.6)	13.4 (±4.3)	10.4 (±4.2)	5.4 (±5.4)	8.3 (±3.8)	7.1 (±3.7)
Hispanic	51.8 (±4.0)	6.3 (±1.6)	23.9 (±3.6)	8.3 (±2.3)	2.4 (±1.1)	4.5 (±1.7)	2.8 (±1.3)
Non-Hispanic White	48.2 (±1.7)	5.3 (±0.7)	12.4 (±1.1)	18.7 (±1.5)	6.6 (±1.0)	6.8 (±0.9)	2.1 (±0.4)
2005							
Overall	52.9 (±3.7)	4.9 (±1.5)	17.5 (±2.4)	14.5 (±1.6)	3.7 (±0.8)	3.9 (±0.9)	2.8 (±1.1)
African American	58.4 (±13.8)	5.4 (±4.2)	18.6 (±8.4)	12.6 (±7.1)	3.1 (±3.7)	1.4 (±1.3)	0.5 (±0.4)
Asian/PI	56.7 (±11.4)	7.4 (±6.9)	13.8 (±8.2)	10.9 (±6.5)	2.8 (±2.1)	6.3 (±5.8)	2.2 (±2.5)
Hispanic	50.5 (±12.2)	4.9 (±3.7)	27.6 (±8.2)	8.3 (±3.2)	1.3 (±1.2)	2.2 (±1.1)	5.3 (±3.4)
Non-Hispanic White	53.0 (±3.3)	4.5 (±1.2)	12.5 (±2.6)	18.7 (±2.1)	5.0 (±1.4)	4.4 (±1.1)	1.9 (±0.7)

4. Protection of Nonsmokers from Secondhand Smoke (Volume 2, Chapter 1)

Indoor Workers Reporting Smoke-Free Workplaces

Table A.7.17 presents the percentage of indoor workers reporting that their workplaces were smoke-free. The percentages for all racial/ethnic groups increased significantly between 1992 and 1996 and increased slightly since 1996. Every survey year Hispanic workers have been least likely to report smoke-free workplaces compared with other groups.

Table A.7.17
Indoor Workers Reporting Smoke-free Workplaces by Race/Ethnicity

	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1996-2005 %
Overall	35.0 (±1.3)	45.9 (±2.0)	90.5 (±0.9)	93.5 (±0.8)	95.5 (±0.8)	94.8 (±1.7)	4.7%
African American	42.3 (±7.9)	45.9 (±8.3)	91.8 (±3.5)	94.0 (±3.5)	96.4 (±1.2)	94.7 (±3.4)	3.1%
Asian/PI	33.0 (±5.5)	43.9 (±8.8)	91.8 (±2.8)	94.0 (±2.9)	95.3 (±3.6)	96.2 (±1.8)	4.7%
Hispanic	25.8 (±2.9)	30.5 (±4.3)	87.8 (±2.7)	91.3 (±2.1)	93.6 (±1.9)	90.9 (±5.0)	3.5%
Non-Hispanic White	37.9 (±1.7)	51.8 (±2.3)	91.3 (±1.1)	94.5 (±0.8)	96.4 (±0.8)	97.2 (±1.6)	6.5%

Exposure of Indoor Workers to Secondhand Smoke in the Past 2 Weeks

Table A.7.18 presents the percentage of non-smoking indoor workers exposed to secondhand smoke in their workplace in the past two weeks. All groups showed large declines in exposure from 1990 to 2005. In 2005, Hispanics continued to have the highest percentage of non-smoking indoor workers exposed to secondhand smoke.

