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Two Decades of the California Tobacco Control Program: California Tobacco Survey, 1990-2008

California Department of Public Health California Tobacco Control Program



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Tobacco Control Progress in California and the Rest of the United States

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Tobacco Control Progress in California and the Rest of the United States

In this chapter, national data sources are used in addition to the California Tobacco Survey (CTS) to focus on the differences in tobacco smoking-related trends between California and the rest of the United States. More detailed summaries of smoking prevalence from the CTS are presented in Chapter 2.

KEY FINDINGS

- Reported adult smoking prevalence in California is consistently lower than the prevalence in the rest of the U.S. Estimated smoking prevalence in California declined on average by 0.35 percentage points per year between 1990 and 2008 compared to an average 0.24 percentage point per year decline in the rest of the United States.
- Projections from both CTS and Tobacco Use Supplement to the Current Population Survey (TUS-CPS) suggest that California will achieve the Healthy People 2010 target of 12% adult population prevalence of cigarette smoking by the year 2010. The Centers for Disease Control Behavioral Risk Factor Surveillance System (BRFSS) estimates are slightly more conservative, projecting 12.9% prevalence by 2010.
- From 1999 to 2008 there was a reduction in smoking prevalence across all ages from 18 to the seventies, with a dramatic reduction in smoking prevalence for adults aged 18 years, declining from about 18% to about 7%, consistent with the previously reported dramatic decline in smoking initiation among adolescents.
- For both California and the rest of the U.S., peak smoking prevalence as a function of age occurs between the ages of 25 to 30 years. Prevalence within this age group remains high, at about 16% in California as of the 2008 CTS and about 25% within the rest of the nation as of the 2006-07 TUS-CPS.
- Californians purchased an average of 3.37 packs of cigarettes per month in 2008, down 9% from the 3.72 packs per month observed in 2005, and approximately half the 6.42 packs per month observed in the rest of the nation.
- Since the inception of the California Tobacco Control Program (CTCP) in 1989, the per capita budget allocation to this program has declined by 73% in inflation-adjusted dollars. Tobacco industry per capita expenditures for advertising and promotion on the other hand have *increased* by 72% as of the last tobacco industry report in 2006.

Tobacco Control Progress in California and the Rest of the United States

Introduction

California has been on the forefront of tobacco control nationwide since it initiated the first well-funded statewide comprehensive tobacco control program with the passage of Proposition 99 in 1988. Since then, we have regularly documented that the gap between both smoking prevalence and per capita taxed cigarette sales in California compared to the rest of the nation has consistently increased (Burns & Pierce, 1991; Burns & Pierce, 1992; Pierce et al., 1993; Pierce et al., 1994; Pierce et al., 1998; Gilpin et al., 2001; Gilpin et al., 2004; Al-Delaimy et al., 2008a, 2008b). The relatively greater success of tobacco control efforts in California has included: a) decreased initiation (Pierce et al., 2005), b) increased young adult guitting (Messer et al., 2007), and c) decreased cigarette consumption among continuing smokers (AI-Delaimy et al., 2007). The CTCP includes media campaigns, school and community education on smoking, cessation programs, and policy changes to discourage tobacco use and exposure to second-hand smoke, which reflect the guidelines for effective components of comprehensive programs. The multifaceted approach of the CTCP is an effective response to the multifaceted approach by the tobacco industry in promotion and sales of cigarettes, as any single component of a tobacco control measure is unlikely to have the same long-term influence on decreasing smoking prevalence as the combination of all the components.

In this chapter, we summarize temporal trends in prevalence of cigarette smoking observed by CTS and other public surveys in California and the rest of the nation. Survey data measure population prevalence, which is the number of people currently smoking divided by the total population. We also summarize trends in prevalence according to age for each of the CTS surveys since 1996 and compare these age trends with the rest of the U.S. Beyond prevalence, taxable sales of cigarettes is an objective measure of smoking levels in a state, provided that there is not significant tax evasion. As another indicator of tobacco use, taxable cigarette sales data are presented for California and the rest of the U.S. to characterize trends in sales over time. This chapter also summarizes temporal trends in funding by the state for the CTCP compared to temporal trends in funding by the tobacco industry on promotion and advertisement of its products. There is a close correlation between amount of funding for comprehensive tobacco control programs and their effectiveness (Tauras et al, 2005). The current low level of state tobacco control program funding compared to the industry funding, and ongoing efforts by the tobacco industry to indirectly undermine the program with aggressive sales promotions (Glantz & Balbach, 2000) may lead to slowing of the decline in prevalence or increase in the sales of cigarettes.

Later chapters in this report will provide detailed results from the 2008 CTS, and compare 2008 statistics with findings from the previous seven surveys in this series.

1. Adult Smoking Prevalence-Pooled Analysis

A number of surveys provide regular estimates of smoking prevalence in California, in addition to the CTS. These include two surveys that are regularly used to provide state-level estimates of smoking behavior: the very large national Tobacco Use Supplement to the Current Population Survey (TUS-CPS) and the Behavioral Risk Factor Surveillance System (BRFSS). Data from these three survey series are summarized in **Figure 1.1**. Data were standardized to the race, ethnicity, age, and education distribution of the California population in 2008 (Al-Delaimy et al., in press) to control for the influence of these demographic factors in comparisons across surveys.

Figure 1.1 summarizes data from these surveys. While there is considerable variability from year to year in the estimates from these surveys, it is clear that reported smoking prevalence in California is consistently lower than in the rest of the U.S. Linear regression lines fitted to the pooled California survey data and the pooled survey data for the rest of the U.S. for 1990 through 2008 are included in the figure. Based on the linear regression line fit to the California data, estimated smoking prevalence in California declined on average by 0.32 points per year between 1990 and 2008 and reached 13.1% in 2008. Projecting the pooled sample regression for California leads to an estimated smoking prevalence of 12.4% in 2010, close to the Healthy People 2010 recommended target of 12% smoking prevalence (USDHHS, 2000).





Over the same time period, smoking prevalence declined on average 0.24% per year in the rest of the United States, and reached 19.0% prevalence in 2008. Hence over the period of the CTCP implementation in California, prevalence declined 46% faster in California than in the rest of the nation.

2. Adult Smoking Prevalence-Individual Survey Series Analysis

Figure 1.2 summarizes each survey series individually. To provide a point of reference for comparing graphs, each plot in Figure 1.2 includes the pooled estimate trend lines for California and the rest of the U.S. that were reported in Figure 1.1 as well as linear regression models fit independently to each series.

Figure 1.2: Comparison of Pooled Prevalence Estimates (bold lines) to Estimates from Individual Surveys (All Data Standardized to 2008 California Adult Population).



SOURCE: TUS-CPS 1992-93, 1995-96, 1998-99, 2001-02, 2003, 2006-07; BRFSS 1990-2008; CTS 1990, 1992, 1993, 1996, 1999, 2002, 2005, 2008

Tobacco Use Supplement to the Current Population Survey. The TUS-CPS utilized the large labor force survey for the nation, with enhanced self-reporting undertaken since 1992. There are three separate survey months (non-overlapping samples) involved in each of these surveys. Each full survey sampled 16,000 to 24,000 from California and 210,000 to 290,000 from the rest of the nation. The surveys were conducted in 1992-93, 1995-96, 1998-99, 2001-02, and 2006-07. A separate survey with a different design (including a follow-back component) was conducted in 2003 with a focus on estimating cessation rates. The estimates from the 2003 survey were considerably outside the general trend of the TUS-CPS surveys, presumably because of this difference in design, and accordingly have been omitted from this trend analysis. The trend lines from the included surveys suggested a higher prevalence in 1990 than obtained from the pooled estimates, and a sharper decline over time. These models predict a 2010 smoking prevalence of 10.8% in California and 15.0% in the rest of the nation.

Behavioral Risk Factor Surveillance System. The BRFSS is a state-based system of health surveys that collects from adults information on health risk behaviors, preventive health practices, and health care access primarily related to chronic disease and injury. Data are collected monthly through a random-digit telephone survey in all 50 states, the District of Columbia, Puerto Rico, the U.S., Virgin Islands, and Guam. The states forward the responses to the Centers for Disease Control and Prevention (CDC), where the monthly data are aggregated for each state. There were 19 different survey estimates from the BRFSS over the 1990-2008 time period. Starting in 1994, the California BRFSS was supplemented with the state Department of Public Health California Adult Tobacco Survey (CATS). The CATS increased the sample size for California using the BRFSS sampling frame and survey questions. Surveys prior to 1994 included between 3000 and 6000 Californians; surveys from 1994 forward included more than 10.000 Californians per survey. For the rest of the nation, the BRFSS sample size was between 80,000 and 400,000 per survey. The linear trend for smoking prevalence in California from the BRFSS series had a similar starting point to the pooled analysis estimate, but suggested a slower rate of decline, projecting a 12.9% prevalence by 2010, modestly higher than the estimate from the pooled analysis. The BRFSS trend estimate for the rest of the nation also suggested a slower rate of decline for the rest of the nation than the combined trend, projecting a 18.4% prevalence in 2010.

California Tobacco Survey. The CTS is a triennial California survey of between 44,000 and 93,000 respondents per survey. Estimated prevalence was about 19% in the 1990 survey, remained relatively steady between 16% to 17% from 1992-99, and then steadily declined from 17% in 1999 to 11.6% in 2008. The linear regression model fit to the entire CTS series is consistent with but slightly lower than the model for trend in California from the pooled analysis. This CTS model projects a 2010 smoking prevalence of 12.1%. Trends projected using only data from 1999 forward are slightly more optimistic than this.

The best estimate using trends from 1999 forward is that California will reach the Healthy People 2010 target of 12% adult smoking prevalence by the year 2010. **Trends from 1999 Forward.** Based on visual inspection of the individual scatter plots, each of the above three survey series has a suggestion that there may be a change in the trajectory of trend within California starting in 1999, the year of implementation of the Master Settlement Agreement. Using only data from 1999 forward to inform projections, the predicted 2010 adult smoking prevalence for the state of California is 11.5% using CTS data, 10.3% using TUS-CPS data, and 12.3% using BRFSS data. The average projected prevalence using only data from 1999 forward is 11.4%, within the Healthy People 2010 target of 12% adult smoking prevalence.

3. Age-Specific Smoking Prevalence

The large size of the CTS surveys allows us to provide estimates at the individual age level. For example, the 2008 CTS survey includes 400 to 900 observations for each one-year age interval between the ages of 18 and 75. This sample size allows us to estimate age-specific smoking prevalence in California more accurately than would be possible with other surveys. **Figure 1.3** summarizes age-specific prevalence across the CTS surveys from 1996 through 2008. The prevalence by age curves were created by first calculating population prevalence estimates for each year of age, and then applying a weighted moving average smoother (Friedman, 1984) to the estimates for each age.

With each succeeding survey from 1999 to 2008, prevalence dropped across all ages from 18 to the late seventies. The most marked difference over time is the dramatic decline in smoking among 18 year olds across surveys, from ~18% prevalence in 1999 to about one-third of that level (~7%) in 2008. This decline reflects the success of the program in reducing early initiation of smoking, as has previously been noted (Pierce et al., 2005). However, it would appear that this success was achieved by postponing initiation to the late onset period (18-24 years) rather than preventing it entirely. A much smaller decline in prevalence was observed for those aged 24-29 years. As expected, for all survey years, peak smoking prevalence is seen at the end of the initiation window (mid- to late-twenties) after which prevalence over this period appears to be among those aged 35 to 45 years (**Figure 1.3**). The curves converge around age 80 years at a prevalence rate of five percent.



Figure 1.3: Age-Specific Prevalence, California Tobacco Survey 1996-2008.

Age

SOURCE: CTS 1996, 1999, 2002, 2005, 2008

To compare these trends with those of the rest of the nation, we used the circa 1999 TUS-CPS (started in 1998 and completed in 1999) and the circa 2007 TUS-CPS (started in 2006 and completed in 2007) (**Figure 1.4**). Similar patterns of prevalence across age are observed in the TUS-CPS and CTS, providing some evidence of cross-validation of these two surveys. In 1999 (left panel), the prevalence in the late-twenties (peak prevalence) was ~29% for the rest of the nation compared to 22% in California. In 2007 (right panel), the peak age-specific prevalence in the late-twenties was ~25% in the rest of the U.S. compared to a 2008 peak that was one-third lower in the CTS (~16%). In the circa 1999 surveys (left panel), there was little difference in age-specific prevalence across the two regions from age 65 to 80. However, by 2007 (right panel), California prevalence rates were considerably lower than those for the rest of the nation for persons aged 65 to 75 years, though the lack of difference persisted for persons aged 75 to 80 years. Comparing the left and right panels in **Figure 1.4**, the difference in age-specific prevalence between California and the rest of the nation consistently increased from 1999 to 2006-2007 for almost the entire age range.





4. Per Capita Cigarette Sales

Throughout previous reports, we have used taxable sales to validate trends observed in the population survey data. Discrepancy between reported smoking prevalence and sales data

Per capita, Californians buy half the number of cigarettes bought by the rest of the nation. may be attributed to many factors related to nonresponse and reporting bias (survey data) or to cross-state sales and tax-free sales (cigarette sales data). Every state of the nation taxes cigarette sales at the wholesale level and data on these taxes are available. For the period 1970 through 2007, state-specific data have been collated and summarized by Orzechowski and Walker (2009). Taxable sales were divided by the total adult population (18+ years) to obtain per capita estimates (**Figure 1.5**). In 1970, per capita taxable sales were similar in California and the rest of the nation. However, California

taxable sales have declined consistently since the mid 1970s whereas those in the rest of the nation have declined consistently from the early 1980s.

At the start of the CTCP in 1989, California per capita cigarette sales were 26.1% lower than those for the rest of the U.S. (108.8 versus 147.2 packs per year). For the next 11 years, the rate of decline in sales was considerably faster within California compared to the rest of the nation. Taxable sales in California were half those of the rest of the nation by the year 2002 (48 versus 101 packs per capita per year). From 2002, there was a slowing in the rate of decline in taxable sales in California that does not appear to have occurred in the rest of the nation. This may attribute to retailer licensing policy and tax stamp in California. Nonetheless. per capita cigarette consumption declined considerably during this period, from 44.6 to 40.4 packs per year, a decline of 9.4%, and California continued to have per capita taxable sales that were about half those of the rest of the nation (for 2008, 40 versus 77 packs per capita per year, or 3.37 versus 6.42 packs per capita per month).

The recent slowing of the rate of change within California relative to the rest of the nation could be an artifact associated with different trends in tax evasion. In 2002, California was the first state to pass a law requiring an upgraded electronic tax stamp on cigarette packs, making compliance with the tax much easier to monitor. In 2005-06, California and New York tobacco surveys both asked a statewide sample of respondents where they purchased their cigarettes and how much they paid. Comparing these surveys, there was an estimated fourfold higher tax evasion in New York than California, with estimates of up to 50% of smokers in New York buying from untaxed or low tax venues (O'Connor, 2008).



Figure 1.5: Per Capita Cigarette Consumption in California and the Rest of the U.S.

5. Per Capita Spending to Influence Smoking Behavior

Both the tobacco industry and the CTCP spend money to influence smoking behavior. The relative level of expenditure by these two groups may be relevant to understanding trends in cigarette consumption and smoking prevalence. To investigate this, we have derived per capita expenditures by these two groups since the inception of the CTCP. Direct state-level data on industry expenditures are not available. However, since 1966 the tobacco industry has been mandated to provide details of advertising and promotions expenditure at the national level to the Federal Trade Commission (FTC), which gives an annual report to the U.S. Congress (FTC, 2009). We use nationwide per capita expenditures as a best available estimate of California state per capita expenditures. Industry expenditures for advertising and promotions are not equally distributed across the nation and there is considerable evidence that the tobacco industry invests more in states like California that conduct tobacco control programs (Wakefield & Chaloupka, 2000). Hence nationwide per capita industry expenditures are likely a conservative underestimate of per capita advertising and promotions expenditures within the state of California. Per capita expenditures by CTCP are based on the entire CTCP budget (excluding the budget of the California Department of Education). Industry and state expenditures are summarized in Figure 1.6. To facilitate comparisons across time, all expenditures are adjusted to 2008 dollars using the consumer price index.

Tobacco Industry Expenditures. The total expenditure by the tobacco industry on cigarette

From 1989 to 2008, real dollar per capita expenditure by CTCP decrease by over 70%. Tobacco industry expenditure *increased* by a similar percentage during this time. advertising and promotional expenditures in 1989 was over 3.6 billion dollars (\$34.07 per person in 2008 dollars). Industry expenditure increased to 12.5 billion dollars in 2006 (\$58.76 per person in 2008 dollars), a 72.4% increase in industry per capita expenditure during this period. The peak total expenditure by the industry occurred in 2003 when the total budget was \$80.91 in 2008 dollars, a 137% increase compared to 1989.

California Tobacco Control Program Budget Expenditures.

The total budget in fiscal year 1989-1990 allotted to the Tobacco Control Section of the California Department of Health Services was 95.2 million dollars (\$7.54 per capita in 2008 dollars). This budget dropped to 55.9 million dollars from 1989 to 2008, a period during which the adult population served expanded from 21.9 to 28.0 million people. The 2008 per capita expenditure by the CTCP was \$2.02 per person, a decline from 1989 in real dollar per capita expenditures of nearly 75% (73.2%).

As of 2006, the last year for which industry data are available, the CTCP budget was 64.3 million dollars. This translates to \$2.54 per capita in 2008 dollars, a 66% decline in per capita expenditures since 1989, as compared to the 2006 tobacco industry expenditures of \$58.76 per capita, a 72.4% increase from 1989. So while tobacco industry real dollar per capita expenditures increased by 72.4% from 1989 to 2006, CTCP per capita expenditures decreased by 66% during the same 17-year period. As of 2006, the ratio of tobacco industry to tobacco control real dollar per capita expenditures further declined by 20% in real dollars, from \$2.54 per capita to \$2.02 per capita. Comparable figures for industry are not yet available. For the entire period of the CTCP, the state expenditures are well below the \$12.12 per capita currently recommended by CDC for funding an effective statewide tobacco control program (CDPH, 2009).



Figure 1.6: Cigarette Promotional Expenditure versus CTCP Budget (adjusted to 2008 dollars).

Summary

California continues to do better than the rest of the U.S. in tobacco control. The California population buys approximately half (52%) the number of cigarettes per person as the rest of the U.S. Overall reported prevalence of smoking from multiple population-based data sets is consistently lower in California compared to the rest of the U.S. Prevalence declined 46% faster between 1990 and 2008 in California compared to the rest of the U.S. during the same period, leading to a divergence in prevalence over time between California and the U.S. All the above is strongly suggestive of the continued success of the program.

There is some concern from emerging evidence that the rate of reduction in consumption as estimated by taxable cigarette sales is slowing in California. Nonetheless, the 2008 CTS adult prevalence estimate of 11.6%, and trends within all longitudinal of California residents, do suggest that adult smoking prevalence within California has or will soon reach the 12% goal recommended by Healthy People 2010. In addition, prevalence rates within ages 18 to the early-twenties continue to decline, suggesting initiation rates are declining within this susceptible age group. Decreasing the peak age-specific prevalence that occurs in the mid- to late-twenties remains as a challenge for the CTCP.

The large difference in the budget spent by the tobacco industry to promote its products compared to the budget spent by the state on tobacco control may explain the slowing of progress on some of the tobacco control parameters described in this chapter. From previous evidence, it is well documented that patterns of tobacco use and behavior can take generations to change and in some instances the impacted generation continues to bear the consequences of the poor tobacco control programs or aggressive tobacco industry advertisements and promotions such as the Joe Camel advertising campaign. While the declining prevalence of

smoking within the youngest ages is promising, the lack of equal progress in lowering the peak prevalence around the ages of 25 to 30 years is troubling and suggests that tobacco industry advertising dollars continue to affect the behavior of young adults.

As described in the following chapters in this report, the progress made in California as a result of the CTCP has sustained the trends of lower use of cigarettes and higher support for smoking bans. Similarly, the aggressive and sustained influence of the tobacco industry and the budget dedicated to promotion of tobacco products may be slowing progress in other areas, including an increased prevalence of use of new tobacco products and no substantial change in quitting trends by smokers. More efforts as well as sustained and larger budgets are required to specifically target the subpopulations and areas of concern highlighted in the chapters to follow.

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Trends in Tobacco Use in California

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Chapter 2 Trends in Tobacco Use in California

KEY FINDINGS

- Smoking prevalence among adults in California continues to decline at a relatively consistent rate and in 2008 reached 11.6±0.4%, representing a 38% decline compared to 1990.
- Women continue to consistently smoke less than men in California. Between 1990 and 2008, there was a 43.9% decline for women compared to a 33.6% decline for men during that same period. In 2008, 14.9±0.6% of men in California smoked compared to only 8.4±0.4% of women.
- Among ethnic groups, African Americans have the highest smoking prevalence for both genders. Non-Hispanic Whites, Asians, and Hispanics were overlapping in their prevalence trends for men. But for women, Asian, and Hispanic women's prevalence rates were significantly lower than that of African Americans and Non-Hispanic Whites.
- Since 2005, smoking prevalence declined across all age groups. The 18-24 and 25-44 age groups declined at approximately double the rate of those in the older age groups of 45-64 and 65 years or above. This is especially evident for women in the youngest 18-24 age group.
- In 2008, among men, there is an increase in current smoking prevalence among men up until the age of 30. The prevalence rate peaks at more than 23% until age 30 before it begins to decline. The prevalence of occasional and light (≤ 10 cigarettes per day) smokers declines after the age of 32, but for moderate to heavy smokers (more than 10 cigarettes per day) the prevalence remains relatively constant at 5-7% until the age of 70 when it declines. For women, there are fewer heavy and occasional smokers across all age groups. Light-to moderate female smokers (1-20 cigarettes per day) are at a constant prevalence of approximately 5%.
- Consistent with previous surveys, smoking prevalence declined for college graduates to a prevalence of 5.9±0.4% in 2008 while a prevalence range of 12-15% among those with less than a college education. Men who did not graduate from high school had the highest prevalence of smoking (20.9 ±2.0%). However, women with less than 12 years of education had a lower smoking prevalence (8.7±1.3%) compared to those with a high school diploma (10.8 ±0.9%) or some college education (10.4 ±1.0%).
- Lower rates of smoking are seen in all households that report incomes over \$75,000, with the lowest rate in households with incomes of \$150,000 or more (7.8±1.5%). The trend of lower prevalence of smoking among higher incomes was consistent for both genders and did not change much for income above \$75,000.

Trends in Tobacco Use in California

Introduction

Smoking prevalence is defined as the number of smokers divided by the total number of the population in the same time period. This measure has been used as primary marker to monitor the overall success of the California Tobacco Control Program (CTCP) since its inception in 1990. Prevalence trends at successive time periods are also used at the national level by other surveys such as the Behavioral Risk Factor Surveillance System (BRFSS) and Tobacco Use Supplement to the Current Population Survey (TUS-CPS) (See Chapter 1).

Smoking prevalence predicts the future risk of tobacco related diseases in the population (Burns et al., 1997, Thun & Jemal 2006). The prevalence of smoking also reflects the major endpoint of the impact of all components of the CTCP, including media campaigns, school and community education on smoking, cessation programs, taxes and smoke-free policy changes to discourage tobacco use and reduce exposure to secondhand smoke. These components have different impacts on smoking prevalence, some of which manifest in the short-term, such as cessation programs, and others which may take years to manifest, such as the policy changes affecting social norms and ultimately affecting behavior. The influence or successes of these components also vary over time. In the recently released State of Tobacco Control Report by the American Lung Association, it was found that California failed the standard for tobacco prevention and control spending level but did very well in terms of smoke-free policy and restrictions on smoking (American Lung Association, 2009). Monitoring trends in prevalence assists in detection of any major time-specific or sustained impact of one or more of such factors on the status of smoking in the population. For example, in a recent study of smoking rates of youths in Florida between 1998 and 2006, it was demonstrated that there was a clear slowing in the decline of smoking prevalence followed by reversal and increase in smoking after the discontinuation of the "Truth" anti-smoking media campaign targeting the youth (Dietz et al., 2010).

However, the overall prevalence does not help elucidate the differences according to demographics and subpopulations. If one ethnicity, such as the case of African Americans in California, has a consistently higher smoking prevalence compared to the other ethnic groups, this can be driving the overall prevalence higher than if all ethnic groups were at comparable smoking prevalence rates. Similarly, gender, education, and age are important determinants of smoking rate that vary over time and between one survey and another. It is important to understand which of these factors are contributing more to changing the overall smoking prevalence rate, or to the trend of smoking within a specific subpopulation, in order to develop targeted corresponding tobacco control initiatives. Furthermore, monitoring prevalence trends helps us understand where the program has been more successful in terms of decreasing smoking prevalence and how to apply that to other populations within the state.

The chapter presents the overall prevalence rate but then categorizes prevalence according to gender for all data because of the consistent difference in smoking between males and females. Ethnicity, education, and income are presented separately for males and females. In addition, cigarette consumption in 2008 is presented according to age and gender to assess this

established risk factor of lung cancer. Smoking cessation is addressed in a separate chapter (see Chapter 6).

1. Current Smoking Prevalence Among Adults

Prevalence of adult smoking was measured in the screener survey by asking the following questions for every adult member of the household:

{As far as you know}{have you/has person} smoked at least 100 cigarettes during your lifetime? **(SC9)**

If they answer was "yes", the respondent was asked: {*As far as you know*} {*do you/does person*} *smoke cigarettes every day, some days, or not at all?* **(SC10)**

Those who answered yes to question SC9 above and then answered question SC10 as everyday or some days (some days smokers represent non-daily smokers) are included in the numerator when calculating the prevalence of smoking while all adults are included in the denominator. As seen in **Figure 2.1**, there was an increase in prevalence between 1996 and 1999 followed by a continued decline in prevalence till 2008. The peak in 1999 is consistent across all demographic subgroups and may be attributed to the influence of the aggressive tobacco industry promotion of brands, especially Marlboro and Camel, among adolescents in the period between 1993-96 (Pierce et al., 1999). It could also reflect the change in definition of smoking prevalence in 1999 to include those who report smoking occasionally, therefore increasing the overall prevalence. This peak elevated the overall trend of adult prevalence and future projections despite the continued decline in smoking prevalence after 1999.

In 2008, adult smoking prevalence continued to decline to reach 11.6%. The standardized and unstandardized prevalence for California adults is presented in **Figure 2.1**. We standardized estimates to adjust the data from previous surveys for differences in population demographics between that year and 2008.





In 2008, 11.6±0.4% of the California population was classified as smokers, a decline of 12.8% from the 13.3% prevalence observed in 2005. This also translated to a 37.7% decline in prevalence from 1990 to 2008 (after adjusting for shifting population demographics through standardization). Table A.2.1 in the Appendix details the prevalence according to age group, gender, racial/ethnic group, income, and education level. As detailed in the following sections, the segments of the populations with the largest decline in prevalence were women, younger adults, African Americans, those who graduated from college, and those living in households with an annual income of \$30,000 to \$50,000.

Smoking prevalence among adults continues to steadily decline at a similar overall rate of decline over the years since the inception of the tobacco control program in 1990 in California, reflecting the continuing success of this program.

2. Current Smoking Prevalence for Demographic Subgroups of the Population

Differences in Smoking Prevalence by Gender

Smoking prevalence is consistently lower for women compared to men in the state of California. The rate of smoking prevalence decline in 2008 compared to 1990 was slightly higher for women than men. Prevalence for women has declined from a high of $15.0 \pm 0.7\%$ in 1990 to the

current low of 8.4 \pm 0.4% observed in the 2008 survey, representing a 43.9% decline. Smoking prevalence for men declined from 22.4 ±0.6% to 14.9 ±0.6% during the same period, representing a 33.6% decline for men during that same period. Similarly for the more recent period between 2005 and 2008, the decline was 17.6% for women compared to 9.5% for men (Figure 2.2). The difference in prevalence between men and women has remained fairly constant over the vears and declined only slightly from 7.4% in 1990 to 6.5% in 2008. The





difference in prevalence by gender is present in all racial/ethnic groups, with larger differences in prevalence within some ethnic groups, as seen from the following sections. All the following prevalence rate figures are presented according to gender.

Differences in Smoking Prevalence by Race/Ethnicity

The participants of the California Tobacco Survey (CTS) are asked about the ethnicity of each member of the household on the screener survey (**SC13-15**). These questions identify whether the individual is Hispanic or not (including a sub-classification on Mexican heritage) and which of the following best describes their background: White, Black, Japanese, Chinese, Filipino, Korean, Other Asian or Pacific Islander, American Indian or Alaskan Native, or Other. For reporting purposes, persons were categorized into one of five groups: Hispanic, Non-Hispanic White, African American, Asian/Pacific Islander, or 'Other'. Participants with an Asian or Pacific Islander background were combined into one category because of the small sample size within individual Asian subgroups; participants in the American Indian or Alaskan Native category were combined with the "Other" category for the same reason.

Prevalence by racial/ethnic group is summarized in detail in Appendix Table A.2.1. The group of "Other" ethnicities seem to have the highest prevalence of smoking with 22.8 ±3.6% of them current smokers. They also show the lowest proportional decline in smoking since 1990 (29.8%) (See Appendix Table A.2.1). "Others" ethnic group comprise about 2% of the adult California population; given the small numbers and high variability within this group, they are not shown in the figures.

Figures 2.3a and **2.3b** summarizes temporal trends in prevalence by ethnicity and gender. African Americans had the highest smoking prevalence over time for both genders, but also experienced the greatest decline in prevalence between 2005 and the most recent survey in 2008. The overall smoking prevalence for African Americans was 14.2 ±1.6 % in 2008. The sample size for the African American category was relatively small in the 2005 survey, as reflected in the large confidence intervals around the 2005 prevalence estimates. The uncertainty in the 2005 prevalence estimates does translate to uncertainty in estimated change, and the larger decline from 2005 to 2008 observed in the African Americans may be attributable to random sampling error in the 2005 survey. In 2008 there were more accurate prevalence estimates have less sampling error, they better reflect the true trend and prevalence for African Americans.



Figure 2.3a: .Standardized (2008) Smoking Prevalence by Ethnicity and Gender (Males), 1990-2008 (see Appendix Tables A.2.2 and A.2.3).

	1990	1993	1996	1999	2002	2005	2008
African-American	26.4	23.6	23.1	23.2	20.5	21.1	16.3
Asian/PI	21.3	17.4	17.5	18.4	17.5	16.0	12.8
Hispanic	23.0	20.8	18.9	19.8	18.3	16.4	15.1
Non-Hispanic White	21.0	19.8	18.8	19.4	17.9	15.8	14.6

Figure 2.3b: Standardized (2008) Smoking Prevalence by Ethnicity and Gender (Females), 1990-2008 (see Appendix Tables A.2.2 and A.2.3).



	1990	1993	1996	1999	2002	2005	2008
African-American	21.8	16.8	18.6	15.6	16.2	17.4	12.1
Asian/PI	7.0	5.5	6.7	7.4	6.3	5.9	3.8
Hispanic	11.5	8.9	8.8	8.9	7.2	6.8	5.3
Non-Hispanic White	18.1	17.4	15.8	16.0	14.1	12.7	10.8

Prevalence rates within other ethnic groups of Non-Hispanic Whites, Asians, and Hispanics overlapped for men but distinct groups by ethnicity formed for women, where Asian and Hispanic women had significantly lower prevalence than that of African Americans and Non-Hispanic Whites.

Considering overall prevalence by ethnic group (Appendix Table A.2.1), the lowest smoking prevalence for any ethnic group in 2008 was among the Asian group (8.1±1.1%). This ethnic group also showed the largest decline (41.6%) in smoking prevalence since 1990. Smoking prevalence among Hispanics for 2008 was 10.2±1.1%, and among Non-Hispanic Whites was 12.7±0.5%. The decline in smoking prevalence among Hispanics since 1990 was comparable to the large decline among African Americans and Asians during that period, but the rate of decline in smoking slowed for Hispanics since 2005 and was only 11.7% compared to declines of 26.1% for African Americans and 24.9% for Asians during the same period. Nevertheless, all ethnic groups for both genders are continuing to decrease their smoking rates, and Asian women now have the lowest prevalence of smoking of 3.8±1.0% smoking prevalence in 2008. The gender gap in smoking is particularly marked among the Asian and the Hispanic populations. Asian men in 2008 had a prevalence rate more than three-fold higher than Asian women (12.8% versus 3.8% prevalence), and Hispanic men had nearly a three-fold higher prevalence rate than Hispanic women (15.1% versus 5.3% prevalence). The gender gap is smallest among non-Hispanic Whites and African Americans. More detailed analyses for the specific ethnic groups will be presented in a separate chapter on race/ethnicity (see Chapter 10).

Differences in Smoking Prevalence by Age

The age of each household member was reported by the adult household member answering the screener survey **(SC6)**.

Among the combined male and female sample, all age groups declined their smoking prevalence over the period of follow up between 1990 and 2008 by about one-third their rates in 1990. This was slightly higher in the 45-64 year-old age groups, which declined by 40% during that same period. However, since 2005, the 18-24 and 25-44 year-old age groups declined 15-20% while those in the 45-64 and 65 years or above age groups declined only 6-7% (Appendix Table A.2.1).

As shown in **Figures 2.4a** and **2.4b**, smoking prevalence continues to decline across age groups for both genders, although the decline in prevalence in the 65 and above age group reaches a plateau from 2005-08, especially for women. This older age group has consistently lower prevalence than the other age groups for both genders, although the difference is much more pronounced and substantial among men compared to women. The age group of 65 years and older had a prevalence of smoking of only 6.8 ±0.5% in 2008, which is approximately 50% lower than the smoking prevalence of persons within the 25-44 and 45-64 year age groups. This low prevalence of smoking in the older age group may be attributed to chronic diseases that prevent the smokers from smoking or to early mortality of smokers.





Age	1990	1993	1996	1999	2002	2005	2008
18-24	19.5	17.2	19.6	22.9	20.6	16.6	14.1
25-44	25.3	23.2	21.2	22.3	20.6	19.2	17.5
45-64	24.9	22.0	20.1	20.1	19.5	16.8	15.5
65+	12.5	11.6	11.0	9.8	8.3	8.1	7.5





Age	1990	1993	1996	1999	2002	2005	2008
18-24	13.2	12.1	13.4	14.6	11.9	10.1	6.7
25-44	15.5	13.1	13.5	13.5	11.7	11.1	8.5
45-64	17.9	15.8	13.9	13.8	12.6	11.3	10.2
65+	10.0	9.5	8.4	8.0	6.7	6.5	6.2

18-24 year olds:

In the overall sample, the 18-24 year olds had the largest decline in smoking prevalence (20.8%) since 2005 (Table A.2.1). This decline is evident for both men and women (**Figure 2.4**). The decline in prevalence was higher for women than men for most age groups except the 65 years and older age group (see Table A.2.1). Between 1990 and 2008, this gender difference was especially evident for the youngest age group where the decline in prevalence was 49.5% among women compared to 27.7% decline among men. Similarly, the between 2005 and 2008 the decline in the youngest age group was 33.7% among women compared to a 15.3% decline among men.

25-44 year olds:

Among those aged 25-44 years, smoking prevalence declined by 45.2% for women and by 30.8% for men since the start of the program in 1990. In 2008, 17.5 \pm 1.0% of men compared to only 8.5 \pm 0.9% of women in this age group were current smokers. Similarly, the decline for women between 2005 and 2008 was higher (23.3%) than the decline for men in this age group (9.3%) during the same period (Table A.2.1).

45-64 year olds:

For the 45-64 age group, the gender differences in the decline in smoking prevalence from 1990 to 2008 were less substantial. However, in 2008, the men in this age group still had a higher smoking prevalence of $15.5\pm1.0\%$ compared to $10.2\pm1.0\%$ for women. The decline between 1990 and 2008 for men was 37.8% and for women was 43% in women during that period. A similar trend was seen in the decline in prevalence rates between 2005 and 2008. For men, it was 7.6%, and for women it was 9.5% (Table A.2.1).

As seen in **Figures 2.4a** and **2.4b**, there was an increase in prevalence from 1993 to 1999 among the younger age groups for both genders. Prevalence within the youngest age group peaked for both genders in 1999 but then declined at a faster rate than the other age groups, and in 2008 was lower than the 25-44 and 45-64 age groups. There was also a slightly smaller peak for men and women aged 25-44 years. This finding is consistent with other published literature that demonstrates younger age groups in California are smoking less (Messer & Pierce, 2009). This also provides evidence of the long-term success of the tobacco control program as shown in other data (Tang et al., 2010; Al-Delaimy et al., 2007; Messer et al., 2007).

Differences in Smoking Prevalence by Education

The screener respondent reported on the highest grade or year of regular school or college attended by each household member. We grouped responses into four educational levels: less than 12 years, high school graduate, some college, and college graduate and above **(SC16)**.

Smoking is correlated with education level (CDC 2009, Substance Abuse and Mental Health Services Administration 2005), as has been consistently shown by our surveys. The smoking prevalence for those with college degrees and above in 1990 was $12.2 \pm 0.7\%$ compared to 17-22% prevalence among those with lower education level. A similar trend was observed in 2008, when $5.9 \pm 0.4\%$ of persons with 16 or more years of education (college graduates) smoked compared to 12-15% of persons within lower education categories. In summary, smoking prevalence among persons with a college education is consistently one-half to one-third of those less educated.

The gap in smoking prevalence across education levels has been previously documented (Pierce et al., 1989) and is also supported in the current results. The decline in prevalence between 1990 and 2008 was 51.4% for college educated compared to approximately 30% for those less educated. The difference in smoking prevalence across education levels is less dramatic when only examining women. Women with less than high school education had a prevalence of smoking of 8.7 \pm 1.3% in 2008, while those with college or more education had a prevalence of 4.6 \pm 0.5%. The propensity not to smoke among good students is clearly identifiable as early as the teen years (Al-Delaimy et al., 2006).

In **Figures 2.5a** and **2.5b**, the overall trends over time in smoking prevalence by education show that women have lower smoking rates than men across all education levels. This gender difference is more than 50% among individuals with less than high school or high school education levels. Similarly, the decline in smoking among men from 1990 to 2008 was much lower than among women. The exception was among the college or higher education group where the decline was comparable for women and men (55.7% and 48.1%, respectively).

In 2008, men in the lowest educational group had the highest smoking prevalence of $20.9 \pm 2.0\%$ compared to only $7.3 \pm 0.7\%$ smoking prevalence among men in the college or higher education group.

Hispanic women, who are less likely to smoke and more likely to have less than a high school education, are influencing the gender difference in smoking prevalence. However, there is a clear distinct divide in smoking prevalence over the period of 1990 to 2008 that consistently shows those with college or higher education are smoking less compared to the three lower education groups. This gap seems to be increasing.



Figure 2.5a: Standardized (2008) Smoking Prevalence by Education and Gender (Males) (see Appendix Tables A.2.2 and A.2.3).

	1990	1993	1996	1999	2002	2005	2008
Less than 12 years	28.7	24.1	24.6	25.7	23.7	22.0	20.9
High school graduate	26.8	25.7	23.4	23.7	23.5	20.6	20.3
Some college	20.9	19.6	18.8	20.1	17.9	16.7	15.3
College graduate	14.0	13.0	11.0	11.5	10.9	8.8	7.3

Figure 2.5b: Standardized (2008) Smoking Prevalence by Education and Gender (Females) (see Appendix Tables A.2.2 and A.2.3).



	1990	1993	1996	1999	2002	2005	2008
Less than 12	14.9	11.4	12.7	11.2	9.3	9.9	8.7
years							
High school graduate	18.6	16.8	15.2	15.7	14.2	13.6	10.8
Some college	15.1	14.5	13.3	14.8	12.8	11.6	10.4
÷							

Differences in Smoking Prevalence according to Household Income

The screener respondent was asked to estimate the total combined income of all persons in the household over the past year with the following question:

In studies like this, households are sometimes grouped according to income. Please tell me which group best describes an estimate of the total combined income of all persons in this household over the past year? Please include money income from all sources, such as salaries, interest, retirement, or any other source for all household members. Would you say < \$20,001, \$20,001 to \$30,000, \$30,001 to \$50,000, \$50,001 to \$75,000, \$75,001 to \$100,000, 100,001 to \$150,000, or over \$150,001. (SC23)

We changed the income categories for 2008 compared to previous years to reflect the higher proportion of Californians with higher incomes. Similarly we combined those with \$10,000 annual income or less with those with \$10,001 to \$20,000 annual income into a new category of those with \$20,000 or less annual income. This meant that the lowest categories of income measured in previous surveys were different from that measured in 2008. However, there was no major shift or change in smoking prevalence for this group with lowest income where prevalence only slightly increased from 19.1% in 2005 to 19.8% in 2008.

Prevalence rates by household income category are summarized in Table A.2.1. Education and income are closely associated, and it is therefore expected that those with higher incomes will have lower rates of smoking. Lower rates of smoking are seen in all households that report incomes over \$75,000, with the lowest rate in households with incomes of \$150,000 or more (7.8±1.5%). As seen in Appendix Table A.2.1, there is a clear relationship of higher smoking prevalence among those with a lower income. Prevalence among men was consistently about twice the prevalence among women within the same income categories. The trend of lower prevalence of smoking with higher income was consistent for both genders and did not change much for incomes above \$75,000.

3. Changes in Cigarette Consumption in the Population

The distribution of smoking behavior and cigarette consumption by age among males in 2008 is presented in **Figure 2.8**. Among males there is a consistent increase in the proportion of individuals who are current or former smokers between the ages of 18 to 30. This increase of ever smokers (i.e., decreasing percentage of never smokers) was not linear and the 24-34 age group had higher rates of ever smoking which is reflected in the rise in the graph. The peak prevalence of current smokers was for 28 year olds, where more than 23% were smokers. Decline in the prevalence of current smoking starts with 34 year olds, while the proportion of successful quitters consistently increases with age. Very few male smokers had successfully quit for more than one year at an early age. However, the proportion of men who had quit increased dramatically with each year of age. Heavy smoking men as well as those who recently quit were relatively constant across all age groups, while the proportion of light as well as occasional male smokers decreased with age, especially after 60 years of age.



Figure 2.8: Distribution of Current and Former Male Smokers in 2008 According to Age. Adult 2008 CTS

SOURCE: CTS 2008

The percentage of current smokers who smoked more than 10 cigarettes was fairly stable for age 22 to 70 year olds, at approximately 5-7% of the population. At age 18 years, approximately 5% of men were occasional smokers (current non-daily or never-daily smokers) and this proportion was fairly constant for 35 year old men. Occasional smoking was less prevalent among older adults and attenuated considerably after age 60. These patterns suggest that recent cohorts may have developed a less addictive smoking behavior pattern than older cohorts.

The pattern of smoking among women in 2008 by age is presented in **Figure 2.9**. There is a higher proportion of quitters among 18 year old women than men, which reflects an earlier pattern of smoking and quitting for women compared to men. Unlike the male quitting pattern, the proportion of women who are successful quitters increased with age. This trend substantially increased after the age of 58 years and then reached a plateau. The plateau may reflect less quitting among women or a higher proportion of women who never started smoking in the older age cohorts. The proportion of heavy smokers was very low, while the proportion of other categories of current smokers stayed fairly constant across all age groups. The proportion of non-daily and never-daily female smokers approaches zero around age 35 years suggesting

most never-daily occasional smokers quit at an early age, while the proportion of non-daily and once-daily smokers was a consistently small proportion through all age groups.





SOURCE: CTS 2008

Adult 18-year old females were 3% of the current daily smokers who smoked 10 cigarettes or less and continued to be the proportionately largest group of current smokers for all age groups.

Summary

Decline in smoking prevalence has been relatively constant across survey years with the exception of 1999, where prevalence increased across all demographic variables. As mentioned in Chapter 1, the CTS prevalence rates are robust and comparable to prevalence rates from other representative data for California. Patterns of prevalence in the subpopulations are predictable based on previous surveys. Women smoke less than men, and Hispanic and Asian women have the lowest prevalence of smoking while Non-Hispanic White and African American men have the highest smoking prevalence. African Americans showed a dramatic reduction in prevalence in the 2008 survey. This group now has one of the highest proportional declines from 1990 to 2008 among all ethnic groups. In terms of gender, there was a clear

differentiation of smoking prevalence trends among men based on ethnicity, but this was not the case for women. The opposite was true for education where there was less differentiation in smoking prevalence among men by education and more differentiation in smoking prevalence trends among women. The pattern of women with the least amount of education also having a lower prevalence than women with a high school education or some college education was observed in current analyses as well as in previous analyses.

This chapter provides a detailed account of where the disparities are in smoking prevalence and which subpopulations should be focused on in the future to narrow such gaps. For example, those with the least education and low income populations continue to present a challenge in lowering smoking rates. Furthermore, the chapter provides an impetus to learn why certain subpopulations are consistently smoking less such as Asian and Hispanic women, or why certain groups such as African Americans are constantly at a higher rate than the rest of the ethnic groups although appear to be benefiting from tobacco control effort within the state. The dramatic changes in trends among age groups, especially in the youngest age group of the adult population, need further investigation. This is also addressed in Chapter 1 in the comparison of trends between the U.S. and California and in Chapter 5 in comparing young adults smoking prevalence and behavior.

In summary, progress in furthering the decline in smoking prevalence for Californians is consistent and has reached the targeted 2010 Health People smoking prevalence rate of 12% or lower according to our findings. However, there remain areas and subpopulations that require a more focused tobacco control effort at the state level.
APPENDIX Chapter 2 Trends in Tobacco Use in California

Section two of this chapter discussed the trends in standardized smoking prevalence by gender, age, race/ethnicity, education level and household income. **Table A.2.1** shows the standardized trends for adult men and women combined. **Table A.2.2** and **Table A.2.3** provide the subgroup data for adult men and women separately. These data are also presented in Figures 2.2-2.5 of this chapter.

	Table A.2.1. Standardized Adult Smoking Prevalence (Screener Data)								
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change, 1990-2008 %	Percentage Change, 2005-2008 %
Overall	18.6 (±0.4)	16.6 (±0.5)	15.8 (±0.4)	16.1 (±0.3)	14.6 (±0.3)	13.3 (±0.5)	11.6 (±0.4)	-37.7	-12.8
Gender									
Male	22.4 (±0.6)	20.2 (±0.8)	19.1 (±0.5)	19.8 (±0.5)	18.3 (±0.5)	16.4 (±0.8)	14.9 (±0.6)	-33.6	-9.5
Female	15.0 (±0.7)	13.1 (±0.6)	12.6 (±0.4)	12.7 (±0.3)	11.0 (±0.4)	10.2 (±0.5)	8.4 (±0.4)	-43.9	-17.6
Age									
18-24	16.4 (±1.4)	14.7 (±1.1)	16.5 (±0.9)	18.9 (±0.8)	16.4 (±0.9)	13.5 (±1.5)	10.7 (±1.0)	-34.9	-20.8
25-44	20.3 (±0.7)	18.1 (±0.9)	17.3 (±0.6)	17.8 (±0.4)	16.1 (±0.4)	15.3 (±1.0)	13.0 (±0.8)	-35.9	-15.0
45-64	21.4 (±1.1)	18.7 (±0.9)	16.9 (±0.6)	16.8 (±0.5)	15.8 (±0.6)	13.9 (±0.9)	12.8 (±0.7)	-40.3	-7.9
65+	11.3 (±0.9)	10.6 (±1.0)	9.6 (±0.8)	8.8 (±0.6)	7.4 (±0.5)	7.3 (±0.7)	6.8 (±0.5)	-39.8	-6.8
Race/Ethnicity									
AfricanAmerican	24.1 (±2.4)	20.2 (±2.2)	20.8 (±1.5)	19.3 (±1.1)	18.3 (±1.6)	19.2 (±2.6)	14.2 (±1.6)	-41.0	-26.1
Asian/PI	13.9 (±1.1)	11.2 (±1.3)	11.9 (±0.9)	12.7 (±0.9)	11.7 (±0.9)	10.8 (±1.9)	8.1 (±1.1)	-41.6	-24.9
Hispanic	17.2 (±1.0)	14.8 (±1.0)	13.8 (±0.8)	14.3 (±0.5)	12.7 (±0.6)	11.5 (±1.0)	10.2 (±0.7)	-40.8	-11.7
Non-Hispanic White	19.6 (±0.4)	18.5 (±0.6)	17.3 (±0.3)	17.7 (±0.4)	16.0 (±0.4)	14.2 (±0.6)	12.7 (±0.5)	-35.3	-10.8
Other	32.5 (±5.2)	26.6 (±4.0)	24.7 (±2.1)	26.4 (±3.2)	22.7 (±2.2)	16.5 (±2.7)	22.8 (±3.6)	-29.8	38.7
Education		1							
Less than 12 years	22.1 (±1.6)	18.0 (±1.4)	18.8 (±1.3)	18.7 (±0.7)	16.7 (±0.9)	16.2 (±1.5)	15.0 (±1.2)	-31.8	-7.2
High school graduate	22.6 (±0.9)	21.2 (±1.0)	19.3 (±0.6)	19.7 (±0.6)	18.8 (±0.7)	17.1 (±0.9)	15.5 (±0.9)	-31.4	-9.1
Some college	17.9 (±0.7)	16.9 (±0.9)	15.9 (±0.5)	17.3 (±0.5)	15.2 (±0.6)	14.0 (±0.8)	12.7 (±0.8)	-29.0	-9.3
College graduate	12.2 (±0.7)	10.8 (±0.8)	9.8 (±0.5)	9.7 (±0.4)	9.0 (±0.4)	7.3 (±0.7)	5.9 (±0.4)	-51.4	-18.6
Income									
< \$20,000	22.7 (±1.2)		21.4 (±0.9)	22.4 (±0.9)	20.9 (±1.4)	19.1 (±1.8)	19.8 (±2.0)	-12.7	3.4
\$20,001-\$30,000	21.7 (±1.7)		19.1 (±0.8)	19.4 (±0.9)	18.7 (±1.3)	17.6 (±2.4)	16.7 (±2.0)	-22.8	-4.8
\$30,001-\$50,000	18.9 (±1.6)		16.4 (±0.8)	18.1 (±0.8)	17.2 (±0.9)	17.7 (±1.7)	15.4 (±1.4)	-18.4	-12.7
\$50,001-\$75,000	18.4 (±1.5)		14.9 (±1.1)	16.3 (±0.8)	14.8 (±0.9)	14.0 (±1.3)	12.5 (±1.5)	-32.1	-10.7
\$75,001 \$100,000*	16.3 (±2.4)		12.8 (±1.3)	14.4 (±1.0)	12.4 (±0.7)	11.2 (±1.3)	10.3 (±1.2)	-37.0	-8.0
\$100,001-\$150,00							9.9 (±1.7)		
> \$150,000							7.8 (±1.5)		
Missing	16.8 (±1.4)	16.6 (±0.5)	13.3 (±0.8)	12.7 (±0.7)	12.2 (±0.8)	11.5 (±1.5)	9.9 (±1.1)	-41.2	-13.9

*\$75,000 and over prior to 2008

	Appendix Table A.2.2. Standardized Adult Smoking Prevalence, Male (Screener Data)									
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change, 1990-2008 %	Percentage Change, 2005-2008 %	
Age	-									
18-24	19.5 (±1.8)	17.2 (±1.5)	19.6 (±1.2)	22.9 (±1.1)	20.6 (±1.5)	16.6 (±2.5)	14.1 (±1.5)	-27.7	-15.3	
25-44	25.3 (±1.0)	23.2 (±1.4)	21.2 (±0.8)	22.3 (±0.7)	20.6 (±0.7)	19.2 (±1.6)	17.5 (±1.0)	-30.9	-9.3	
45-64	24.9 (±1.6)	22.0 (±1.4)	20.1 (±0.9)	20.1 (±0.7)	19.5 (±0.9)	16.8 (±1.3)	15.5 (±1.0)	-37.8	-7.6	
65+	12.5 (±1.4)	11.6 (±1.3)	11.1 (±1.1)	9.8 (±0.8)	8.3 (±0.8)	8.1 (±1.0)	7.5 (±0.9)	-40.0	-7.3	
Race/Ethnicity	Race/Ethnicity									
African American	26.4 (±2.6)	23.6 (±3.1)	23.1 (±2.1)	23.2 (±1.8)	20.5 (±2.0)	21.1 (±3.9)	16.3 (±2.6)	-38.1	-22.6	
Asian/PI	21.3 (±1.7)	17.4 (±2.0)	17.5 (±1.3)	18.4 (±1.4)	17.5 (±1.5)	16.0 (±2.6)	12.8 (±1.8)	-39.9	-20.2	
Hispanic	23.0 (±1.4)	20.8 (±1.7)	18.9 (±1.2)	19.8 (±0.7)	18.3 (±1.0)	16.4 (±1.7)	15.1 (±1.0)	-34.3	-7.8	
Non-Hispanic White	21.0 (±0.5)	19.8 (±0.8)	18.8 (±0.4)	19.4 (±0.6)	17.9 (±0.6)	15.8 (±0.9)	14.6 (±0.8)	-30.6	-7.3	
Other	36.2 (±7.3)	28.9 (±5.6)	25.8 (±3.0)	27.9 (±4.2)	27.3 (±3.6)	19.2 (±3.9)	24.3 (±4.8)	-32.9	26.4	
Education				1						
Less than 12 years	28.7 (±2.1)	24.1 (±2.3)	24.6 (±1.8)	25.7 (±1.2)	23.7 (±1.6)	22.0 (±2.3)	20.9 (±2.0)	-27.1	-5.1	
High school graduate	26.8 (±1.2)	25.7 (±1.4)	23.4 (±0.9)	23.7 (±0.9)	23.5 (±0.9)	20.6 (±1.4)	20.3 (±1.4)	-24.3	-1.6	
Some college	20.9 (±1.1)	19.6 (±1.2)	18.8 (±0.8)	20.1 (±0.8)	17.9 (±0.9)	16.7 (±1.5)	15.3 (±1.1)	-26.9	-8.1	
College graduate	14.0 (±1.2)	13.0 (±1.2)	11.0 (±0.7)	11.5 (±0.7)	10.9 (±0.7)	8.8 (±0.9)	7.3 (±0.7)	-48.1	-17.6	
Income										
< \$20,000	25.7 (±2.1)		24.1 (±1.3)	25.3 (±1.6)	23.1 (±2.5)	23.2 (±3.0)	24.3 (±4.1)	-5.4	4.9	
\$20,001-\$30,000	23.8 (±2.9)		21.5 (±1.4)	22.5 (±1.4)	22.3 (±1.8)	20.3 (±3.4)	20.0 (±3.8)	-16.0	-1.6	
\$30,001-\$50,000	21.3 (±1.9)		18.3 (±1.1)	20.7 (±1.2)	20.2 (±1.2)	20.0 (±2.4)	19.2 (±2.4)	-10.0	-4.1	
\$50,001-\$75,000	21.8 (±3.1)		18.0 (±2.1)	20.0 (±1.1)	18.3 (±1.5)	17.2 (±2.2)	16.4 (±2.2)	-24.4	-4.5	
\$75,001 \$100,000*	22.9 (±2.4)		17.0 (±3.0)	18.0 (±1.7)	15.8 (±1.3)	14.0 (±1.9)	12.3 (±2.4)	-46.5	-12.5	
\$100,001-\$150,00							13.0 (±2.8)			
> \$150,000							13.5 (±7.9)			
Missing	20.2 (±2.4)		16.0 (±1.2)	15.0 (±1.1)	15.2 (±1.3)	13.7 (±1.7)	13.1 (±1.7)	-35.0	-4.3	

	Appendix Table A.2.3. Standardized Adult Smoking Prevalence, Female (Screener Data)									
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change, 1990-2008 %	Percentage Change, 2005-2008 %	
Age										
18-24	13.2 (±1.5)	12.1 (±1.3)	13.4 (±1.2)	14.6 (±1.0)	11.9 (±0.9)	10.1 (±1.5)	6.7 (±1.1)	-49.5	-33.7	
25-44	15.5 (±0.8)	13.1 (±0.8)	13.5 (±0.6)	13.5 (±0.5)	11.7 (±0.6)	11.1 (±1.0)	8.5 (±0.9)	-45.2	-23.3	
45-64	17.9 (±1.2)	15.8 (±1.1)	13.9 (±0.7)	13.8 (±0.7)	12.6 (±0.6)	11.3 (±1.0)	10.2 (±0.7)	-43.0	-9.5	
65+	10.0 (±1.4)	9.5 (±1.2)	8.4 (±0.9)	8.0 (±0.7)	6.7 (±0.7)	6.5 (±0.9)	6.2 (±0.5)	-37.8	-4.3	
Race/Ethnicity	Race/Ethnicity									
African American	21.8 (±3.1)	16.8 (±2.3)	18.6 (±2.0)	15.6 (±1.2)	16.2 (±2.3)	17.4 (±3.7)	12.1 (±1.8)	-44.3	-30.2	
Asian/PI	7.0 (±1.3)	5.5 (±1.5)	6.7 (±1.1)	7.4 (±0.9)	6.3 (±0.9)	5.9 (±1.9)	3.8 (±1.0)	-46.4	-36.5	
Hispanic	11.5 (±1.3)	8.9 (±1.1)	8.8 (±0.8)	8.9 (±0.6)	7.2 (±0.6)	6.8 (±1.0)	5.3 (±0.8)	-53.6	-21.0	
Non-Hispanic White	18.1 (±0.8)	17.4 (±0.7)	15.8 (±0.5)	16.0 (±0.4)	14.1 (±0.6)	12.7 (±0.6)	10.8 (±0.6)	-40.6	-14.9	
Other	28.6 (±7.4)	24.2 (±5.8)	23.5 (±3.1)	24.9 (±4.5)	17.9 (±2.0)	13.5 (±3.3)	21.3 (±5.0)	-25.6	57.0	
Education								1		
Less than 12 years	14.9 (±1.9)	11.4 (±1.4)	12.7 (±1.4)	11.2 (±0.8)	9.3 (±0.9)	9.9 (±1.4)	8.7 (±1.3)	-41.5	-12.3	
High school graduate	18.6 (±1.1)	16.8 (±1.0)	15.2 (±0.8)	15.7 (±0.7)	14.2 (±0.9)	13.6 (±1.0)	10.8 (±0.9)	-41.6	-20.4	
Some college	15.1 (±1.0)	14.5 (±1.1)	13.3 (±0.7)	14.8 (±0.6)	12.8 (±0.7)	11.6 (±0.9)	10.4 (±1.0)	-31.6	-10.7	
College graduate	10.4 (±0.9)	8.6 (±0.9)	8.6 (±0.6)	8.0 (±0.5)	7.1 (±0.4)	5.8 (±0.9)	4.6 (±0.5)	-55.7	-20.2	
Income								1		
< \$20,000	18.4 (±1.4)		15.6 (±1.2)	17.0 (±1.2)	15.8 (±1.5)	13.6 (±2.2)	14.3 (±2.4)	-22.1	4.9	
\$20,001-\$30,000	16.6 (±1.9)		14.5 (±1.0)	14.3 (±1.0)	13.7 (±1.2)	12.9 (±2.2)	12.6 (±2.1)	-24.4	-2.9	
\$30,001-\$50,000	14.3 (±1.7)		13.6 (±0.9)	13.7 (±0.9)	12.9 (±0.9)	12.6 (±1.7)	10.0 (±1.4)	-30.1	-20.3	
\$50,001-\$75,000	13.8 (±2.3)		11.6 (±1.3)	12.3 (±0.9)	10.9 (±1.0)	10.2 (±1.5)	8.4 (±1.3)	-39.2	-17.4	
\$75,001 \$100,000*	13.8 (±5.3)		9.2 (±1.2)	11.4 (±1.4)	9.1 (±0.9)	8.5 (±1.1)	7.7 (±1.4)	-43.9	-9.0	
\$100,001-\$150,00							6.9 (±1.5)			
> \$150,000							6.3 (±2.3)			
Missing	11.3 (±1.4)		10.0 (±1.0)	9.3 (±0.8)	8.8 (±0.9)	8.2 (±1.9)	6.4 (±1.5)	-43.6	-22.7	

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Two Decades of the California Tobacco Control Program: California Tobacco Survey, **1990-2008**

Chapter 3

Regional Differences in Smoking Prevalence in California

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Chapter 3 Regional Differences in Smoking Prevalence in California

This chapter summarizes patterns of cigarette smoking prevalence across geographic regions of California.

KEY FINDINGS

- Adult smoking prevalence has consistently declined across all regions of California since 1990, although the decline has been less dramatic within the regions of the predominantly rural counties of northern and western California. This region currently has the highest prevalence (16.0%) among all the California Tobacco Survey (CTS) sampling regions.
- Counties containing the largest California cities tend to have low adult smoking prevalence rates. This was true for Los Angeles County (10.4% prevalence), San Diego County (11.0% prevalence), and Alameda County (10.0% prevalence). Exceptions are San Francisco County (13.5% prevalence) and Sacramento County (14.0% prevalence), whose prevalence rates exceed the statewide adult prevalence rate of 11.6%.
- Conversely, predominantly rural counties tend to have high adult cigarette smoking rates. This was true for nearly all of the northern and western California counties that compose sampling region 10 (see **Table 3.3**), and was true for the rural counties of the south central portion of the state that are contained in sampling region 9 (with the exception of Madera County with a prevalence rate of 9.5% and a population density of 85 persons per square mile).
- The general pattern of high prevalence within counties with low population density was confirmed by analysis at the geographically finer resolution provide by United States Census Bureau Zip Code Tract Areas (ZCTAs[™]). The prevalence of cigarette smoking within ZCTAs[™] with a population density of 100 or fewer persons per square mile was 15.9% compared to a prevalence of 10.9% within ZCTAs[™] with a population density of 2,000 or higher.

Chapter 3 Regional Differences in Smoking Prevalence in California

Introduction

The CTS used a stratified sample designed to provide geographically representative samples of smoking behavior across the state of California. Although the statewide estimate of smoking prevalence is an important metric of success of the CTCP at the global level, it can miss important geographic and demographic differences that may be relevant to planning future tobacco control efforts.

The sampling design for the 2008 CTS consisted of 12 geographically defined sampling strata with a targeted sample size of at least 3,000 adults enumerated per stratum (**Figure 3.1**). The number of sampling regions was reduced to 12 (from 18) beginning with the 2008 CTS. The 2008 regions were created by reallocating counties from some of the smaller regions used in previous surveys to form a smaller number of larger regions. This was done to increase the sample size per region and improve the precision of region-specific estimates of smoking prevalence. The new regions are geographically

Figure 3.1: Sampling Regions in California.



contiguous except for region 9, which combines the rural south central counties with Imperial County to form one predominantly rural southern California region (**Figure 3.1**).

While prevalence estimates within these strata provide some indication of geographic differences in smoking prevalence, finer resolution summaries may help to better target future interventions by the CTCP. Nearly all survey respondents provide their county of residence (99.6% completion rate), and most provided usable ZIP Codes[®] (93%). Chapter 3 uses the region, county, and ZIP Code[®] level geographic indicators to provide a detailed description of the geographic distribution of smoking prevalence within the state of California.

1. Prevalence by Sampling Region

The 2008 CTS was a random sample of 12 geographically defined sampling strata. The target sample size of 3000 adults per region was established to ensure stable estimates of prevalence for each region. The target was achieved or nearly achieved for all regions (region 12, with 2785 adults, had the smallest sample size). The Los Angeles region was oversampled to obtain sample size quotas for otherwise underrepresented racial/ethnic subgroups (n=9,902 adults sampled in the Los Angeles region). Due to the large sample size per region, 95% confidence intervals for region-level prevalence estimates are quite narrow, on the order of +/- 0.8 to 2.0 percent prevalence.

Regions that have a population primarily from a single large city tend to have lower prevalence rates, as noted in Los Angeles County (10.4% prevalence), San Diego County (11.0% prevalence), and Alameda County (10.0% prevalence).

The prevalence of adult cigarette smoking in 2008 is summarized by sampling region in Table 3.1. All prevalence estimates and corresponding 95% confidence intervals reported in the chapter were calculated using the same methods as used in previous chapters (Al-Delaimy et al., in press). The region with the lowest smoking rate was region 4, the Santa Clara region, with an estimated adult population prevalence of 8.0% (+/-1.2%). Regions 9, composed of Imperial County and the rural counties of south central California, and 10.

Table 3.1 Smoking Prevalence by Region, 2008						
	Current smoker %	Population size (n)	Sample Size (n)			
Overall	11.6 (±0.4)	26,851,511	44,171			
Region						
1-Los Angeles	10.5 (±0.8)	7,713,882	9,902			
2-San Diego	11.0 (±1.4)	2,225,667	3,307			
3-Orange	10.8 (±1.5)	2,217,218	3,150			
4-Santa Clara	8.0 (±1.2)	1,338,766	2,938			
5-San Bernardino	12.6 (±1.5)	1,269,564	3,155			
6-Riverside	12.7 (±1.6)	1,169,392	3,026			
7-Alameda	9.9 (±1.4)	1,119,122	2,868			
8-Contra Costa, Marin,	· ·					
San Francisco, San Mateo, Solano	11.0 (+1.5)	2 563 330	3 1 2 9			
9-Fresno, Imperial, Kern.	11.0 (±1.0)	2,000,000	0,120			
Kings, Madera, Mariposa,						
Merced, Tulare	14.3 (±1.7)	1,841,313	3,005			
10-Alpine, Amador, Butte,						
Calveras, Colusa, Del Norte,						
El Dorado, Glenn, Humboldt,						
Inyo, Lake, Lassen, Mendocino,						
Modoc, Mono, Napa, Nevada,						
Placer, Plumas, Shasta, Sierra,						
Siskiyou, Sonoma, Sutter,		4 705 040	0.000			
Tehama, Trinity, Tuolumne	16.0 (±2.0)	1,795,046	3,692			
11-Sacramento, San Joaquin,						
Stanislaus, Yolo, Yuba	13.3 (±1.9)	1,952,808	3,214			
12-Monterey, San Benito,						
San Luis Obispo, Santa Barbara,						
Santa Cruz, Ventura	12.1 (±1.5)	1,645,403	2,785			

composed of rural northern and western counties of California, had the highest prevalence rates, 14.3% and 16.0% respectively.

Seven of the regions, including the Santa Clara region, are composed of single counties, several of which have populations dominated by a single large city. We note that the regions whose population is largely from a single large city tend to have lower prevalence rates. This is true for Los Angeles County (10.4% prevalence), San Diego County (11.0% prevalence), and Alameda County (10.0% prevalence). In contrast, Riverside and San Bernardino Counties, which contain both urban and rural areas, have higher prevalence rates, 12.7% and 12.6% prevalence respectively. Region 12, composed of counties within the coastal region north of Los Angeles County and south of San Mateo County, had an intermediate prevalence rate of 12.1%, closer to the statewide prevalence rate of 11.6%.

2. Temporal Trends in Prevalence by Region

Table 3.2 summarizes temporal trends in prevalence from 1990 to 2008 for the current sampling regions. As described in the Introduction to Chapter 3, surveys prior to 2008 used different sampling regions. However, the county of residence was recorded for all previous surveys except 1993, and we were able to reconstruct the 2008 regions for the previous surveys from the county codes. Prevalence rates for earlier surveys were standardized to the 2008 age, education, gender, and race/ethnicity distribution within each region to control the influence of shifting demographic factors on prevalence in comparisons across survey years (Al-Delaimy et al., in press).

		1	emporal Tre	Table 3.2 nds in Preval	ence by Regi	on*			
Regio n	Counties	1990 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1990-2008	Percentage Change 2005-2008
1	Los Angeles	19.0 (±1.2)	15.8 (±0.8)	15.7 (±0.6)	14.1 (±0.8)	12.4 (±1.6)	10.5 (±0.8)	-44.7%	-15.3%
2	San Diego	18.6 (±2.2)	14.8 (±1.4)	16.1 (±1.3)	13.5 (±1.1)	12.9 (±1.5)	11.0 (±1.4)	-40.9%	-14.7%
3	Orange	15.4 (±1.9)	13.4 (±1.2)	14.0 (±0.8)	13.4 (±1.3)	12.5 (±1.9)	10.8 (±1.5)	-29.9%	-13.6%
4	Santa Clara	15.9 (±1.9)	12.2 (±1.1)	13.2 (±1.1)	11.1 (±1.2)	9.6 (±1.7)	8.0 (±1.2)	-49.7%	-16.7%
5	San Bernardino	21.5 (±1.9)	18.2 (±2.0)	19.0 (±1.5)	16.9 (±1.6)	17.1 (±1.8)	12.6 (±1.5)	-41.4%	-26.3%
6	Riverside	19.5 (±1.9)	16.0 (±1.8)	18.3 (±1.4)	17.3 (±1.6)	13.5 (±1.7)	12.7 (±1.6)	-34.9%	-5.9%
7	Alameda	18.8 (±2.1)	17.0 (±1.7)	14.7 (±1.4)	14.2 (±1.6)	11.0 (±1.6)	9.9 (±1.4)	-47.3%	-10.0%
8	Contra Costa, Marin, San Francisco, San Mateo, Solano Fresno, Imperial, Kern, Kings, Madara, Marinosa, Merced	17.8 (±0.9)	16.3 (±0.9)	15.9 (±0.8)	13.7 (±0.8)	12.2 (±0.9)	11.0 (±1.5)	-38.2%	-9.8%
9	Tulare	19.9 (±1.5)	18.0 (±1.5)	17.7 (±1.1)	17.0 (±1.2)	15.6 (±1.5)	14.3 (±1.7)	-28.1%	-8.3%
40	Alpine, Amador, Butte, Calveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Inyo, Lake, Lassen, Mendocino, Modoc, Mono, Napa, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Sonoma, Sutter, Tehama,		40.5 (4.0)				40.0 (. 0.0)	01.0%	4.00%
10	Trinity, Tuolumne	20.3 (±1.8)	18.5 (±1.2)	19.0 (±1.1)	16.7 (±1.0)	16.2 (±1.1)	16.0 (±2.0)	-21.2%	-1.2%
11	Joaquin,Stanislaus,Yolo,Yuba	20.7 (±1.3)	18.5 (±1.0)	18.4 (±1.3)	17.7 (±1.2)	15.9 (±1.4)	13.3 (±1.9)	-35.7%	-16.4%
12	Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura	16.2 (+1.1)	15 3 (+1 3)	15 6 (+1 1)	13 1 (+1 0)	12 5 (+1 0)	12 1 (+1 5)	-25.3%	-3.2%

*Prevalence by region, standardized to 2008 by region, sex, age (4 groups), race/ethnicity (3 groups), education (2 groups)

Standardized prevalence rates have declined across all regions from 1990 to the 2008 survey (**Table 3.2**). Standardized rates have dropped by as much as 49.7% from 1990 levels (Santa Clara County). The region with the smallest relative drop in standardized prevalence was region 10 (Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Inyo, Lake, Lassen, Mendocino, Modoc, Mono, Napa, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Sonoma, Sutter, Tehama, Trinity, and Tuolumine counties), which dropped by 21.2% from 1990 levels. Most regions dropped by from 25% to 50% (**Table 3.2**).

Most regions also observed substantial reductions in standardized prevalence rates between the 2005 and 2008 surveys (**Table 3.2**). The most striking exception is region 10, whose estimated standardized prevalence only decreased by a factor of only 1.2%, from 16.2 (± 1.1) % in 2005 to 16.0 (± 2.0) % in 2008.

In summary, tobacco control efforts have been uniformly effective across geographic regions with the exception of the northern and western California counties that compose region 10.

3. Prevalence by County

All households were asked to report their county of residence. The completion rate for this questionnaire item was 99.6%, so that essentially the entire sample is available to inform county-level estimates of prevalence. **Table 3.3** summarizes smoking prevalence within each county. Counties provide a finer geographic resolution of smoking prevalence than regions. Sample sizes for those counties with a small population are restrictively small, and care must be taken not to over interpret estimates for these counties. Nonetheless, the county level summaries do reveal interesting trends beyond what are apparent in the region-level summaries.

Seven of the regions described in the previous section are composed of a single county. Estimates for these regions in **Table 3.3** are based on reported county of residence, and vary slightly from estimates based on sampling regions reported in **Table 3.1**. This slight variation is due to a small rate of misclassification of the **Table 3.1** region codes for households within telephone exchanges that straddle region boundaries. (The sampling frame was constructed from telephone exchanges. Telephone exchanges geographically contained within a sampling stratum were assigned to that stratum. The boundaries of some telephone exchanges were not contained within a single sampling region. Numbers within these exchanges were randomly assigned to one or the other of the regions the exchange covered, resulting in minor variation in region-based estimates compared to county-based estimates.) In all cases, however, estimates were consistent to within the first decimal place or closer.

Among those regions composed of more than one county (regions 8 through 12), we note some variability in prevalence across counties within a region, although most within county sample sizes are

San Francisco and Sacramento Counties, with 6.3% of the adult population of California, have prevalence rates higher than the statewide average prevalence. small and differences across counties within a region are not statistically significant. Of note, the two largest counties within regions 8 through 12 have prevalence estimates well above the statewide prevalence estimate of 11.6%. San Francisco County, with 2.5% of the adult population of California, had a prevalence rate of 13.5 (\pm 3.8)%. Sacramento County, with 3.8% of the adult population of California, had a prevalence rate of 14.0 (\pm 2.8)%.

Except for San Francisco and Sacramento Counties, the general trend of higher prevalence within rural areas and lower prevalence within more urban areas observed in the region-level data is also apparent in the county level data. However, it is also possible that variable population density within counties may be masking the extent of this association. For

example, San Bernardino County, with 13% of the land area of California, has an overall population density of 86 persons per square mile based on the 2000 Census, but this population density measure

is not representative of the relatively more densely populated western portion of the county nor of the vast and sparsely populated eastern portion of the county. To further investigate rural versus urban patterns of smoking prevalence we make use of population density estimates at the ZIP Code[®] level resolution in Section 4 below.

2008 Sm	oking Prevalence	Table 3.3 * by Reporte	d County o	of Residence
Region	County	Density** (/mi²)	Sample Size	Prevalence (%)
1	Los Angeles	2345	9843	10.4 (±0.8)
2	San Diego	669	3307	11.0 (±1.4)
3	Orange	3603	3165	10.9 (±1.5)
4	Santa Clara	1303	2941	8.0 (±1.2)
5	San Bernardino	85	3185	12.7 (±1.5)
6	Riverside	214	3033	12.7 (±1.6)
7	Alameda	1956	2857	10.0 (±1.4)
	Contra Costa	1318	1057	9.6 (±2.4)
	San Francisco	16526	630	13.5 (±3.8)
8	San Mateo	1575	714	9.6 (±2.9)
	Solano	476	390	14.6 (±4.4)
	Marin	476	311	7.3 (±4.3)
	Mariposa	12	54	
	Fresno	134	944	11.2 (±2.8)
	Madera	58	179	9.5 (±4.8)
0	Merced	109	301	17.7 (±6.3)
9	Imperial	34	166	16.1 (±7.8)
	Kern	81	665	17.1 (±4.2)
	Kings	93	151	15.1 (±7.2)
	Tulare	76	503	16.0 (±4.1)
	Napa	165	158	
	Sonoma	291	728	16.4 (±4.1)
	Butte	124	328	21.0 (±7.6)
	Colusa	16	22	
10	Del Norte	27	40	
	Glenn		50	
	Humboldt	35	187	17.7 (±8.5)
	Lake	46	135	
	Lassen	7	43	
	Mendocino	25	157	14.7 (±7.5)

Modoc	2	8	
Plumas	8	40	
Shasta	43	230	13.1 (±5.6)

Table 3.3 (cont'd) 2008 Smoking Prevalence* by Reported County of Residence							
Region	County	Density** (/mi²)	Sample Size	Prevalence (%)			
	Siskiyou	7	70				
	Tehama	19	80				
	Trinity	4	38				
	Amador	59	92				
	Alpine	2	4				
	Calaveras	40	110	18.1 (±9.3)			
10	El Dorado	91	222	16.8 (±8.5)			
(conťd)	Nevada	96	155				
	Placer	177	448	9.5 (±3.8)			
	Sierra	4	1				
	Sutter	131	78				
	Tuolumne	24	141	21.9 (±8.1)			
	Inyo	2	34				
	Mono	4	13				
	Sacramento	1267	1701	14.0 (±2.8)			
	Yolo	167	234	7.7 (±4.4)			
11	San Joaquin	403	708	11.4 (±2.8)			
	Yuba	95	75				
	Stanislaus	299	482	14.9 (±4.4)			
	San Luis Obispo	75	323	13.0 (±4.3)			
	Santa Barbara	146	418	11.6 (±4.3)			
12	Ventura	408	1024	11.8 (±2.3)			
	Monterey	121	468	13.3 (±4.5)			
	San Benito	38	68				
	Santa Cruz	573	468	12.4 (±4.3)			

*Prevalence not reported for counties with sample size less than 30 or a standard error of estimation greater than 30% of the

pooled prevalence within unreported counties was 14.2 (±4.3)%. **Number of persons per square mile in the 2000 U.S. Census

4. Prevalence by Population Density

ZCTAs[™] were created by the U.S. Census Bureau beginning with the 2000 census. ZCTAs[™] are area representations of U.S. Postal Service (USPS) ZIP Code[®] service areas

(<u>http://www.census.gov/geo/ZCTA/zcta.html</u>). Among other things, the Census Bureau has tabulated land area and population size for each ZCTA[™]. Hence, ZCTAs[™] allow a finer level resolution investigation of the relationship between population density and smoking prevalence than provided by region- or county-level data. All households were asked to report their ZIP Code[®] of residence. The completion rate for this questionnaire item was high (available for 97% of enumerated adults). Although not all reported ZIP Codes[®] mapped to ZIP Codes[®] within the Census Bureau ZCTA[™] database, we were able to obtain ZIP Code[®] area resolution population densities for 93% of the enumerated adult CTS sample.

The prevalence of cigarette smoking within ZCTAs with a population density of 100 or fewer persons per square mile was 15.9% compared to a prevalence of 10.9% within ZCTAs with a population density of 2,000 or higher **Figure 3.2** summarizes smoking prevalence for the adult population of California stratified by population density of their resident ZIP Code[®]. The sample was divided into groups of roughly equal size to maximize the precision of group level estimates of prevalence. For persons residing in ZCTAs[™] with population density of 100 persons per square mile or less, the prevalence of smoking was 15.9%. Prevalence rates declined steadily with increasing population density until population density reach 2,000 or more persons per square mile. The prevalence rate increase slightly among persons residing within ZCTAs[™] with population density greater than 10,000 persons per square mile (mainly from San Francisco and Los Angeles counties), to 11.6%. Pooling the final three categories, the prevalence of smoking among persons residing in ZCTAs[™] with more than 2,000 persons per square mile was 10.9%.





Ninety percent of adults within the ZCTAs[™] with density of 100 or less persons per square mile are either Non-Hispanic White (59% of adults) or Hispanic (31% of adults). **Figure 3.3** reports smoking prevalence by population density of place of residence for these two subgroups. The general pattern of prevalence for Non-Hispanic Whites is similar to that seen for the entire population, except that the peak prevalence within the lowest density subgroup is higher, at 17.5%, and the "U-shaped" pattern of increasing prevalence with increasing population density at the high range of population density was more pronounced; the lowest prevalence for Non-Hispanic Whites was within the intermediate population density ZCTAs[™], presumably representing higher socioeconomic status suburban communities. Conversely, prevalence within Hispanics is independent of population density of residence, being consistently at around 10 to 11% regardless of population density.





Population Density	Non-Hispanic White	Hispanic
		107
0-100	17.5	10.7
100-500	15.0	10.9
500-1,000	12.3	10.4
1,000-2,000	11.3	11.3
2,000-5,000	10.4	9.8
5,000-1,0000	12.3	10.0
10,000-100,000	14.1	10.1

Figure 3.4 summarizes smoking prevalence as a function of age and population density. Population density was dichotomized at greater than versus less than or equal to 1000 persons per square mile to ensure sufficient sample size per subgroup for prevalence estimation. Prevalence lines in Figure 3.4 were obtained by fitting locally a weighted average smoother (Friedman, 1984) to age-specific prevalence rates for each subgroup. Smoking prevalence within less densely populated ZCTAs ™ was elevated across almost all age groups (Figure 3.4). The greatest disparity was within the age of peak smoking prevalence, about ages 25 to 30 years (Figure 3.4). Peak prevalence was over 22% within less populated areas compared to approximately 15% within more densely populated areas. Prevalence within less populated areas subgroups for persons over 70 years of age. One positive sign evident on Figure 3.4 is that prevalence rates within the youngest adult age range were consistently

low across population densities, suggesting that successful efforts to delay initiation of smoking within California (see Chapter 1) have been effective in both rural and urban areas.





Summary

In this chapter we have described regional differences in smoking prevalence at the region, county, and ZIP Code[®] level.