Table A.7.18
Exposure of Non-Smoking Indoor Workers to Secondhand Smoke in the Past 2 Weeks by Race/Ethnicity

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1990-2005 (%)
Overall	29.1 (±1.7)	22.4 (±1.3)	11.8 (±1.4)	15.3 (±1.4)	11.9 (±1.0)	13.9 (±4.5)	-52.1
African American	22.8 (±7.3)	19.1 (±4.3)	7.9 (±5.1)	15.7 (±5.6)	9.4 (±2.3)	11.3 (±4.9)	-50.6
Asian/PI	27.8 (±5.6)	26.2 (±5.2)	11.8 (±3.8)	18.4 (±7.3)	11.2 (±3.3)	9.8 (±3.1)	-64.7
Hispanic	39.7 (±4.7)	32.0 (±3.8)	19.6 (±3.8)	20.2 (±3.1)	15.4 (±2.4)	23.3 (±13.8)	-41.4
Non-Hispanic White	25.9 (±1.7)	18.9 (±1.4)	8.9 (±1.6)	12.1 (±1.4)	10.4 (±1.3)	9.2 (±2.3)	-64.4

Total Household Bans on Smoking

Table A.7.19 shows the percentage of adults (including smokers and non-smokers) by race/ethnicity reporting that their homes were completely smoke-free. Data from the 1992 CTS is compared with combined data from the 1999-2005 surveys to improve sample sizes. Over time, all racial/ethnic groups have shown increases in the percentage of homes with a total household ban on smoking. During the period 1999-2005, African American adults were less likely to have a total ban compared with other racial/ethnic groups.

Table A.7.19
Adults with Total Household Bans on Smoking by Race/Ethnicity

	1992 %	1999-2005 %
Overall	48.1 (±1.9)	76.1 (±1.1)
African American	46.4 (±7.0)	72.0 (±2.3)
Asian/PI	49.2 (±6.0)	77.5 (±2.2)
Hispanic	53.1 (±4.0)	78.3 (±2.9)
Non-Hispanic White	46.3 (±2.0)	75.3 (±1.0)

Should Smoking Be Allowed in Venues Where It Is Not Currently Prohibited?

Table A.7.20 shows the percentage of Californians within racial/ethnic groups who felt that smoking should not be allowed in particular venues where it is currently not prohibited. In general, Hispanics showed the greatest support for smoke-free venues and Non-Hispanic Whites showed the least support. Support for smoke-free outdoor public places was significantly higher among Hispanics than in other racial/ethnic groups.

Table A.7.20
Places Smoking Should Not Be Allowed by Race/Ethnicity (2005)

	Outdoor public places %	Outdoor restaurant dining patios %	Outside entrances to buildings %	Indian casinos %	Inside cars when children are in them %
Overall	53.4 (±2.1)	70.0 (±1.7)	67.1 (±1.9)	66.4 (±1.8)	92.3 (±0.7)
African American	51.6 (±5.2)	65.3 (±5.2)	70.3 (±5.1)	66.3 (±6.2)	94.2 (±2.8)
Asian/PI	56.0 (±6.0)	70.6 (±5.1)	61.6 (±4.9)	68.3 (±4.5)	95.3 (±1.8)
Hispanic	72.1 (±4.6)	78.6 (±3.8)	79.2 (±4.4)	75.9 (±3.5)	97.1 (±1.1)
Non-Hispanic White	41.5 (±2.4)	65.7 (±2.3)	60.8 (±2.7)	60.3 (±2.3)	88.2 (±1.2)

5. Young Adult Smoking (Volume 2, Chapter 2)

Smoking Prevalence among Young Adults by Race/Ethnicity

Table A.7.21 presents the current smoking prevalence in young adults (aged 18-29) standardized to the 2005 population. Smoking prevalence has declined fairly uniformly across the major racial/ethnic groups. The apparent increase in 2005 for African Americans is computed from a small sample size and was not statistically significant.