We found substantial regional variability in smoking prevalence in California. Many of the counties containing major urban areas have prevalence rates well below the statewide average. Critical exceptions are San Francisco and Sacramento Counties, with prevalence rates of 13.5 and 14.0%, respectively. These two counties represent 1.7 million adults, or 6.3% of the 2008 adult population in California. Hence, the potential health impact return on tobacco prevention dollars spent in these geographic areas is high. Moreover, identifying and addressing the causes of the higher prevalence within these areas would favorably impact overall prevalence rates for the state.

A second distinct population with high prevalence rates is Non-Hispanic Whites living in areas with a low population density. The prevalence rate among Non-Hispanic Whites within ZCTAs[™] with a population density of 100 or fewer people per square mile was 17.5%, which is 5.9 percentage points, or 51%, higher than the statewide average prevalence of 11.6%. It is reasonable to infer that tobacco-related health burden within this population is likewise disproportionately higher. Decreasing smoking prevalence within this geographically dispersed rural population of California represents a distinct challenge to the CTCP. Interestingly, prevalence was not related to population density among Hispanics, suggesting that cultural influences on smoking behavior are intact regardless of urban or rural residency for this ethnic group, although further investigation would be required to establish which factors mediate these divergent patterns of smoking prevalence.

Consistent with the observed higher prevalence among rural Non-Hispanic Whites, region 10, comprised of the mostly rural counties of northern and western California, has had the slowest rate of decline in smoking prevalence since 1990. This may reflect a failure of tobacco control efforts within this region, or, more plausibly, may reflect the difficulty of intervening within this geographically dispersed rural population.

APPENDIX Chapter 3 Regional Differences in Smoking Prevalence in California

Table A.3.1 presents demographic distributions of the adult population of each region. Sample sizes for each demographic category are also reported.

Appendix Table A.3.1 Population Demographics by Region - Adults in Screener Survey												
	Regio	Region 1 Region 2		Region 3 Region		n 4	A Region 5		Region 6			
	%	Sample size	%	Sample size	%	Sample size	%	Sample size	%	Sample size	%	Sample size
Gender												
Male	48.7 (±0.5)	4,550	49.0 (±1.0)	1,536	49.2 (±1.0)	1,477	50.1 (±1.1)	1,413	48.9 (±1.1)	1,454	49.0 (±1.0)	1,386
Female	51.4 (±0.5)	5,352	51.0 (±1.0)	1,771	50.9 (±1.0)	1,673	49.9 (±1.1)	1,525	51.1 (±1.1)	1,701	51.0 (±1.0)	1,640
Age												
18-24	14.1 (±0.7)	1,145	12.5 (±1.3)	306	13.6 (±1.8)	329	12.0 (±1.6)	288	16.5 (±1.3)	418	12.8 (±1.3)	307
25-44	41.7 (±1.1)	2,834	39.7 (±2.5)	844	39.6 (±2.2)	831	44.2 (±2.8)	875	38.5 (±2.1)	847	39.8 (±2.3)	762
45-64	28.6 (±1.0)	3,691	28.9 (±1.7)	1,282	30.6 (±1.5)	1,247	30.4 (±2.1)	1,191	30.0 (±2.1)	1,227	28.8 (±1.8)	1,135
65+	15.6 (±0.8)	2,232	19.0 (±1.8)	875	16.2 (±1.7)	743	13.4 (±1.6)	584	15.0 (±1.6)	663	18.6 (±1.8)	822
Race/Ethnicity	Race/Ethnicity											
African American	10.0 (±0.7)	1,690	4.7 (±1.2)	114	2.4 (±0.9)	66	3.2 (±1.5)	73	6.9 (±1.4)	192	5.9 (±2.1)	139
Asian/PI	13.5 (±1.1)	843	12.0 (±2.1)	246	16.3 (±2.4)	331	32.5 (±3.3)	657	6.8 (±2.1)	139	4.4 (±1.3)	96
Hispanic	42.7 (±1.5)	3,246	29.4 (±3.1)	648	27.2 (±2.3)	581	19.4 (±2.3)	419	42.0 (±3.1)	966	42.2 (±3.4)	865
Non-Hispanic White	32.1 (±1.2)	3,983	52.0 (±2.9)	2,246	53.0 (±2.2)	2,138	44.0 (±2.8)	1,761	41.2 (±2.7)	1,777	44.6 (±2.8)	1,851
Other	1.7 (±0.4)	140	1.9 (±0.8)	53	1.2 (±0.4)	34	0.9 (±0.6)	28	3.1 (±1.1)	81	2.9 (±1.1)	75
Education												
Less than 12 years	16.4 (±1.3)	1,367	12.8 (±1.7)	283	11.0 (±1.8)	247	7.5 (±1.8)	152	15.2 (±1.8)	373	16.7 (±1.8)	365
High school graduate	30.1 (±1.3)	2,593	25.9 (±2.1)	741	25.1 (±2.3)	673	20.9 (±2.4)	509	35.2 (±2.3)	984	34.5 (±2.6)	916
Some college	22.5 (±1.0)	2,529	25.3 (±1.6)	914	25.8 (±1.8)	868	21.6 (±2.0)	668	27.3 (±2.0)	990	26.6 (±1.7)	901
College graduate	31.0 (±1.2)	3,413	36.0 (±2.3)	1,369	38.1 (±2.6)	1,362	50.0 (±2.4)	1,609	22.3 (±2.3)	808	22.3 (±1.7)	844
Income												
\$20,000 or less	13.5 (±1.2)	1,258	8.7 (±1.6)	247	7.4 (±1.7)	185	7.1 (±1.7)	165	12.7 (±2.1)	383	12.2 (±2.2)	342
\$20,001 to \$30,000	11.1 (±1.2)	1,013	9.4 (±1.5)	267	6.8 (±1.6)	193	4.8 (±1.5)	137	9.8 (±1.8)	297	10.6 (±1.7)	277
\$30,001 to \$50,000	12.8 (±1.3)	1,234	13.1 (±2.6)	413	9.2 (±1.4)	290	7.7 (±1.8)	234	14.7 (±2.1)	448	14.2 (±2.3)	428
\$50,001 to \$75,000	11.3 (±1.2)	1,185	13.4 (±2.1)	438	13.6 (±2.2)	410	10.0 (±1.8)	321	14.7 (±2.4)	466	14.5 (±2.0)	451
\$75,001 to \$100,000	10.3 (±1.2)	1,044	13.1 (±2.0)	450	11.4 (±2.0)	374	11.9 (±1.8)	352	13.0 (±2.3)	402	14.0 (±1.9)	428
\$100,001 to \$150,00	11.6 (±1.5)	1,106	12.4 (±2.0)	473	17.2 (±2.8)	555	16.5 (±3.1)	509	12.4 (±2.0)	398	12.4 (±1.7)	373
over \$150,000	12.1 (±1.3)	1,270	10.8 (±2.0)	408	16.0 (±2.5)	550	23.3 (±2.7)	710	7.7 (±1.9)	267	8.8 (±1.7)	310
Missing	17.4 (±1.5)	1,792	19.1 (±2.4)	611	18.4 (±1.9)	593	18.7 (±2.6)	510	15.1 (±2.1)	494	13.4 (±2.0)	417
Population (weighted estimate)	7,713,882	9,902	2,225,667	3,307	2,217,218	3,150	1,338,766	2,938	1,269,564	3,155	1169392	3026

Region 1	Los Angeles	Region 7	Alameda
Region 2	San Diego	Region 8	Contra Costa, Marin, San Francisco, San Mateo, Solano
Region 3	Orange	Region 9	Fresno, Imperial, Kern, Kings, Madera, Mariposa, Merced, Tulare Alpine, Amador, Butte, Calveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Inyo, Lake, Lassen, Mendocino, Modoc, Mono, Napa, Nevada,
Region 4	Santa Clara	Region 10	Placer, Plumas, Shasta, Sierra, Siskiyou, Sonoma, Sutter, Tehama, Trinity, Tuolumne
Region 5	San Bernardino	Region 11	Sacramento, San Joaquin, Stanislaus, Yolo, Yuba
Region 6	Riverside	Region 12	Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura

Appendix Table 3.1 (cont'd) Population Demographics by Region - Adults in Screener Survey												
	Region 7		Region	8	Region 9 Regio		Region	gion 10 Region 11		11	Region 12	
	0/	Sample	0/	Sample	0/	Sample	0/	Sample	0/	Sample	0/	Sample
Gandar	%	size	%	size	%	size	%	size	%	size	%	size
Malo	10.0 (+1.1)	1 30/	50 5 (+0 0)	1 /6/	50 5 (±1.0)	1 300	10 0 (+0 0)	1 7/10	10 1 (±0 0)	1 /6/	50 3 (±1 2)	1 206
Fomalo	$49.0(\pm 1.1)$ 51.0(± 1.1)	1,504	10.5 (±0.9)	1,404	$30.3 (\pm 1.0)$	1,390	$49.9 (\pm 0.9)$	1,740	$49.4 (\pm 0.9)$	1,404	$30.3 (\pm 1.2)$	1,290
	51.0 (±1.1)	1,304	49.5 (±0.9)	1,005	49.5 (±1.0)	1,015	50.1 (±0.9)	1,952	50.0 (±0.9)	1,750	49.7 (±1.2)	1,409
18 2/	117(+15)	256	11.0 (±1.5)	256	13.2 (±1.6)	303	10.7 (±1.5)	270	12 3 (±1 3)	315	13.5 (±1.0)	201
25.44	$11.7 (\pm 1.3)$	200	$11.0(\pm 1.0)$	200	13.2 (±1.0)	001	$10.7 (\pm 1.5)$	219	$12.3 (\pm 1.3)$	015	13.3 (±1.9)	291
25-44	$41.3(\pm 2.7)$	1 220	$33.0(\pm 2.2)$	1 261	$43.2(\pm 3.0)$	1 000	$33.9(\pm 2.0)$	1 576	$39.0(\pm 1.9)$	1 070	$30.7 (\pm 2.9)$	1 102
45-64	$31.0(\pm 2.3)$	1,229	$33.7 (\pm 1.9)$	1,301	$27.0(\pm 2.2)$	1,090	$33.3(\pm 1.7)$	1,070	$30.1(\pm 1.0)$	1,272	$32.0(\pm 2.1)$	1,195
	15.1 (±1.4)	100	19.7 (±1.7)	009	10.0 (±1.4)	/	22.2 (±1.4)	1,001	10.0 (±1.3)	102	17.1 (±1.0)	100
African American	11 5 (, 1 0)	070	E 7 (. 1 A)	120	21(.00)	70	10(.06)	00	74(.45)	100	2.2 (, 1.4)	42
Ancan American	$11.3(\pm 1.9)$	212	$3.7 (\pm 1.4)$	132	3.1 (±0.9)	120	1.0 (±0.6)	105	7.4 (±1.5)	100	2.2 (±1.1)	43
Asian/PI	$21.2(\pm 2.1)$	000	20.0 (±2.2)	400	0.5 (±1.9)	1.014	5.2 (±1.4)	217	$10.1(\pm 1.9)$	201	0.0 (±2.0)	143
Hispanic	14.5 (±1.7)	308	16.1 (±2.5)	338	40.5 (±2.7)	1,014	15.4 (±2.1)	317	24.4 (±2.7)	518	33.4 (±3.1)	011
Non-Hispanic vvnite	45.6 (±2.8)	1,759	56.5 (±2.5)	2,201	40.7 (±2.6)	1,692	74.6 (±2.0)	3,151	54.9 (±3.1)	2,222	53.7 (±3.0)	1,939
Other	1.2 (±0.6)	29	1.8 (±0.5)	50	3.2 (±1.1)	88	3.8 (±1.2)	97	3.3 (±1.0)	85	2.3 (±1.0)	49
Education		100						001				070
Less than 12 years	6.4 (±1.6)	136	7.0 (±1.3)	148	24.1 (±2.3)	559	9.9 (±1.4)	231	13.6 (±1.6)	321	15.2 (±2.0)	276
High school graduate	22.1 (±1.8)	543	23.0 (±1.9)	605	33.0 (±2.1)	886	31.7 (±1.5)	1,063	31.5 (±2.3)	896	28.3 (±2.5)	668
Some college	22.3 (±1.7)	680	23.5 (±1.7)	757	24.4 (±1.9)	851	28.2 (±1.8)	1,112	27.7 (±2.1)	956	25.6 (±2.2)	793
College graduate	49.2 (±2.7)	1,509	46.5 (±2.0)	1,619	18.5 (±1.8)	709	30.2 (±2.0)	1,286	27.2 (±1.8)	1,041	30.9 (±2.4)	1,048
Income	I											1
\$20,000 or less	7.1 (±1.9)	161	6.4 (±1.7)	166	18.9 (±2.3)	490	11.1 (±2.0)	378	11.5 (±2.0)	328	9.8 (±1.9)	221
\$20,001 to \$30,000	5.2 (±1.5)	148	5.1 (±1.4)	141	14.7 (±1.9)	372	9.3 (±1.8)	331	9.1 (±1.7)	266	7.4 (±1.8)	188
\$30,001 to \$50,000	11.6 (±1.9)	300	10.1 (±1.8)	297	18.4 (±2.4)	547	16.3 (±2.2)	575	12.8 (±2.2)	417	14.5 (±2.3)	393
\$50,001 to \$75,000	10.9 (±1.8)	329	13.2 (±1.9)	385	12.2 (±1.8)	410	15.4 (±2.1)	607	15.6 (±2.2)	501	12.9 (±2.0)	370
\$75,001 to \$100,000	15.4 (±2.5)	435	12.0 (±1.9)	407	10.8 (±1.7)	367	12.7 (±1.9)	464	13.6 (±1.9)	444	12.0 (±2.2)	344
\$100,001 to \$150,00	17.3 (±2.7)	523	14.4 (±2.2)	469	8.6 (±1.9)	297	12.8 (±1.8)	477	14.6 (±2.3)	500	13.9 (±2.3)	416
over \$150,000	19.1 (±2.7)	579	21.9 (±2.6)	726	4.2 (±1.2)	154	7.0 (±1.3)	300	6.9 (±1.4)	257	10.5 (±1.7)	336
Missing	13.5 (±2.0)	393	16.9 (±2.5)	538	12.2 (±2.0)	368	15.5 (±2.0)	560	15.9 (±2.1)	501	19.0 (±2.7)	517
Population (weighted estimate)	1,119,122	2,868	2,563,330	3,129	1,841,313	3,005	1,795,046	3,692	1,952,808	3,214	1,645,403	2,785
			-						-			

Region 1	Los Angeles	Region 7	Alameda
Region 2	San Diego	Region o	Contra Costa, Manin, San Francisco, San Mateo, Solano
Region 3	Orange	Region 9	Fresno, Imperial, Kern, Kings, Madera, Mariposa, Merced, Tulare Alpine, Amador, Butte, Calveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Inyo, Lake, Lassen, Mendocino, Modoc, Mono, Napa, Nevada, Placer,
Region 4	Santa Clara	Region 10	Plumas, Shasta, Sierra, Siskiyou, Sonoma, Sutter, Tehama, Trinity, Tuolumne
Region 5	San Bernardino	Region 11	Sacramento, San Joaquin, Stanislaus, Yolo, Yuba
Region 6	Riverside	Region 12	Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura

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Adult Use of Other Tobacco Products

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Chapter 4

Adult Use of Other Tobacco Products

The 2008 California Tobacco Survey (CTS) included questions on tobacco products other than cigarettes. These products have been promoted by the tobacco industry as alternatives to cigarettes. The prevalence of smokeless tobacco, cigars, and hookah use are presented here.

KEY FINDINGS

- Other tobacco product use is not decreasing in a manner similar to cigarette smoking. While adult current cigarette smoking decreased by 13.4% since 2005, current cigar smoking increased by 7.9% and current smokeless tobacco use remained unchanged for the same 3-year time period. <u>Ever-use</u> for hookah increased between 2005 and 2008 by 41.8% for males and by 47.4% for females.
- In 2008, 11.2±1.4% of males had <u>ever</u> smoked a hookah while only 2.8±0.7% of females <u>ever</u> smoked a hookah. Hookah use is increasing faster than any other tobacco product, especially in young adults. <u>Ever-use</u> of hookah is now the most popular form of alternative tobacco use in females aged 18-24 years (10.0±2.0% reported ever-use of hookah). For young males within the same age group (18-24 years) 24.5±3.1% reported ever using hookah.
- Prevalence of <u>ever-use</u> of cigars in 2008 was highest in males (32.9±2.9), a prevalence that has not changed since 1996. The prevalence of females <u>ever-use</u> of cigars is much lower than males but increased by 14.8% since 2005 and is now 7.0±1.2%. The prevalence of current cigar use in males has increased by 11.4% since 2005 and is now 7.8±1.7%. The 2008 measures of male current use and female <u>ever-use</u> of cigars are higher than any previous CTS.
- In 2008, the prevalence of current cigar use among current and former cigarette smokers is increasing and now higher than in any prevalence from previous CTS. The highest current use of cigars is among current male cigarette smokers (16.4±2.5%) followed by male former cigarette smokers (9.8±4.1%).
- Current smokeless tobacco use remains stable and low in 2008 at 2.0% in males (negligible in females). Initiation of smokeless tobacco use seems to be on the decline among young male adults aged 18-24 years as <u>ever-use</u> declined by 47% between 1990 and 2008 and by 9.1% between 2005 and 2008. Current male use of smokeless tobacco in this young age group was reduced by 57.1% between 1990 and 2008 and by 11.1% between 2005 and 2008.
- While 28.4% smokers in California report that they might be willing to use tobacco products with 'fewer health consequences' and 52.9% report that they might use a product that 'didn't require smoking or spitting', the use of 'potentially reduced exposure tobacco products' (PREPs) is currently very low (0.2% to 1.8%).

Chapter 4

Adult Use of Other Tobacco Products

Introduction

This chapter will review the use of tobacco products other than cigarettes by adults in California using data from the CTS. For the purposes of the CTS, 'other tobacco products' refers to smokeless tobacco, cigars, hookah (waterpipe tobacco), and some PREPs. For smokeless tobacco and cigars, current use and ever-use is collected in the survey. For hookah, there is only data on ever-use. There are also questions on ever-use for newer products, promoted by the tobacco industry to be less harmful, such as snus and Ariva.

Although cigarettes remain the predominant form of tobacco use in the U.S., other tobacco products may be gaining a market share. This gain in market share may be due to the fact that cigarette smoking is on the decline while many tobacco control programs do not target other forms of tobacco use with the same emphasis that they place on cigarettes. Additionally, many tobacco companies are increasing the production, availability, and promotion of alternate tobacco products, known as PREPs.

For cigar use, the National Cancer Institute believes the increase in cigar use is seen since the mid-1990's and can be attributed to the introduction and popularity of *Cigar Aficionado Magazine* (first published in September, 1992) (Burns, 1998). The adverse health effects of cigars are similar to those of cigarettes. Cigar smokers have an increased risk of all-cause mortality, as well as cancers of the lung, larynx, esophagus, mouth, bladder, and pancreas. Heavy cigar users and deep inhalers are also at higher risk for coronary heart disease and chronic obstructive pulmonary disease (Burns, 1998).

Smokeless tobacco is related to adverse health conditions and cancers, usually in the mouth. Occurring in up to 60% of smokeless tobacco users (Grady et al., 1980; Sinusas et al., 1992), the most common condition is called an *oral leukoplakia*. This is a change in the oral epithelial cells that become thickened and may be white in color. Oral leukoplakia is considered a precursor to oral cancer (Rhodus, 2005) and the epidemiologic evidence for the link between smokeless tobacco and oral cancer is convincing (Scientific Committee on Emerging and Newly Identified Health Risks, 2008).

In the U.S., hookah smoking is a relatively new phenomenon. While there is insufficient data to make definitive statements of hookah trends, most of the research indicates that this behavior is on the rise, especially in adolescents and young adults (Maziak et al., 2004; Noonan & Kulbok, 2009). Social establishments where groups of individuals may gather to socialize and smoke flavored tobacco through a communal hookah pipe ('hookah lounges') are now present in California. The presence and popularity of these establishments has increased greatly in the U.S. over the last five to 10 years (American Lung Association, 2007). The increased presence of hookah lounges has made waterpipe tobacco more accessible, leading to the increased popularity of this behavior. Similar to cigarette smoking, hookah smoking is related to a variety of preventable diseases. It has been associated with many cancers such as lung cancer (Gupta et al., 2001; Rakower & Fatal, 1962), oral cancer (EI-Hakim & Uthman, 1999), and bladder cancer (Bedwani et al., 1997; Roohullah et al., 2001). Hookah use has also been associated with coronary heart disease (Jabbour et al., 2003) and adverse pulmonary effects (AI-Fayez et

al., 1988; Shaikh et al., 2008; Sharma et al., 1997). It has even been linked to eczema of the hand (Onder et al., 2002). Additionally, hookah smoke has been shown to contain an abundance of the same cancer-causing substances found in cigarette smoke (Shihadeh & Saleh, 2005).

As research detailing the adverse health effects associated with the use of traditional tobacco products continues to enter the health community, tobacco companies are introducing newer products to the American consumer that some are calling PREPs. The suggested use of these products continues to be debated in the tobacco research and health communities.

1. Current Use of Any Tobacco Products

To determine the current use of tobacco products (cigars and smokeless tobacco) in addition to cigarette use, the following questions were asked of adult respondents:

Other than cigarettes, have you <u>ever</u> used any tobacco products such as chewing tobacco, snuff, cigars, pipes, or any other form of tobacco use? **(E5a)**

Do you now smoke cigars every day, some days or not at all? (E12a)

Do you now use chewing tobacco or snuff every day, some days, or not at all? (E3)

About 6% of the adult male respondents were current users of chewing tobacco, snuff, or cigars, but were not cigarette smokers. About 6% of the adult male respondents were current users of chewing tobacco, snuff, or cigars, but were not cigarette smokers. Those that responded 'every day' or 'some days' were defined as 'current users' of that tobacco product. For each subgroup, the prevalence of 'any tobacco product' use can be compared to the prevalence of cigarette use alone. The difference between the two prevalence rates gives us the percent of cigar or smokeless tobacco users who are not concurrently smoking cigarettes.

Figure 4.1 shows the difference between current cigarette smokers who do not use other tobacco products and current users of any tobacco product (including cigarettes) in 2008 by gender. Almost all female users of any tobacco product were cigarette smokers; $9.0 \pm 0.7\%$ of the adult females were current cigarette smokers, and $9.3 \pm 0.7\%$ of females were current users of all tobacco products (inclusive of cigarettes). That is, the current use of other tobacco products by males continues to be more socially accepted than by females. The reported current male cigarette use was $15.7 \pm 0.7\%$ and current use of any tobacco product (including cigarettes) by males was $21.6 \pm 1.6\%$. This means that about 6% of the adult male respondents were current users of chewing tobacco, snuff, or cigars, but were not cigarette smokers.



Figure 4.1: Any Tobacco Product vs. Cigarettes Only by Gender, 2008.

For males, the difference between prevalence of cigarette smoking and prevalence of using other tobacco products is relatively constant for all age groups (**Figure 4.2**). The oldest group (65 years and older) shows a slightly smaller difference compared to other age groups, indicating there are fewer non-cigarette smokers that use other tobacco products in this age group. For race/ethnicity (among males), Non-Hispanic Whites and African Americans show the greatest difference between current cigarette smoking and any tobacco use, indicating that members of these two ethnic groups have more non-cigarette smokers that use cigars and smokeless tobacco in the absence of cigarettes than Hispanics and Asian/Pacific Islanders (**Figure 4.3**). The Asian/Pacific Islander group reported very little use of other tobacco products among the non-cigarette smokers.



Figure 4.2: Any Tobacco Product vs. Cigarettes Only for Males by Age Group.





The most striking trend is observed when examining cigarette use and other tobacco use by household income level for males (**Figure 4.4**). While there is a constant decreasing trend in current cigarettes smoking as household income level increases, the use of any tobacco product does not follow this trend. Those with higher household incomes were more likely to be non-cigarette smokers using other tobacco products. In fact, for those households making more than \$150,000, the prevalence of any current tobacco use ($19.3 \pm 4.8\%$) was more than double the prevalence of cigarette smoking ($8.8 \pm 1.9\%$) meaning that there were more non-cigarette smoking users of other tobacco products than there were cigarette smokers alone. Cigar use seems to be the driving factor in this phenomenon and will be discussed later.



Figure 4.4: Any Tobacco Product vs. Cigarettes Only for Males by Household Income Level.

2. Cigars

To estimate the prevalence of ever-cigar use and current cigar use, the following two questions were asked of the adult respondents:

The 2008 measures of male current use and female ever-use of cigars are higher than any previous California Tobacco Survey.

inception of the CTS.

Have you ever smoked cigars, cigarillos, or little cigars? (**E10a**) Do you now smoke cigars every day, some days, or not at all? (**E12a**)

For cigars, both ever-use and current use continue to be a male-dominated behavior. However, some groups of females may be increasing their ever-use of cigars.

Figure 4.5 shows the 18-year trend for current cigar and current cigarette use in males. Cigarette use continues to be more prevalent than cigar use. However, cigarette use has been declining since 1990 while the use of cigars is remaining relatively stable. In fact, the prevalence rates of cigar use and cigarette use among males appear to be approaching each other. Current cigar use among males is at its highest level since the

To further develop the relationship between cigarettes and cigars, we examine current cigar smoking by cigarette smoking status (**Figure 4.6**). This figure shows that current cigar use has increased since 1990 among current smokers and there may be a shorter-term increase among former smokers (since 2002). Since 2002, current cigarette use in males has decreased by 16.0%. Of the possible causes, the drop in male smoking is mostly likely a combination of

current smokers quitting, current smokers dying, and a reduced initiation rate. The first of these would lead to an increase in the total number of former smokers. According to the weighted analysis from the 2002 and 2008 CTS, there was a 14.7% increase in the total number of male former smokers in California. During the same time period, current cigar use in former smokers increased by 55.5%.



Figure 4.5: Current Use of Cigarettes and Cigars among Males, 1990-2008.





Smoking status	1990	1996	1999	2002	2005	2008
Current smoker	9.2	12.7	13.9	13.0	15.2	16.4
Former smoker	4.2	7.7	7.8	6.3	7.3	9.8
Never smoker	1.9	5.8	4.0	4.9	4.8	4.9

In 2008, the prevalence of current cigar use among current and former cigarette smokers is higher than in any previous CTS. While this does not necessarily mean that males are giving up their cigarettes for cigars, the increasing use of cigars among current and former cigarette smokers should not be ignored.

The increase in cigar use by current cigarette smokers may be a common trend across the U.S. Data from the Tobacco Use Supplements to the Current Population Survey (TUS-CPS) indicates that cigar use increased in cigarette smokers in every socio-demographic category from 1995-2002 (Backinger et al., 2008).

Among males, current cigar use is associated with age and income. **Figure 4.7** shows that since 1996 cigar use is most common in the youngest age group of adult males and that it decreases with each successive age group, although the confidence intervals overlap. In 2008, $9.9 \pm 1.6\%$ of adult males aged 18 to 24 were current cigar smokers. However, there appears to be a trend of increasing use for the next two age groups (25-44 and 45-64) occurring since 2002. For the 25-44 age group, this may be partially due to a cohort effect as some of the males moved up from the youngest age group. The oldest age group of males smokes cigars the least, with just $3.2 \pm 2.3\%$ being current users in 2008.



Figure 4.7: Percent of Current Male Cigar Use by Age Group, 1990-2008.

Age	1990	1996	1999	2002	2005	2008
18-24	4.0	12.4	11.2	9.5	10.5	9.9
25-44	4.6	9.6	8.2	7.5	8.8	8.9
45-64	4.4	5.7	6.7	5.5	5.6	7.7
65+	4.0	1.8	2.8	3.6	1.9	3.2

Figure 4.8 shows that, with the exception of the lowest income category, there is a continuous upward trend for current cigar use according to household income. The highest prevalence of cigar use $(13.2 \pm 5.7\%)$ occurred in those households earning more than \$150,000 per year. For both age and income, the confidence intervals for male current use are wide and this data should be interpreted cautiously. The association between cigar use and income was similar in the 2005 CTS. Other studies also observed this association between cigar use and income

(Gerlach et al., 1998; Smith-Simone et al., 2008; Vander et al., 2008). The association between cigar use and income is noteworthy because it is the inverse of the income/cigarette relationship in which lower income households are more likely to have current cigarette smokers (see chapter 2) (Davis et al., 2007). The association between cigar use and household income is likely due to the use of high-priced, premium cigars. Because income and education are closely linked, perceptions of harm may also be important. Most cigar users believe that cigars have fewer health risks than cigarettes (Nyman et al., 2002; Smith et al., 2007). When income is replaced by education in this analysis, the spike at the lowest end of the spectrum disappears (Appendix Table A.4.2), meaning that those with lower income and smoking cigars are not the least education and may be caused by cigar use among current college students not yet earning a salary.



Figure 4.8: Current Male Cigar Use by Household Income Category.

When current cigar use is presented according to ethnicity (**Figure 4.9**), Non-Hispanic Whites appear to have the highest rate of current cigar smoking ($9.8 \pm 2.4\%$ in 2008). However, African Americans and Asians have shown an increase in cigar use over the last two decades. Again, the wide, overlapping confidence intervals preclude definitive conclusions.

In future surveys, the collection of more detailed information on current cigar use is warranted. Information on frequency of use and the perceived social acceptability of cigars in relation to that of cigarettes may be of assistance in planning future tobacco control policies in California.



Figure 4.9: Current Male Cigar Use by Race/Ethnicity, 1990-2008.

	1990	1996	1999	2002	2005	2008
African American	2.9	5.9	6.3	6.4	9.5	9.0
Asian/PI	2.1	2.8	3.3	3.4	4.6	4.3
Hispanic	3.2	5.5	5.0	4.0	4.1	5.4
Non-Hispanic White	5.4	10.7	10.0	9.0	9.3	9.8

Measures of ever-use of cigars in adult males have remained very constant over the past two decades. **Figure 4.10** shows that $32.9 \pm 2.9\%$ of adult males had ever smoked a cigar in 2008.

100 80 60 % 40.9 32.9 32.7 33.5 32.9 32.2 40 T Ŧ Ŧ 20 0 1990 1996 1999 2002 2005 2008 SOURCE: CTS 1990, 1996, 1999, 2002, 2005, 2008

Figure 4.10: Ever-Use of Cigars for Males, 1990-2008.

Ever-Use of Cigars for Females

Historically, females have used cigars and other tobacco products at such a low rate that they often are unreported. And while female cigar use remains substantially lower than male use, the increasing trend of use in some demographic groups is noteworthy.

Figure 4.11 shows the ever-use of cigars for all females from 1990-2008. Since 1996, female ever-use of cigars increased by 43%. In 2008, $7.0\pm1.2\%$ of all females reported ever smoking a cigar in their lifetime. When female ever-use of cigars is presented by demographic groups, we notice an increase in use.





Figure 4.12 shows female ever-use of cigars by age group. Since 1996, a steady increase can be seen for the 25-44 and 45-64 age groups. This mirrors the increase in the same age groups for *current use* in males observed since 2002 (**Figure 4.7**). Ever-use of cigars by females in these age groups is probably influenced by the current-use of males in the same age groups. Discovering the sources of this influence will help address the increase in female cigar use. The confidence intervals in this figure are wide as a result of small sample sizes. The data should be interpreted with caution, but the trends indicate a phenomenon consistent with trends in male current cigar use.



6.5

3.3

65+

3.9

1.8

4.4

1.5

4.8

1.1

4.7

2.6

6.3

3.3

Figure 4.12: Female Ever-Use of Cigars by Age Group, 1990-2008.

Figure 4.13 shows female ever-use of cigars by race/ethnicity. Again mirroring male current use, we see an increasing trend of ever-use for African American and Asian/Pacific Islander females since 1996. We also see an increase within Non-Hispanic White females, which is the group with the highest incidence of ever-use.



Figure 4.13: Female Ever-Use of Cigars by Race/Ethnicity, 1990-2008.

Race/ethinicity	1990	1996	1999	2002	2005	2008
African American	4.2	4.8	5.2	5.1	6.3	7.2
Asian/PI	3.8	1.6	4.0	3.5	3.9	4.1
Hispanic	3.6	2.9	2.7	2.9	3.0	3.9
Non-Hispanic White	7.9	7.3	8.1	7.5	8.4	9.8

The decreasing use of cigarettes combined with the increase in male current use and female ever-use of cigars may suggest a developing shift in social acceptance of these products. Smith-Simone et al. (2008) observed a similar trend in which the peers of college freshmen were perceived to 'look cooler' when using cigars, compared to cigarettes.

3. Smokeless Tobacco

To estimate the prevalence of ever-smokeless tobacco use and current smokeless tobacco use, the following two questions were asked of the adult respondents:

Have you ever used chewing tobacco or snuff? (E1) Do you now use chewing tobacco or snuff every day, some days, or not at all? (E3)

Like all other tobacco products, smokeless tobacco use is more prevalent in males. However, the gender differences for this product are more divergent than for any other tobacco product. In 2008, 15.5 \pm 2.3% of males had ever used smokeless tobacco, while just 1.6 \pm 0.4% of females had ever used the product. Unlike cigar use, the use of smokeless tobacco in females is not increasing.

Figure 4.14 shows ever-use of smokeless tobacco for males from 1990-2008. This figure shows that ever-use has remained constant over the last decade. In 2008, ever-use of smokeless tobacco was 53% lower than ever-use of cigars for male respondents.



Figure 4.14: Ever-Use of Smokeless Tobacco for Males, 1990-2008.

The most encouraging aspect of ever-use of smokeless tobacco is seen in the youngest age group **(Figure 4.15**). Those aged 18-24 have shown a continued decrease in ever-use for this product. Therefore, the initiation of smokeless tobacco may be declining and a reduction in current use may be seen in future research.



Figure 4.15: Male Ever-Use of Smokeless Tobacco by Age Group, 1990-2008.

Age	1990	1996	1999	2002	2005	2008
18-24	24.7	21.9	17.8	16.0	14.3	13.0
25-44	18.0	18.8	18.6	20.1	19.9	19.1
45-64	12.1	9.5	11.7	10.6	13.6	15.1
65+	17.2	11.5	8.9	8.7	8.1	8.9

Figure 4.16 shows current smokeless tobacco use for males from 1990-2008. In 2008, $2.0 \pm 0.7\%$ of adult male respondents were current smokeless tobacco users. Non-Hispanic Whites continue to use smokeless tobacco more than other race/ethnicities. The difference between current vs. ever-use for smokeless tobacco is much different than it is for cigars. With cigars, about one out of every four ever-users is also a current user. For smokeless tobacco, roughly one out of every eight ever-users is also a current user. This suggests that when males experiment with these tobacco products, they are more likely to continue cigar use than smokeless tobacco use.

The decrease in initiation of smokeless tobacco use suggested in **Figure 4.15** is further developed in **Figure 4.17**. This figure shows current smokeless tobacco use by age group for males from 1990-2008. In 2008, we see that for the first time, the youngest age group no longer has the highest prevalence of current use, although the confidence intervals overlap. This means that current users of smokeless tobacco are aging out of the youngest group and are not being regularly replaced by new users. This further supports the suggestion that initiation of smokeless tobacco use may be on the decline in the state of California. Observations from the TUS-CPS suggest this trend is also occurring on a national level (Mumford et al., 2006).



Figure 4.16: Current Smokeless Tobacco Use for Males, 1990-2008.

Figure 4.17: Male Current Smokeless Tobacco Use by Age Group, 1990–2008.



Age	1990	1996	1999	2002	2005	2008
18-24	5.6	4.2	3.7	2.6	2.7	2.4
25-44	2.9	2.8	2.9	2.1	2.6	2.8
45-64	1.1	1.1	0.8	0.8	2.3	1.9
65+	0.8	0.3	0.5	0.6	0.2	0.2

4. Hookah Use

The most pressing aspect of hookah use is the age of initiation. A study of Arab American adolescents found that 40% of respondents had ever smoked a hookah while 29% had ever smoked a cigarette. The strongest predictor of hookah use in that study was having friends or family that also used hookah (Rice et al., 2006). Hookah smoking offers a unique set of dangers in comparison to other tobacco products. Most hookah users know the smoke is dangerous (Shaikh et al., 2008). However, the majority of smokers believe hookah smoke to be safer than smoking cigarettes. One study found that more than 90% of beginning hookah users believe that cigarettes are more addictive than hookah smoking (Asfar et al., 2005). The major reason for this belief is the perception that hookah smoke passing through water renders it less harmful than tobacco smoke that does not pass through water (Maziak, 2008). Additionally, some hookah smokers believe it to be safer than cigarettes because they do not see the warning labels associated with cigarette packaging (Roskin & Aveyard, 2009). Also, the mild or fruity flavor of the hookah smoke confuses some smokers into believing it to be safer (Roskin & Aveyard, 2009). The belief that hookah smoke is safer than cigarette smoke by those first experimenting with tobacco (adolescents and young adults) may lead to an increase in initial nicotine exposure and a higher likelihood for repeated use and addiction.

Conservative estimates of a single hookah session are that it is the equivalent of smoking 10-20 cigarettes. However, the World Health Organization (WHO) calculates a much more drastic 100 cigarette equivalent for a single hookah session (one cigarette per puff and 100 puffs per average session) (WHO, 2005). Smoking a hookah as an adolescent or young adult increases the likelihood of smoking cigarettes either concurrently or later in life (Rice et al., 2006).

Many hookah smokers are occasional, non-daily smokers. This aspect may lead the user into a false belief that they are in no danger of addiction or harmful effects (Maziak et al., 2005). Hookah smoking is usually done indoors, often in cafes with many other hookah-smoking groups. This means that even when a person isn't actually smoking a hookah, he or she is exposed to the entire establishment's secondhand tobacco smoke. Tests of secondhand hookah smoke have shown that it contains a considerable amount of fine particles known to cause respiratory damage (Maziak et al., 2008; Monn et al., 2007).

During a hookah smoking session, many individuals share a single mouthpiece to pull smoke through the pipe. This aspect may increase the spread of infectious diseases such as tuberculosis, hepatitis, herpes, and others (Maziak et al., 2004).

To estimate the prevalence of ever-use of hookah (waterpipe tobacco), the following question was asked in the CTS:

Have you ever smoked a Hookah pipe? (E14)

Hookah use is increasing faster than any other tobacco product, especially in young adults. Tobacco smoking with a hookah pipe (also known as a waterpipe, narghile, or shisha) is a relatively new phenomenon in the U.S. Originating in India and the Middle East, this device is made up of a long smoking hose connected to a glass base filled with water. A stem with a small bowl sits atop the base. Tobacco is placed in the small bowl and is burned with charcoal. The tobacco smoke is pulled
down the stem, through the water and into the hose where the smoker inhales. Because hookah smoking is usually a social behavior, a hookah pipe may have multiple smoking hoses.

The CTS question on hookah use was asked for the first time in 2005. Therefore, 2008 represents the first year in which time-trends can be evaluated.

Like other tobacco products, the use of hookah is associated with gender. In 2008, $11.2 \pm 1.4\%$ of adult males reported ever smoking a hookah pipe, compared to just $2.8 \pm 0.7\%$ of females. In 2005, it was $7.9 \pm 1.1\%$ for males and $1.9 \pm 0.4\%$ for females. From 2005 to 2008, ever-use of hookah increased by 42% in males and 47% in females. The three-year increase in hookah ever-use observed in males is statistically significant. Similar to other alternative tobacco products, Non-Hispanic Whites have smoked a hookah at higher rates than other race/ethnicities.

The most defining demographic factor for hookah use is age. **Figure 4.18** shows ever-use of hookah for males by age group for 2005 and 2008. **Figure 4.19** shows the same data for females. Hookah use increased in all age groups for both genders. For the youngest age group, the implications are alarming because this is the age at which lifetime tobacco can be established.



Figure 4.18: Male Ever-Use of Hookah by Age Group, 2005-2008.



Figure 4.19: Female Ever-Use of Hookah by Age Group, 2005–2008.

Figure 4.20 shows the ever-use of other tobacco products for males aged 18-24 and **Figure 4.21** shows the same data for females. In males, the increase in hookah use from 2005-08 makes that behavior almost as common as cigars, with about one in every four males in this age group having used a hookah. In 2005, cigars were the most common form of other tobacco use in females. However, in 2008, hookah is now the single most common form of alternative tobacco use for females in this age group. Roughly one out of every 10 adult females aged 18–24 has smoked a hookah. Combined with the rising use of cigars in some female demographic groups, this creates an opportunity for further study and intervention in the use of tobacco by females.



Figure 4.20: Ever-Use of Other Tobacco Products by Males Aged 18-24 Years, 2005-2008.

Figure 4.21: Ever-Use of Other Tobacco Products by Females Aged 18–24 Years, 2005-2008.



Because hookah use is clearly on the rise and is so prevalent in young adults, additional detailed research is needed throughout California and the U.S. In future surveys, questions on current use are needed. It has been established that lifetime tobacco use starts in the late teens and hookah use is increasing for this age group. Additional questions directed at this age group are needed to further evaluate the current trends.

5. Harm Reduction and Reduced Exposure Tobacco Products

The concept of harm reduction is continually debated in the tobacco control community. In recent years, some prominent tobacco researchers have begun to advocate PREPs. Makers of

The use of 'potentially reduced exposure tobacco products' (PREPs) is currently very low (0.2% to 1.8%) these products claim that they have fewer health consequences than cigarettes and other traditional tobacco products. However, all tobacco products have been placed in the jurisdiction of the U.S. Food and Drug Administration and such claims will be controlled in the future. The theory behind any recommendation for these products is that the most heavily addicted persons will never be able to quit completely, so they might as well use products that have fewer health consequences. Additionally, most of these products are smokeless and so do not expose others to secondhand tobacco smoke.

One such product, known as snus (pronounced '*snoose*'), has been used for a long time in Sweden. Several studies of snus use in Sweden have reported that snus is a safer alternative to smoking cigarettes and that Sweden's reduction in smoking is probably due to the popularity of snus (Foulds et al., 2003), but more recent studies from Sweden argue against that (Stenbeck et al., 2009, Holm et al., 2009). Snus is used similarly to traditional moist snuff, either as loose grounds or in portioned packets.

Another new product in the U.S. is Ariva. This product comes as a pill of pressed tobacco that is placed under the lip, where it dissolves completely and requires no expectoration. Other PREPs include Eclipse, Accord, Exalt, Revel, Omni and Advance.

While harm reduction has its advocates, many tobacco control researchers do not support this approach. The primary dissenting argument against harm reduction is that it will encourage the use of these products in those that would not use tobacco otherwise. By encouraging the use of a 'safer' product, you may be encouraging some tobacco-naïve individuals, especially adolescents, to try these products. Adolescents could then be introduced to a lifetime of nicotine addiction. The CTCP continues to support programs that reduce the initiation of tobacco use and the discontinuation of current use over the theory of harm reduction.

The following questions were asked of current smokers to assess their openness to harm reduction products:

Would you replace your cigarettes with smokeless tobacco, dip, or chew if you thought it had fewer health consequences? Definitely yes, probably yes, probably not, definitely not. (**B26c_3**)

Would you switch from cigarettes to a new product, if you could get the dose of nicotine that you need from the new product without smoking or spitting? Definitely yes, probably yes, probably not, definitely not. (**B26c_4**)

When asked if they would switch to a new tobacco product with fewer health consequences, 71.6 \pm 2.8% of current smokers said that they would 'definitely not', which is similar to the response rate of this answer in 2005 (72.9 \pm 2.9%). Consequently, about 29% of smokers may be susceptible to this hypothetical product, as they did not reject it outright. In 2008, 10.3 \pm 2.7% responded 'definitely yes', which is a slight increase from 2005 (8.2 \pm 1.8).

When asked if they would switch to a new product that didn't require smoking or spitting, $47.1 \pm 3.0\%$ responded that they would 'definitely not'. Again, this is similar to 2005 (49.3 ± 4.0). This means that more than 50% of smokers may be susceptible to such a hypothetical product. In 2008, $15.2 \pm 2.8\%$ responded 'definitely yes'. This is up from 2005, which was $11.9 \pm 1.7\%$.

To investigate the response to real products that fit the hypothetical situations (above), the following questions were asked of adult respondents to assess knowledge and use of PREPs:

Have you heard of snus? (E15) Have you... used snus, might you use snus, will you never use snus? (E15A)

Have you heard of Ariva? (E16) Have you... used Ariva, might you use Ariva, will you never use Ariva? (E16A)

Have you heard of Eclipse, Accord, Exalt, Revel, Omni or Advance? (E17) Have you... used any of these products, might you use any of these products, will you never use any of these products? (E17A)

Only 13.0% of all respondents and 14.9% of current smokers had ever heard of snus. Furthermore, only 1.8% of current smokers had ever used snus. With Ariva, only 6.0% of all respondents and 8.6% of smokers said that they had heard of this product, and only 0.2% of smokers had ever tried Ariva. In answering the question with several other reduced-exposure products, 8.1% of all respondents and 15.1% of current smokers had heard of at least one of them, with 1.5% of current smokers having used at least one of these products. Representing the highest rate of use for any group of smokers, 5.6% of current smokers aged 18 to 24 have used at least one of these other products. All other age groups of current smokers had a rate of past use of less than 1% for these products. This may mean that these products are being marketed towards young adults, or it may mean that older smokers are less willing to try new products.

According to the hypothetical questions B26c_3 and B26c_4, about 29% of smokers may be susceptible to a product with fewer health consequences and more than 50% of smokers may be susceptible to a product that didn't require smoking or spitting. Although these smokers say they might be willing to switch to a hypothetical PREP, most adult respondents were unaware of their existence and very few had ever used them.

The argument against PREPs for harm reduction is rooted in the possibility of nonsmokers and non-tobacco users believing there is now a 'safe' tobacco product. Recommendation of these products could lead to nicotine use and addiction in individuals that would not have tried a tobacco product otherwise. Nicotine addiction would likely lead to the use of other tobacco products, including cigarettes. Data from the Centers for Disease Control and Prevention's Teenage Attitudes and Practices Survey of young men found that nonsmoking smokeless tobacco users were more than three times as likely to be current smokers four years later, compared to non-users of smokeless tobacco (Tomar, 2003). There has even been a report of nicotine gum addiction in never-smokers (Etter, 2007). Subsequently, if tobacco users begin using multiple tobacco products, they are less likely to ever quit tobacco than users of single products (Wetter et al., 2002).

Summary

Most indicators of alternative (non-cigarette) tobacco use, including cigars, smokeless tobacco, and hookah show that the prevalence of their use is not decreasing in a manner similar to cigarettes. The data suggest that the use of these products is increasing in some demographic groups.

Since 2002, the number of male former smokers in California increased by 14.7% and cigar use is increasing in this group. In fact, current cigar use among current and former cigarette smokers is at an all time high in California since the inception of the CTS. Cigar use is positively associated with income and is increasing in some female demographic groups. These trends in cigar use may be related to the differences in harm perception and social stigma associated with cigar and cigarette use. Cigar use is sufficiently high to recommend further studies of predictors and trend.

The trends of female ever-cigar use seem to be mirroring those of male current use. Historically, female use of cigars has been very low. Therefore, the influence of male cigar use is most likely responsible for the increase in female use. Discovering the driving forces of this influence may be needed to curb the increase in female cigar use.

The most alarming indicator of increasing tobacco consumption is seen in hookah use, especially in young adults. Reducing hookah smoking in young adults will be one of the next challenges for the tobacco research and control community. Immediate action by tobacco control policy makers may be needed to curb the increase in hookah use.

The debate over the suggested use of PREPs as a harm reduction technique will likely continue for years to come, but decreasing initiation and increasing complete cessation as means of reducing tobacco associated morbidity and mortality will continue to be the goal in tobacco control.

APPENDIX

Chapter 4 Adult Use of Other Tobacco Products

1. Current Tobacco Use by Demographic Groups

Section 1 of this chapter discusses any tobacco use versus cigarettes only. **Table A.4.1** shows the current use of any tobacco, cigarettes, cigars, and smokeless tobacco for gender, age, ethnicity education, and income for the 2008 CTS.

	Table A.4.1 Adult Current Use of Any Tobacco						
	Any Tobacco %	Cigarettes %	Cigars %	Chewing Tobacco/Snuff %			
Overall	15.4 (±0.9)	12.3 (±0.5)	4.1 (±0.8)	1.1 (±0.4)			
Male	21.6 (±1.6)	15.7 (±0.7)	7.7 (±1.5)	2.1 (±0.8)			
Female	9.3 (±0.7)	9.0 (±0.7)	0.6 (±0.2)	0.1 (±0.0)			
Males only							
Age							
18-24	24.1 (±2.3)	18.0 (±2.2)	10.1 (±1.6)	2.5 (±0.8)			
25-44	26.1 (±3.4)	19.5 (±1.6)	8.9 (±3.0)	2.8 (±1.5)			
45-64	20.5 (±3.3)	13.9 (±1.6)	7.5 (±2.5)	1.9 (±1.6)			
65+	10.0 (±2.4)	7.6 (±1.7)	2.8 (±1.6)	0.2 (±0.1)			
Race/Ethnicity							
African American	25.0 (±4.7)	17.9 (±4.5)	8.5 (±3.5)	1.0 (±1.1)			
Asian/PI	12.7 (±2.8)	10.2 (±2.3)	4.2 (±2.0)	0.9 (±0.9)			
Hispanic	21.4 (±3.3)	16.8 (±1.9)	5.6 (±2.7)	1.4 (±1.3)			
Non-Hispanic White	22.8 (±2.7)	15.4 (±0.9)	9.8 (±2.3)	3.0 (±1.3)			
Other	36.0 (±25.8)	28.9 (±21.3)	10.8 (±9.5)	2.8 (±3.0)			
Education		•		-			
Less than 12 years	21.5 (±4.7)	20.5 (±4.4)	2.9 (±1.2)	0.3 (±0.4)			
High school graduate	28.0 (±4.0)	21.8 (±2.5)	8.7 (±3.0)	3.1 (±2.0)			
Some college	26.4 (±2.8)	19.5 (±2.4)	10.1 (±2.5)	2.2 (±0.7)			
College graduate	13.5 (±2.9)	6.7 (±0.7)	7.3 (±2.8)	1.8 (±1.3)			
Income		•		-			
\$20,000 or less	27.2 (±5.9)	22.9 (±4.4)	5.2 (±2.5)	2.9 (±4.0)			
\$20,001 to \$30,	24.4 (±7.3)	20.4 (±5.7)	4.8 (±5.2)	1.2 (±0.8)			
\$30,001 to \$50,	22.9 (±4.3)	19.4 (±3.9)	5.2 (±1.7)	2.1 (±2.2)			
\$50,001 to \$75,	24.1 (±5.3)	16.3 (±3.9)	9.2 (±3.4)	2.3 (±2.5)			
\$75,001 to \$100	17.7 (±4.1)	13.2 (±2.9)	8.1 (±3.2)	2.0 (±1.8)			
\$100,001 to \$15	20.6 (±5.7)	11.9 (±2.5)	10.8 (±5.2)	3.1 (±2.2)			
Over \$150,000	19.3 (±4.8)	8.8 (±1.9)	12.2 (±4.2)	2.4 (±2.1)			
Missing	17.9 (±3.7)	15.1 (±3.2)	5.0 (±1.6)	0.6 (±0.6)			

2. Adult Use of Cigars

Section 2 of this chapter discusses the adult use of cigars, according to gender. **Table A.4.2** shows the standardized current use of cigars among males from 1990 to 2008 for various demographic groups. **Tables A.4.3** and **A.4.4** show the standardized ever-use of cigars of various demographic groups from 1990 to 2008 among males and females, respectively.

	Table A.4.2						
	Adult Male Current Use of Cigars Standardized to 2008 Adult California Population						
	1990 %	1996 %	1999 %	2002	2005 %	2008 %	
Cigars	4.3 (±0.6)	7.6 (±0.7)	7.3 (±0.7)	6.6 (±0.7)	7.0 (±1.1)	7.8 (±1.7)	
Cigarettes	22.7 (±0.5)	19.4 (±0.5)	20.1 (±0.5)	18.7 (±0.5)	16.7 (±0.9)	15.7 (±0.7)	
Age	,		Y/			· · · · · ·	
18-24	4.0 (±1.4)	12.4 (±2.7)	11.2 (±2.4)	9.5 (±1.3)	10.5 (±2.4)	9.9 (±1.6)	
25-44	4.6 (±0.9)	9.6 (±1.2)	8.2 (±1.1)	7.5 (±1.1)	8.8 (±2.3)	8.9 (±3.2)	
45-64	4.4 (±1.0)	5.7 (±1.1)	6.7 (±1.1)	5.5 (±1.3)	5.6 (±1.4)	7.7 (±2.6)	
65+	4.0 (±2.1)	1.8 (±1.1)	2.8 (±2.6)	3.6 (±1.5)	1.9 (±1.3)	3.2 (±2.3)	
Race/Ethnicity							
African American	2.9 (±2.1)	5.9 (±2.7)	6.3 (±2.8)	6.4 (±1.7)	9.5 (±4.8)	9.0 (±3.7)	
Asian/PI	2.1 (±1.5)	2.8 (±1.5)	3.3 (±1.2)	3.4 (±1.8)	4.6 (±2.0)	4.3 (±2.2)	
Hispanic	3.2 (±1.2)	5.5 (±1.6)	5.0 (±1.4)	4.0 (±1.0)	4.1 (±1.5)	5.4 (±2.7)	
Non-Hispanic White	5.4 (±0.7)	10.7 (±1.1)	10.0 (±0.9)	9.0 (±1.0)	9.3 (±2.2)	9.8 (±2.4)	
Other	14.3 (±7.7)	7.1 (±3.5)	11.0 (±17.7)	12.7 (±6.3)	8.8 (±6.1)	17.3 (±15.5)	
Education							
Less than 12 years	4.4 (±1.5)	2.4 (±0.9)	3.1 (±1.0)	2.6 (±0.8)	2.5 (±1.1)	3.2 (±1.5)	
High school graduate	3.8 (±1.1)	7.9 (±1.7)	7.2 (±1.4)	7.4 (±1.1)	7.5 (±2.0)	9.1 (±3.5)	
Some college	4.8 (±1.3)	8.7 (±1.3)	9.5 (±1.3)	9.0 (±1.4)	9.9 (±3.0)	9.7 (±2.2)	
College graduate	4.1 (±1.0)	9.9 (±1.5)	8.2 (±1.4)	6.5 (±1.4)	7.1 (±1.9)	7.2 (±2.9)	
Income							
\$20,000 or less	5.0 (±1.2)	7.2 (±2.3)	6.0 (±1.7)	6.8 (±3.3)	5.4 (±2.7)	10.3 (±9.8)	
\$20,001-\$30,000	5.1 (±1.9)	6.1 (±1.8)	7.1 (±2.2)	4.9 (±1.8)	8.3 (±4.6)	4.5 (±3.2)	
\$30,001-\$50,000	5.4 (±1.7)	7.5 (±2.3)	6.0 (±1.6)	7.0 (±1.7)	5.0 (±2.0)	6.2 (±1.9)	
\$50,001-\$75,000	3.5 (±1.0)	10.2 (±3.2)	9.8 (±2.0)	6.8 (±1.7)	8.0 (±2.3)	9.4 (±3.8)	
\$75,001-\$100,000	7.4 (±4.9)	11.8 (±3.0)	8.9 (±2.0)	8.0 (±1.4)	9.7 (±3.1)	7.9 (±5.6)	
\$100,001-\$150,000						12.7 (±8.1)	
Over \$150,000						13.2 (±5.7)	
Unknown	3.1 (±1.0)	4.9 (±1.6)	6.1 (±2.7)	4.9 (±1.4)	5.8 (±2.2)	6.6 (±2.9)	

	Table A.4.3						
	Adult Male Ever-Use of Cigars Standardized to 2008 Adult California Population						
	1990	1996	1999	2002	2005	2008	
	%	%	%	%	%	%	
Overall	40.9 (±1.8)	32.7 (±1.0)	33.5 (±1.2)	32.2 (±1.4)	32.9 (±3.1)	32.9 (±2.9)	
Age							
18-24	29.1 (±2.8)	33.0 (±4.0)	32.8 (±3.3)	31.1 (±1.5)	29.4 (±3.5)	28.3 (±3.2)	
25-44	35.1 (±2.2)	29.2 (±2.0)	29.3 (±1.7)	27.6 (±1.6)	31.6 (±4.5)	29.8 (±4.9)	
45-64	46.8 (±3.2)	34.0 (±2.9)	37.8 (±2.7)	34.6 (±3.2)	34.1 (±5.0)	35.2 (±4.0)	
65+	55.4 (±5.9)	39.3 (±4.3)	36.8 (±4.5)	40.7 (±5.2)	37.1 (±8.0)	40.6 (±7.9)	
RaceEthnicity							
African American	26.8 (±4.6)	30.7 (±5.9)	30.2 (±7.3)	25.8 (±3.4)	34.2 (±11.1)	28.9 (±5.1)	
Asian/PI	30.7 (±4.8)	16.3 (±4.0)	17.5 (±3.7)	20.2 (±5.7)	23.3 (±5.8)	20.5 (±3.5)	
Hispanic	27.4 (±3.0)	18.2 (±2.7)	17.0 (±2.3)	16.6 (±2.4)	18.3 (±3.6)	21.5 (±5.2)	
Non-Hispanic White	54.2 (±2.0)	48.0 (±1.7)	49.4 (±2.0)	46.8 (±2.0)	44.3 (±4.7)	43.6 (±4.9)	
Other	56.2 (±16.7)	25.4 (±9.6)	41.0 (±22.7)	40.0 (±10.8)	56.3 (±18. 3)	56.3 (±22. 2)	
Education							
Less than 12 years	28.3 (±4.6)	14.5 (±4.1)	13.9 (±2.6)	14.6 (±3.2)	14.6 (±3.6)	13.2 (±3.0)	
High school graduate	38.2 (±3.1)	32.7 (±2.5)	28.8 (±2.6)	31.3 (±3.0)	30.0 (±4.9)	36.9 (±7.1)	
Some college	46.0 (±3.7)	38.4 (±2.4)	41.3 (±2.5)	38.1 (±2.4)	39.2 (±6.2)	39.5 (±5.2)	
College graduate	45.1 (±3.3)	39.7 (±2.2)	41.4 (±2.6)	37.6 (±2.7)	37.1 (±5.0)	33.9 (±5.0)	
Income							
\$20,000 or less	36.7 (±3.1)	29.3 (±3.7)	28.5 (±5.3)	30.7 (±4.8)	29.6 (±7.5)	36.0 (±8.9)	
\$20,001-\$30,000	40.7 (±4.4)	31.0 (±4.3)	31.2 (±3.9)	28.6 (±5.1)	32.5 (±7.2)	26.1 (±8.5)	
\$30,001-\$50,000	44.6 (±3.8)	34.8 (±3.2)	31.6 (±2.6)	31.4 (±3.2)	29.3 (±6.7)	28.0 (±7.7)	
\$50,001-\$75,000	43.7 (±4.4)	36.3 (±4.3)	37.4 (±4.1)	33.5 (±3.9)	34.4 (±6.9)	36.4 (±7.7)	
\$75,001-\$100,000	43.1 (±5.0)	43.2 (±5.3)	41.1 (±4.7)	36.2 (±3.6)	38.2 (±7.0)	35.1 (±9.4)	
\$100,001-\$150,000						42.5 (±10.4)	
Over \$150,000						36.5 (±6.8)	
Missing	38.5 (±4.3)	27.8 (±4.1)	34.8 (±6.3)	27.8 (±4.7)	29.3 (±6.9)	31.2 (±6.2)	

Table A.4.4 Adult Female Ever-Use of Cigars Standardized to 2008 Adult California Population						
	1990 %	1996 %	1999 %	2002 %	2005 %	2008 %
Overall	5.8 (±0.7)	4.9 (±0.5)	5.6 (±0.6)	5.4 (±0.5)	6.1 (±0.9)	7.0 (±1.2)
Age						
18-24	6.5 (±3.7)	9.2 (±2.1)	10.4 (±1.9)	9.1 (±1.1)	10.5 (±2.1)	8.1 (±1.8)
25-44	6.2 (±0.8)	5.9 (±1.0)	7.1 (±1.0)	6.7 (±1.0)	7.4 (±1.8)	9.0 (±2.1)
45-64	6.5 (±1.5)	3.9 (±0.7)	4.4 (±1.2)	4.8 (±0.9)	4.7 (±1.5)	6.3 (±1.8)
65+	3.3 (±1.2)	1.8 (±0.9)	1.5 (±0.8)	1.1 (±0.6)	2.6 (±1.5)	3.3 (±2.6)
Race/Ethnicity	Race/Ethnicity					
African American	4.2 (±2.1)	4.8 (±2.1)	5.2 (±2.1)	5.1 (±1.4)	6.3 (±3.4)	7.2 (±2.4)
Asian/PI	3.8 (±1.9)	1.6 (±0.8)	4.0 (±2.3)	3.5 (±1.7)	3.9 (±1.8)	4.1 (±1.8)
Hispanic	3.6 (±1.6)	2.9 (±0.9)	2.7 (±0.7)	2.9 (±0.8)	3.0 (±1.2)	3.9 (±1.5)
Non-Hispanic White	7.9 (±0.9)	7.3 (±0.9)	8.1 (±0.9)	7.5 (±0.8)	8.4 (±1.6)	9.8 (±2.2)
Other	10.6 (±5.8)	5.1 (±2.5)	6.4 (±4.7)	9.3 (±3.8)	13.5 (±8.1)	10.8 (±7.8)
Education						
Less than 12 years	3.3 (±1.3)	2.2 (±1.2)	1.3 (±0.7)	1.6 (±0.5)	1.8 (±0.9)	2.0 (±0.9)
High school graduate	4.4 (±0.8)	3.5 (±0.7)	4.5 (±0.9)	3.8 (±0.7)	4.3 (±1.2)	6.9 (±2.2)
Some college	6.0 (±0.9)	6.1 (±1.0)	7.6 (±1.1)	7.1 (±1.2)	7.9 (±1.9)	9.7 (±2.2)
College graduate	7.6 (±1.6)	6.6 (±1.2)	6.9 (±1.3)	7.1 (±1.1)	8.4 (±2.2)	7.4 (±2.6)
Income						
\$20,000 or less	5.9 (±1.3)	6.9 (±1.8)	6.7 (±1.8)	5.5 (±2.4)	10.7 (±5.9)	7.1 (±2.9)
\$20,001-\$30,000	5.3 (±1.4)	4.2 (±1.4)	4.8 (±1.5)	7.0 (±2.8)	5.4 (±1.8)	9.8 (±4.3)
\$30,001-\$50,000	6.1 (±1.7)	5.3 (±1.3)	5.3 (±1.2)	4.5 (±0.8)	4.5 (±1.7)	6.9 (±3.2)
\$50,001-\$75,000	5.6 (±1.6)	4.5 (±1.6)	6.0 (±1.7)	6.8 (±1.7)	8.4 (±3.0)	7.6 (±3.6)
\$75,001-\$100,000	4.5 (±1.2)	5.3 (±1.7)	7.0 (±1.7)	5.3 (±1.0)	6.6 (±2.0)	9.5 (±9.3)
\$100,001-\$150,000						12.3 (±8.7)
Over \$150,000						7.8 (±7.3)
Missing	6.8 (±2.1)	4.1 (±1.8)	3.3 (±1.8)	4.1 (±1.6)	4.6 (±2.7)	6.9 (±2.8)

3. Adult Use of Smokeless Tobacco Among Males

Section 3 of this chapter discusses the adult use of smokeless tobacco among males. **Table A.4.5** shows the standardized current use of smokeless tobacco among males from 1990 to 2008 for various demographic groups. **Table A.4.6** shows the standardized ever-use of smokeless tobacco among males from 1990 to 2008 for various demographic groups.

	Table A.4.5						
	Adult Male Current Use of Smokeless Tobacco						
	5tanda 1000	1006	1000	2002	2005	2008	
	%	%	%	%	%	%	
Overall	2.4 (±0.4)	2.1 (±0.4)	2.0 (±0.4)	1.5 (±0.3)	2.1 (±0.5)	2.0 (±0.7)	
Age							
18-24	5.6 (±1.7)	4.2 (±1.5)	3.7 (±1.4)	2.6 (±0.6)	2.7 (±1.4)	2.4 (±0.8)	
25-44	2.9 (±0.8)	2.8 (±0.7)	2.9 (±0.8)	2.1 (±0.5)	2.6 (±1.2)	2.8 (±1.4)	
45-64	1.1 (±0.3)	1.1 (±0.7)	0.8 (±0.4)	0.8 (±0.5)	2.3 (±1.0)	1.9 (±1.6)	
65+	0.8 (±0.4)	0.3 (±0.3)	0.5 (±0.5)	0.6 (±0.4)	0.2 (±0.3)	0.2 (±0.2)	
Race/Ethnicity							
African American	1.4 (±1.0)	3.2 (±3.3)	1.9 (±2.4)	1.0 (±1.1)	3.0 (±4.5)	0.9 (±1.0)	
Asian/PI	0.7 (±0.6)	1.4 (±1.7)	0.2 (±0.2)	0.8 (±0.9)	0.8 (±0.6)	0.9 (±1.1)	
Hispanic	1.3 (±0.8)	0.8 (±0.5)	0.7 (±0.4)	0.4 (±0.3)	1.0 (±1.0)	1.3 (±1.2)	
Non-Hispanic White	3.8 (±0.6)	3.1 (±0.6)	3.2 (±0.6)	2.4 (±0.5)	3.2 (±0.9)	2.9 (±1.3)	
Other	3.7 (±3.5)	1.8 (±1.7)	7.4 (±8.1)	4.5 (±2.8)	2.4 (±1.8)	4.9 (±3.5)	
Education	•			•			
Less than 12 years	1.8 (±0.8)	0.8 (±0.4)	0.8 (±0.6)	0.6 (±0.3)	0.9 (±0.6)	0.3 (±0.3)	
High school graduate	3.3 (±1.3)	3.1 (±0.8)	2.5 (±0.7)	1.8 (±0.6)	3.2 (±1.4)	3.0 (±1.9)	
Some college	2.9 (±0.8)	2.5 (±1.0)	2.6 (±0.8)	2.3 (±0.7)	2.4 (±1.1)	2.3 (±0.8)	
College graduate	1.4 (±0.5)	1.5 (±0.8)	1.7 (±0.6)	1.1 (±0.4)	1.8 (±1.2)	1.8 (±1.3)	
Income							
\$20,000 or less	2.1 (±0.7)	2.3 (±1.7)	2.2 (±0.9)	1.4 (±0.7)	0.3 (±0.3)	1.6 (±2.2)	
\$20,001-\$30,000	2.2 (±0.9)	2.4 (±1.1)	3.1 (±1.4)	1.7 (±0.7)	2.6 (±2.1)	1.7 (±1.5)	
\$30,001-\$50,000	2.6 (±0.6)	3.0 (±1.0)	2.0 (±0.7)	1.6 (±0.9)	1.6 (±1.6)	2.1 (±1.7)	
\$50,001-\$75,000	4.0 (±2.6)	1.8 (±1.1)	1.8 (±0.7)	2.1 (±0.7)	2.8 (±1.7)	2.4 (±2.4)	
\$75,001-\$100,000	1.6 (±0.8)	1.9 (±1.0)	2.2 (±1.3)	1.4 (±0.5)	3.5 (±3.3)	1.6 (±1.5)	
\$100,001-\$150,000						2.4 (±1.5)	
Over \$150,000						3.0 (±4.2)	
Missing	2.0 (±0.7)	$1.5(\pm 1.0)$	0.8 (±0.9)	1.6 (±1.2)	1.7 (±1.0)	$1.0(\pm 1.0)$	

Table A.4.6 Adult Male Ever-Use of Smokeless Tobacco Standardized to 2008 Adult California Population						
	1990 %	1996 %	1999 %	2002 %	2005 %	2008 %
Overall	17.1 (±1.0)	15.3 (±1.0)	14.9 (±1.1)	14.9 (±1.1)	15.4 (±1.7)	15.5 (±2.3)
Age			, <i>i</i>			
18-24	24.7 (±3.0)	21.9 (±3.4)	17.8 (±2.6)	16.0 (±1.5)	14.3 (±2.8)	13.0 (±2.0)
25-44	18.0 (±1.4)	18.8 (±1.6)	18.6 (±1.5)	20.1 (±1.8)	19.9 (±3.8)	19.1 (±4.0)
45-64	12.1 (±1.6)	9.5 (±2.2)	11.7 (±2.2)	10.6 (±1.9)	13.6 (±2.5)	15.1 (±3.6)
65+	17.2 (±4.1)	11.5 (±3.5)	8.9 (±2.0)	8.7 (±2.2)	8.1 (±3.3)	8.9 (±3.5)
Race/Ethnicity						
African American	13.4 (±4.6)	14.1 (±4.6)	13.4 (±5.0)	9.0 (±2.2)	19.1 (±11.5)	9.5 (±3.4)
Asian/PI	7.9 (±2.6)	7.0 (±2.3)	4.6 (±2.7)	8.7 (±3.0)	8.0 (±3.6)	9.6 (±2.9)
Hispanic	11.2 (±2.0)	9.9 (±1.9)	7.8 (±1.3)	6.9 (±1.6)	8.6 (±2.7)	11.3 (±3.8)
Non-Hispanic White	23.4 (±1.4)	21.5 (±1.6)	22.2 (±1.5)	22.3 (±1.8)	21.2 (±3.0)	19.7 (±3.4)
Other	35.7 (±12.1)	16.8 (±7.9)	30.4 (±12.6)	28.8 (±8.2)	26.5 (±15.0)	38.6 (±25.6)
Education						
Less than 12 years	13.6 (±3.1)	8.6 (±2.2)	7.9 (±2.1)	7.4 (±2.1)	6.1 (±2.0)	6.9 (±1.9)
High school graduate	18.5 (±2.3)	17.6 (±1.8)	16.0 (±1.8)	15.6 (±2.0)	16.7 (±4.1)	19.6 (±5.4)
Some college	20.8 (±2.3)	18.9 (±2.6)	18.7 (±2.1)	18.4 (±2.1)	19.1 (±3.9)	18.9 (±3.9)
College graduate	13.0 (±1.8)	14.0 (±2.0)	14.1 (±1.8)	15.4 (±2.2)	16.2 (±3.6)	13.7 (±3.7)
Income						
\$20,000 or less	18.2 (±2.4)	15.9 (±3.4)	16.9 (±3.3)	15.0 (±3.4)	20.8 (±4.8)	12.0 (±6.0)
\$20,001-\$30,000	15.8 (±2.5)	14.0 (±2.6)	16.2 (±3.2)	14.4 (±3.1)	18.2 (±6.0)	12.4 (±4.4)
\$30,001-\$50,000	21.2 (±3.4)	18.1 (±2.8)	14.5 (±2.0)	15.0 (±2.3)	12.0 (±4.4)	16.5 (±6.3)
\$50,001-\$75,000	18.4 (±3.5)	17.0 (±3.0)	16.9 (±3.9)	17.2 (±2.7)	17.5 (±4.8)	16.5 (±7.6)
\$75,001-\$100,000	15.2 (±4.4)	18.2 (±4.4)	16.9 (±3.0)	17.2 (±3.0)	18.0 (±4.5)	22.5 (±8.8)
\$100,001-\$150,000						23.2 (±8.5)
Over \$150,000						22.0 (±8.0)
Missing	14.8 (±2.2)	11.5 (±3.1)	12.6 (±3.4)	13.2 (±4.0)	12.7 (±3.8)	12.3 (±3.7)

4. Adult Use of Hookah

Section 4 of this chapter discusses the adult use of hookah, according to gender. **Tables A.4.7** and **A.4.8** show the standardized ever-use of hookah for various demographic groups from 2005 to 2008 among males and females, respectively.

Ta	ble A.4.7					
Adult Male E Standardized to 2008	Standardized to 2008 Adult California Population					
	2005	2008				
	%	%				
Overall	7.9 (±1.1)	11.2 (±1.4)				
Age						
18-24	19.7 (±3.0)	24.5 (±3.1)				
25-44	7.6 (±2.0)	11.9 (±3.0)				
45-64	5.3 (±1.8)	8.1 (±2.1)				
65+	2.7 (±1.9)	2.8 (±1.7)				
Race/Ethnicity						
African American	4.8 (±2.7)	6.5 (±2.3)				
Asian/PI	5.2 (±2.4)	8.2 (±3.0)				
Hispanic	3.8 (±1.1)	8.8 (±3.5)				
Non-Hispanic White	10.9 (±2.0)	13.8 (±2.1)				
Other	27.7 (±19.6)	20.6 (±10.4)				
Education						
Less than 12 years	3.5 (±1.8)	4.5 (±1.6)				
High school graduate	8.7 (±2.1)	11.9 (±3.9)				
Some college	11.0 (±2.6)	17.4 (±3.1)				
College graduate	7.4 (±1.6)	9.2 (±2.6)				
Income						
\$20,000 or less	7.8 (±3.6)	15.3 (±9.4)				
\$20,001-\$30,000	8.6 (±3.0)	10.3 (±4.9)				
\$30,001-\$50,000	5.1 (±2.0)	11.0 (±3.7)				
\$50,001-\$75,000	11.6 (±4.4)	12.0 (±5.6)				
\$75,001-\$100,000	8.0 (±1.9)	8.6 (±5.5)				
\$100,001-\$150,000		18.7 (±8.1))				
Over \$150,000		12.7 (±2.9)				
Missing	7.8 (±3.6)	8.5 (±3.0)				

Table A.4.8						
Adult Female Ev	Adult Female Ever-Use of Hookah					
tandardized to 2008 Adult California Population						
	0005	0000				

TWO DECADES OF THE CALIFORNIA TOBACCO CONTROL PROGRAM: CALIFORNIA TOBACCO SURVEY, 19900508

ORNIA TOBACCO SURVE	r, 199 0/20 08 %	2008
Overall	1.9 (±0.4)	2.8 (±0.7)
Age		
18-24	8.1 (±2.2)	10.0 (±2.0)
25-44	2.0 (±0.9)	3.3 (±1.5)
45-64	0.5 (±0.4)	1.2 (±0.6)
65+	0.0 (±0.0)	0.1 (±0.1)
Race/Ethnicity		
African American	2.0 (±2.4)	2.2 (±1.3)
Asian/PI	1.4 (±1.2)	1.8 (±0.9)
Hispanic	0.8 (±0.4)	1.6 (±0.6)
Non-Hispanic White	2.6 (±0.7)	4.0 (±1.4)
Other	5.2 (±7.7)	3.3 (±2.9)
Education		
Less than 12 years	0.5 (±0.3)	1.1 (±0.6)
High school graduate	1.0 (±0.5)	1.9 (±0.6)
Some college	3.0 (±0.9)	3.9 (±0.9)
College graduate	2.4 (±1.0)	3.6 (±1.8)
Income		
\$20,000 or less	1.3 (±1.0)	4.1 (±2.6)
\$20,001-\$30,000	1.9 (±0.9)	4.9 (±3.0)
\$30,001-\$50,000	1.5 (±0.9)	4.0 (±3.0)
\$50,001-\$75,000	3.3 (±1.5)	2.3 (±0.8)
\$75,001-\$100,000	1.6 (±0.5)	4.0 (±3.8)
\$100,001-\$150,000		2.7 (±2.0)
Over \$150,000		4.6 (±6.7)
Missing	1.8 (±1.7)	3.1 (±1.4)

5. Willingness to Use Harm Reduction Products in Current Smokers

Section 5 of this chapter discusses the willingness of current smokers to use other tobacco products. **Table A.4.9** shows the percent of current smokers willing to use harm reduction products.

Table A.4.9							
Willingness of	Willingness of Current Smokers to Use Harm Reduction Products						
would y din or che	ou replace your clg	larettes with smok had fewer health	Celess IODacco,				
	Definitely yes	Probably yes	Probably not	Definitely not			
Overall	10.3 (+2.7)	67(+15)	11 4 (+1 4)	716 (+28)			
Gender	10.0 ()	0.1 (21.0)	(=)	1110 (22.0)			
Male	9.8 (±2.1)	6.3 (±1.7)	12.6 (±1.6)	71.3 (±2.7)			
Female	11.1 (±6.5)	7.4 (±2.1)	9.3 (±2.0)	72.2 (±6.5)			
Gender	(=)						
18-24	6.3 (±4.1)	6.2 (±3.0)	11.7 (±3.8)	75.8 (±6.5)			
25-44	12.6 (±5.8)	5.3 (±2.1)	11.2 (±2.3)	71.0 (±5.8)			
45-64	8.6 (±2.2)	8.9 (±2.2)	10.9 (±2.1)	71.5 (±3.8)			
65+	11.3 (±4.4)	7.4 (±3.1)	13.5 (±4.3)	67.7 (±6.3)			
Race/Ethnicity		· · ·	· · ·				
African American	14.0 (±7.9)	9.5 (±4.6)	8.1 (±3.3)	68.4 (±9.0)			
Asian/PI	11.0 (±7.9)	8.6 (±6.3)	10.7 (±7.0)	69.7 (±11.8)			
Hispanic	18.4 (±8.3)	6.8 (±2.8)	11.7 (±3.4)	63.1 (±7.8)			
Non-Hispanic White	5.6 (±1.1)	6.1 (±1.4)	12.3 (±1.6)	76.0 (±2.2)			
Other	4.3 (±3.7)	6.1 (±4.3)	7.5 (±4.1)	82.2 (±5.7)			
Education							
Less than 12 years	22.1 (±12. 5)	7.0 (±3.3)	9.6 (±3.6)	61.3 (±9.5)			
High school graduate	9.1 (±2.1)	6.7 (±2.4)	11.5 (±2.8)	72.7 (±3.5)			
Some college	7.2 (±2.1)	7.7 (±2.6)	11.7 (±2.6)	73.5 (±3.9)			
College graduate	5.7 (±3.1)	4.7 (±2.8)	12.5 (±3.0)	77.1 (±4.8)			
Income							
\$20,000 or less	17.4 (±5.0)	8.3 (±3.4)	11.9 (±4.1)	62.4 (±5.9)			
\$20,001 to \$30,000	8.0 (±3.7)	6.1 (±2.9)	9.2 (±3.8)	76.8 (±6.9)			
\$30,001 to \$50,000	9.7 (±4.6)	6.4 (±2.9)	9.9 (±3.2)	74.0 (±6.4)			
\$50,001 to \$75,000	5.6 (±3.9)	6.8 (±3.3)	13.2 (±4.3)	74.4 (±5.7)			
\$75,001 to \$100,000	5.3 (±3.3)	5.3 (±2.5)	14.1 (±5.4)	75.4 (±5.7)			
\$100,001 to \$150,00	11.6 (±5.2)	6.2 (±3.9)	9.8 (±4.2)	72.4 (±6.8)			
over \$150,000	4.5 (±3.1)	7.7 (±5.4)	12.2 (±7.6)	75.6 (±8.7v			
Missing	15.7 (±18.7)	6.9 (±3.7)	11.5 (±5.0)	66.0 (±14.9)			

Willingness o	Table A	Table A.4.9 (cont'd)					
Would you switch from cigarettes to a new tobacco product.							
if yo	u could get the do	ose of nicotine tha	t you need				
from	the new product	without smoking of	or spitting?				
	Definitely yes %	Probably yes %	Probably not %	Definitely not %			
Overall	15.2 (±2.8	20.8 (±2.5	16.8 (±1.7	47.1 (±3.0			
Gender							
Male	13.6 (±2.3	21.8 (±3.3	16.3 (±2.2	48.3 (±3.9			
Female	18.1 (±6.0	19.1 (±3.2	17.8 (±2.8	45.0 (±5.0			
Age							
18-24	9.1 (±4.5	19.6 (±5.4	20.1 (±5.8	51.1 (±7.4			
25-44	16.3 (±5.8	19.1 (±3.7	16.0 (±3.2	48.6 (±5.8			
45-64	17.4 (±3.3	23.8 (±3.3	16.5 (±2.8	42.4 (±4.1			
65+	13.2 (±5.3	21.4 (±6.2	16.3 (±4.3	49.1 (±7.2			
Race/Ethnicity							
African American	14.5 (±5.8	19.0 (±7.1	14.9 (±6.8	51.6 (±10.4			
Asian/PI	10.0 (±6.3	19.8 (±10.8	11.6 (±7.3	58.5 (±12.5			
Hispanic	21.2 (±8.1	17.4 (±4.1	14.1 (±3.9	47.4 (±7.0			
Non-Hispanic White	12.4 (±1.7	24.3 (±2.9	20.2 (±2.1	43.1 (±3.0			
Other	15.5 (±7.8	13.2 (±6.8	12.4 (±7.1	58.9 (±11.7			
Education							
Less than 12 years	27.5 (±11.9	19.9 (±6.9	11.5 (±5.3	41.2 (±7.6			
High school graduate	14.0 (±2.6	21.7 (±3.7	15.8 (±2.5	48.5 (±5.3			
Some college	13.3 (±3.0	20.7 (±4.3	20.4 (±3.6	45.6 (±5.1			
College graduate	7.8 (±3.4	19.9 (±4.0	19.2 (±3.3	53.1 (±5.0			
Income							
\$20,000 or less	25.4 (±6.1	19.4 (±4.3	15.3 (±4.9	39.9 (±6.6			
\$20,001 to \$30,000	12.6 (±5.0	23.8 (±8.1	10.9 (±4.6	52.7 (±11.1			
\$30,001 to \$50,000	16.1 (±4.7	20.1 (±5.6	20.2 (±4.7	43.6 (±6.2			
\$50,001 to \$75,000	7.3 (±2.9	25.5 (±6.7	17.2 (±4.8	50.0 (±6.2			
\$75,001 to \$100,000	11.3 (±4.3	25.2 (±6.4	16.7 (±5.3	46.9 (±6.6			
\$100,001 to \$150,00	14.8 (±5.6	16.2 (±5.7	21.8 (±5.8	47.3 (±6.5			
over \$150,000	12.4 (±6.1	17.8 (±8.1	13.0 (±7.0	56.8 (±10.1			
Missing	17.9 (±18.9	16.9 (±5.8	19.0 (±7.4	46.1 (±11.9			

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Two Decades of the California Tobacco Control Program: California Tobacco Survey, **1990-2008**

Chapter 5

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

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Chapter 5 Young Adults: Smoking Prevalence, Uptake, Cessation, and Attitudes

KEY FINDINGS

- Prevalence of current established smoking among young adults (18-29 years of age) continues to decline, due in part to lower prevalence among women. In 2008, the prevalence of established smoking among young adult women was 8.1±1.0%, a 42.1% decrease since the peak in 1999. In 2008, the prevalence of established smoking among young adult men was 18.1±1.3%, a 21.0% decrease since the peak in 1999.
- African American young adults had the lowest current established smoking rate among all racial/ethnic groups. In 2008, smoking prevalence among African American young adults was 9.5±2.7%, which was 42.1% lower than prevalence among Non-Hispanic Whites. This is the first large decrease in prevalence since 1993. There has been little change in prevalence for Asian/Pacific Islander and Hispanic young adults since 2005.
- Current established smoking remains lower among young adults with at least some college education. In 2008, smoking prevalence among young adults with some college education was 10.5±1.0% compared to 16.7±1.5% among young adults with no college education. However, both groups have been declining at a similar rate since 1999.
- The youngest adult age group (18-20 years of age) continues to have lower prevalence of current established smoking than the older young adult age groups. In 2008, 8.3±1.3% of young adults (18-20 years of age) were current cigarette smokers. However, since 2005, there has been only a slight decline in prevalence in this age group compared to the major decline of 25% among 21-23 year old young adults.
- In 2008, daily smoking prevalence among young adults was 8.7±1.0%, demonstrating a continued decline. Average daily cigarette consumption in 2008 decreased compared to 2005 as a result of fewer heavy smokers.
- Among all adult cigarette smokers, in 2008 young adults had a greater proportion of smokers (74.9±3.6%) who reported quitting for one day in the past year compared to those aged 30-49 years (63.8±5.7%) and 50-65 years (57.4±3.8%). Young adults have consistently had the highest rate of quit attempts since 1996.
- Overall, the majority of young adults who sometimes or often go to bars or clubs are in favor of smoke-free bars. More than half (60.5±2.5%) of young adults would like to see the current smoke-free bar law kept as it is or more strictly enforced. Nearly one third (29.9±2.3%) of young adults would like to see the current smoke-free bar law extended to patios and outdoor sitting areas. Young adult support for smoke-free bars is strong regardless of smoking status.