Table A.7.21
Standardized (2005) Smoking Prevalence in Young Adults 18-29 Years of Age
(Screener Data)

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1999-2005 (%)
Overall	18.1 (±0.9)	16.1 (±1.0)	16.9 (±0.7)	18.8 (±0.6)	17.0 (±0.7)	15.3 (±1.4)	-18.6
African American	20.6 (±3.6)	12.9 (±3.5)	15.5 (±2.7)	16.9 (±2.3)	15.7 (±3.1)	19.6 (±4.9)	15.6
Asian/PI	15.2 (±3.1)	11.7 (±2.5)	14.5 (±1.7)	15.7 (±1.7)	13.5 (±1.8)	12.0 (±4.0)	-23.8
Hispanic	15.1 (±1.5)	13.8 (±1.5)	12.6 (±1.1)	14.6 (±1.0)	13.4 (±0.9)	11.7 (±1.9)	-20.0
Non-Hispanic White	20.5 (±1.0)	20.0 (±1.4)	22.0 (±1.0)	24.1 (±1.1)	21.9 (±1.3)	19.3 (±1.8)	-19.9

6. Adolescent Smoking Behavior (Volume 2, Chapter 3)

Adolescent Smoking Prevalence (from Volume 1, Chapter 2)

Table A.7.22 shows the current (in the last 30 days) smoking prevalence of adolescents (12-17-year-olds) by race/ethnicity. All racial/ethnic groups have seen factor declines over 50% since 1996 when adolescent smoking rates were at their peak. Since 2002, all racial/ethnic groups have continued to see declines in prevalence.

Table A.7.22
Standardized (2005) Adolescent Current Smoking Prevalence by Race/Ethnicity

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1993-1996 %	Factor Change 1996-2002 %	Factor Change 2002-2005 %
Overall	9.1 (±1.1)	8.9 (±1.3)	11.5 (±1.2)	7.7 (±0.8)	5.1 (±0.7)	3.2 (±0.7)	29.4	-55.9	-36.6
African American	7.3 (±3.7)	7.7 (±3.9)	9.0 (±2.6)	7.8 (±2.8)	4.4 (±1.8)	4.0 (±2.5)	17.0	-51.2	-9.0
Asian/PI	5.9 (±3.1)	7.1 (±5.8)	8.9 (±2.6)	5.5 (±2.2)	4.1 (±1.7)	2.9 (±2.1)	24.2	-54.0	-28.7
Hispanic	8.9 (±2.1)	7.1 (±1.7)	10.6 (±1.9)	7.4 (±1.3)	4.8 (±1.4)	2.6 (±1.2)	49.6	-54.3	-45.9
Non-Hispanic White	10.9 (±1.3)	11.9 (±1.4)	14.1 (±1.2)	8.8 (±1.2)	5.9 (±0.9)	3.8 (±1.1)	18.8	-58.4	-35.2

Committed Never Smokers Who Have Never Been Curious About Smoking

Table A.7.23 shows the percentage of committed never smokers who have never been curious about smoking by race/ethnicity. Between 1996 and 2005, all racial/ethnic groups showed significant increases in this percentage; Asian/PIs showed the largest factor increase (+91.7%). Since 2002, the percentages have increased in all racial/ethnic groups, but only changed significantly for Asian/PIs and Hispanics.

Table A.7.23
Committed Never Smokers who Have Never Been Curious About Smoking in Racial/Ethnic Groups of Adolescents 12-17 Years of Age

	1996 %	1999 %	2002 %	2005 %	Factor Increase 1996-2005 (%)
Overall	23.3 (±1.2)	28.4 (±1.1)	32.2 (±1.2)	40.3 (±2.9)	73.0
African American	28.5 (±4.4)	36.6 (±4.4)	39.6 (±5.3)	46.6 (±8.9)	63.5
Asian/PI	25.4 (±3.7)	27.3 (±4.8)	30.0 (±5.0)	48.7 (±9.8)	91.7
Hispanic	20.6 (±2.1)	25.0 (±1.7)	27.6 (±2.0)	38.6 (±5.7)	87.4
Non-Hispanic White	23.8 (±1.5)	30.0 (±1.5)	36.9 (±2.0)	39.4 (±3.4)	65.5

Ever-Smoking

Table A.7.24 presents the trends in ever-smoking among 12-14-year-olds of different racial/ethnic groups. Since 1996, ever-smoking has declined among all racial/ethnic groups, with statistically significant declines for Asian/PIs, Hispanics, and Non-Hispanic Whites. Between 2002 and 2005, there was also a significant decline in ever-smoking among Hispanic adolescents 12-14 years of age.