Chapter 5

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

Introduction

Young adulthood is a critical period for tobacco prevention and intervention. Young adults in the United States typically have a higher prevalence of smoking than older age groups (Ling et al., 2009) and more quit attempts (Messer et al., 2008). Their range of smoking behaviors includes experimentation of smoking (Gilpin et al., 2005), establishment of smoking (Gilpin et al., 2005), quit attempts or cessation (Tang et al., 2010; Ling et al., 2009; Messer et al., 2007; Messer et al., 2008) and changes in cigarette consumption (Gilpin et al., 2009; Al-Delaimy et al., 2007). This transitional phase makes young adults both susceptible to (Gilpin et al., 2005; Biener & Albers, 2004; Ling et al., 2009) and targets of tobacco industry marketing and promotional campaigns (Ling & Glantz, 2002; Sepe et al., 2002).

Tobacco industry promotions in bars and nightclubs have been used to increase prevalence of smoking among young adults (Sepe et al., 2002). A combination of advertising, product sampling and financial incentives have been used to encourage smoking by increasing social acceptability and peer influences (Sepe et al., 2002; Ling & Glantz, 2002). Research has demonstrated that these bar and nightclub promotions are associated with young adults being at increased risk for future smoking (Gilpin et al., 2005). Because young adulthood is the time when a smoking habit becomes established (Gilpin et al., 1994; Choi et al., 2001), young adult smoking prevalence can be a good predictor of national trends in smoking prevalence and population health (Gilpin et al., 2009).

Recent data from Gilplin and colleagues (2009) suggest that young adult smoking patterns have changed both nationally and in California over the last two decades. However, young adult smoking prevalence and the number of cigarettes smoked are lower in California compared to the nation. Research suggests that, if national trends were to more closely resemble young adult smoking patterns in California, we may see future health benefits for the population as a whole.

In this chapter, we highlight and discuss results from the California Tobacco Survey (CTS) relevant to young adults. Section 1 summarizes trends in cigarette smoking prevalence. Section 2 reviews daily cigarette consumption patterns. Section 3 discusses smoking cessation and quit attempts. Section 4 describes support for extending smoke-free bans in bars and restaurants.

1. Trends in Current Established Smoking Prevalence Among Young Adults

In this section, we present trends in smoking prevalence for young adults (18-29 years of age) 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? (S9)

Do you smoke cigarettes everyday, some days or not at all? (SC10)

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

Respondents who indicated they had smoked 100 cigarettes in their lifetime are considered established smokers. Those who further indicated they smoked every day (daily smokers), some days (non-daily smokers), or smoked now are classified as current established smokers. The change in definition in 1999 captured more non-daily smokers. This change has been shown to increase the smoking prevalence (CDC 1994). Former smokers are those who smoked at least 100 cigarettes in their lifetime but who currently smoke "not at all."

Prevalence of Current Established Smoking Among Young Adults

A current established cigarette smoker is someone who has smoked at least 100 cigarettes in their lifetime and currently smokes cigarettes some days or everyday. Prevalence of current established smoking among young adults (18-29 years of age) continues to decline due in part to lower prevalence among women. In 2008, the prevalence of established smoking among young adult women was 8.1±1.0%, a 42.1% decrease since the peak in 1999. In 2008, the prevalence of established smoking among young adult men was 18.1±1.3%, a 21.0% decrease since the peak in 1999 (**Figure 5.1**). The larger decline in smoking among women in 2008 can be attributed to either lower initiation or higher quitting.





From 2005 to 2008, the prevalence of established smoking among women decreased 24.3% and decreased 3.7% among men which suggests a slowing in the rate of decline among men. Furthermore, the difference in prevalence between men and women has reached a high of nearly 10% which suggests a gender disparity. Efforts to prevent smoking and encourage cessation among young adults could address this disparity through developing and implementing programs and messages directed at young adult men.

Prevalence of Current Smoking by Race-Ethnicity

5

0 ⊥___ 1988

1991

Prevalence among African Americans, at 9.5±2.7%, is now the lowest among racial/ethnic groups. African American young adults had the lowest prevalence of current established smoking among all racial/ethnic groups for the first time in the history of the CTS. In 2008, current established cigarette smoking prevalence among African American young adults was 9.5±2.7%, which is 42.1% lower than prevalence among Non-Hispanic Whites (**Figure 5.2**). This is the first large decrease in prevalence among African American young adults since 1993.

However, this also reflects the decline from higher than expected smoking prevalence among African Americans in 2005. The wide confidence interval for the prevalence of smoking for young adult African Americans in 2005 indicate the prevalence estimate is not very precise and may be higher than the actual prevalence. Nevertheless, that does not change the fact that young African Americans have the lowest smoking prevalence in 2008.



1997



Race/Ethnicity	1990	1992	1993	1996	1999	2002	2005	2008
African American	20.6	14.4	12.8	15.4	17.3	15.6	19.8	9.5
Asian	15.0	9.5	11.7	14.1	15.4	13.4	11.8	11.0
Hispanic	14.6	12.6	13.3	12.2	14.2	12.9	11.4	11.7
Non-Hispanic White	20.8	19.3	20.1	22.5	24.4	21.8	19.3	16.4

2000

2003

2006

2009

1994

SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005, 2008

Prevalence of current established cigarette smoking among Non-Hispanic White young adults has steadily decreased by approximately 10% to 16% each year since the peak in 1999. In 2008, prevalence of current established cigarette smoking among Non-Hispanic White young adults was 16.4 \pm 1.7% which is a decrease of 32.8 percent from 1999. Prevalence of current established smoking among Asian/Pacific Islander and Hispanic young adults remains lower than Non-Hispanic Whites at 11.0 \pm 2.7% and 11.7 \pm 1.3% respectively. However, there has been little change in prevalence for Asian/Pacific Islander and Hispanic young adults since 2005. This suggests more resources may be needed to reach Asian/Pacific Islander and Hispanic young adults with prevention and cessation messages.

Prevalence of Current Established Smoking by Educational Status

Young adults that were currently attending college, have attended college in the past without earning a degree, and those who have earned a degree are all categorized as having "some college education." In 2008, current established cigarette smoking prevalence among young adults with some college education was 10.5±1.0% compared to young adults with no college education (16.7±1.5%) (**Figure 5.3**). Since 1999, the prevalence of established smoking among young adults with some college education has decreased 32.3% and the prevalence of established smoking among young adults with no college education has decreased 24.4%. Regardless of educational status the overall prevalence of current established smoking among young adults has been declining at a similar rate since 1999. Similar declines in smoking prevalence is encouraging; however, there continues to be approximately a 6% gap in smoking prevalence between the two groups during this time. Efforts targeted at less educated young adults may be needed to successfully reduce the gap in smoking prevalence.



Figure 5.3: Current Smoking Prevalence among Young Adults by Educational Status, 1990-2008.

Prevalence of Current Established Smoking by Age

While the youngest age group (18-20) continues to have the lowest prevalence, the rate of decline is slowing. Youngest adults (18-20 years of age) continue to have lower prevalence of current established smoking than all other young adult age groups. In 2008, 8.3±1.3% of 18-20 year old young adults were current cigarette smokers. However, since 2005, there has been only a slight decline in prevalence in this age group compared with a major decline of 25% among 21-23 year old young adults (**Figure 5.4**). This difference suggests that the previous cohort of 18-20 years in 2005 continue to have lower prevalence of smoking than the recent cohort of 18-20 year olds. This is a rather

concerning sign to find the sudden slowing of decline in prevalence in this youngest age group in 2008. This finding is consistent with the age-specific analyses in the CTS that show a decline in prevalence of smoking in this age group over time but minor change in the most recent 2008 survey (Chapter 1, **Figure 1.3**).



Figure 5.4: Current Smoking Prevalence among Young Adults by Age Group, 1990-2008.

SOURCE: CTS 1990, 1993, 1996, 1999, 2002, 2005, 2008

Age	1990	1992	1993	1996	1999	2002	2005	2008
18-20	14.7	12.1	12.3	15.6	16.8	13.7	9.1	8.3
21-23	16.9	15.2	16.2	17.3	20.4	19.0	17.1	12.8
24-26	19.5	16.1	18.1	17.8	20.1	18.9	18.3	18.8
27-29	21.7	20.8	18.2	17.7	18.3	16.8	18.3	16.5

Delayed Initiation of Regular Smoking by Education Level

We asked young adults about the age at which they started smoking regularly and used 18 years or older age as the cut-off for new initiators to determine delayed initiation, because

More smokers are initiating smoking after 18 years of age, especially among those with some college education. the majority of smokers started before 18 years of age (Fryar et al., 2007). Delayed initiation is a positive aspect of tobacco control because it usually translates into less heavy smoking and lower addiction (Breslau et al., 1993; Breslau & Peterson, 1996; Chen & Millar, 1998; Gilpin et al., 2009). A consistently higher percentage of young adults with some college education started smoking at 18 years or older compared to those with no college education. In 2008, $57.4\pm7.2\%$ of young adults (22-29 years of age) with some college education initiated smoking at or after 18 years of age compared to only $41.5\pm7.6\%$ for those with no college education

(Figure 5.5). This indicates that younger adults with less education are more likely to start smoking before 18 years of age, a finding consistent with the literature (Ling et al., 2009). However, the difference was not significant in our data. Figure 5.5 also demonstrates that an increasing number of young adults with some college education are initiating smoking at 18 years of age or older, although for young adults with no college education the percentage has not changed since 1996. The educational gap in smoking initiation among young adults needs further attention.





Education	1990	1992	1996	1999	2002	2005	2008
Some college	46.9	42.5	51.5	51.5	54.6	54.4	57.4
No college	27.9	31.4	41.4	40.4	41.6	35.1	41.5

2. Consumption Levels among Young Adult Smokers

Average daily consumption continues to decline for all but the oldest young adults. In 2008, prevalence of daily smoking among young adults was $8.7\pm1.0\%$ demonstrating a continued decline, as has prevalence of moderate-to-heavy smoking (11 or more cigarettes per day) at $3.5\pm0.8\%$ (**Figure 5.6**). Consumption levels in all age groups of young adults have been decreasing. Overall, young adult men smoke more cigarettes per day then young adult women (Appendix Table A.5.3). Heavy smoking among young adult men ($4.4\pm1.0\%$) is approximately three times greater than young adult women ($1.4\pm0.6\%$). Moderate smoking among young adult men ($9.8\pm1.8\%$)

is approximately 1.5 times greater than young adult women (6.5±1.3%).





	1990	1996	1999	2002	2005	2008
Current daily smoker	16.7	13.5	12.7	11.0	10.1	8.7
Current daily, 11+	9.9	6.6	6.0	5.1	4.1	3.5

Compared to 2005, average daily cigarette consumption in 2008 decreased for the young adult age group, especially the youngest group (18-20 years old), among whom the average number of cigarettes smoked per day decreased by 23.4% from an average of 8.6±1.8 cigarettes per day to 6.6±1.3 cigarettes per day (**Figure 5.7**). In contrast, in 2008, average daily cigarette consumption among the oldest group (27-29 years old) increased by 12.3%.



Figure 5.7: Average Daily Consumption among Young Adult Smokers in California, 1990-2008.

Age	1990	1996	1999	2002	2005	2008
18-20	10.6	9.1	9.1	8.8	8.6	6.6
21-23	11.2	8.9	8.9	8.3	8.6	7.6
24-26	12.7	9.7	9.2	8.3	9.2	8.0
27-29	12.5	10.5	8.7	8.4	6.5	7.3

3. Smoking Cessation Among Young Adults

Recent national data suggest that young adults (18-24) have higher rates of quit attempts of at least one day than all other age groups (Messer et al, 2008). Data from the CTS replicate this finding among young adults in California. Among all adult cigarette smokers in 2008, young adults had a greater proportion of smokers (74.9±3.6%) who report quitting for at least one day in the past year compared to those aged 30-49 years (63.8±5.7%) and 50-64 years (57.4±3.8%) (**Figure 5.8**). There was convergence of the proportion of smokers who quit for at least one day in 2005 as the rates for young adults were declining while other age groups were nearly stationary. However, in 2008 quit attempts of at least one day among all age groups increased for the first time in nearly six years. The percentage of young adult smokers who made quit attempts of at least one day in the last year increased with decreasing number of cigarettes and

Young adults continue to have the highest rates of quit attempts, although the rate of successful quits is not improving. frequency of smoking (Appendix Table A.5.6.).

The proportion of young adult smokers who were quit for 3+ months was $8.2\pm2.6\%$ in 2008 and $8.4\pm2.2\%$ in 2005 (**Figure 5.9**). These data suggest that 3+ month cessation rates for young adults are flattening which is consistent with the findings for successful quitting for all adult age groups (Chapter 6, Smoking Cessation). However, due to small numbers, the percentages have wide confidence intervals for all age groups and these findings should be cautiously interpreted.



Figure 5.8: Proportion of Recent California Smokers Who Quit for One or More Days in the Past Year by Age, 1996-2008.

Age	1996	1999	2002	2005	2008
18-29	70.4	75.8	65.3	54.8	74.9
30-49	54.1	60.4	50.4	48.4	63.8
50-64	45.9	48.2	45.6	47.2	57.4

Figure 5.9: Recent Smokers Who Were Quit For 3+ Months at Survey, by Age, 1996-2008.



Age	1996	1999	2002	2005	2008
18-29	8.9	7.8	10.8	8.4	8.2
30-49	6.5	6.9	7.3	7.8	10.1
50-64	6.0	6.9	8.5	6.9	7.4

4. Support by Young Adults for Extending Smoking Bans in Bars

Young adults strongly support keeping or extending smoking bans in bars and clubs. Overall, the large majority of young adults aged 21-29 years who sometimes or often go to bars or clubs are in favor of smoke-free bars. More than 90% of young adults would like to see the current smoke-free bar law kept as is, more strictly enforced, or extended to patios and outdoor sitting areas. (**Figure 5.10**).





Young adult support for smoke-free bars is strong regardless of smoking status (**Figure 5.11**). Support for keeping or enforcing the current smoke-free bar law is $47.4\pm10.1\%$ among current daily smokers, and $62.1\pm6.9\%$ among never smokers. Support for extending the smoke-free bars to outdoor areas is $28.4\pm9.3\%$ among current daily smokers, and $31.1\pm6.3\%$ among never smokers.



Figure 5.11: Young Adult (21-29 years) Support for Smoke-Free Bars, by Current Cigarette Smoking Status, 2008.

Summary

Young adulthood is a critical period for tobacco prevention and intervention efforts because young adults are in a transitional phase for smoking behaviors. Young adults also are an important group to monitor because trends in smoking may be an indicator of future population health status. Once young adults become established daily smokers they are likely to continue to be smokers into older adulthood and become more addicted to tobacco. Our overall findings from this chapter suggest that smoking habits of current California young adults are generally moving in a desirable direction.

Prevalence of current established smoking and average daily cigarette consumption among young adults continues to decrease. Delayed initiation and quit attempts are increasing among young adults. Delayed initiation is closely associated with earlier quitting and less addiction. These data support published literature indicating lower young adult prevalence in California compared to the nation (Gilpin et al., 2009), as well as higher quitting in those below the age of 35 years in California compared to the rest of the nation (Messer et al., 2007).

In 2008, young adults of all educational levels demonstrated increases in delayed initiation compared to 2005. However, there is a disparity related to less educated young adults who start smoking earlier than young adults with some college education.

Overall, progress among young adults in 2008 was greater among women, African Americans, and those with more education. To address these disparities, additional resources may be needed to reach young adult men and young adults who have not attended college. There are also some signs for concern as the decline in smoking prevalence among the youngest age group of young adults (18-20 years of age) is slowing or reaching a plateau. This needs further attention and follow up by the tobacco control community. The fact that the tobacco industry is

targeting young adults (Ling & Glantz, 2002; Sepe et al., 2002) to avoid the scrutiny of targeting underage adolescents does support the hypothesis that this slowing of progress in tobacco control may be the outcome of such industry efforts.

APPENDIX Chapter 5

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

1. Current Smoking Prevalence

Appendix Table A.5.1 presents the cigarette smoking prevalence of young adults (18-29 years old) by demographic group and standardized to the 2008 population. Overall prevalence of smoking declined between 2005 and 2008. Males smoke much more than females. Non-Hispanic Whites, young adults above the age of 21 years, and those with no college education are more likely to smoke.

Appendix A.5.1 Smoking Prevalence Of Young Adults (18-29 Years Old) By Demographic Group and Standardized to the 2008 Population									
	1990 %	1992 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	
Overall	18.0 (±0.9)	15.6 (±1.3)	16.0 (±1.0)	17.0 (±0.8)	18.8 (±0.6)	16.8 (±0.7)	15.0 (±1.3)	13.4 (±0.9)	
Gender									
Male	21.0 (±1.2)	18.0 (±1.8)	19.2 (±1.6)	20.1 (±1.1)	22.9 (±0.8)	21.3 (±1.0)	18.8 (±1.9)	18.1 (±1.3)	
Female	14.6 (±1.3)	12.7 (±1.6)	12.2 (±1.0)	13.4 (±0.9)	14.0 (±0.8)	11.7 (±0.8)	10.7 (±1.6)	8.1 (±1.0)	
Age									
18-21	16.1 (±1.6)	12.0 (±1.9)	13.4 (±1.1)	15.8 (±1.2)	17.8 (±0.9)	14.7 (±1.1)	10.5 (±1.5)	8.6 (±1.1)	
22-25	17.7 (±1.5)	16.4 (±2.0)	16.9 (±1.8)	18.0 (±1.2)	20.2 (±1.2)	19.4 (±1.4)	18.9 (±2.2)	16.3 (±2.0)	
26-29	21.2 (±1.9)	19.8 (±2.3)	18.8 (±2.0)	17.6 (±1.0)	18.8 (±1.0)	17.3 (±1.1)	17.7 (±2.7)	17.6 (±1.9)	
Race/Ethnicity									
African American	20.6 (±3.5)	14.4 (±4.7)	12.8 (±3.8)	15.4 (±2.6)	17.3 (±2.4)	15.6 (±3.1)	19.8 (±4.6)	9.5 (±2.7)	
Asian/PI	15.0 (±2.8)	9.5 (±2.3)	11.7 (±2.8)	14.1 (±1.9)	15.4 (±1.8)	13.4 (±1.8)	11.8 (±4.2)	11.0 (±2.7)	
Hispanic	14.6 (±1.5)	12.6 (±2.1)	13.3 (±1.5)	12.2 (±1.1)	14.2 (±1.0)	12.9 (±0.9)	11.4 (±1.8)	11.7 (±1.4)	
Non-Hispanic White	20.8 (±1.1)	19.3 (±1.9)	20.1 (±1.4)	22.5 (±1.0)	24.4 (±1.1)	21.8 (±1.3)	19.3 (±1.7)	16.4 (±1.7)	
Other	27.0 (±7.2)	28.1 (±13.7)	25.3 (±10.0)	22.9 (±5.1)	29.8 (±6.4)	24.8 (±5.3)	24.1 (±7.0)	23.9 (±7.3)	
Education		• • •	• • •				•		
Some college	12.6 (±1.2)	10.9 (±1.5)	12.6 (±1.2)	13.2 (±0.9)	15.5 (±0.8)	13.5 (±1.0)	12.2 (±1.5)	10.5 (±1.0)	
No college	23.2 (±1.4)	19.8 (±1.9)	19.4 (±1.4)	20.6 (±1.3)	22.1 (±0.9)	20.2 (±1.0)	18.6 (±1.7)	16.7 (±1.5)	

Appendix Table A.5.2 reports the percentage of young adult ever-established smokers, aged 22-29, who started smoking cigarettes regularly at age 18 years or older, by demographic group and standardized to the 2008 population.

Appendix Table A.5.2 Young Adult Ever-Established Smokers (22-29 Years) Who Started Smoking Cigarettes Regularly at Age 18 Years or Older by Demographic Group and Standardized to the 2008 Population									
	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %		
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)	49.1 (±5.0)		
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)	49.9 (±6.6)		
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)	47.7 (±8.4)		
Age	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)	44.5 (±7.3)		
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)	52.9 (±6.2)		
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)	45.0 (±33.0)		
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)	52.5 (±24.7)		
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)	57.9 (±11.1)		
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)	43.1 (±6.9)		
Other	38.3 (±18.9)	37.5 (±37.7)	30.8 (±13.2)	50.7 (±46.0)	39.7 (±17.3)	27.3 (±20.0)	33.6 (±31.3)		
Education	Education								
Less than 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)	28.9 (±14.6)		
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)	46.6 (±10.9)		
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)	54.0 (±8.9)		
No college	54.1 (±8.2)	55.2 (±12.9)	56.5 (±6.4)	57.5 (±7.2)	65.1 (±5.9)	60.2 (±13.9)	63.8 (±12.4)		

2. Detailed Smoking Status and Future Smoking Risk

Appendix Table A.5.3 shows the percentage of the young adults (18-29 years old) who are current established smokers, by smoking level and demographic group in 2008.

Young Adults (18-29 ۲ by Smoking	Appendix Table (ears Old) Who are Level and Demogr	A.5.3 Current Established S aphic Group in 2008	mokers
	Daily, ≥ 11/Day %	Daily, 1-10/Day or Once-Daily %	Non-Daily, Never-Daily %
	%	%	%
Overall	3.5 (±0.8)	8.1 (±1.2)	4.5 (±0.8)
	Gender		
Male	4.7 (±1.2)	9.4 (±1.8)	5.9 (±1.1)
Female	1.8 (±0.6)	6.1 (±1.3)	2.5 (±0.8)
Age			
18-24	2.5 (±1.1)	6.3 (±1.4)	4.5 (±1.3)
25-44	4.1 (±1.4)	8.7 (±2.0)	4.9 (±1.9)
45-64	4.4 (±1.6)	10.1 (±2.5)	4.1 (±1.7)
Race/Ethnicity			
African American	2.1 (±2.1)	5.1 (±3.5)	4.1 (±4.0)
Asian/PI	0.9 (±1.2)	7.5 (±3.6)	4.2 (±2.3)
Hispanic	1.7 (±1.0)	7.5 (±2.0)	4.8 (±1.4)
Non-Hispanic White	6.8 (±1.6)	8.9 (±1.5)	3.7 (±1.1)
Other	3.2 (±3.9)	18.0 (±13.1)	13.7 (±8.7)
Education			
No college	4.3 (±1.3)	9.4 (±2.1)	4.4 (±1.0)
Some college (not current)	7.8 (±3.3)	11.7 (±4.7)	5.5 (±3.4)
Part time student	5.0 (±4.0)	11.5 (±4.7)	2.6 (±2.5)
Full time student	1.5 (±0.9)	6.0 (±2.1)	5.2 (±2.0)
College graduate	1.0 (±0.8)	3.9 (±2.1)	4.1 (±1.9)
Marital Status			
Married	3.0 (±1.3)	9.0 (±2.5)	2.7 (±1.6)
Partnered	4.4 (±2.7)	7.6 (±3.3)	3.3 (±2.1)
Divorced/widowed/separated	9.8 (±8.4)	14.3 (±9.9)	5.1 (±5.1)
Single	3.3 (±1.0)	7.7 (±1.4)	5.1 (±1.0)
Employment Status			
Working	4.2 (±1.2)	9.5 (±1.9)	5.2 (±1.4)
Homemaker	1.6 (±1.4)	5.2 (±2.8)	1.6 (±1.9)
Student	1.5 (±0.8)	5.0 (±1.6)	3.7 (±1.3)
Unemployed	6.6 (±3.7)	11.4 (±5.4)	5.1 (±2.5)
Appendix Table A.5.4 shows the percentages of young adults (18-29 years old) who are not current established smokers by demographic group in 2008.

Appendix Table A.5.4 Young Adults (18-29 Years Old) Who are not Currently Established Smokers by Demographic Group in 2008								
	Former Established, Quit ≤ 1 Year %	Former Established, Quit 1+ Year %	Never An Established Smoker %					
Overall	1.3 (±0.4)	5.6 (±1.0)	77.1 (±1.5)					
Gender								
Male	1.3 (±0.6)	6.2 (±1.5)	72.4 (±2.3)					
Female	1.3 (±0.5)	4.7 (±1.2)	83.6 (±1.8)					
Age		· · ·						
18-21	1.0 (±0.5)	1.9 (±0.7)	83.8 (±2.0)					
22-25	1.5 (±0.9)	7.7 (±2.5)	73.0 (±3.4)					
26-29	1.6 (±0.8)	9.2 (±2.6)	70.7 (±3.8)					
Race/Ethnicity								
African American	0.9 (±0.6)	6.3 (±1.9)	78.8 (±2.6)					
Asian/PI	1.5 (±0.6)	5.3 (±1.4)	73.8 (±2.7)					
Hispanic	1.3 (±1.4)	4.4 (±3.4)	83.1 (±6.2)					
Non-Hispanic White	1.1 (±1.5)	4.0 (±3.1)	82.3 (±3.7)					
Other	6.6 (±6.6)	6.9 (±8.2)	51.6 (±14.8)					
Education								
No college	1.4 (±0.6)	6.1 (±1.9)	74.5 (±2.6)					
Some college, not current	1.5 (±1.3)	7.7 (±4.1)	65.8 (±5.0)					
Part time student	0.3 (±0.7)	6.6 (±4.4)	74.0 (±6.7)					
Full time student	1.5 (±1.1)	2.8 (±1.1)	83.1 (±3.6)					
College graduate	1.1 (±0.8)	6.0 (±2.3)	84.0 (±3.5)					
Marital Status								
Married	1.0 (±0.7)	9.6 (±3.4)	74.8 (±4.9)					
Partnered	2.3 (±1.9)	8.9 (±3.9)	73.6 (±5.9)					
Divorced/widowed/separated	8.4 (±6.3)	13.2 (±8.9)	49.3 (±17.0)					
Single	1.0 (±0.5)	3.8 (±1.0)	79.1 (±1.7)					
Employment Status								
Working	1.4 (±0.6)	7.1 (±1.7)	72.6 (±2.8)					
Homemaker	0.6 (±0.9)	5.0 (±2.8)	86.1 (±5.2)					
Student	1.2 (±0.8)	1.8 (±0.8)	86.8 (±2.4)					
Unemployed	1.7 (±1.4)	7.9 (+4.6)	67.3 (+6.4)					

Appendix Table A.5.5 gives the distribution across risk categories of young adults who are not current established smokers. *Former at risk* are current non-smokers who have smoked in the past year and have high risk smoking cognitions. *Former not at risk* are current non-smokers who have smoked in the past year and do not have high risk smoking cognitions.

Experimenters at risk are current non-smokers who have experimented with smoking in the past and have high risk smoking cognitions. *Experimenters not at risk* are current non-smokers who have experimented with smoking in the past and do not have high risk smoking cognitions. *Susceptible never smokers* are never smokers that have responded "definitely yes", "probably yes" or "probably not" to two questions about intention-to-smoke. *Committed never smokers* are never smokers that responded "definitely not" to two questions about intention-to-smoke.

Appendix Table A.5.5 Distribution across Risk Categories, Young Adults, Not Currently Established Smokers							
	Former, At Risk %	Former, Not At Risk %	Experimenter, At Risk %	Experimenter, Not At Risk %	Susceptible Never Smoker %	Committed Never Smoker %	
Overall	3.3 (±0.7)	3.6 (±0.8)	15.7 (±1.8)	10.8 (±1.7)	5.7 (±1.2)	44.9 (±2.2)	
Gender							
Male	3.7 (±1.0)	3.9 (±1.3)	18.8 (±2.8)	10.7 (±2.4)	5.5 (±1.3)	37.4 (±3.3)	
Female	2.8 (±0.8)	3.2 (±1.0)	11.3 (±1.9)	11.1 (±1.8)	6.0 (±1.5)	55.3 (±3.2)	
Age							
18-21	2.1 (±0.9)	0.8 (±0.5)	18.8 (±2.8)	4.8 (±1.4)	9.5 (±2.1)	50.6 (±3.3)	
22-25	3.4 (±1.4)	5.8 (±2.2)	16.4 (±2.7)	13.3 (±4.5)	3.1 (±1.6)	40.2 (±4.3)	
26-29	4.9 (±1.7)	5.9 (±1.9)	10.2 (±3.2)	17.7 (±3.4)	2.4 (±1.4)	40.5 (±4.7)	
Race/Ethnicity							
African American	2.3 (±0.9)	4.9 (±1.7)	15.9 (±2.7)	12.4 (±3.1)	6.4 (±1.9)	44.1 (±3.8)	
Asian/PI	4.5 (±1.1)	2.4 (±0.8)	17.2 (±2.6)	9.9 (±1.9)	4.5 (±1.3)	42.2 (±2.3)	
Hispanic	3.0 (±3.3)	2.6 (±1.8)	14.6 (±9.5)	9.7 (±5.5)	7.5 (±4.4)	51.3 (±9.3)	
Non-Hispanic White	2.1 (±2.3)	3.0 (±2.7)	9.9 (±3.8)	7.4 (±3.8)	6.9 (±2.9)	58.2 (±6.2)	
Other	8.7 (±7.0)	4.8 (±5.7)	20.6 (±11.8)	16.2 (±14.0)	1.1 (±2.2)	13.8 (±8.7)	
Education	·	-	•	• • •	· · ·		
No college	2.8 (±1.0)	4.7 (±1.6)	14.9 (±2.6)	9.9 (±2.7)	7.1 (±1.9)	42.6 (±3.6)	
Some college, not current	4.9 (±3.0)	4.3 (±2.8)	13.7 (±3.6)	17.7 (±4.9)	4.1 (±3.3)	30.3 (±5.6)	
Part time student	2.8 (±2.0)	4.1 (±3.7)	18.3 (±6.0)	12.0 (±5.9)	2.8 (±3.4)	40.9 (±9.3)	
Full time student	3.2 (±1.4)	1.1 (±0.8)	19.2 (±3.1)	5.4 (±1.5)	6.0 (±1.9)	52.6 (±4.0)	
College graduate	3.8 (±2.1)	3.2 (±1.5)	13.6 (±2.8)	16.6 (±4.3)	3.2 (±2.1)	50.6 (±4.8)	
Marital Status	·	-	•	•	· · ·		
Married	3.8 (±1.8)	6.7 (±2.8)	7.5 (±2.7)	19.4 (±6.2)	3.1 (±2.1)	44.9 (±6.0)	
Partnered	5.9 (±3.1)	5.3 (±3.3)	17.5 (±6.3)	14.3 (±5.6)	5.6 (±4.4)	36.3 (±7.5)	
Divorced/widowed/separated	10.9 (±7.7)	10.6 (±8.7)	5.3 (±4.7)	7.5 (±6.6)	1.9 (±2.7)	34.6 (±18.2)	
Single	2.6 (±0.7)	2.3 (±0.9)	18.3 (±2.0)	8.1 (±1.3)	6.6 (±1.4)	46.2 (±2.3)	
Employment Status		· · · ·	· · · /	,	· · · /	,	
Working	4.0 (±1.2)	4.5 (±1.2)	17.1 (±2.6)	14.2 (±2.5)	3.8 (±1.2)	37.6 (±3.1)	
Homemaker	1.9 (±1.6)	3.7 (±2.4)	3.0 (±2.9)	15.5 (±6.0)	6.3 (±5.2)	61.2 (±9.8)	
Student	2.0 (±0.9)	1.0 (±0.5)	16.6 (±2.9)	4.6 (±1.6)	8.4 (±2.5)	57.2 (±3.9)	
Unemployed	3.2 (±1.9)	6.4 (±4.3)	13.5 (±4.4)	8.5 (±3.2)	7.4 (±3.9)	37.9 (±6.8)	

3. Smoking Cessation Among Young Adults

Appendix Table A.5.6 shows the percentages of young adults (18-29 years old) who were smokers in the last year (recent smokers) who made a quit attempt of at least one day in the past year according to smoking status. As shown, the smokers who smoke more cigarettes and more regularly are more likely to make quit attempts. However, due to small numbers, the results should be interpreted with caution.

Table A.5.6						
Percentages	Or Young Adult Overall %	Daily, 11+	Daily, 1-10	At Least One Day Non-Daily, Ever-Daily %	Non-Daily, Never-Daily %	
Overall	74.9 (±3.6)	62.2 (±10.9)	72.0 (±7.2)	81.5 (±8.3)	81.3 (±7.0)	
Gender						
Male	77.0 (±4.5)	66.8 (±11.6)	75.9 (±9.1)	83.2 (±10.4)	80.4 (±8.3)	
Female	69.7 (±7.7)	45.3 (±20.6)	64.2 (±14.1)	77.7 (±13.1)	84.2 (±10.8)	
Age						
18-21	82.8 (±6.5)	69.4 (±19.9)	79.3 (±11.8)	91.9 (±10.2)	86.4 (±9.6)	
22-25	70.5 (±7.6)	59.4 (±17.5)	68.0 (±14.4)	80.6 (±16.2)	73.5 (±17.0)	
26-29	70.5 (±8.7)	58.4 (±18.4)	68.5 (±16.9)	72.7 (±16.5)	81.7 (±14.7)	
Race/Ethnicity						
African American	94.0 (±7.9)	91.1 (±20.9)	86.1 (±23.6)	100.0 (±0.0)	100.0 (±0.0)	
Asian/PI	86.0 (±13.6)	100.0 (±0.0)	92.6 (±15.1)	91.5 (±23.3)	71.1 (±34.8)	
Hispanic	79.6 (±6.3)	66.6 (±31.7)	73.0 (±15.9)	83.4 (±14.6)	85.6 (±8.7)	
Non-Hispanic White	65.6 (±6.1)	56.7 (±12.5)	62.4 (±11.0)	75.9 (±12.3)	72.9 (±14.3)	
Other	83.9 (±17.1)	100.0 (±0.0)	71.7 (±60.0)	85.5 (±31.4)	88.3 (±18.5)	
Education						
No college	77.0 (±5.5)	65.0 (±14.2)	70.3 (±11.3)	86.7 (±11.8)	87.5 (±8.7)	
Some college, not current	62.1 (±12.3)	40.6 (±22.8)	68.2 (±28.4)	77.2 (±21.3)	66.7 (±33.8)	
Part time student	82.6 (±12.7)	80.6 (±29.2)	84.1 (±22.5)	70.1 (±45.0)	100.0 (±0.0)	
Full time student	80.8 (±8.0)	74.4 (±29.4)	83.4 (±15.2)	82.7 (±18.8)	79.8 (±15.2)	
College graduate	64.4 (±15.7)	60.2 (±58.3)	46.7 (±41.6)	71.0 (±26.1)	67.0 (±28.8)	

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Chapter 6

Smoking Cessation

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Chapter 6 Smoking Cessation

KEY FINDINGS

- The overall percentage of smokers in the last year who made a quit attempt increased from 56.0±3.5% in 2005 to 60.2±2.8% in 2008, which is similar to the level it was in 1999 (60.2±1.5%). Smokers who were less likely to make quit attempts were women, older age groups, and Non-Hispanic Whites.
- Overall, in 2008, approximately 8.0% of recent smokers were currently in a quit attempt of 3+ months and around 6.4% were in a quit attempt of 6+ months; there has been no significant change in these percentages since 1990. The percentage of smokers intending to quit in the next month or next six months also did not change over this time period.
- In recent surveys (2002-08), the overall percentage of smokers using any formal assistance to quit has not increased but remained fairly stable at approximately 25%. The percentage of smokers who used nicotine replacement therapy (NRT) alone or in combination with other assistance has not changed significantly during that same time period.
- Over time, consumption patterns have shifted from daily smoking to non-daily smoking. The percentage of non-daily smokers among current smokers doubled between 1992 and 2008, from 14.8±3.3% to 28.1±3.2% of the smokers.
- There has also been a shift among daily smokers from moderate (11-20 cigarettes per day) and heavy (>20 cigarettes per day) daily smoking to light-daily smoking (1-10 cigarettes per day). Among daily smokers, the average number of cigarettes consumed per day has steadily decreased from 19.3±0.4 cigarettes per day in 1992 to 14.5±0.2 cigarettes per day in 2008.
- Consumption patterns varied by demographic subgroups. Young adult smokers were more likely to be non-daily or light-daily smokers compared to older adults. Non-Hispanic Whites were more likely to be heavier smokers compared to other racial/ethnic groups.
- Home bans may be associated with decreases in consumption. In 2005, 35.2±4.9% of current smokers who have ever had a home ban reported that they reduced consumption because of a ban. By 2008, 53.4±3.8% of current smokers who have ever had a home ban reported that they reduced consumption because of a ban, an increase of 51.7%.
- Home bans may also be associated with time to first cigarette. In 2008, the percentage of smokers who reported they smoke within 30 minutes of waking was lowest for those with a total home ban (49.1±5.2%), followed by those with a partial ban (67.3±6.1%) and highest in those with no home ban (70.6±5.1%).

Chapter 6

Smoking Cessation

Introduction

In 2006, the Centers for Disease Control and Prevention (CDC) updated its evidence-based recommendations for population-level tobacco control programs (US DHHS CDC 2007). According to the CDC's *Best Practices for Comprehensive Tobacco Control Programs*, one of the key goals of a comprehensive tobacco control program should be to promote and assist tobacco users to quit. The Public Health Service also recently updated its Clinical Practice Guideline *Treating Tobacco Use and Dependence* (US DHHS CDC 2007), which addresses the important role clinicians and health systems can play in helping smokers quit. These guidelines encourage clinicians to offer every smoker at least brief interventions. The guidelines also affirm the effectiveness of counseling (individual, group and telephone) and medications.

On a national level, data from the National Health Information Survey (NHIS) indicate that the overall prevalence of adult current smoking in the U.S. declined significantly between 1998-2008, from 24.1% to 20.6% (US DHHS, 2006; US DHHS CDC 2009). However, the prevalence did not decline between 2007 and 2008 (estimated at 19.7% in 2007 and 20.6% in 2008). Furthermore, the quit ratio (ratio of former smokers to ever smokers) varied little between 1998-2008 (48.7% in 1998, 51.1% in 2008). An analysis of tobacco cessation measures in the 2005 NHIS found that only 61.2% of smokers who had visited a healthcare provider in the past year had been advised to quit and only 34.5% had used tobacco dependence treatments (medications or counseling) during their last quit attempt in the past year (Cokkinides et al., 2008). This study also noted significant differences in prevalence of smoking cessation interventions between Non-Hispanic White, African American, and Hispanic smokers. As for consumption levels, a study utilizing data from the 2005 Tobacco Use Supplement of the Current Population Survey (TUS-CPS) found that a significant proportion of current U.S. smokers are non-daily or light-daily smokers, with a higher prevalence of these smoking behaviors in certain racial/ethnic groups (Trinidad et al., 2009).

Looking more specifically at California, in January 2009, California's Tobacco Education and Research Oversight Committee (TEROC) reviewed the progress of tobacco control efforts in California for the period 2006-08 and developed a master plan for 2009-11 (TEROC 2009). In their report, TEROC noted that the percentage of Californians interested in quitting has remained relatively unchanged from 2002-07 and the percentage making a quit attempt decreased from 1999-2005. In the new master plan, one of the main objectives is to increase the availability and utilization of cessation services.

To further understand the effects of the California Tobacco Control Program (CTCP) on cessation, this chapter will examine important factors associated with smoking cessation, including quit attempts, use of cessation aids, cigarette consumption levels and home smoking restrictions. Due to the well-described health consequences of secondhand smoke (US DHHS, 2006), past discussions of home smoking restrictions have primarily focused on the hazards of secondhand smoke for non-smokers. Recently, the literature has shown a positive association between such restrictions and smoking cessation (Messer et al., 2008; Pierce 2009; Mills et al., 2009). Therefore, this chapter will include a more detailed examination of home smoking restrictions and cessation than in previous reports.

1. Smokers Making Quit Attempts

Demographics of Smokers Who Made a Quit Attempt in the Past Year

One indicator of the effect of cessation interventions is the percentage of smokers who are making quit attempts (Zhu 2006), which has been monitored over time in the California Tobacco Survey (CTS). In order to calculate the proportion of smokers who made a quit attempt in the past year, the CTS included a question which was used to estimate the proportion of people who could have made a quit attempt. Thus, all ever smokers (lifetime 100 or more cigarettes) were asked:

Were you smoking at all around this time 12 months ago? (C1)

This question identifies the pool of potential quitters who, taken together, comprise the denominator of the calculation of quit attempts. To estimate who made a quit attempt, current smokers were asked:

During the past 12 months, have you quit smoking intentionally for one day or longer? **(C6)**

and former smokers who said they were smoking a year ago were asked:

When did you last smoke regularly? (B28)

Only those who had quit less than 12 months before the time of the survey and who were currently not smoking are included as recent former smokers in this analysis.

Overall, the percentage of smokers in the last year who made a quit attempt has increased from $56.0\pm3.5\%$ in 2005 to $60.2\pm2.8\%$ in 2008 (**Table 6.1**). However, this increase between the 2005 and 2008 surveys is not statistically significant. The percentage of smokers who made a quit attempt in 2008 is rebounding back in the right direction and is at the level it was in 1999 ($60.2\pm1.5\%$). In addition, there has been a significant increase between 1996 and 2008, from $53.7\pm1.2\%$ to $60.2\pm2.8\%$, a factor change of 12.1%.

In 2008, 60% of current smokers reported a quit attempt in the last year - the same percentage as in 1999.

A slightly higher percentage of male smokers made a quit attempt compared to female smokers ($62.8\pm3.7\%$ men vs. $55.6\pm3.6\%$ women) and the difference was close to statistically significant. There was a significant difference by age group: the percentage of smokers making a quit attempt decreased with increasing age group. While $76.1\pm5.7\%$ of young adults aged 18-24 years reported a quit attempt, only $44.5\pm4.8\%$ of adults aged 65+ years reported a quit attempt. This age group pattern has been consistent across surveys. In 2008, the percentage of Non-Hispanic White smokers making a quit attempt was

significantly lower than that for African Americans and for Hispanics. Across all these demographic variables, the recent change in percentage of quit attempts has been small and there has been no appreciable progress in this indicator of smoking cessation in California.

Table 6.1 Percentage of Smokers Who Made a Quit Attempt in the Last Year by Demographics (denominator includes all smokers in the last year), 1996-2008							
	1996 %	1999 %	2002 %	2005 %	2008 %		
Overall	53.7 (±1.2)	60.2 (±1.5)	58.9 (±1.4)	56.0 (±3.5)	60.2 (±2.8)		
Gender							
Male	54.9 (±1.8)	61.8 (±2.1)	60.7 (±2.0)	56.5 (±5.3)	62.8 (±3.7)		
Female	52.2 (±1.7)	57.8 (±2.3)	56.2 (±2.1)	55.2 (±3.8)	55.6 (±3.6)		
Age							
18-24	74.1 (±3.1)	78.0 (±3.6)	77.3 (±3.6)	69.2 (±6.0)	76.1 (±5.7)		
25-44	55.2 (±1.8)	62.3 (±2.5)	59.6 (±2.3)	60.8 (±4.4)	64.6 (±5.0)		
45-64	43.5 (±1.9)	48.8 (±3.1)	50.1 (±3.1)	46.8 (±8.8)	51.8 (±3.6)		
65+	43.1 (±4.0)	47.3 (±5.8)	45.8 (±6.4)	44.1 (±6.9)	44.5 (±4.8)		
Race/Ethnicity							
African American	59.5 (±5.8)	68.3 (±5.8)	62.7 (±5.8)	68.4 (±9.3)	71.8 (±5.9)		
Asian/PI	57.5 (±6.6)	64.8 (±6.1)	65.4 (±5.6)	54.5 (±11.1)	66.0 ±10.3)		
Hispanic	64.3 (±3.0)	66.5 (±3.6)	69.3 (±3.7)	59.2 (±12.4)	67.7 (±6.2)		
Non-Hispanic White	49.2 (±1.2)	56.8 (±1.8)	53.3 (±2.0)	53.0 (±2.9)	54.0 (±3.3)		
Other	51.8 (±6.1)	48.8 (±13.8)	53.5 (±7.1)	53.5 (±9.6)	56.6 (±12.7)		
Education							
Less than 12 years	56.6 (±2.7)	61.4 (±4.4)	59.9 (±4.4)	54.8 ±13.1)	58.6 (±9.8)		
High school graduate	49.0 (±2.2)	58.9 (±2.7)	54.7 (±2.7)	51.8 (±5.6)	57.1 (±4.4)		
Some college	55.0 (±2.2)	60.5 (±2.4)	61.9 (±2.3)	59.8 (±4.0)	64.2 (±3.3)		
College graduate	56.7 (±3.2)	60.4 (±2.6)	60.7 (±3.5)	59.1 (±6.3)	62.0 (±5.6)		
Income				· · · ·			
\$20,000 or less	55.8 (±2.6)	60.2 (±3.5)	59.6 (±3.0)	63.2 (±5.6)	61.5 (±8.4)		
\$20,001 to \$30,000	53.1 (±3.7)	61.3 (±4.1)	59.4 (±4.1)	43.8 ±20.0)	57.4 (±9.1)		
\$30,001 to \$50,000	53.5 (±2.4)	58.7 (±4.1)	57.2 (±4.0)	52.7 (±6.8)	61.1 (±5.9)		
\$50,001 to \$75,000	52.6 (±3.9)	59.8 (±4.1)	61.9 (±3.9)	55.4 (±7.2)	61.6 (±6.5)		
\$75,001 to \$100,000	54.1 (±4.6)	61.8 (±3.3)	57.6 (±3.2)	59.0 (±5.9)	62.2 (±6.4)		
\$100,001 to \$150,00	· · · ·				62.0 (±7.8)		
Over \$150,000					55.3 (±10.1)		
Missina	50.8 (±4.3	59.0 (±6.9)	57.8 (±7.1)	57.1 (±6.5)	58.0 (±6.3)		

2. Successful Quitting

Quitting Among Adult Ever Smokers

Overall cessation patterns and cigarette consumption levels in California vary by both gender and age. These patterns were examined in 2008 among adult ever smokers (i.e., smoked 100 cigarettes or more in their lifetime), as shown in **Figure 6.1** and **Figure 6.2** below.

Among male ever smokers, the percentage who have successfully quit (i.e., quit for a year or more) increased steadily with age, and by age 43 approximately 50% of these men had successfully quit. This is comparable to the data from the 2005 CTS (Al-Delaimy et al., 2007), thus suggesting no recent marked improvement in successful quitting attempt among men who smoke. For any age group, approximately 5% of men who were ever smokers were recent

quitters (i.e., quit less than 12 months ago). The largest percentages of current non-daily, never-daily smokers and light-daily smokers [\leq 10 cigarettes per day (cpd)] were 18 year olds, with approximately 25% classified as non-daily, never-daily smokers and more than 30% smoking \leq 10 cpd. Current smokers smoking 11-20 cpd accounted for 15% of smokers with little change in this percentage until age 63 years when there was a decline with increasing age. Heavy daily smokers (>20 cpd) were a small percentage for all age groups, comprising about 3% of ever smokers across the ages of 30 to 68 years and comprising a smaller percentage outside of this age range.

Female ever smokers seemed to quit at a younger age than their male counterparts. One possible explanation could be that female smokers may quit due to pregnancy. By age 38, approximately 50% of female ever smokers had successfully quit. However the steady increase in successful quitting seemed to plateau between ages 40-52, before another steady increase with increasing age. Similar to the pattern seen in men, the largest percentages of current non-daily, never daily smokers and light-daily smokers (\leq 10 cpd) were seen at age 18 years with approximately 25% never-daily, non-daily smokers and more than 30% smoking \leq 10 cpd; this continued to decrease with age. Between the ages of 40-52, there was a peak in the percentage of light and moderate daily smokers (\leq 10 cpd and 11-20 cpd) that was most evident at age 49 years followed by a steady decline. Heavy daily smokers (i.e., smoking >20 cpd) were a negligible group in females.





SOURCE: CTS 2008



Figure 6.2: Quitting Among Adult Female Ever Smokers (2008 CTS).

SOURCE: CTS 2008

Quitting Among Recent Smokers

Overall, in 2008, approximately 8.0% of recent smokers (i.e., smoked one year prior to the survey) were currently in a quit attempt of 3+ months and around 6.4% were in a quit attempt of 6+ months (**Figure 6.3**). Although conclusions about trend over time are limited by small sample sizes, there has been no significant change in these percentages since 1990. The percentage of smokers who are currently quit for 3+ months was $8.5\pm1.0\%$ in 1990, dropped to $5.4\pm0.5\%$ by 1999 and returned to $8.0\pm2.5\%$ in 2008. Similarly, the percentage of recent smokers who are currently quit for 6+ months was $5.6\pm0.7\%$ in 1990, then dropped to $4.2\pm0.5\%$ in 1999 and increased back to $6.4\pm2.5\%$ in 2008.



Figure 6.3: Quitting Among Recent Smokers (Quit 3+ and 6+ Months).

Quit Length	1990	1992	1993	1996	1999	2002	2005	2008
3+ months	8.5	7.4	7.2	6.9	5.4	8.2	7.4	8.0
6+ months	5.6	4.2	4.2	4.3	4.2	6.5	5.3	6.4

3. Predictors of Quitting

Readiness to Quit

Predictors of quit attempts include a smoker's motivation or readiness to quit. To evaluate this, the CTS asked the following question of all current smokers:

What best describes your intentions regarding quitting? Would you say you. (never expect to quit, may quit in the future, but not in the next six months, will quit in the next six months, or will quit in the next month?) **(B26a)**

The percentage of smokers intending to quit has been relatively stable over time. Overall, the percentage of smokers intending to quit has been relatively stable over time (**Figure 6.4**). In 1996, 11.8±1.0% of smokers reported they will quit in the next month, while in 2008, 13.2±1.7% of smokers reported they will quit in the next month. Over time, approximately one-third of smokers reported they will quit in the next month of smokers reported they will quit in the next six months (but not in the next month) and 40% of smokers report they may quit, but not in the next six months. In 1996,

 $13.8\pm1.1\%$ of smokers reported they never expect to quit. This percentage decreased significantly to $10.7\pm1.1\%$ in 2002, followed by a non-significant increase to $12.3\pm1.5\%$ in 2008.



Figure 6.4: Distribution of Smokers in the Last Year According to Their Reported Intent to Quit.

intent to quit	1996	1999	2002	2005	2008
Will quit in next month	11.8	12.4	13.7	14.4	13.2
Will quit in next 6 mo	30.1	33.1	34.0	31.7	32.0
May quit, not in next 6 mo	44.4	40.9	41.6	43.1	42.6
Never expect to quit	13.8	13.7	10.7	10.7	12.3

Physician Advice to Quit Smoking

Physician advice to quit has been found to be an effective tool in encouraging smokers to quit (Lancaster & Stead 2004; US PHS, 2008). In the CTS, all current smokers and recent former smokers are asked if they have visited a doctor at least once in the past 12 months. Those answering "yes" are then asked:

In the last 12 months (In the last 12 months before you quit), did a doctor advise you to stop smoking? **(F32)**

Across time, among smokers who have seen a doctor, the overall percentage who report receiving physician advice has increased from $51.9\pm1.7\%$ in 1996 to $63.7\pm3.0\%$ in 2008, a factor change of 22.6% (Appendix Table A.6.1). These findings are consistent with a national study, using 2005 NHIS data, which reported that 61.2% of smokers who visited a healthcare provider in the past year were advised to quit (Cokkinides 2008). Although there has been progress, there is still opportunity for improvement since one-third of smokers do not report receiving advice to quit.

Over time, a higher percentage of heavier smokers reported receiving advice compared to lighter smokers. In the 2008 CTS, only 45.1±6.9% of non-daily smokers reported receiving advice, a low percentage that is consistent with other studies (Tong et al., 2006). Some of these non-daily smokers may be missed because they are not being asked about their smoking habits (Tong et al., 2006).

Self-Efficacy to Quit

A predictor of successful quitting is a smoker's self-efficacy to quit, that is, their belief in their ability to successfully quit (Pierce et al., 1998). To assess self-efficacy, the 2008 CTS included two questions for smokers:

How sure are you that you could refrain from smoking for at least 1 month? (Very sure, somewhat sure, somewhat unsure or very unsure) (B27)

If someone offered you 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? (Very sure, somewhat sure, somewhat unsure or you could not do it) **(B26a_1)**

The answers from these two questions were used to create an index of self-efficacy. Those who answered "very sure" on both were categorized as having "high efficacy" (i.e., strong belief in ability to quit). Smokers who responded "very sure" on only one question were categorized as "indeterminate efficacy" and those with other less confident answer combinations were classified as "low efficacy". Overall, in 2008, 45.5±2.9% of smokers fit into the category of high efficacy, 28.2±1.9% with intermediate efficacy and 26.3±2.1% with low efficacy (Appendix Table A.6.2). High self-efficacy was noted in a higher percentage of younger smokers compared to older smokers. In 2008, only 17.8±6.2% of daily smokers who smoked over 20 cigarettes per day had high self-efficacy, while 62.5±8.4% reported having low self-efficacy.

Across time, the percentage of smokers who thought they could refrain for at least one month has been highest among non-daily smokers, followed by light, moderate and heavy smokers, which is expected given that the level of addiction is correlated with consumption (Appendix Table A.6.3).

4. Use of Formal Assistance for Quitting

Overall Use of Any Assistance

In the CTS, questions were asked of participants regarding use of various types of assistance on their last quit attempt. Options for types of assistance included: counseling advice or selfhelp materials ("Counseling"), different types of nicotine substitutes ("NRT"), and other

The percentage of smokers using any assistance for their most recent quit attempt has remained close to 25% since 2002. prescription drugs such as Zyban, Prozac, Chantix ("Prescription drugs"). Compared to 1996, there has been a statistically significant increase in the percentage of smokers using any assistance, including medications or counseling, for their most recent quit attempt (a factor change of approximately 27% from $20.4\pm1.2\%$ in 1996 to $25.9\pm3.2\%$ in 2008) (Figure 6.5). However, the percentage of smokers using any assistance for their most recent quit attempt has remained stable over the past six years ($25.4\pm1.8\%$ in 2002, $26.1\pm3.1\%$ in 2005, $25.9\pm3.2\%$ in 2008). In 2008, only one fourth of smokers used any assistance in their most recent quit and

approximately three fourth of smokers used no assistance for their most recent quit attempt.



Figure 6.5: Use of Assistance for the Most Recent Quit Among All Smokers in the Past Year, 1996-2008.

Various Types of Assistance Used

As shown in **Figure 6.6**, which describes the type of assistance used by smokers in their last quit, the use of NRT alone has decreased slightly since 2005 ($10.4\pm2.5\%$ in 2005 vs. 7.7 $\pm1.7\%$ in 2008), but this change was not statistically significant. The small percentage of smokers who used NRT alone in 2008 is closer to the percentage it was in 1999 ($6.5\pm1.0\%$ in 1999 vs. 7.7 $\pm1.7\%$ in 2008).

Although a small percentage, use of counseling alone has increased slightly over time from $4.8\pm0.9\%$ in 1999 to $5.9\pm1.8\%$ in 2008. The use of counseling and prescription drugs in combination has increased over time from $0.7\pm0.3\%$ in 1999 to $1.4\pm0.9\%$ in 2008. In contrast, the use of counseling and NRT in combination has decreased over time ($6.3\pm0.8\%$ in 1999 to $4.5\pm1.4\%$ in 2008). Therefore, although there were some changes for one type of assistance or another, the overall current use and change of use since the last survey suggest no substantial utilization of cessation assistance, which may in part be due to lack of knowledge, low demand, lack of access and/or financial barriers.



Figure 6.6: Usage of Various Types of Assistance by Smokers in the Last Year Who Attempted a Quit, 1999-2008.

	1999	2002	2005	2008
Gum, patch or inhalant (NRT)	6.5	10.0	10.4	7.7
Counseling	4.8	4.5	4.5	5.9
Prescription drugs	2.4	2.0	2.0	1.8
Counseling and NRT	6.3	5.0	5.1	4.5
Counseling & prescription drugs	0.7	0.9	0.9	1.4
NRT and prescription drugs	1.1	1.3	1.7	2.7
All	1.2	1.7	1.6	2.0

Demographics of Smokers Using Nicotine Replacement Therapy

Overall, the percentage of smokers who used any NRT (either alone or in combination with other assistance) in their <u>last quit attempt</u> increased from $13.7\pm1.2\%$ in 1996 to $18.8\pm3.0\%$ in 2005, followed by a non-significant decline to $16.8\pm2.7\%$ in 2008 (Appendix Table A.6.4). <u>Ever-use</u> of NRT by smokers was asked in the 2002-2008 CTS questionnaires. In 2002, $31.7\pm1.5\%$ of smokers reported ever-use of NRT; followed by a non-significant increase to $34.1\pm3.7\%$ in 2005 and no change at $34.6\pm2.6\%$ in 2008.

Appendix Table A.6.4 outlines the demographics of smokers using NRT on their last quit attempt. Across surveys, the percentage of female smokers who used NRT has consistently been greater than the percentage of male smokers who used NRT. In 2008, a significantly higher percentage of female smokers compared to male smokers used NRT in their last quit attempt (21.4±3.4% in females vs. 14.5±3.3% in males). By age group, across time, middle-aged (age 45-64 years) and older (age 65+ years) smokers have been more likely to use NRT than younger smokers.

Reported use of NRT appears to differ by race/ethnicity. In 2008, Non-Hispanic White and African Americans smokers were more likely to use NRT than Hispanic smokers or Asian/PI smokers; however, conclusions are limited by small sample sizes. In 2008, the percentage of Non-Hispanic White smokers using NRT was more than twice the percentage of Hispanic smokers using NRT (22.5±3.7 % of Non-Hispanic Whites vs. 9.2±4.9% of Hispanics). Between 1996 and 2008, the percentage of African American smokers using NRT increased from 8.8±3.8% in 1996 to 18.4±7.7% in 2008; however, conclusions are limited by small sample sizes.

Recently, there seems to have been a decline in NRT use by heavy daily smokers (i.e., >20 cpd), although conclusions are limited by small sample sizes. In 2005, $42.3\pm12.2\%$ of smokers who reported being heavy smokers 12 months prior to the interview said they used NRT on their last quit attempt, compared to $29.7\pm9.5\%$ of heavy smokers in 2008. This percentage in 2008 was very similar to the percentage in 1996 ($29.6\pm3.6\%$). Among moderate daily smokers (11-20 cigarettes per day), use of NRT on their last quit attempt remained stable from 2005 to 2008 ($25.1\pm5.0\%$ in 2005, $24.6\pm6.7\%$ in 2008). There seems to have been an increase in NRT use between 1996 and 2008 among non-daily, light-daily and moderate daily smokers, but conclusions are limited by small sample sizes. The following section explores beliefs about NRT use among all participants and smokers in particular.

Beliefs about Nicotine Replacement Therapy

In the 2005 and 2008 CTS, all participants (current smokers, former smokers, and never smokers) were asked to respond to the following statement regarding nicotine replacement therapy:

Most smokers who use NRT to quit are successful (Agree, Disagree, Refused, Don't Know) **(G22a)**

In 2005 and 2008, 1/4 of all survey participants agreed that smokers who use NRT to quit are successful while 1/3 disagreed that smokers who use NRT to guit are successful. The remaining responses were either "refused" or "don't know". As seen in **Table 6.2**, the percentage who did not believe the effectiveness of NRT was highest among current non-daily and daily smokers (41.0±6.6% and 44.8±3.2%, respectively). Between 2005 and 2008, the percentage of current smokers who did not believe in NRT's effectiveness increased from 31.2±5.4% to 41.0±6.6% among non-daily smokers and from 37.4±3.7% to 44.8±3.2% among daily smokers. It seems that smokers may be developing a less favorable view of NRT, which may in part explain why the use of NRT has not been increasing significantly in recent years.

Use of Chantix

A new non-nicotine smoking cessation medication called Chantix has been approved by the Food and Drug Administration and introduced for clinical use (US PHS, 2008). It is available by prescription only. In 2008, for the first time, the CTS included a question about use of Chantix. Overall, only 2.1% of smokers reported using Chantix in the last year (N=89). Trends in Chantix use will be followed in future surveys to obtain more information about who is using it.

Respondents Who Disagree with the Statement "Most smokers who use NRT to quit are successful"					
	2005 %	2008 %			
Overall	32.3 (±1.9)	34.6 (±2.3)			
Gender					
Male	32.9 (±3.3)	37.6 (±2.8)			
Female	31.6 (±2.8)	31.6 (±3.2)			
Age					
18-24	36.5 (±2.8)	40.6 (±2.3)			
25-44	31.9 (±2.9)	34.7 (±4.6)			
45-64	31.2 (±4.1)	32.1 (±3.0)			
65+	31.7 (±4.8)	34.0 (±5.0)			
Race/Ethnicity					
African American	27.8 (±4.4)	35.3 (±3.5)			
Asian/PI	27.3 (±3.5)	32.0 (±3.5)			
Hispanic	29.4 (±4.0)	33.1 (±4.7)			
Non-Hispanic White	35.5 (±2.4)	36.2 (±2.9)			
Other	46.0 (±11.8)	33.5 (±15.3)			
Education					
Less than 12 years	30.5 (±5.8)	31.5 (±6.2)			
High school graduate	34.4 (±3.8)	37.2 (±5.0)			
Some college	34.4 (±3.7)	35.4 (±3.2)			
College graduate	29.9 (±3.4)	33.1 (±3.1)			
Income					
\$20,000 or less	30.2 (±4.4)	37.6 (±6.0)			
\$20,001 to \$30,000	29.6 (±8.8)	39.1 (±8.6)			
\$30,001 to \$50,000	28.9 (±5.2)	34.3 (±6.6)			
\$50,001 to \$75,000	38.3 (±5.2)	35.0 (±6.5)			
\$75,001 to \$100,000	33.7 (±3.6)	36.0 (±4.6)			
\$100,001 to \$150,00		35.6 (±4.6)			
Over \$150,000		30.5 (±3.9)			
Missing	31.1 (±4.9)	28.9 (±4.9)			
Smoking status	. , , , , ,	· /			
Never smoker	30.0 (±2.4)	32.1 (±3.0)			
Former smoker	36.1 (±4.0)	36.5 (±4.5)			
Current non-daily smoker	31.2 (±5.4)	41.0 (±6.6)			
Current daily smoker	37.4 (±3.7)	44.8 (±3.2)			

Table 6.2

5. Cigarette Consumption Levels Among Smokers

Different Consumption Levels among Current Smokers

Consumption patterns among adult smokers have shifted from daily smoking to non-daily smoking. The overall percentage of non-daily smokers among current smokers increased significantly between 1992 and 2008, from 14.8±3.3% in 1992 to 28.1±3.2% in 2008

(Figure 6.7).

There has been a shift from heavier smoking to lightdaily smoking and non-daily smoking. In addition, there has been a significant shift among daily smokers from moderate daily smoking (11-20 cpd) and heavy daily smoking (>20 cpd) to light-daily smoking (1-10 cpd). The percentage of all current smokers who were moderate daily smokers decreased from 41.8±2.1% in 1992 to 29.8±2.3% in 2008. Likewise, the percentage of smokers who were heavy daily smokers decreased by half from 17.6±2.7% in 1992 to $6.8\pm1.1\%$ in 2008. The percentage of all smokers who were light-daily smokers increased significantly from 25.9±2.2% in 1992 to $35.4\pm3.1\%$ in 2008. Among daily smokers, the

average number of cigarettes consumed per day has steadily decreased from 19.3 ± 0.4 cigarettes per day in 1992 to 14.5 ± 0.2 cigarettes per day in 2008 (**Figure 6.8**). The change from daily to non-daily smoking and the clear shift from heavier to lighter smoking are some of the positive signs in this chapter.



Figure 6.7: Prevalence of Different Consumption Levels Among Current Smokers, 1992-2008.



Consumption by Demographic Subgroups

Cigarette consumption patterns in the 2008 CTS were found to vary by demographic subgroups such as gender, age, race/ethnicity and education level (**Table 6.3**). A higher percentage of male smokers are non-daily, never-daily smokers compared to female smokers ($15.4\pm2.7\%$ of male smokers vs. $9.2\pm1.7\%$ of female smokers), while the percentage of non-daily, once-daily smokers is similar for both genders ($14.5\pm3.2\%$ of male smokers vs. $15.9\pm2.5\%$ of female smokers). As for daily smoking, a higher percentage of female smokers are light-daily smokers (1-10 cpd) compared to male smokers ($41.9\pm5.1\%$ of female smokers vs. $31.5\pm4.0\%$ of male smokers) while a higher percentage of men were heavy smokers ($7.8\pm1.4\%$) compared to women ($4.9\pm1.4\%$).

There are differences by age group that suggest current young adults are more likely to be nondaily or lighter smokers than older adults. By age, a significantly higher percentage of young adult smokers (age 18-24 years) are non-daily, never-daily smokers compared to other age groups ($29.2\pm6.3\%$ of smokers 18-24 years, $12.6\pm3.1\%$ of smokers 25-44 years, $8.5\pm2.5\%$ of smokers 45-64 years, $3.6\pm2.3\%$ of smokers 65+ years). In contrast, but supporting those findings, the percentage of smokers who are heavy daily smokers increases with age ($1.3\pm1.2\%$ of smokers 18-24 years, $5.2\pm1.6\%$ of smokers 25-44 years, $9.9\pm1.8\%$ of smokers 45-64 years, $13.3\pm5.6\%$ of smokers 65+ years).

Differences in consumption patterns were also found for smokers of different racial/ethnic groups and for smokers of different education levels. Non-daily, never-daily smokers were least likely to be Non-Hispanic White smokers ($8.0\pm1.7\%$) compared to being from the other ethnic groups, but non-daily, once-daily smokers were similarly distributed across ethnic groups. As for daily smokers, the percentage of Non-Hispanic White smokers who are heavy daily smokers was significantly greater than the percentages for other racial/ethnic groups, which has been consistent over time. An examination of consumption patterns by education indicate that the percentage of non-daily, once-daily smokers increases with increasing educational attainment (9.1 $\pm3.7\%$ for those with less than a high school diploma compared to 23.7 $\pm5.1\%$ for those with a college degree).

Table 6.3 Cigarette Consumption Among Current Smokers by Demographic Groups, 2008								
	Non-daily	smokers	Daily smokers					
	Never-daily	Once-daily	1-10 cigs/day	11-20 cigs/day	> 20 cigs/day			
	%	%	%	%	%			
Overall	13.1 (±1.9)	15.0 (±2.4)	35.4 (±3.1)	29.8 (±2.3)	6.8 (±1.1)			
Gender								
Male	15.4 (±2.7)	14.5 (±3.2)	31.5 (±4.0)	30.7 (±2.9)	7.8 (±1.4)			
Female	9.2 (±1.7)	15.9 (±2.5)	41.9 (±5.1)	28.2 (±3.4)	4.9 (±1.4)			
Age								
18-24	29.2 (±6.3)	13.3 (±4.5)	35.9 (±5.8)	20.3 (±5.4)	1.3 (±1.2)			
25-44	12.6 (±3.1)	19.4 (±5.2)	36.9 (±6.5)	25.9 (±4.1)	5.2 (±1.6)			
45-64	8.5 (±2.5)	11.4 (±2.3)	32.1 (±3.8)	38.2 (±3.5)	9.9 (±1.8)			
65+	3.6 (±2.3)	8.7 (±3.6)	38.3 (±6.3)	36.1 (±5.5)	13.3 (±5.6)			
Race/Ethnicity		,		. ,				
African American	13.6 (±7.3)	12.4 (±6.4)	50.5 (±10.2)	21.9 (±7.0)	1.5 (±1.2)			
Asian/PI	20.6 (±11.9)	16.5 (±9.4)	44.7 (±10.5)	18.3 (±8.7)	0.0 (±0.0)			
Hispanic	20.8 (±5.1)	16.2 (±6.4)	41.4 (±7.7)	19.9 (±5.0)	1.7 (±1.1)			
Non-Hispanic White	8.0 (±1.7)	15.1 (±2.1)	28.5 (±2.7)	37.2 (±2.5)	11.2 (±1.8)			
Other	8.4 (±5.7)	10.1 (±6.6)	33.6 (±11.1)	39.3 (±12.5)	8.7 (±6.1)			
Education		L						
Less than 12 years	12.9 (±5.2)	9.1 (±3.7)	44.3 (±10.0)	27.5 (±6.6)	6.2 (±2.4)			
High school graduate	12.8 (±3.5)	13.4 (±5.0)	34.5 (±4.4)	31.5 (±3.9)	7.7 (±2.3)			
Some college	12.5 (±3.2)	16.1 (±3.3)	33.9 (±4.6)	31.4 (±4.0)	6.2 (±1.7)			
College graduate	15.1 (±4.1)	23.7 (±5.1)	30.3 (±4.9)	25.1 (±4.3)	5.9 (±2.5)			
Income								
\$20,000 or less	13.5 (±4.9)	8.4 (±2.8)	42.2 (±7.0)	27.2 (±5.1)	8.7 (±3.1)			
\$20,001 to \$30,000	14.1 (±5.5)	18.0 (±12.4)	30.8 (±7.5)	30.6 (±8.4)	6.5 (±3.3)			
\$30,001 to \$50,000	12.4 (±5.0)	15.4 (±5.0)	34.4 (±6.3)	32.4 (±5.6)	5.4 (±1.8)			
\$50,001 to \$75,000	14.0 (±5.5)	15.7 (±5.1)	34.0 (±6.3)	27.3 (±4.9)	9.0 (±3.5)			
\$75,001 to \$100,000	9.6 (±4.7)	18.7 (±6.7)	32.0 (±6.8)	31.8 (±5.9)	7.9 (±3.8)			
\$100,001 to \$150,00	13.2 (±4.8)	15.9 (±6.3)	29.1 (±6.7)	35.5 (±6.5)	6.3 (±3.4)			
Over \$150,000	15.4 (±6.6)	25.3 (±7.9)	25.9 (±6.0)	28.5 (±8.2)	4.9 (±3.0)			
Missing	13.0 (±5.3)	9.6 (±3.9)	46.8 (±13.5)	26.5 (±8.1)	4.1 (±2.8)			

6. Home Smoking Restrictions Among Smokers

Overall Prevalence of Home Bans Among Smokers

Beginning in 2005, the CTS has asked all participants the following question regarding home smoking restrictions ("home bans"):

What are the smoking rules or restrictions in your household, if any? Would you say...(smoking is completely banned for everyone, smoking generally banned for everyone with few exceptions, smoking is allowed in some rooms only, there are no restrictions on smoking, Other, Refused, Don't Know.) (**F1**)

Over time, the overall percentage of <u>smokers</u> with a **total** home ban on smoking has increased significantly from 35.9±1.2% in 1996 to 59.3±2.6% in 2008, a change of 65.2% (See Chapter 8, Protection of Nonsmokers from Secondhand Smoke). This change was even larger (204.9%)

when comparing 2008 to the first recorded CTS data on home bans in 1992 (19.4±1.8% in 1992 vs. 59.3±2.6% in 2008). Detailed analyses of the changes in prevalence of home bans by demographic subgroup can be found in Chapter 8 of this report. Below are additional sections that examine home bans in relation to consumption level and cessation.

Home Bans by Consumption Level

Home smoking bans have increased for smokers at all consumption levels. In 2008, total home bans were more common among non-daily and light-daily smokers compared to moderate (11-20 cpd) and heavy (>20 cpd) daily smokers (Figure 6.9). However, there has been an increase in home bans among smokers of all consumption levels, suggesting a positive change in social norms. The percentages of non-daily smokers and light-daily smokers (1-10 cpd) with a total home ban have more than doubled between 1992 and 2008. The percentages of moderate daily smokers (11-20 cpd) and heavy daily

smokers (>20 cpd) with a total home ban increased three to four-fold during the time period 1992-2008. Specifically, the percentage of moderate daily smokers with a home ban increased significantly from $15.9\pm2.2\%$ in 1992 to $49.8\pm4.7\%$ in 2008 and the percentage of heavy daily smokers with a home ban increased significantly from $7.3\pm2.2\%$ in 1992 to $30.9\pm7.5\%$ in 2008. Although these numbers are very encouraging, there remains room for improvement. In 2008, approximately 20% of smokers, (regardless of consumption level) only had a partial home ban and $29.5\pm4.3\%$ of moderate heavy smokers and $49.6\pm8.0\%$ of heavy daily smokers had no ban at all.





Home Bans and Cessation

Data from the 2005 and 2008 CTS allowed an examination of possible associations between home smoking bans and cessation outcomes. In both 2005 and 2008 approximately 72% of current smokers who made a quit attempt in the last year had a home ban in place prior to their quit attempt (data not shown). Another area examined was the possible effect of a home ban on consumption. In 2005, 35.2±4.9% of current smokers who had ever had a home ban reported that they reduced consumption because of a ban. By 2008, 53.4±3.8% of current smokers who had ever had a home ban reported that they reduced consumption because of a ban. By 2008, 53.4±3.8% of current smokers who had ever had a home ban reported that they reduced consumption because of a ban.

Finally, an association between time to first cigarette and home ban status was investigated. Time to first cigarette is one measure of smoking addiction (Fagerstrom 1978). In 1992, the percentage of smokers who reported they smoked within 30 minutes of waking was lowest for those with a total home ban $(57.6\pm6.1\%)$ followed by those with a partial ban $(65.7\pm4.9\%)$ and no ban $(70.9\pm2.7\%)$ (**Figure 6.10**). This trend was similar in 2008: the percentage of smokers who reported they smoke within 30 minutes of waking was lowest for those with a total home ban $(49.1\pm5.2\%)$, followed by those with a partial ban $(67.3\pm6.1\%)$ and highest in those with no home ban $(70.6\pm5.1\%)$. Furthermore, only within the category of smokers with a total ban was there an appreciable decline in the percentage smoking within 30 minutes of waking between 1992 and 2008. Home bans may create a barrier to smoking and help to alter smoking behavior; however, these results may be confounded by the fact that lighter smokers are more likely to have home bans (Mills et al., 2009).



Figure 6.10: Current Daily Smokers Who Smoke within 30 Minutes of Waking by Home Ban Status.

Summary

On both a national level and state level, cessation interventions are recommended as key components of comprehensive tobacco control programs (US DHHS CDC 2007; TEROC 2009). The CTS have documented trends in smoking cessation across time and have documented important indicators or predictors of cessation such as percentage of smokers making quit attempts, interest in quitting, use of formal assistance and cigarette consumption patterns.

In general, the overall pattern of smoking cessation outcomes in California has not changed substantially. Furthermore, the level of some cessation indicators has reached a plateau over the past few years. For example, the age at which 50% of ever smokers were successful quitters has not changed, readiness to quit and self-efficacy for quitting are not improving, and formal assistance continues to not be used frequently. Nevertheless, there seems to be positive improvement in other predictors of cessation. Between 2005 and 2008, the percentage of smokers making quit attempts increased, the consumption level of smokers decreased, and the percentage of smokers who have home bans increased.

The CTCP has relied on social norms to change behavior related specifically to initiation and consumption; thus, one might expect that the California control program might have less of an effect on cessation compared to control programs in states where the primary focus has been on cessation. However, as confirmed by national data, California continues to be one of the leaders in cessation. A study utilizing data from the 1992-2002 TUS-CPS found that among smokers younger than 35 years old, the rate of successful cessation was significantly higher in California compared to other selected states (Messer 2008. A different study examining cessation outcomes and changes in cigarette price in all 50 U.S. states found that California consistently ranked high in a cessation-related outcome index for both 18-34 year-olds and those age 35+, despite a lower rank in pricing, suggesting the CTCP has had a profound impact on cessation outcomes (Tang et al., 2010). Also, as documented in Chapter 1, adult smoking prevalence has consistently decreased at a faster rate in California compared to the rest of the U.S., and cessation is an important component determining trends in prevalence.

One area of progress documented in this chapter is the change in consumption patterns in California, namely the shift from daily smoking to non-daily smoking and from heavier daily smoking to lighter daily smoking. Studies utilizing national data seem to indicate similar changes in consumption, especially among older adults (AI-Delaimy et al., 2007).

Another positive note is the increase in total home smoking bans among smokers. Total home smoking bans help protect non-smokers from the hazards of secondhand smoke (US DHHS PHS 2006). In addition, recent research has shown an association between home bans and cessation (Messer et al., 2008; Pierce 2009; Mills et al., 2009). However, there continues to be room for improvement, as 40% of smokers do not have a total home smoking ban in their homes.

In summary, data from the 2008 CTS indicate that a number of the indicators of cessation have improved while others remained stable in California. The progress made in cessation may be attributed to changing social norms, but more effort is needed to increase the rate of successful quitting and quit attempts, as these are the main indicators of quitting rates in the population. Strategies to increase consumer demand for evidence-based cessation treatments may be instrumental to future progress (Orleans et al., 2010). The National Tobacco Cessation Collaborative's Consumer Demand Roundtable has identified core strategies and design

principles to make cessation products and services more appealing to the public (Backinger et al., 2010). Improved promotion and utilization of telephone cessation programs (quit lines) and other counseling for cessation may have promise. Newer non-nicotine cessation medications (e.g., Chantix) may have an impact in the near future and will be monitored in the coming surveys. Lastly, increased smoking-cessation intervention by multiple types of healthcare professionals, including physicians, nurses, dentists and other clinicians, could increase quitting behaviors, and systems that facilitate clinician intervention should be encouraged (An et al., 2008).