Table A.7.24
Ever-Smoking in Racial/Ethnic Groups of Adolescents 12-14 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1996-2002 (%)
Overall	22.7 (±2.5)	22.1 (±2.1)	19.7 (±1.7)	14.8 (±1.5)	8.0 (±1.1)	5.4 (±1.6)	-72.6%
African American	17.0 (±5.4)	19.7 (±6.7)	16.2 (±5.5)	11.2 (±4.1)	5.5 (±2.6)	7.9 (±8.4)	-51.2%
Asian/PI	15.0 (±6.9)	11.2 (±4.6)	13.9 (±4.3)	8.3 (±4.8)	3.5 (±2.2)	2.6 (±2.0)	-81.3%
Hispanic	22.7 (±2.1)	23.3 (±4.1)	18.6 (±2.9)	17.5 (±3.1)	9.7 (±2.1)	4.4 (±1.6)	-76.3%
Non-Hispanic White	26.3 (±2.3)	23.1 (±2.8)	21.6 (±2.2)	14.8 (±1.4)	8.2 (±1.8)	6.6 (±3.2)	-69.4%

Table A.7.25 presents the trends in ever-smoking among 15-17-year-olds of different racial/ethnic groups. All groups showed declines between 1996 and 2005 and, more recently, between 2002 and 2005.

Table A.7.25
Ever-Smoking in Racial/Ethnic Groups of Adolescents 15-17 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Change 1996-2005 (%)
Overall	50.9 (±2.8)	49.1 (±2.2)	48.8 (±2.3)	40.0 (±2.5)	31.2 (±1.7)	21.2 (±3.0)	-56.6%
African American	46.5 (±5.4)	36.5 (±10.9)	42.8 (±6.6)	31.7 (±6.4)	21.6 (±7.5)	13.6 (±10.7)	-68.2%
Asian/PI	36.3 (±6.9)	35.3 (±9.7)	35.8 (±6.6)	30.5 (±6.2)	24.1 (±5.0)	9.8 (±5.5)	-72.6%
Hispanic	50.2 (±12.1)	48.6 (±6.0)	49.8 (±3.8)	40.1 (±4.1)	33.2 (±5.0)	22.3 (±4.9)	-55.2%
Non-Hispanic White	54.6 (±2.5)	53.5 (±3.2)	52.3 (±3.3)	44.7 (±2.9)	32.8 (±2.8)	23.7 (±4.8)	-54.7%

Established Smokers

Adolescents who report smoking at least 100 cigarettes in their lifetime are considered established smokers. Because very few adolescents under age 15 have progressed to established smoking, the analysis below only includes 15-17-year-olds. **Table A.7.26** shows the prevalence of established smoking among 15-17-year-olds of different racial/ethnic groups. Between 1996 and 2005, the prevalence of established smokers declined in all groups, significantly so for Hispanics and Non-Hispanic Whites.

Table A.7.26
Established Smoking in Racial/Ethnic Groups of Adolescents 15-17 Years of Age