APPENDIX Chapter 6 Smoking Cessation

The primary chapter text, tables and figures provide the key findings regarding smoking cessation from the 2008 CTS. The following appendix tables provide detailed demographic information on a few selected topics, including physician advice, self-efficacy to quit and use of NRT. The appendix also includes new data on "hard-core smokers".

1. Physician Advice to Quit Smoking

Table A.6.1 describes the percentage among smokers who visited a physician in the last year reporting receiving advice to quit smoking. Between 1996 and 2008, the overall percentage of smokers receiving advice has increased from $51.9\pm1.7\%$ in 1996 to $63.7\pm3.0\%$ in 2008, a factor change of 22.6%. Over time, a higher percentage of heavier smokers reported receiving advice compared to lighter smokers.

Table A.6.1 Percentage of Smokers Reporting Physician Advice to Quit Smoking (Amount Smokers Version in the Lost Version 2000)						
	(Among Smo 1996 %	1999 %	2002 %	2005 %	2008 2008 %	Percentage change 1996-2008
Overall	51.9 (±1.7)	55.3 (±2.2)	59.3 (±1.9)	62.6 (±3.5)	63.7 (±3.0)	22.6
Gender						ł
Male	48.8 (±2.6)	52.8 (±3.2)	56.6 (±3.1)	61.1 (±5.4)	62.6 (±4.6)	28.3
Female	55.1 (±2.1)	58.1 (±2.7)	62.5 (±2.4)	64.4 (±4.3)	65.2 (±3.2)	18.4
Education						l
18-24	39.9 (±4.7)	46.9 (±4.4)	46.4 (±4.4)	52.5 (±8.7)	50.5 (±9.3)	26.4
25-44	49.0 (±2.1)	52.5 (±3.2)	56.6 (±3.1)	58.5 (±6.4)	57.6 (±5.9)	17.6
45-64	60.4 (±3.3)	61.4 (±3.3)	69.2 (±3.4)	70.9 (±4.8)	72.5 (±4.0)	20.0
65+	59.7 (±4.6)	65.6 (±6.2)	63.4 (±6.7)	66.7 (±8.0)	72.8 (±5.9)	21.9
Race/Ethnicity		, <u>,</u> ,		, <i>, , , , , , , , , , , , , , , , , , </i>	x x	
African American	58.4 (±6.3)	56.5 (±6.8)	64.6 (±6.2)	65.4 (±10.1)	66.4 (±9.2)	13.7
Asian/PI	50.3 (±8.7)	52.6 (±9.3)	60.8 (±8.3)	67.2 (±11.5)	65.8 (±17.2)	30.9
Hispanic	40.0 (±3.9)	46.5 (±4.6)	50.4 (±4.8)	52.3 (±9.7)	56.2 (±6.5)	40.5
Non-Hispanic White	54.5 (±1.7)	58.3 (±2.0)	61.3 (±2.3)	64.6 (±3.4)	65.4 (±3.2)	19.9
Other	52.9 (±8.0)	52.6 (±16.9)	60.7 (±6.8)	67.7 (±11.2)	72.4 (±14.0)	36.8
Education						·
Less than 12 years	49.3 (±4.5)	56.8 (±6.2)	58.4 (±6.0)	61.5 (±8.7)	68.2 (±6.9)	38.3
High school graduate	51.8 (±2.8)	55.9 (±3.5)	62.4 (±3.1)	65.8 (±5.5)	64.6 (±5.0)	24.9
Some college	53.1 (±2.6)	56.6 (±2.8)	59.4 (±3.3)	64.8 (±3.5)	62.9 (±5.8)	18.4
College graduate	53.4 (±3.3)	49.3 (±3.9)	54.9 (±3.7)	55.3 (±7.2)	59.6 (±5.1)	11.6
Income						
\$20,000 or less	52.4 (±3.2)	57.1 (±3.5)	59.1 (±5.2)	64.8 (±8.3)	59.6 (±7.6)	13.7
\$20,001 to \$30,000	49.2 (±3.9)	54.4 (±5.5)	61.6 (±5.3)	56.1 (±12.5)	64.1 (±7.3)	30.2
\$30,001 to \$50,000	51.7 (±3.3)	57.3 (±4.4)	60.0 (±4.5)	65.8 (±6.4)	70.4 (±6.4)	36.1
\$50,001 to \$75,000	53.6 (±4.2)	54.7 (±4.5)	59.8 (±4.6)	59.2 (±7.1)	56.0 (±8.7)	4.5
\$75,001 to \$100,000	53.4 (±4.0)	52.7 (±5.2)	58.2 (±3.6)	63.9 (±6.1)	65.3 (±7.4)	22.2
\$100,001 to \$150,00					63.8 (±8.7)	
Over \$150,000					63.3 (±10.5)	
Missing	51.0 (±6.4)	52.6 (±6.6)	56.1 (±6.6)	63.8 (±10.7)	69.4 (±7.7)	36.2
Consumption 12 months	sago					
Non-daily	35.3 (±3.1)	35.5 (±3.8)	43.8 (±4.1)	48.1 (±7.0)	45.1 (±6.9)	27.8
Daily, 1-10 cigs/day	50.6 (±3.8)	54.1 (±4.3)	58.2 (±3.1)	68.3 (±6.5)	67.8 (±6.1)	34.2
Daily, 11-20 cigs/day	56.5 (±2.0)	63.1 (±2.8)	62.9 (±3.4)	62.6 (±5.3)	67.9 (±4.6)	20.1
Daily, >20 cigs/day	65.3 (±3.5)	69.3 (±3.9)	76.5 (±4.6)	78.7 (±7.0)	82.3 (±5.4)	26.0

2. Self-Efficacy to Quit Smoking

As previously described in the chapter, the CTS examined indicators of self-efficacy using two questions. The answers from these two questions were then used to create an index of

self-efficacy and smokers were categorized as having "High efficacy" (i.e., strong belief in ability to quit), "Intermediate" or "Low efficacy". Overall, in 2008, 45.5±2.9% of smokers fit into the category of high efficacy, 28.2±1.9% with intermediate efficacy and 26.3±2.1% with low efficacy. High self-efficacy was noted in a higher percentage of younger smokers compared to older smokers. Further demographic details are provided in Table A.6.2.

Table A.6.2 Self-Efficacy Among Current Smokers, 2008							
	High Efficacy %	Intermediate %	Low Efficacy %				
Overall	45.5 (±2.9)	28.2 (±1.9)	26.3 (±2.1)				
Gender							
Male	48.2 (±3.4)	29.0 (±2.7)	22.9 (±2.3)				
Female	40.9 (±5.9)	26.8 (±3.6)	32.3 (±4.5)				
Age			· · · · · ·				
18-24	54.3 (±8.1)	29.2 (±7.1)	16.5 (±4.5)				
25-44	51.0 (±5.4)	28.6 (±4.3)	20.4 (±3.5)				
45-64	38.2 (±3.9)	28.6 (±3.8)	33.3 (±3.5)				
65+	26.8 (±6.3)	22.7 (±4.5)	50.6 (±7.2)				
Race/Ethnicity		· · · ·					
African American	52.2 (±9.8)	32.3 (±9.0)	15.5 (±3.8)				
Asian/PI	35.5 (±10.6)	33.9 (±10.0)	30.6 (±10.0)				
Hispanic	53.9 (±6.3)	26.9 (±4.7)	19.2 (±4.5)				
Non-Hispanic White	40.3 (±2.6)	28.1 (±2.4)	31.7 (±2.3)				
Other	50.1 (±11.5)	23.7 (±9.2)	26.2 (±10.4)				
Education							
Less than 12 years	47.1 (±11.5)	26.1 (±7.0)	26.8 (±7.5)				
High school graduate	42.6 (±4.4)	27.9 (±3.3)	29.6 (±4.1)				
Some college	45.2 (±4.3)	31.3 (±3.8)	23.5 (±2.3)				
College graduate	51.7 (±5.6)	25.5 (±5.0)	22.8 (±4.2)				
Income							
\$20,000 or less	36.3 (±5.6)	30.3 (±6.0)	33.4 (±5.0)				
\$20,001 to \$30,000	43.9 (±11.4)	32.7 (±8.1)	23.4 (±7.0)				
\$30,001 to \$50,000	42.9 (±6.3)	29.6 (±6.5)	27.5 (±5.3)				
\$50,001 to \$75,000	51.6 (±6.6)	21.4 (±5.7)	27.0 (±5.5)				
\$75,001 to \$100,000	43.1 (±7.5)	30.2 (±7.7)	26.7 (±5.9)				
\$100,001 to \$150,00	51.5 (±7.6)	25.1 (±6.6)	23.5 (±5.8)				
over \$150,000	45.3 (±9.3)	33.5 (±9.5)	21.2 (±6.7)				
Missing	52.9 (±13.0)	24.1 (±7.5)	23.1 (±7.5)				
Smoking Status		-					
Nondaily, never daily	73.4 (±6.8)	21.0 (±5.8)	5.6 (±3.2)				
Nondaily, once daily	68.1 (±7.0)	20.0 (±5.6)	11.9 (±4.1)				
Daily, 1-10	39.8 (±7.3)	34.2 (±5.1)	25.9 (±3.9)				
Daily, 11-20	31.1 (±3.9)	31.7 (±3.7)	37.3 (±4.7)				
Daily, >20	17.8 (±6.2)	19.7 (±5.6)	62.5 (±8.4)				
Quit attempts							
No attempt in last year	32.0 (±3.6)	26.9 (±3.2)	41.2 (±3.1)				
Attempt, < 1 week	40.0 (±6.1)	33.2 (±5.5)	26.8 (±5.5)				
Attempt, 7-29 days	50.7 (±7.2)	33.3 (±6.1)	16.0 (±4.6)				
Attempt, 30+ days	73.9 (±7.1)	21.0 (±6.3)	5.1 (±2.1)				
Use of NRT by daily > 10 cigs/day	27.9 (±10.6)	38.8 (±11.1)	33.3 (±10.8)				
No use of NRT	46.5 (±8.8)	33.3 (±8.3)	20.1 (±6.1)				

One of the CTS questions regarding self-efficacy examined the percentage of smokers who were very sure they could refrain from smoking at least one month. As mentioned in the chapter text, across time, the percentage of smokers who thought they could refrain for at least one month has been highest among non-daily smokers, followed by light, moderate and heavy smokers. In 2008, non-daily, never-daily smokers had the highest percentage of smokers with high efficacy (72.2±5.6%) compared to other heavier smokers. Further demographic details for the survey years 1996-2008 are provided below in **Table A.6.3**.

Table A.6.3 Percentage Of Current Smokers who are Very Sure they Could Refrain from Smoking at Least One Month, 1996-2008						
	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008
Overall	40.8 (±1.4)	41.9 (±2.2)	41.7 (±1.8)	50.8 (±3.2)	54.3 (±2.8)	33.3
Gender						
Male	44.7 (±1.8)	45.4 (±2.9)	45.7 (±2.8)	57.1 (±4.4)	58.7 (±3.2)	31.4
Female	35.6 (±1.9)	37.0 (±3.4)	35.6 (±2.1)	41.1 (±3.9)	46.9 (±5.6)	31.6
Age		, , , ,	, , , , , , , , , , , , , , , , , , ,	· · ·	\$ * *	
18-24	47.1 (±4.4)	45.7 (±4.6)	48.2 (±4.1)	54.5 (±6.2)	63.4 (±6.2)	34.5
25-44	42.3 (±2.1)	43.9 (±2.7)	45.1 (±2.5)	53.2 (±4.0)	59.5 (±5.0)	40.6
45-64	35.3 (±2.4)	38.1 (±3.8)	35.2 (±3.1)	47.7 (±8.3)	47.1 (±3.8)	33.5
65+	36.2 (±5.6)	34.1 (±8.2)	27.6 (±4.7)	41.4 (±7.6)	38.0 (±7.7)	5.2
Race/Ethnicity						
African American	39.2 (±4.5)	45.0 (±5.5)	42.8 (±5.2)	45.9 (±17.2)	56.8 (±9.3)	44.9
Asian/PI	34.4 (±6.4)	41.8 (±7.7)	38.5 (±7.5)	48.8 (±11.9)	42.1 (±8.9)	22.4
Hispanic	50.3 (±3.1)	49.1 (±4.3)	49.5 (±4.3)	61.0 (±9.4)	64.4 (±5.7)	28.1
Non-Hispanic White	38.1 (±1.6)	39.1 (±2.3)	39.1 (±2.1)	46.1 (±2.8)	48.4 (±2.6)	26.9
Other	42.1 (±6.7)	32.4 (±13.6)	35.4 (±6.3)	51.9 (±11.0)	65.2 (±10.5)	54.8
Education						
Less than 12 years	38.8 (±3.3)	36.0 (±4.8)	36.2 (±4.4)	51.8 (±10.5)	57.2 (±10. 2)	47.7
High school graduate	38.7 (±2.4)	40.8 (±3.3)	38.7 (±2.5)	47.3 (±4.6)	51.1 (±4.6)	32.0
Some college	42.2 (±2.2)	44.1 (±2.8)	43.9 (±3.2)	48.9 (±4.7)	53.5 (±3.9)	26.6
College graduate	45.6 (±3.1)	49.4 (±3.3)	51.2 (±4.0)	58.8 (±6.3)	60.7 (±4.8)	33.3
Income			- (-/ 1			
\$20,000 or less	38.0 (±2.7)	36.9 (±4.3)	35.6 (±3.7)	42.7 (±6.4)	44.1 (±4.9)	16.0
\$20.001 to \$30.000	41.3 (±3.7)	39.7 (±4.7)	39.5 (±4.1)	55.0 (±17.5)	54.8 (±10.5)	32.9
\$30.001 to \$50.000	40.9 (±2.6)	42.2 (±4.3)	41.9 (±3.6)	46.6 (±6.9)	53.2 (±6.7)	30.2
\$50.001 to \$75.000	41.7 (±3.7)	41.3 (±3.4)	44.7 (±4.7)	52.4 (±6.3)	58.1 (±6.1)	39.2
\$75,001 to \$100,000	45.8 (±4.0)	49.9 (±3.7)	46.3 (±3.2)	54.8 (±6.1)	53.7 (±7.4)	17.3
\$100,001 to \$150,00		· · · · · ·		· · · · ·	57.8 (±7.4)	
Over \$150,000					56.6 (±7.6)	
Missing	40.4 (±5.0)	45.0 (±6.6)	44.0 (±7.4)	58.2 (±9.1)	60.7 (±11.7)	50.2
Smoking status		· /	· / I		· /	
Non-dailv. never-dailv	67.4 (±5.2)	63.4 (±6.4)	72.2 (±5.6)	72.2 (± 5.6)	72.2 (± 5.6)	7.1
Non-daily, once-daily	64.8 (±4.6)	66.7 (±4.1)	66.0 (± 4.8)	66.0 (±4.8)	66.0 (±4.8	1.9
Daily, 1-10	42.7 (±2.3)	40.4 (±3.2)	39.6 (±2.7)	39.6 (±2.7)	39.6 (±2.7	-7.3
Daily, 11-20	28.6 (±1.8)	28.8 (±2.0)	26.4 (±2.5)	26.4 (±2.5)	26.4 (±2.5	-7.7
Dailv. ≥ 20	22.3 (±3.1)	23.6 (±4.8)	19.9 (±4.7)	19.9 (±4.7)	19.9 (±4.7	-10.8

3. Smokers Who Used NRT in Their Last Quit Attempt

Appendix Table A.6.4 describes the percentage of smokers by demographic subgroup that used any NRT, either alone or in combination with other assistance, in their last quit attempt. As noted in the chapter, those groups with a higher percentage using NRT include females, older age groups, Non-Hispanic Whites, African Americans and those with higher educational attainment.

Table A.6.4 Smokers in the Past Year Who Used NRT in Their Last Quit Attempt, 1996-2008							
	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008 %	
Overall	13.7 (±1.2)	15.1 (±1.4)	18.1 (±1.5)	18.8 (±3.0)	16.8 (±2.7)	22.6	
Gender		- (/	- (- /				
Male	12.2 (±1.3)	13.7 (±1.6)	16.6 (±1.9)	17.4 (±3.7)	14.5 (±3.3)	18.7	
Female	15.8 (±2.0)	17.2 (±2.2)	20.4 (±2.8)	20.9 (±4.4)	21.4 (±3.4)	35.9	
Age	Age						
18-24	3.3 (±1.2)	6.5 (±2.0)	8.2 (±1.8)	6.0 (±3.6)	6.4 (±4.6)	92.5	
25-44	13.8 (±1.7)	15.8 (±2.3)	19.2 (±2.3)	17.5 (±5.2)	16.1 (±4.9)	17.1	
45-64	19.5 (±2.7)	20.5 (±3.1)	23.3 (±4.2)	27.0 (±5.4)	23.5 (±3.6)	20.5	
65+	24.8 (±6.1)	20.5 (±6.4)	23.8 (±7.4)	26.1 (±14.0)	21.9 (±7.5)	-11.9	
Race/Ethnicity							
African American	8.8 (±3.8)	9.7 (±4.1)	17.7 (±6.1)	19.5 (±12.1)	18.4 (±7.7)	109.7	
Asian/PI	11.9 (±6.6)	7.1 (±3.3)	19.4 (±9.0)	5.6 (±4.4)	9.8 (±9.2)	-17.9	
Hispanic	6.0 (±1.9)	7.6 (±2.5)	6.7 (±1.9)	9.7 (±4.4)	9.2 (±4.9)	51.7	
Non-Hispanic White	17.8 (±1.5)	20.4 (±1.9)	23.9 (±2.1)	25.5 (±3.8)	22.5 (±3.7)	26.5	
Other	16.6 (±6.4)	14.4 (±8.8)	22.9 (±8.7)	14.8 (±9.5)	20.4 (±10.3)	22.7	
Education	•						
Less than 12 years	9.4 (±2.5)	10.8 (±2.6)	13.2 (±3.8)	13.3 (±5.6)	10.7 (±5.9)	14.0	
High school graduate	14.4 (±2.1)	15.5 (±2.1)	19.5 (±3.2)	14.6 (±3.0)	14.8 (±3.4)	2.7	
Some college	13.6 (±2.2)	17.1 (±2.7)	21.5 (±2.8)	23.4 (±4.7)	19.2 (±4.0)	41.7	
College graduate	19.0 (±3.4)	17.1 (±2.8)	16.0 (±3.4)	25.2 (±8.8)	23.0 (±6.2)	21.0	
Income	r	1					
\$20,000 or less	11.4 (±2.1)	11.9 (±2.7)	13.9 (±3.8)	15.3 (±4.9)	16.0 (±7.3)	40.0	
\$20,001 to \$30,000	9.3 (±2.3)	15.2 (±4.3)	15.6 (±4.6)	14.0 (±6.1)	10.6 (±5.9)	14.0	
\$30,001 to \$50,000	14.6 (±2.8)	18.1 (±3.5)	19.1 (±4.0)	16.4 (±5.3)	16.7 (±4.9)	13.9	
\$50,001 to \$75,000	16.6 (±3.2)	18.8 (±3.1)	24.2 (±5.3)	19.5 (±7.5)	19.4 (±6.7)	17.3	
\$75,001 to \$100,000	19.7 (±3.8)	14.0 (±2.7)	18.6 (±2.9)	25.4 (±6.9)	20.4 (±6.9)	3.7	
\$100,001 to \$150,00					21.9 (±10.1)		
Over \$150,000					17.7 (±8.3)		
Missing	13.8 (±3.3)	12.5 (±3.8)	16.7 (±5.3)	19.3 (±9.0)	13.0 (±6.1)	-6.2	
Consumption 12 months ago							
Non-daily	4.0 (±1.2)	4.8 (±1.6)	7.8 (±3.1)	7.5 (±3.2)	9.4 (±3.7)	136.3	
Daily (1-10 cigs/day)	9.1 (±1.8)	11.5 (±2.0)	13.1 (±2.8)	16.0 (±6.1)	12.8 (±3.9)	40.7	
Daily (11-20 cigs/day)	19.9 (±2.5)	22.9 (±2.8)	25.3 (±2.9)	25.1 (±5.0)	24.6 (±6.7)	23.6	
Daily (>20 cigs/day)	29.6 (±3.6)	28.6 (±5.5)	39.1 (±6.1)	42.3 (±12.2)	29.7(±9.5)	0.5	

4. Smokers Who May Never Quit

Across surveys, the CTS has collected data on "hard-core smokers", defined as: current smokers, over 25-years-old, with no recent quit attempt and who never expect to quit. As presented in **Table A.6.5**, since 1996, there has not been a statistically significant decline in the percentage of smokers who are hard-core smokers; however, due to the overall decline in population prevalence of smoking, there has been a subsequent decline in the population prevalence of hard-core smokers. Across time, a higher percentage of those aged 65 and over were hard-core smokers compared to younger age groups, and a higher percentage of Non-Hispanic Whites were hard-core smokers compared to other racial/ethnic groups.

Table A.6.5 Percentage Of Smokers defined as "Hard-Core" (Current Smokers > 25 Years Old With No Recent Quit Who Never Expect To Quit Smoking), 1996-2008						
	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008
Overall	10.3 (±1.0)	9.4 (±1.2)	8.1 (±1.1)	7.8 (±1.3)	8.7 (±1.4)	-15.9
Male	11.4 (±1.3)	10.3 (±1.7)	8.2 (±1.6)	7.5 (±1.6)	8.4 (±1.7)	-25.8
Female	8.9 (±1.2)	8.2 (±1.4)	8.0 (±1.6)	8.2 (±2.1)	9.0 (±2.0)	0.6
Age						
26-44	6.3 (±1.0)	5.5 (±1.1)	5.1 (±0.9)	4.4 (±1.5)	5.0 (±1.7)	-21.3
45-64	13.3 (±1.7)	12.9 (±2.3)	9.5 (±2.0)	8.0 (±1.6)	9.7 (±2.3)	-27.3
65+	26.8 (±3.6)	22.3 (±5.4)	24.0 (±6.4)	26.7 (±7.6)	22.5 (±6.1)	-16.0
Race/Ethnicity						
African American	4.7 (±1.8)	3.0 (±2.2)	3.3 (±2.2)	2.2 (±1.9)	2.4 (±1.6)	-48.8
Asian/PI	7.3 (±3.1)	8.6 (±3.4)	7.9 (±4.3)	9.3 (±6.4)	9.3 (±6.7)	26.8
Hispanic	8.0 (±1.7)	7.3 (±2.2)	5.6 (±1.7)	5.2 (±3.0)	6.1 (±2.9)	-23.8
Non-Hispanic White	11.9 (±1.1)	11.2 (±1.4)	9.6 (±1.4)	9.7 (±1.6)	10.8 (±2.3)	-9.7
Other	12.9 (±5.0)	9.4 (±11.9)	11.3 (±6.0)	13.3 (±9.2)	10.1 (±7.8)	-21.5
Education						
Less than 12 years	11.4 (±2.8)	10.0 (±3.2)	10.0 (±3.3)	8.0 (±3.2)	9.2 (±4.9)	-18.9
High school graduate	10.9 (±1.7)	9.2 (±2.0)	9.4 (±1.8)	8.7 (±2.5)	9.9 (±2.6)	-9.5
Some college	8.3 (±1.1)	9.4 (±1.5)	6.7 (±1.3)	8.5 (±2.6)	6.0 (±2.3)	-28.5
College graduate	10.9 (±2.1)	9.2 (±2.1)	5.6 (±1.6)	4.8 (±1.8)	9.3 (±3.7)	-14.5
Income						
\$20,000 or less	11.4 (±2.0)	10.5 (±3.0)	9.1 (±2.5)	7.1 (±2.9)	7.5 (±2.8)	-33.9
\$20,001 to \$30,000	10.4 (±2.3)	9.2 (±2.5)	8.2 (±3.5)	6.9 (±3.0)	11.4 (±6.0)	9.2
\$30,001 to \$50,000	10.1 (±1.8)	10.3 (±2.4)	6.8 (±2.1)	6.1 (±2.4)	7.1 (±3.2)	-30.3
\$50,001 to \$75,000	6.8 (±1.7)	7.9 (±2.2)	6.9 (±2.3)	9.3 (±4.0)	9.6 (±3.7)	40.8
\$75,001 to \$100,000	9.6 (±2.5)	7.4 (±1.8)	7.1 (±2.2)	5.2 (±1.8)	5.4 (±3.5)	-43.6
\$100,001 to \$150,00					10.4 (±5.2)	
Over \$150,000					8.0 (±5.4)	
Missing	137(+40)	115 (+53)	134 (+55)	16 1 (+7 5)	99(+54)	-27 7

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Chapter 7

Price, Taxes, and Purchasing Behavior

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Chapter 7 Price, Taxes, and Purchasing Behavior

KEY FINDINGS

- In California, the pre-tax price of cigarettes according to national reports in 2008 (\$3.42) was comparable to the inflation-adjusted price in 1999 (\$3.41), suggesting a limited influence of price as a tobacco control measure in the near future unless the price is further increased.
- Since 2002 there has been a decreasing trend of reported average price paid per pack among all smokers. In 2008, the average reported price paid per pack of cigarettes was less than in 2002 by 10% among non-daily smokers, 8.5% among light daily smokers, 9.3% among moderate daily smokers and 10% among heavy daily smokers.
- In 2008, the average reported price per pack of cigarettes from all sources (including bulk purchases) paid by Californians ranged from \$2.64 to \$4.37 depending on the place of purchase. The least expensive places to purchase cigarettes were mail/phone order, the internet, and military commissaries. The most expensive places were supermarkets, convenience stores/gas stations, and liquor/drug stores.
- Convenience stores and gas stations remain the most important sales venue, with 50.1 +/- 2.8% of smokers purchasing cigarettes in such stores, followed by liquor/drug stores (19.0±1.8%) and tobacco discount stores (16.5±2.0%).
- Since 2002, there has been a trend of declining cigarette purchases over the internet or from out of state (from 1.3% to 0.7%) and an increasing trend of cigarette purchases at Indian reservations (from 0.2% to 0.9%). Although this may resemble a shifting purchasing trend, the overall percentage for these purchases remains very low.
- In 2008, more than three-quarters of adults (77.8%) supported an additional tax on cigarette packs and nearly half of them supported an increase of \$1 or more per pack. Approximately half of never smokers (54.1%) and former smokers (49.5%) supported an increase of \$1 or more per pack.
- While more than half of adults surveyed in California believe that laws banning cigarette sales to minors are not adequately enforced, there has been a 22.1% decrease in this belief, from 70.2±1.2% in 1996, to 57.5±2.1% in 2008.
- In 2008, 58.5±10.3% of young adults (18-21 years) were asked for their identification the last time they wanted to buy cigarettes, which was comparable to reports in 2005 (57.8±8.4%) and in 2002 (54.7±5.0%).
Price, Taxes, and Purchasing Behavior

Introduction

Economists and other researchers have clearly demonstrated a relationship between the price of cigarettes and smoking behaviors, based on the price elasticity of demand (Chaloupka et al., 2002; Chaloupka & Warner, 2000) whereby price and product consumption are inversely related. Tobacco excise taxes are part of a population-based public health strategy to reduce smoking prevalence by increasing the price of cigarettes. Increased excise taxes have been associated with a decrease in smoking behaviors and recovery of health care costs associated with these behaviors.

The two most notable excise taxes in California were implemented under Proposition (Prop) 99 and Prop 10. The enactment of Prop 99 in 1989 resulted in a \$0.25 per pack cigarette tax and the enactment of Prop 10 in 1999 resulted in a \$0.50 per pack cigarette tax (Sung et al., 2005). The most notable tobacco industry wholesale price increase was \$0.45 per pack which was implemented after the Master Settlement Agreement (MSA) (Sung et al., 2005).

Numerous studies have estimated the price elasticity of demand for cigarettes in California. Data reviewed from 1980 to 1990 in California found price elasticity estimates ranging from -0.3 to -0.6 (Keeler et al., 1993) (i.e., with a 10% increase in price there is a 3-6% decline in sales). The price elasticity associated with the tobacco tax was estimated at -0.3 during 1989 and 1992 which was immediately following the implementation of Prop 99 (Keeler et al., 1993; Hu et al., 1995).

Purchasing behavior is another indicator of behavior that reflects social norm, prices, and the effectiveness of tobacco industry advertisement and tobacco control efforts. A recently published study demonstrated that the average inflation-adjusted price of cigarettes does affect smoking behavior across adult age groups with the highest price elasticity among the youngest group of adults (18-29 years of age) in the U.S. (Franz, 2008). This study suggests that positive effects from average inflation-adjusted price increases on cigarettes can be realized across all adult age groups (Franz, 2008).

A closely linked factor to price of cigarettes and purchasing behavior is tax evasion. Tax evasion can include purchasing cigarettes from non-taxed sources (e.g., Indian reservations) and smuggling. Some public health and official entities argue against raising prices of cigarettes to prevent a black market based on smuggled, cheaper, cigarettes from out of state or illegal sources. According to the California Board of Equalization, in fiscal year 2007-08 the Investigations Division identified cigarette and tobacco products tax evasion of over \$21 million (California Board of Equalization, 2008). The \$21 million accounts for only a small proportion of \$1.04 billion total tax revenue from tobacco products (California Board of Equalization, 2008).

In this chapter, we present the trend for cigarette prices over time adjusted to inflation. This will be directly relevant to any planned increases in taxes on cigarettes and how this may be perceived by the population. We also explore purchasing behavior to detect any shifts in such

behavior that might reflect price differences and smuggling. Finally, self-reports of enforcement and perceived enforcement when purchasing cigarettes are explored.

1. Price Trends and Price Elasticity of Demand

In order to determine the average pre-tax price of a pack of cigarettes in California, data was gathered from *The Tax Burden on Tobacco* for the period 1970-2008 (Orzechowski & Walker, 2009). As the nominal (reported) price does not represent the true price due to inflation, we provided the real inflation-adjusted price along with the nominal (reported) price for comparison. We calculated the inflation-adjusted price by subtracting the appropriate state and Federal taxes from the average reported price and dividing by the Consumer Price Index (CPI) for the relevant year.

Figure 7.1 shows the average pre-tax price per pack of cigarettes in California from 1970-2008 in both reported and inflation-adjusted to 2008 dollars. From 1970 to 1992 the reported (nominal) price of cigarettes increased more than 450% while the real (inflation-adjusted) price of cigarettes had a modest increase of approximately 57%. After the price peak in 1992, both reported and inflation-adjusted prices reached a plateau until the price increase in 1999. It is possible that from 1993-98 the average pre-tax price per pack of cigarettes was not increased to generate more sales. The most notable increase in price was from 1998 to 1999 when the MSA was implemented. During this time, both the reported price of cigarettes (40%) and the inflation-adjusted price (37.4%) had similar price increases. The increase in price by the tobacco industry may have been used to fund some of the costs incurred by the MSA (Sung et al., 2005).



Figure 7.1: Average Pre-tax Price/Pack of Cigarettes in California, 1970-2008.

The inflation-adjusted price of cigarettes peaked in 2002 at \$3.84 after which time a deflation in price was observed. This trend may be explained by increases in tobacco industry advertising and promotional expenses (U.S. Federal Trade Commission, 2003; U.S. Federal Trade

Commission, 2009). The inflation-adjusted price of cigarettes in 2008 (\$3.42) was similar to the price in 1999 (\$3.41) following the implementation of Prop 10 and the MSA. The relatively stable inflation-adjusted price of cigarettes may be attributable to price-subsidizing efforts by the tobacco industry to stabilize prices (Chaloupka et al., 2002; Pierce et al., 2005; Emery et al., 2002). This suggests a limited influence of price as a tobacco control measure in California in the near future unless the price is further increased. Stable cigarette prices may result in a plateau in cigarette consumption. Increasing tobacco excise taxes is the way the state can increase the price of cigarettes. California recently earned a "D" grade on the American Lung Association's "State of Tobacco Control 2009" report card for the current \$0.87 cigarette tax (American Lung Association, 2010). According to the report, California ranks 32nd in the nation for tobacco taxes and is one of four states that has not raised its tobacco tax in more than a decade.

2. Cigarette Prices and Purchasing Behaviors

In this section, data from smokers' reports of what they pay for cigarettes and where and how they purchase is reviewed. **Figure 7.2** shows the average reported price per pack (in 2008 dollars) by type of smoker and consumption. During the implementation of Prop 10 and the MSA, from 1996 to 1999, the average reported price of cigarettes increased 44.8% among non-daily, 59.3% among light daily, 64% among moderate daily and 69.6% among heavy daily smokers. However since 2002 there has been a decreasing trend of average price per pack among all smokers. In 2008, the average reported price per pack of cigarettes was lower by 10% to 8.5% among the different smoking categories compared to 2002. Lighter smokers consistently report paying higher average prices per pack of cigarettes across all survey years.



Figure 7.2: Average Reported Price per Pack in 2008 Dollars by Level of Cigarette Consumption.

		Cost per Pack, 2008\$								
	Non-Daily Daily 1-14 Daily 15-24 Daily 25+									
1996	2.93	2.72	2.51	2.32						
1999	4.42	4.34	4.09	3.86						
2002	5.03	4.68	4.33	4.01						
2005	4.60	4.35	4.09	3.63						
2008	4.48	4.25	3.91	3.63						

For example, in 2008 non-daily smokers paid \$0.20 more than daily smokers consuming 1-14 cigarettes/day, \$0.60 more than smokers consuming 15-24 cigarettes per day, and \$0.90 more than smokers consuming 25 or more cigarettes per day. Differential prices reported between consumption levels may be associated with the usual place of purchasing cigarettes.

As seen below in **Figure 7.3**, the average per pack price of cigarettes in 2008 ranged from \$2.64 to \$4.37, depending on place of purchase. The least expensive places to purchase cigarettes were through bulk mail/phone order, the internet, and military commissaries. These sources do not charge state tobacco taxes (Emery et al., 2002). The most expensive places were supermarkets, convenience stores/gas stations and liquor/drug stores, which typically include state cigarette taxes in their prices.



Figure 7.3: Average Reported Price per Pack by Usual Place of Purchase in 2008.

Published data demonstrate that differential prices reported between smokers are associated with purchasing behaviors (White et al., 2005). Moderate-to-heavy daily smokers (15+ cigarettes per day) are 3.16 (2.40–4.15) and 6.37 (5.01–8.09) times more likely to purchase cigarettes from a cheaper retail outlet or use promotional offers when seen than are light daily (1-14 cigarettes per day) and non-daily smokers respectively (White et al., 2005). Moderate-to-heavy daily smokers are also 2.83 (1.93–4.14) and 6.82 (4.50–10.35) times more likely to purchase cigarettes by the carton or from low-tax or non-taxed sources than light daily and non-daily smokers respectively (White et al., 2005).

As seen below in **Figure 7.4**, there have been several changes in places where smokers purchase their cigarettes in 2008 compared to 2005. There has been a 4.7% decrease for convenience stores/gas stations, and a 2.3% decrease for non-taxed sources. Increases in purchases were observed in supermarkets by 4.2%, liquor/drug stores by 9.2% and tobacco discount stores by 14.6%. These changes may be related to differential changes in price per pack.



Figure 7.4: Where Smokers Buy Their Cigarettes, 1999-2008.

	Convenience Store/ Gas Stations	Supermarket	Liquor or Drug Store	Tobacco Discount Store	Other Discount Stores	Non- Taxed Sources	Other Sources
1999	45.1	8.9	16.8	14.6	5.7	5.4	3.6
2002	48.3	5.5	16.2	15.6	5.1	6.3	3.0
2005	52.5	4.8	17.4	14.4	3.7	4.4	2.7
2008	50.1	5.0	19.0	16.5	3.7	4.4	1.3

3. Tax Avoidance, Tax Evasion, and Support for a Tax Increase

There is a general concern that increased cigarette prices may result in an increase in cigarette tax evasion behaviors. In 2004, 37% of New York smokers reported purchasing cigarettes from low-tax or untaxed sources (e.g., Indian reservations, out-of-state sources, Internet, toll-free numbers and duty-free shops) "all the time" or "sometimes" (Davis et al., 2006). In 2005, 4.4±1.0% of smokers in California reported usually purchasing cigarettes from non-taxed sources. Although the question asked in the New York survey is not identical to the question asked in the California Tobacco Survey the magnitude of difference between the populations cannot be explained by the difference in question alone. It appears that smokers in New York evade tax much more often than smokers in California. Greater tax evasion in New York may be attributed to the availability and accessibility of non-taxed cigarettes compared to the limited availability and accessibility of non-taxed cigarettes in California. Another probable explanation is the much higher per pack price of cigarettes in New York as a result of a \$2.75 excise tax, which is one of the highest cigarette excise taxes in the country compared to the low excise cigarette tax in California of only \$0.87 (American Lung Association, 2010).

In 2008, cigarette purchases from non-taxed sources in California remained relatively stable at $4.4\pm0.9\%$ (**Figure 7.4**). Since the majority of smokers purchase their cigarettes from supermarkets, convenience stores/gas stations and liquor/drug stores, tax evasion does not presently appear to pose a major threat to tax revenues in California (Emery et al., 2002).

The 4.4% is a decrease of 18.2% compared to the 5.4% reported in 1999 before the implementation of Prop 10 and the MSA. Therefore, smokers in California are not increasing their tax avoidance behaviors when buying cigarettes. Decreases in tax avoidance behaviors may be related to tobacco industry efforts to decrease prices through price-subsidizing promotions (Chaloupka et al., 2002; Pierce et al., 2005; Emery et al., 2002). Since 2002, there has been a declining trend of cigarette purchases on the internet and out of state and an increasing trend of cigarette purchases at Indian reservations. However, less than 1% of the smokers in California purchase from sources that avoid state excise taxes.



Figure 7.5: Percentage of California Smokers Avoiding Excise Taxes, 1999-2008.

4. Support of Tobacco Excise Tax

California adults, regardless of smoking status, were asked:

How much additional tax on a pack of cigarettes would you be willing to support if all the money raised was used to fund programs aimed at preventing smoking among children, and other health care programs? (H2a)

As seen in **Figure 7.6**, only 22.2% did not support additional tax; close to three-quarters of adults (73.1%) supported an additional tax on cigarette packs (including 49.0% who supported a tax increase \$1 or more per pack of cigarettes).



Figure 7.6: Support for an Additional Tax on a Pack of Cigarettes, 2008.

Support for an additional tax on a pack of cigarettes differs by smoking status. As seen in **Figure 7.7**, 77.5% of never smokers and 71.1% of former smokers supported an increase of tax, while 55.1% (which is still a majority) of current smokers supported a tax increase.

Figure 7.7: Support for an Additional Tax on a Pack of Cigarettes, by Smoking Status, 2008.



5. Youth and Young Adult Cigarette Purchases

Population-based strategies to prevent youth smoking and decrease prevalence include the enactment of laws to reduce youth access to tobacco such as the Synar Amendment (Federal Public Law 102-321). The Synar Amendment restricts the sale of tobacco to persons aged 18 or older and mandates enforcement through random inspections (Forster et al., 1998). As seen in **Figure 7.8**, beliefs about enforcement of youth access laws have been relatively stable for almost a decade. Since 1999, more than half of adults surveyed in California believed that enforcement of youth access laws was inadequate. In 2008, 57.5±2.1% of California adults believed that laws banning the sales of tobacco to minors were not adequately enforced. This trend is an improvement compared to the higher percentage (more than 70%) of the population who believed banning sales of tobacco to minors was not adequately enforced prior to 1999. Perceptions about inadequate enforcement may be related public support for the increasing number of tobacco retailer license ordinances (California Department of Public Health, 2009).



Figure 7.8: Adults who Believe Laws Banning Sales of Tobacco to Minors Have not been Adequately Enforced, 1990-2008.

Enforcement of youth access laws should result in checking the identification of young adults (18-29 years old). As seen in **Figure 7.9**, the youngest group of young adults (18-21 years old) more frequently report being asked for identification the last time they wanted to buy cigarettes. However, in 2008, 41.5% of young adults aged 18-21 were not asked for their identification. This result is similar to the previous surveys. These reports of lack of enforcement among this younger age group are concerning because their age, and therefore their appearance, is close to the age of minors below 18 years who are not allowed to purchase cigarettes and therefore should be asked about their IDs. This also supports the perception of the population that enforcement of laws banning sales of tobacco to minors is inadequate (**Figure 7.8**).



Figure 7.9: Young Adult Ever Smokers Who Were Asked for ID the Last Time They Wanted to Buy Cigarettes.