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	Factor Decline 1996-2005 %
Overall	10.5 (±1.6)	9.9 (±1.5)	12.1 (±1.4)	8.0 (±1.1)	4.6 (±0.6)	2.7 (±0.8)	-77.7%
African American	4.6 (±5.4)	2.5 (±2.7)	5.7 (±3.5)	4.0 (±3.0)	3.0 (±2.4)	2.0 (±2.6)	-64.9%
Asian/PI	7.6 (±6.9)	6.9 (±7.6)	8.3 (±3.4)	5.4 (±3.0)	3.0 (±1.6)	3.1 (±3.5)	-62.7%
Hispanic	7.0 (±2.1)	6.1 (±1.8)	8.1 (±2.0)	6.0 (±1.3)	2.6 (±1.0)	2.0 (±1.5)	-75.3%
Non-Hispanic White	14.4 (±2.3)	13.7 (±2.0)	16.2 (±1.9)	11.1 (±1.8)	7.3 (±1.6)	3.2 (±1.1)	-80.3%

7. Limiting Youth Access to Cigarettes (Volume 2, Chapter 5)

Adolescents Who Think Cigarettes Are Easy to Get

Table A.7.27 shows the percentage of adolescent never-smokers who perceived that cigarettes would be easy to obtain if they wanted to. Between 1996 and 2005, all racial/ethnic groups showed steady declines. This decline was statistically significant for Hispanic adolescent never-smokers. In 2005, the percentage of Hispanic adolescent never-smokers who thought it would be easy to get cigarettes was significantly less than the percentage of Non-Hispanic White adolescent never-smokers with that perception.

Table A.7.27
Adolescent Never-Smokers Who Thought It Would Be Easy to Get Cigarettes If They Wanted Them by Race/Ethnicity

	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %
Overall	57.9 (±2.2)	56.9 (±1.9)	57.2 (±1.4)	48.2 (±1.4)	45.9 (±1.9)	39.8 (±2.5)
African American	56.6 (±9.9)	62.1 (±7.7)	59.3 (±5.6)	48.9 (±4.7)	45.5 (±6.5)	44.5 (±10.4)
Asian/PI	51.5 (±9.2)	48.0 (±6.9)	53.0 (±5.3)	44.4 (±6.5)	41.3 (±5.0)	38.3 (±10.4)
Hispanic	57.2 (±3.9)	53.0 (±4.5)	50.0 (±2.5)	43.7 (±3.2)	42.5 (±3.0)	34.3 (±4.3)
Non-Hispanic White	59.7 (±2.0)	60.5 (±2.1)	63.8 (±2.1)	53.0 (±2.5)	51.7 (±2.6)	46.5 (±3.7)

Table A.7.28 shows the percentages of adolescents (of all smoking status groups) who thought it would be easy to buy a few cigarettes. All racial/ethnic groups showed over a 50% factor decline between 1996 and 2005 and about a 14% factor decline between 2002 and 2005. In 2005, there were no significant differences between different racial/ethnic groups.

Table A.7.28
Adolescents Who Think It Is Easy to Buy a Few Cigarettes by Race/Ethnicity

	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1996-1999 %	Factor Decrease 1999-2002 %	Factor Decrease 2002-2005 %	Factor Decrease 1996-2005 %
Overall	69.1(±1.2)	47.4 (±1.3)	36.1 (±1.3)	31.0 (±2.2)	-31.4	-24.0	-14.1	-55.2
African American	69.1(±4.2)	51.3 (±5.7)	35.4 (±5.6)	30.4 (±8.3)	-25.7	-31.1	-14.1	-56.0
Asian/PI	64.0 (±3.0)	42.8 (±4.3)	35.0 (±3.9)	30.0 (±8.5)	-33.1	-18.2	-14.5	-53.2
Hispanic	64.6 (±2.6)	46.1 (±2.4)	34.9 (±2.3)	29.7 (±3.5)	-28.7	-24.3	-14.8	-54.0
Non-Hispanic White	73.5 (±1.6)	49.3 (±2.1)	37.6 (±1.9)	32.9 (±3.1)	-33.0	-23.6	-12.5	-55.2

Table A.7.29 shows the percentage of adolescents (of all smoking status groups) who thought it would be easy to buy a pack of cigarettes. All racial/ethnic groups showed significant declines between 1996 and 2005.

Table A.7.29
Adolescents Who Think It Is Easy to Buy a Pack by Race/Ethnicity

	1996 %	1999 %	2002 %	2005 %	Factor Decrease 1996-1999 %	Factor Decrease 1999-2002 %	Factor Decrease 2002-2005 %	Factor Decrease 1996-2005 %
Overall	51.5 (±1.4)	26.7 (±1.3)	21.7 (±1.0)	17.6 (±1.6)	-48.2	-18.8	-19.1	-65.9
African American	55.3 (±4.9)	28.2 (±4.8)	22.7 (±4.7)	17.1 (±9.2)	-49.0	-19.5	-24.7	-69.1
Asian/PI	43.1 (±4.6)	26.8 (±4.7)	18.2 (±3.4)	19.3 (±7.7)	-37.9	-32.1	6.1	-55.3
Hispanic	46.2 (±2.8)	24.9 (±2.1)	21.2 (±2.0)	15.0 (±2.3)	-46.0	-15.1	-29.0	-67.4
Non-Hispanic White	56.5 (±1.9)	28.1 (±1.8)	23.3 (±1.6)	19.8 (±2.5)	-50.3	-16.9	-15.3	-65.0

Adolescent Never-Smokers Offered a Cigarette

Table A.7.30 shows the percentage of adolescent never-smokers who reported having been offered a cigarette. Among committed never-smokers, all racial/ethnic groups showed a decline between 1996 and 2005; this decline was significant for African Americans and Non-Hispanic Whites. In 2005, Hispanic committed never-smokers were more likely than other racial/ethnic groups to report being offered a cigarette.

Among susceptible never-smokers, all racial/ethnic groups showed a decline between 1996 and 2005; this decline was only significant for Non-Hispanic Whites. In 2005, Hispanic susceptible never-smokers were more likely than other racial/ethnic groups to report being offered a cigarette but this difference was not statistically significant.

Table A.7.30
Adolescent Never-Smokers Within Racial/Ethnic Groups Who Have Been Offered a Cigarette

	1996 %	1999 %	2002 %	2005 %	Factor Change 1996- 2005 %	Factor Change 2002- 2005 %
Committed never smokers						
Overall	35.2 (±2.6)	35.1 (±2.4)	26.5 (±1.8)	24.8 (±3.6)	-29.6	-6.5
African American	44.8 (±8.3)	43.7 (±7.1)	30.4 (±6.4)	15.7 (±9.4)	-64.9	-48.2
Asian/PI	24.6 (±6.1)	24.0 (±7.3)	20.1 (±5.9)	15.1 (±7.3)	-38.7	-25.3
Hispanic	37.7 (±4.2)	38.3 (±4.6)	29.0 (±3.8)	33.7 (±7.6)	-10.7	16.3
Non-Hispanic White	34.6 (±2.8)	33.2 (±3.8)	25.3 (±2.8)	20.6 (±3.0)	-40.6	-18.5
Susceptible never smokers						
Overall	39.6 (±2.6)	39.2 (±2.0)	36.9 (±2.2)	31.3 (±3.3)	-20.9	-15.0
African American	35.7 (±9.8)	36.8 (±8.0)	39.6 (±10.0)	29.0 (±18.6)	-18.8	-26.7
Asian/PI	30.4 (±6.8)	32.5 (±7.1)	24.6 (±6.7)	21.2 (±8.1)	-30.4	-14.0
Hispanic	45.2 (±4.5)	44.8 (±3.0)	42.3 (±4.0)	34.4 (±6.3)	-23.9	-18.6
Non-Hispanic White	38.1 (±3.6)	36.2 (±3.8)	34.9 (±3.9)	29.7 (±4.1)	-22.1	-15.0

8. School Policies (Volume 2, Chapter 6)

Obeying the School Rule Not to Smoke on Campus

Table A.7.31 describes the percentage of students who perceive that most or all students obeyed the rule not to smoke on campus. Perceived compliance with the rule increased significantly in all racial/ethnic groups following the 1996 implementation of a smoke-free policy in public schools and has continued to increase. In 2005, a higher percentage of Non-Hispanic White students reported that most or all student smokers obeyed the school rule compared with other racial/ethnic groups.

Table A.7.31
How Many Students Who Smoke Obey the Rule Not to Smoke on School Property by Race/Ethnicity

	Responding "Most" or "All"						Factor Increase 2002-2005 %
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	
All Students	46.3 (±2.0)	43.7 (±1.6)	40.7 (±1.4)	66.7 (±1.5)	71.5 (±1.4)	74.3 (±2.9)	3.9
African American	49.2 (±8.8)	42.5 (±7.7)	38.3 (±5.0)	65.2 (±5.4)	65.7 (±5.0)	69.1 (±7.5)	5.2
Asian/PI	42.1 (±6.6)	38.0 (±5.9)	34.5 (±4.3)	61.4 (±4.8)	74.2 (±4.4)	78.2 (±7.5)	5.4
Hispanic	42.8 (±3.5)	38.5 (±3.8)	39.6 (±2.9)	63.0 (±2.5)	66.8 (±2.4)	69.0 (±5.5)	3.3
Non-Hispanic White	48.9 (±2.6)	47.9 (±2.3)	43.3 (±2.0)	72.5 (±2.0)	76.5 (±2.1)	81.3 (±1.5)	6.3

Students Witnessing Smoking in School

Table A.7.32 shows the percentage of students who have seen anyone smoking at school in the past two weeks by race/ethnicity. Overall, this percentage decreased steadily between 1996 and 2002 but stabilized between 2002 and 2005.

Table A.7.32
Students Who Have Seen Anyone Smoking at School in the Past 2 Weeks by Race/Ethnicity

	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	36.0 (±1.5)	26.3 (±1.7)	20.8 (±1.2)	19.6 (±2.5)	-5.8
African American	35.1 (±5.2)	27.1 (±6.2)	26.9 (±5.7)	19.4 (±3.4)	-27.9
Asian/PI	41.7 (±4.1)	31.0 (±5.7)	17.9 (±3.3)	13.2 (±4.0)	-26.3
Hispanic	32.2 (±2.9)	24.4 (±2.4)	20.3 (±2.2)	21.5 (±5.0)	5.9
Non-Hispanic White	37.0 (±1.8)	26.7 (±2.0)	20.6 (±1.9)	18.5 (±2.8)	-10.2

Perception of Teachers' Smoking

Table A.7.33 shows the percentage of students who perceived that teachers smoked on school grounds. Since 1996, the percentage has declined over 30% in all racial/ethnic groups, except for Asian/PIs who had a low percentage originally.

Table A.7.33
Students Who Perceive That Teachers Smoke On School Grounds by Race/Ethnicity

	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %	Factor Change 1996-2005 %
All Students	19.4 (±1.4)	15.7 (±1.8)	13.0 (±1.3)	13.3 (±3.3)	2.3	-31.4
African American	26.5 (±6.9)	24.1 (±6.0)	14.5 (±5.3)	17.3 (±13.1)	19.3	-34.7
Asian/PI	17.3 (±4.6)	17.4 (±5.2)	11.8 (±4.1)	16.4 (±8.6)	39.0	-5.2
Hispanic	19.4 (±3.1)	15.1 (±2.4)	14.6 (±2.7)	12.3 (±5.8)	-15.8	-36.6
Non-Hispanic White	18.7 (±1.8)	14.1 (±2.2)	12.4 (±1.9)	12.7 (±3.7)	2.4	-32.1

Class on Health Risks of Smoking

Table A.7.34 shows the percentage of students who recalled having a class on the health risks of smoking. For all racial/ethnic subgroups, the highest percentage of students who recalled having a class on this topic was seen in 2002. Unfortunately, in 2005, this percentage declined to the 1996 level or lower depending on subgroup. In 2005, a significantly lower percentage of Hispanic students recalled a class on the health risks of smoking compared with Non-Hispanic White students.

Table A.7.34
Students Who Recall Having a Class on the Health Risks of Smoking

	1996 %	1999 %	2002 %	2005 %	Factor Change 2002-2005 %
All Students	76.1 (±1.3)	77.8 (±1.4)	80.1 (±1.0)	73.4 (±2.3)	-8.4
African American	70.4 (±5.2)	74.0 (±5.6)	74.3 (±6.2)	68.3 (±9.9)	-8.1
Asian/PI	78.6 (±3.7)	77.9 (±4.5)	80.7 (±4.2)	78.6 (±6.5)	-2.6
Hispanic	69.9 (±3.0)	74.0 (±2.7)	77.0 (±2.0)	69.8 (±4.8)	-9.4
Non-Hispanic White	80.3 (±1.5)	82.2 (±1.5)	83.9 (±1.5)	77.9 (±3.0)	-7.2

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Glossary

Adolescents

Committed never smoker – a never smoker who answers definitely not in answer to three questions: trying a cigarette soon, accepting a cigarette if offered by a best friend, and likelihood of smoking in the next year.

Current established smoker – an *established smoker* who has smoked a cigarette on any day in the past month.

Current experimenter – an *experimenter* who has had a cigarette in the past 30 days or admits to smoking once in awhile.

Current smoker – has smoked a cigarette on at least one day in the past month.

Established smoker – has smoked at least 100 cigarettes in his or her lifetime.

Ever smoker – has smoked a cigarette (includes *puffers*)

Experimenter – has smoked a cigarette (excludes *puffers*), but has not smoked at least 100 cigarettes in his or her lifetime.

Former smoker – an *established smoker* who has not smoked a cigarette on any days of the past month.

Never smoker – has never smoked or even puffed on a cigarette.

Non-current smoker – has not smoked a cigarette on any days in the past month.

Puffer – someone who has not smoked a whole cigarette, but admits to puffing on one.

Susceptible never smoker – a *never smoker* who fails to answer "definitely not" to all three questions about trying a cigarette soon, accepting a cigarette if offered by a best friend, and their likelihood of smoking in the next year.

Adults

Non-daily, never daily – has smoked at least 100 cigarettes in his or her lifetime but has never smoked on a daily basis for at least 6 months.

Current experimenter – an *experimenter* who has had a cigarette in the past 30 days or admits to smoking once in awhile.

Current smoker – has smoked at least 100 cigarettes in his or her lifetime and smokes now either everyday or some days.

Daily smoker – a *current smoker* who has smoked on every day of the past month.

Established smoker – has smoked at least 100 cigarettes in his or her lifetime.

Ever daily, current non-daily – has smoked at least 100 cigarettes in his or her lifetime and has smoked on a daily basis for at least 6 months but now smokes only some days.

Ever smoker – has smoked at least 100 cigarettes in his or her lifetime.

Experimenter – has smoked a cigarette, but has not smoked at least 100 cigarettes in his or her lifetime.

Former smoker – has smoked at least 100 cigarettes in his or her lifetime, but does not smoke now (old question) or now smokes not at all (new question).

Light smoker – a *current smoker* who smokes fewer than 15 cigarettes a day.

Moderate-to-heavy daily smoker – a *current smoker* who smokes 15 or more cigarettes a day.

Never smoker – has smoked fewer than 100 cigarettes in his or her lifetime.

Non-daily smoker – a *current smoker* who smokes some days.

Nonsmoker – a *never smoker* or a *former smoker*.

Recent quitter – a *current smoker* with a quit attempt in the last year; a *former smoker* with a quit attempt of less than 1 year.

Smoker in the last year – Either a *current smoker* or a *former smoker* who smoked regularly a year before the survey.

Social smoker – a *current experimenter* or *non-daily smoker* who smokes only when others are smoking.