2008 2002 2005 Aae 18-21 54.7 57.8 58.5 47.3 22-25 50.1 48.2 43.3 26-29 31.3 26.6

Summary

There appears to have been no substantial changes in the behavior related to cigarette purchasing or the prices consumers pay for cigarettes in recent years. The price of cigarettes in California, as measured by inflation-adjusted price, has been on the decline. This is counterproductive in terms of tobacco control purposes as price has been well documented to be inversely related to prevalence and consumption (Levy et al., 2005 Sung et al., 2005; Sheu et al., 2004). Furthermore, based on the responses of survey participants, a large majority, including among smokers, support an increase in the cigarette excise tax. As shown in Chapter 1, the relative magnitude of tobacco industry advertising and promotional expenditures is much larger than the tobacco control budget in California and revenues from a cigarette excise tax can help fill in some of the gap.

Minor changes occurred in 2008 in the places where smokers purchase cigarettes compared to 2005. Consumer tax evasion and avoidance continue to be a minor concern, since only a small fraction of smokers in California pursue such purchases compared to a much higher percentage of smokers who do that in states such as New York. This may be explained by the effort needed to purchase cigarettes from these lower cost sources in California compared to New York. Convenience stores, gas stations and liquor or drug stores continue to be the major places where smokers buy their cigarettes even though these offer cigarettes at higher prices compared to other places.

The perception about enforcement of banning sales to minors does not seem to be making any substantial progress in the last nine years. Approximately 50% of the population do not believe such laws are adequately enforced and a comparable percentage of the youngest adults, who are likely to resemble minors under the age of 18 years, report not being asked for an ID.

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Protection of Nonsmokers from Secondhand Smoke

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Protection of Nonsmokers from Secondhand Smoke

KEY FINDINGS

- Despite a 14-year ban on smoking in workplaces, there are still reports of workers in places with no smoke-free policy. Those who report workplaces with no smoke-free policy are more likely to be men, current smokers, Hispanics, less educated, or to be within the lowest income category.
- Between 1996 and 2008, there has been no appreciable change in reported exposure to secondhand smoke Secondhand Smoke (SHS) in the workplace; the percentage of workers who reported exposure ranged between 11.8% and 15.3% during this period. Those reporting work exposure to SHS were more likely to be males, nonsmokers, Hispanics, work in small businesses, warehouses, or stores. Individuals working in bars and restaurants were also more likely to report being exposed to secondhand smoke at work.
- The proportion of adults living in homes with total home bans is still gradually increasing: 80.8% in 2008 in the general population and 59.3% among smokers. For those living with a child younger than 6 years, 88.6% reported a total home ban when all household members were nonsmokers, and 76.7% reported a total home smoking ban when there was at least one smoker in the household. In addition, being male, having no college education, and low income were associated with a lack of a home smoking ban.
- Most secondhand smoke exposure outside of the work and home environments occurred in parks and public outdoor places (49.4% of adults reporting exposure), followed by restaurants (11.4%) and shopping malls (5.9%).
- The perception that secondhand smoke has adverse health effects seems to have reached a saturation level with no change since 2002 in the percentage of individuals who perceive secondhand smoke as a cause of cancer. In 2008, 67.2% of daily smokers, 80.2% of non-daily smokers, and 85.8% of nonsmokers perceived secondhand smoke as a cause of cancer. There has been no change in the belief that secondhand smoke harms the health of children; since 1996 88-94% of smokers and nonsmokers consistently agreed to such a statement.
- There has been a continuous increase in the proportion of smokers who support banning smoking in outdoor restaurant dining areas. In 2008, 54.3±3.3% of smokers supported banning smoking outside the entrance of buildings compared to only 44.5±1.7% in 2002; and 44.3±2.5% supported banning smoking in restaurant outdoor patios in 2008 compared to 36.8±1.9% in 2002.
- A clear majority (66.5%) of Californians support banning smoking in casinos. Only 5.9% of the population who visited a casino in the last year stated they would be less likely to visit a casino if there were a ban on smoking in comparison to the 34% of the population who said they would be more likely to visit a casino if there were a ban on smoking, and 60% said it made no difference to them.

Protection of Nonsmokers from Secondhand Smoke

Introduction

When it was established, the California Tobacco Control Program (CTCP) made the protection of nonsmokers from secondhand smoke a major goal of the program (Roeseler et al., 2010). This was a distinct feature of the program that separated it from tobacco control programs in other states. The social norm change among the California population was driven, among other aspects, by the focus on protection of nonsmokers. After 20 years of the program, this strategy has clearly produced the desired results and in California, smoking is becoming a socially unacceptable behavior. Smoking is being banned from beaches and parks, college and university campuses, and being targeted for bans in multi-unit housing complexes.

Social norms against tobacco in California were present before the CTCP, as reflected in local ordinances to ban smoking in public places. Moreover, the landmark legislative act to ban smoking in all working and public places in California, the first anywhere in the world, in the mid 1990s had a direct measurable influence on behavior among the population. As smokers were restricted from smoking at work, it became more acceptable to ban smoking at home including the homes of smokers. Smokers began to find it more difficult to smoke at work and home, and were inconvenienced by having to go out and find a spot to smoke their cigarettes. These changes in the social norms are believed to be associated with a decrease in cigarette consumption and an increase in quitting within California (AI-Delaimy et al., 2007; Messer et al., 2008; Tang et al., 2010).

Recent data suggest that many states have high reports of home smoking bans. In the recent Morbidity and Mortality Weekly Reports (MMWR) report from CDC, 11 states reported a range of home smoking bans between 68%-85%according to the 2008 Behavioral Risk Factor Surveillance System (BRFSS) surveys (CDC 2009). This was further supported by the objective data of serum cotinine collected from the National Health and Nutrition Examination Survey(NHANES), where the percentage of nonsmokers aged >4 years with detectable serum cotinine (>0.05 ng/mL) declined from 83.9% in 1988–1994 to 46.4% in 1999–2004 (CDC 2008). Despite this progress, only 21 out of the 50 states have laws that completely ban smoking in the work place and indoor public places (CDC 2008). Data from the Tobacco Use Supplement to the Current Population Survey (TUS-CPS) showed that public support for smoking bans increased from 54% (1995-96) to 68.5% (2001-02) (Osypuk and Acevedo-Garcia, 2009).

Despite the role of California in initiating the nation-wide progress in smoke-free policies and protection of the population from SHS in many states, according to a recent CDC report, California now ranks poorly in terms of 100% smoke-free laws (CDC 2010). California was ranked with the group with incomplete smoke-free coverage along with the tobacco-producing states. This is due to the definition used in the report to define State smoke-free policy as a statute that prohibits smoking in workplaces, restaurants, and/or bars. If a state statute allows exemptions for designated or ventilated smoking areas in workplaces, restaurants or bars, the state was not considered smoke-free in the report. In California, lack of enforcement and

exemptions for places like hotel lobby areas and rooms, work break rooms, small businesses with less than five employees and owner-operated businesses qualified it as an incomplete smoke-free state.

In this chapter, we characterize the consistent progress in protection of nonsmokers from SHS in California by assessing the trends in smoking bans and exposure to SHS at work, home, and public places. We attempt to focus on the beliefs and behavior of smokers in relation to SHS because they are the important segment of the population determining the exposure of nonsmokers to SHS. Exposure to SHS remains a problem in casinos, outdoor restaurant patios, and public places as well as some workplace related exposure. The support for banning smoking in public places as well as casinos is assessed to help understand the level of support for further policy to restrict smoking in the remaining places of exposure to SHS.

1. Smoking Restrictions in the Workplace

In the 2008 California Tobacco Survey (CTS) the following questions were asked about exposure to SHS in the workplace:

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

Temporal trends in indoor workplace SHS exposure are summarized in **Figure 8.1**. Workplace smoking bans were not the norm prior to the 1996 survey, but little change has been observed since the state-wide banning of smoking in the workplace after 1994. In 2008, 95.2±1.7% of smokers and 96.6±1.3% of nonsmokers report having a completely smoke-free workplace. From the figure, it is clear the two-fold increase in reporting smoke free workplaces coincides with the implementation of the California Smokefree Workplace Act banning smoking in the workplace. Appendix Table A.8.1 shows the detailed demographics on the report of smoke-free workplaces from 1990 through 2008. Similarly, in **Figure 8.2**, the percentage of indoor nonsmoking workers who report being exposed to SHS has been in the range of 11-15% since 1996, compared to 22.4% in 1993. The decline in reported exposure between 1990 and 2008 was 53%. Despite approximately only 5% not reporting a smoke-free work place in 2008, 13.5% reported exposure to SHS at work in 2008; this indicates that there is likely poor enforcement or lack of implementation of the work ban policy for about 8% of those that reported exposure to SHS.

Those who report workplaces with no smoke-free policy are more likely to be males, current smokers, Hispanics, less educated, and to be within the lowest income category. This could also be due to exposure to SHS near the building entrances or lunch areas where smoking is allowed. Even though a small percentage report being exposed, an indicator of concern is the plateau in the trend for reported workplace exposure after the ban was implemented in 1994 (**Figure 8.2**). The characteristics of the population reporting exposure to SHS at work are presented in the Appendix Table A.8.2.

We wanted to explore the characteristics of the workers who do not have a complete smoking ban at work. The workers who report not having a complete work ban on smoking were more likely to be men, current smokers, Hispanics, less educated, and to be within the lowest income, when compared to workers who report having complete work bans (Appendix Table A.8.3). Regarding types and places of work; working in sales, labor work, a warehouse or store, a plant or factory, or small workplaces with less than five workers were all associated with SHS exposure in the workplace. This suggests a targeted approach will be required to address the disparity in workplace SHS exposure. These same characteristics apply to reports of being exposed to SHS at work in the last two weeks (Appendix Table A.8.4).



Figure 8.1: Indoor Workers Who Report Having a Completely Smoke-free Workplace, 1990-2008.

Figure 8.2: Exposure of Indoor Workers to Secondhand Smoke, 1990-2008.



Respondents were asked about the source of secondhand smoke exposure at work in the last two weeks. Regardless of the workplace being smoke-free or not, most reported exposure from other employees smoking (85-89%) (Appendix Table A.8.5).

2. Smoking Restrictions in the Home

To assess smoking bans in homes, the 2008 CTS included the following question:

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

The percentage of adults living in homes with total home bans is still gradually increasing, to 80.8% in 2008 in the general population and 59.3% among smokers. Since 1992, the above question has been asked of smokers and nonsmokers. There has been a consistent increase in the percentage of smoke-free homes in California, and in 2008, 80.8± 1.4% of all Californians had total smoke-free home bans (Appendix A.8.6). Young adults 18-24 years have been consistently the least likely to live in homes with a total home ban (69.1±2.2%) compared to the other age groups.

Appendix Table A.8.7 presents characteristics for those with a complete home smoking ban and those without a complete home ban in 2008. More male respondents reported living in homes without a total ban than in homes with complete home smoking bans. In the homes without a complete ban, the majority (58±4.0%) of the

households reporting it were men, while only 47.4±1.0% of household respondents with complete bans were men. Having a smoker in the home, not having children in the home, and being a Hispanic with some college education were factors associated with not having a total ban in the home. We further investigated why Hispanics with some college education were less likely to have a home smoking ban than Hispanics without college education; we found that the college educated Hispanics were more likely to be acculturated and speak English rather than Spanish at home, and less likely to have children living at home. Low income respondents were more often living in homes with less than complete bans (Appendix Table A.8.7). The above difference did not reach statistical significance.

In 2008, $59.3\pm2.6\%$ of smokers in California lived in homes with a total home smoking ban compared to 19.4 ± 1.6 in 1992 (**Figure 8.3**). This represents a substantial three-fold increase in the percentage of smokers who live in homes with a total home ban in California over a 15 year period. Similarly, there was a decline in the percentage of smokers living in homes with no restriction on smoking during that same period from 54.2 to 21.8%. There has been no substantial change in the percentage of smokers living in homes with partial smoking bans. Appendix Table A.8.8 details the characteristics of smokers who had home bans on smoking. In 1996, the percentage of smokers with a total home ban was significantly higher for males than females ($41.7\pm1.8\%$ in males vs. $28.3\pm2.1\%$ in females). In 2008, the percentages were similar by gender ($60.2\pm4.1\%$ for males vs. $57.8\pm4.3\%$ for females). Looking at different age groups, total home bans were more common among younger smokers compared to older smokers ($66.6\pm7.3\%$ in 18-24 year-olds vs. $34.1\pm5.9\%$ in 65+ years). The largest increase over time was seen in the 45-64 year-old age group, which increased by 102.7% from $25.9\pm2.4\%$ in 1996 to $52.6\pm3.9\%$ in 2008. Notably, in 2008, the percentage of smokers with a total home bans was lower in African Americans ($46.6\pm9.2\%$) compared to other racial/ethnic groups; however, this was a four-fold increase for African Americans from $9.3\pm3.9\%$ in 1992 and two-fold increase from $23.0\pm4.4\%$ in 1996.



Figure 8.3: Trends in Reported Home Smoking Policy among Smokers, 1992-2008.

	1992	1993	1996	1999	2002	2005	2008
Smoke-free	19.4	19.8	35.9	46.8	51.9	57.7	59.3
Some restrictions	26.4	25.6	26.5	22.8	24.4	20.6	18.9
No restrictions	54.2	54.6	37.6	30.4	23.7	21.7	21.8

Figure 8.4 shows that household bans in homes with young children (0-5 years) and with at least one adult smoker have increased from 43.2±4.5% in 1993 to 80.1±10.7% in 2008. It is also apparent that having more smokers in the household is associated with a lower likelihood of having a home ban despite having young children, while not having any smokers was associated with having a smoking ban in the home. However, the difference between these groups was not statistically significant, which suggests future focus on policies against smoking if there were children in the home.

For households with children, the reported home bans were categorized based on the age of the youngest child (i.e., 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 (Appendix A.8.9). The wide confidence intervals limit interpretation of the results.



Figure 8.4: Home Smoking Bans in Homes with a Child < 6 Years with No Smokers, at Least One Smoker, or All Adults Smoking in Household.

	1993	1996	1999	2002	2005	2008
All adults smoke	18.0	40.3	56.1	64.6	57.8	76.7
At least 1 smoker	43.2	64.7	74.7	75.7	79.6	80.1
No smokers	71.6	79.6	88.4	88.1	89.3	88.6

3. Support for Restrictions on Smoking

Since 2002, participants were asked about their support for restrictions on smoking:

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?

This question is a direct indicator of the social norm of the population regarding SHS. There is consistently increasing support by the general California population for banning smoke in public places (Figure 8.5A). Close to three-quarters of the population support banning it near entrances to buildings and outside restaurant patios, and close to two-thirds of the population support banning it in casinos and outdoor public places. We then limit the analyses in Figure 8.5B to the responses from smokers, to show the support even among smokers for smoking bans in venues where smoking is currently permitted. Smokers showed a high level of support for a smoking ban in cars when children are present ($89.9 \pm 1.5\%$ in 2008). There is also a consistent increase between 2002 and 2008 in support among smokers for banning smoking in public places, restaurant outdoor patios, and outside building entrances. As expected, the

support among smokers is lower than the general population, but they constitute only a small percentage of the population. For the general population, the level of support is almost two to one in favor of a ban on smoking in casinos ($66.5\pm2.0\%$) and in outdoor public places ($60.4\pm2.0\%$). Support was also high in the general population for a ban on smoking in outdoor restaurant patios ($75.0\pm1.5\%$), and outside entrances to buildings ($72.1\pm1.5\%$). As shown in the Appendix, groups such as women, Hispanics, those with less education and low income individuals were more likely to be exposed and were more likely to support a ban on smoking in cars when children are in them, a law to ban smoking in cars when children are in them that was passed after the 2005 survey did not substantially influence the level of support from the 2008 survey.



Figure 8.5A: Support among the general population for Smoking Bans in Venues Where Smoking Usually Takes Place.

Figure 8.5B: Support among Smokers for Smoking Bans in Venues Where Smoking Usually Takes Place.



4. Other Secondhand Smoke Exposure

While California workers have enjoyed a decline 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:

<u>In California</u>, 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:

Most secondhand smoke exposure outside of the work occurred in parks and public outdoor places (49%). The last time this happened, <u>in California</u>, where were you? **(F16b)**

As shown in **Figure 8.6**, there are no major changes in where nonsmokers report SHS exposure between 1999 and 2008, minor shifts in SHS exposure at bars and homes, which showed a consistent decline in reported exposure, and minor shifts in SHS exposure in parks/outdoors places, which showed a consistent

increase in reported exposure to SHS. Nearly half (49.4±2.8%) of Californians reported parks and outdoor places as the most frequent place of exposure to SHS, and reported restaurants as the second most frequent place of exposure (11.4±1.8%).





				r			r	-			
	Restaurant	Restaurant	Bars/	Park/	Shopping Mall	Community/	Gambling	Other Person's	Other Person's	Other	Exposed
		Bar	Taverns	Outdoors		Sports Event	Venue	Home	Car		in Home
1999	12.0	1.9	7.2	28.2	3.8	4.9	2.9	11.1	3.3	14.4	10.4
2002	12.1	2.0	6.0	36.6	7.1	3.7	4.3	9.1	2.5	7.5	9.1
2005	14.6	1.4	3.7	39.5	6.6	2.4	8.2	6.2	2.1	8.0	7.2
2008	11.4	2.1	2.0	49.4	5.9	2.4	5.4	6.7	2.5	6.4	5.8

The increase in reported exposure in public/outdoor places may reflect better control of exposure to SHS in all indoor places, leaving outdoor places as the main source of exposure. In Appendix A.8.11, we report the percentage of Californians who are not exposed to SHS from any source (that is, the percentage not exposed at work, at other places, or in the home where a ban on smoking is in place and no smokers reside). Only $33.6\pm2.4\%$ of Californians are not exposed to SHS, which has not changed since 1999. Young adults 18-24 years are least protected from SHS exposure (19.9±1.9%) compared to those aged 25-44 years (32.4±4.5), 45-64 years (33.5±4.3) and 65 or more years (41.7±4.7) who were much more protected against SHS and more likely to report no SHS exposure.

5. Beliefs of Smokers about Harm from Secondhand Smoke

More than 1/3 of smokers still do not believe their smoking can lead to cancer in nonsmokers. To assess the knowledge of Californians about risks associated with secondhand smoke, we asked respondents 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 appreciable change in recent years in the percentage of Californians who believe secondhand smoke causes cancer to nonsmokers (Figure 8.7) or harms the health of children (Figure 8.8). However, regardless of their smoking status, consistently more people believe that SHS harms the health of children than believe that SHS causes cancer in nonsmokers. There was little difference by smoking status in the belief that SHS harms the health of children, but for the belief that SHS causes cancer among nonsmokers, daily smokers were less likely to agree compared to nonsmokers. Only 67.2±2.5% of daily smokers in 2008 believed SHS causes cancer in nonsmokers, which means 1/3 of smokers do not believe their smoking can lead to cancer in nonsmokers. This percentage has not changed since 2002. In 1992, a slightly lower percentage of 60% of smokers agreed with the belief that SHS causes cancer. In 2008 a higher (88.7%) percentage of daily smokers believed SHS can harm the health of children. Non-daily smokers' beliefs were similar to those of nonsmokers regarding harm to children's health, but compared to nonsmokers, non-daily smokers were less likely to believe SHS causes cancer in nonsmokers. One third of regular smokers do not believe that SHS causes cancer in nonsmokers despite the 1993 Environmental Protection Agency report classifying SHS as a type A carcinogen (US DHHS NIH NCI 1993), which is cause for concern.



Figure 8.7: Smokers Who Believe Secondhand Smoke Can Cause Cancer in Nonsmokers, 1992-2008.

	1992	1996	1999	2002	2005	2008
Daily smoker	60.0	62.6	64.8	68.0	67.0	67.2
Non-daily smoker	73.8	79.6	78.9	82.5	85.4	80.2
Non-Smoker	83.2	85.7	86.5	85.8	87.6	85.8

Figure 8.8: Smokers Who Believe Secondhand Smoke Can Harm the Health of Children and Babies, 1992-2008.



	1992	1996	1999	2002	2005	2008
Daily smoker	84.4	85.7	88.5	90.1	88.8	88.6
Non-daily smoker	89.3	93.8	94.1	92.9	94.0	94.1
Non-smoker	94.4	94.4	94.9	95.1	95.8	94.7

Casinos

In 2008, participants were asked 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)**

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

A clear majority (66.5%) of Californians support banning smoking in casinos. casinos in California with slot machines are located on Indian reservations. These businesses are not under the legal jurisdiction of the State of California. The workers, as well as patrons, are being exposed to high level of SHS in these places. The main claim against implementing a smoke ban is that it will negatively influence these casino businesses. We therefore investigated the level of support for banning smoking in casinos.

A clear majority (66.5%) of all Californians support banning smoking in casinos (Appendix A.8.10.). A large majority of the population said a smoking ban in casinos would not affect their likelihood of visiting a casino. Among those who have visited a casino in the last 12 months, only a small proportion (5.9%) of persons would be less likely to visit a casino if smoking were banned. Persons who regularly visit casinos (who have visited a casino in the last year) are more relevant from the perspective of casino operators, and are summarized in **Figure 8.9**. A much larger 34% said they would be *more likely* to visit a casino if it were smoke-free; 60 percent said it would make no difference. Smokers were disproportionally more likely to say they were less likely to go to casinos if they were smoke-free, but constitute only 18% of the population of casino visitors in the last 12 months (**Figure 8.9**). These data suggest that casinos would experience a net benefit financially in terms of an increased likelihood of returning customers if a smoking ban were implemented.

Figure 8.9: Likelihood of Going to a Casino if Smoking Ban Enacted Among Those Who Visited a Casino in Last 12 Months.



	More likely	No difference	Less likely	Missing
Current smoker	1.2	12.3	3.9	0.1
Former smoker	10.2	17.8	0.6	0.1
Never smoker	22.6	29.5	1.4	0.3

Summary

In summary, this chapter focused on nonsmokers' exposure to secondhand smoke according to measures of reported exposure, attitudes about SHS and policy support on clean air laws among smokers and nonsmokers. Unlike previous reports, we focused on presenting figures for smokers, when applicable, because that group is the source of SHS exposure for nonsmokers.

We showed a consistent increase in the percentage of smokers who have a complete home ban and a reciprocal decline in homes of smokers that do not have any smoking restrictions. Similarly, support for a ban on smoking in public places is on the rise among smokers. Furthermore, smokers reported a smoking ban at casinos made no difference in their intentions to visit casinos.

A cause for concern is the lack of substantial progress in shifting attitudes among smokers about SHS causing cancer in the nonsmokers. The tobacco control media campaign should focus on this component among smokers in an effort to further protect nonsmokers from SHS.

For the general population of California, the support for bans against SHS and agreement on the harm of SHS has been very high and is reaching saturation levels. Support for further bans on outdoor places among the general population is much higher than among smokers. Nevertheless, there is still measurable exposure for nonsmokers at work and in public places such as parks and outdoor areas. Only one-third of nonsmokers are completely unexposed to SHS from any source.

California led the initiatives for smoke-free workplaces and public places, but there is room for more improvement to limit exposure and to make the state a smoke-free place.

APPENDIX Chapter 1 Protection of Nonsmokers from Secondhand Smoke

1. Secondhand Smoke Exposure in the Workplace

Appendix Table A.8.1 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 2008. Low income and workers with less education also showed an increase in smoke-free workplaces between 2005 and 2008. However, these differences were not significant, due to large confidence intervals. Across time, Hispanics were less likely to report a smoke-free workplace compared to other racial/ethnic groups.

Table A.8.1							
		Indoor Workers R	eporting Smoke	-Free Workplac	es		
	1990	1992	1996	1999	2002	2005	2008
0	% 25.0 (. 4.2)	% 45.0 (+ 0.0)	% 00 5 (, 0 0)	% 00 5 (, 0, 0)	<u>%</u>	% 04.0 (: 4.7)	% 00 4 (+ 4 0)
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)	96.4 (±1.2)
Gender							07.0 (
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)	95.2 (±1.9)
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)	97.7 (±1.4)
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)	94.7 (±1.6)
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)	96.6 (±2.0)
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)	96.6 (±2.2)
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)	99.3 (±0.7)
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)	97.3 (±1.6)
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)	97.8 (±1.1)
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)	94.5 (±3.1)
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)	97.1 (±1.5)
Other	26.9 (±8.4)	34.2 (±15.1)	91.5 (±3.6)	91.8 (±7.1)	96.2 (±2.6)	88.6 (±17.0)	97.4 (±3.5)
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)	90.9 (±8.3)
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)	95.5 (±1.7)
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)	95.8 (±2.8)
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)	98.6 (±0.6)
Income							
\$20,000 or less	25.7 (±2.8)		85.3 (±3.3)	90.6 (±3.1)	92.2 (±2.8)	82.8 (±12.0)	89.6 (±10.2)
\$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)	95.4 (±2.4)
\$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)	96.4 (±2.0)
\$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)	97.4 (±1.4)
\$75,001 to \$100,000	44.0 (±3.2)		95.5 (±1.2)	96.8 (±0.7)	97.1 (±1.5)	96.9 (±2.0)	97.1 (±2.2)
\$100,001 to \$150,00			、 /	、 /	, , , , , , , , , , , , , , , , , , ,	, <i>, ,</i>	98.3 (±1.2)
over \$150,000							97.8 (±3.6)
Missing	32.3 (±4.3)		86.5 (±3.4)	94.5 (±2.3)	94.8 (±1.6)	93.9 (±4.2)	95.7 (±3.4)

Appendix Table A.8.2 shows the demographic distribution of indoor workers who report exposure to secondhand smoke in the past two weeks. While large confidence intervals mean that the results should be interpreted with caution, it appears that Hispanics and those with low to moderate incomes were exposed to secondhand smoke more frequently in 2005 and 2008 than in 2002.

	Expo	sure of Indoor V	Tabl Workers to Sec	e A.8.2	ke in the Past	2 Wooks		
	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Decrease 1990- 2008
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)	13.5 (±2.3)	-53.6
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)	17.2 (±4.0)	-51.7
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)	9.7 (±2.4)	-57.7
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)	25.5 (±3.6)	-38.3
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)	13.0 (±4.0)	-53.9
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)	10.7 (±3.3)	-53.7
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)	3.4 (±3.1)	-79.9
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)	18.7 (±6.6)	-17.9
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)	12.6 (±3.3)	-54.8
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)	19.2 (±6.5)	-51.8
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)	8.8 (±2.0)	-66.2
Other	30.5	28.6	61(151)	10.0 (, 0.7)	11.2 (. 5.0)	18.4	33.4	0.6
	(±21.9)	(±10.0)	0.1 (±3.1)	10.9 (±9.7)	11.3 (±3.9)	(±12.2)	(±30.9)	9.0
Education						36.4	19.4	
Less than 12 years	41.7 (±8.4)	36.1 (±5.2)	28.2 (±6.8)	26.7 (±6.7)	17.7 (±5.0)	(±35.6)	(±16.3)	-53.3
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)	16.0 (±4.5)	-52.5
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)	18.8 (±5.7)	-37.4
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)	8.6 (±2.3)	-53.4
Income								
\$20,000 or less	37.9 (±5.7)		24.5 (±5.9)	19.9 (±4.8)	16.4 (±3.3)	21.1 (±12.4)	22.7 (±13.4)	-40.1
\$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)	16.6 (±12.9)	-49.6
\$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)	12.7 (±5.3)	-55.6
\$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)	13.8 (±5.5)	-45.6
\$75,001 to \$100,000	21.6 (±2.8)		5.3 (±1.5)	12.0 (±2.1)	9.7 (±1.5)	8.3 (±2.6)	9.9 (±3.8)	-54.0
\$100,001 to \$150,00							9.3 (±4.4)	
over \$150,000							14.6 (±5.0)	
Missina	30.1 (±7.2)		14.0 (±5.3)	13.3 (±3.9)	12.4 (±4.5)	11.0 (±4.5)	15.0 (±10.1)	-50.2

Appendix Table A.8.3 shows the characteristics of indoor workers according to their workplace policy on smoking (smoke-free or not smoke-free). Those without a smoke-free workplace were younger, more likely to be men, have less education, and more likely to work in crafts, trades, factory work, retail sales, labor, or other indoor setting workplace.

Appendix A.8.3							
Characteristics of Indoor V	Vorkers	din a					
by whether Their Workplace Has a Comp	Smokefree	Not					
	Workplace	Smokefree					
	%	%					
Mean age	40.9 (±0.4)	37.0 (±3.0)					
% male	51.1 (±2.5)	69.3 (±17.6)					
% current smokers	10.7 (±1.0)	14.7 (±6.8)					
Race/ethnicity	· · · · ·						
African American	5.6 (±0.5)	4.1 (±2.5)					
Asian/PI	14.2 (±1.2)	8.7 (±5.2)					
Hispanic	30.1 (±3.0)	47.3 (±20.1)					
Non-Hispanic White	48.1 (±2.7)	38.5 (±17.8)					
Other	2.0 (±0.8)	1.4 (±1.8)					
Education	· · · · ·						
Less than 12 years	10.7 (±2.7)	29.1 (±23.1)					
High school graduate	22.2 (±2.7)	28.5 (±13.7)					
Some college	21.5 (±2.0)	25.2 (±15.7)					
College graduate	45.6 (±2.9)	17.2 (±8.5)					
Income							
\$20,000 or less	8.5 (±1.8)	26.5 (±23.8)					
\$20,001 to \$30,000	6.6 (±1.6)	8.6 (±4.9)					
\$30,001 to \$50,000	12.4 (±2.8)	12.6 (±7.4)					
\$50,001 to \$75,000	14.6 (±2.6)	10.5 (±6.5)					
\$75,001 to \$100,000	14.5 (±2.1)	11.8 (±9.3)					
\$100,001 to \$150,00	18.2 (±2.3)	8.8 (±6.6)					
over \$150,000	15.3 (±2.0)	9.1 (±15.0)					
Missing	10.0 (±1.7)	12.2 (±9.9)					
Occupation							
Professional, administrative	46.7 (±2.7)	15.2 (±7.8)					
Clerical, administrative support, sales or marketing	18.1 (±3.0)	7.6 (±5.0)					
Crafts, trades, factory work, retail sales or labor	27.9 (±2.9)	63.0 (±15.0)					
Military	1.4 (±0.7)	0.6 (±1.2)					
Other/unknown	5.9 (±1.3)	13.6 (±10.5)					
Type of workplace							
Office	49.8 (±3.3)	18.9 (±10.0)					
Plant or factory	8.4 (±2.3)	15.2 (±16.7)					
Store or warehouse	11.1 (±2.1)	15.4 (±9.1)					
Classroom	8.9 (±1.5)	0.6 (±0.8)					
Hospital	4.4 (±1.1)	0.8 (±0.8)					
Restaurant or bar	6.3 (±1.4)	4.9 (±3.6)					
Vehicle	0.8 (±0.4)	3.9 (±4.9)					
Other indoor setting	10.3 (+1.8)	40.4 (+19.5)					

Appendix A.8.3 (cont'd) Characteristics of Indoor Workers, by Whether Their Workplace Has a Complete Ban on Smoking							
Smokefree Not Workplace Smokefre % %							
Size of workplace							
Less than 5 employees	9.3 (±2.2)	30.0 (±21.5)					
At least 5 but less than 25	27.2 (±2.4)	22.8 (±13.0)					
Between 25 and 50	16.7 (±2.0)	21.3 (±17.7)					
More than 50	46.3 (±3.0)	24.9 (±11.4)					
Refused/Don't know	0.6 (±0.4)	1.0 (±1.2)					
Race/ethnicity and education							
Hispanic, some college	37.0 (±5.6)	11.4 (±9.7)					
Hispanic, no college	63.0 (±5.6)	88.6 (±9.7)					
Non-Hispanic White, some college	81.0 (±2.9)	66.3 (±25.5)					
Non-Hispanic White, no college	19.1 (±2.9)	33.7 (±25.5)					
African American, some college	73.5 (±5.3)	59.3 (±27.2)					
African American, no college	26.5 (±5.3)	40.7 (±27.2)					
Asian/PI, some college	83.4 (±4.9)	91.4 (±17.9)					
Asian/PI, no college	16.6 (±4.9)	8.6 (±17.9)					
Other, some college	55.5 (±25.9)	80.2 (±66.4)					
Other, no college	44.5 (±25.9)	19.8 (±66.4)					

Appendix Table A.8.4 presents characteristics of indoor workers who were exposed to secondhand smoke in the past two weeks. Those exposed were more likely to be Hispanics, work in crafts, trades factory work, retails sales, or labor and workplace sizes less than five workers.

Appendix Table A.8.4 Characteristics Non-Smoking Indoor Workers by Secondbard Smoke Exposure Status in the Past 2 Weeks					
	Exposed to SHS	Not Exposed			
Mean age	35.7 (±1.3)	42 (±0.5)			
% male	64.3 (±8.6)	48.6 (±3.2)			
Race/ethnicity (%)	-				
Hispanic	43.9 (±11.0)	28.7 (±3.3)			
Non-Hispanic White	30.7 (±7.0)	50.0 (±3.3)			
African American	7.6 (±3.2)	5.1 (±0.6)			
Asian/PI	13.8 (±4.4)	15.0 (±1.4)			
Other	4.0 (±3.8)	1.3(±0.9)			
Education (%)					
Less than 12 years	16.6 (±14.3)	10.9(±3.0)			
High school graduate	24.5 (±7.7)	20.0 (±3.4)			
Some college	28.7 (±8.9)	19.3 (±2.1)			
College graduate	30.3 (±8.5)	49.8 (±3.5)			
Income (%)					
\$20,000 or less	15.4 (±9.0)	8.3 (±2.5)			
\$20,001 to \$30,000	7.1 (±5.3)	5.7 (±1.9)			
\$30,001 to \$50,000	11.5 (±4.0)	12.2 (±3.4)			
\$50,001 to \$75,000	14.5 (±5.4)	14.2 (±3.2)			
\$75,001 to \$100,000	10.8 (±4.5)	14.9 (±2.5)			
\$100,001 to \$150,00	12.6 (±5.2)	19.2 (±3.4)			
over \$150,000	17.0 (±5.8)	15.7 (±2.5)			
Missing	11.1 (±7.1)	9.9 (±2.1)			
Occupation (%)	• • • •	<u> </u>			
Professional, administrative	27.9 (±7.2)	50.1 (±3.6)			
Clerical, administrative support, sales or marketing	16.2 (±6.5)	17.1 (±3.5)			
Crafts, trades, factory work, retail sales or labor	46.5 (±8.9)	25.8 (±3.5)			
Military	1.8 (±1.7)	1.1 (±0.9)			
Other/unknown	7.6 (±5.0)	5.9 (±1.4)			
Type of workplace (%)	• • • •				
Office	36.4 (±9.5)	52.5 (±3.9)			
Plant or factory	9.4 (±5.6)	8.5 (±3.0)			
Store or warehouse	19.6 (±7.1)	9.3 (±2.1)			
Classroom	2.3 (±1.7)	10 (±1.9)			
Hospital	1.7 (±1.0)	4.6 (±1.4)			
Restaurant or bar	12.5 (±7.2)	4.6 (±1.4)			
Vehicle	2.3 (±2.6)	0.5 (±0.3)			
Other indoor setting	15.9 (±7.4)	10.1 (±2.2)			

Appendix Table A.8.4 (cont'd) Characteristics of Non-Smoking Indoor Workers By Exposure to Secondhand Smoke in The Past 2 Weeks						
Exposed M to SHS Exp %						
Size of workplace						
Less than 5	18.3 (±8.4)	8.9 (±1.8)				
At least 5 but less than 25	26.2 (±6.9)	27.1 (±2.8)				
Between 25 and 50	19.6 (±8.2)	16.5 (±2.2)				
More than 50	35.6 (±10.5)	46.9 (±2.7)				
Refused/Don't know	0.4 (±0.4) 0.6 (±0.4)					
Race/ethnicity and education						
Hispanic, some college	36.4 (±22.8)	35.4 (±5.9)				
Hispanic, no college	63.6 (±22.8)	64.6 (±5.9)				
Non-HispanicWhite, some college	75.5 (±11.6)	81.0 (±3.0)				
Non-HispanicWhite, no college	24.5 (±11.6)	19.1 (±3.0)				
African American some college	72.5 (±14.7)	73.2 (±5.8)				
African American, no college	27.5 (±14.7)	26.8 (±5.8)				
Asian/PI, some college	76.3 (±16.0)	84.6 (±5.3)				
Asian/PI, no college	23.7 (±16.0)	15.4 (±5.3)				
Other, some college	91.8 (±14.2)	44.5 (±27.0)				
Other, no college	8.2 (±14.2)	55.5 (±27.0)				

Appendix Table A.8.5 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.

Table A.8.5 Source of Smokers Exposing Indoor-Working Nonsmokers to Secondhand Smoke In Last 2 Weeks, 2008.					
Completely Smoke-free (n=460) % %					
Other employees	84.8 (±5.7)	88.7 (±8.8)			
Customers or non-employees	53.8 (±11.4)	72.1 (±20.7)			
Supervisors or your supervisor	34.0 (±9.1)	43.5 (±27.8)			
Anyone else	5.5 (±4.7)	0.8 (±1.0)			

2. Home Exposure to Secondhand Smoke

Appendix Table A.8.6 provides the percentage of persons living in households with total household smoking bans by various demographic groups. The percentages increase within all demographic groups. Those with higher incomes or education levels are most likely to have bans.

Table A.8.6								
Total Household Smoking Bans								
	1992 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	
Overall	/0	70 50.0 (+0.0)	/0 64 5 (+1 1)	/0 70 0 (, 1 1)	76 9 (+0.0)	70 / (+2 5)	70 20 2 (, 1 4)	
Gondor	40.1 (±1.9)	50.9 (±0.9)	04.3 (±1.1)	12.0 (±1.1)	70.0 (±0.9)	70.4 (±2.5)	00.0 (±1.4)	
Mela	40.4 (+0.7)	40.0 (. 1.0)	(2, 0, (1, 1, 2))	71.0 (, 1.2)	74 C (. 1 4)	72.0 (. 4.0)	77 5 (. 0 6)	
	49.4 (±2.7)	49.8 (±1.2)	$62.8(\pm 1.3)$	71.8 (±1.3)	$74.0(\pm 1.4)$	73.8 (±4.0)	77.5 (±2.6)	
	46.9 (±2.6)	52.0 (±1.2)	66.2 (±1.5)	73.9 (±1.3)	79.0 (±1.3)	82.9 (±2.0)	84.1 (±1.6)	
Age	(= 0 (= =)							
18-24	45.0 (±5.5)	52.6 (±2.1)	61.1 (±2.8)	/0.1 (±2.6)	68.7 (±1.2)	67.8 (±2.6)	69.1 (±2.2)	
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)	83.9 (±2.5)	
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)	82.7 (±2.8)	
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)	78.9 (±3.3)	
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)	78.6 (±2.6)	
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)	84.0 (±2.4)	
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)	79.3 (±3.8)	
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)	81.4 (±1.5)	
Other	49.6 (±13.6)	43.4 (±6.3)	63.9 (±6.2)	65.9 (±11.4)	69.2 (±6.8)	72.1 (±7.0)	79.1 (±8.6)	
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)	80.7 (±5.4)	
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)	79.2 (±2.9)	
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)	77.2 (±2.9)	
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)	84.6 (±2.3)	
Income								
\$20,000 or less			62.6 (±2.6)	70.8 (±2.8)	72.7 (±2.6)	76.3 (±3.6)	76.6 (±4.9)	
\$20,001 to \$30,000			59.0 (±3.5)	69.5 (±3.1)	75.4 (±2.4)	68.5 (±17.2)	76.4 (±5.9)	
\$30,001 to \$50,000			63.4 (±2.3)	71.0 (±2.8)	75.7 (±2.7)	77.3 (±3.9)	78.3 (±4.3)	
\$50,001 to \$75,000			66.1 (±3.4)	73.2 (±2.0)	77.1 (±2.2)	78.5 (±3.1)	84.1 (±2.7)	
\$75,001 to \$100,000			69.7 (±2.5)	78.4 (±1.9)	81.3 (±1.8)	83.0 (±3.4)	85.1 (±4.0)	
\$100,001 to \$150,00					. /		82.2 (±3.4)	
Over \$150,000							84.5 (±3.2)	
Missing			67.2 (±3.8)	72.2 (±3.5)	74.8 (±2.9)	79.3 (±5.8)	78.6 (±4.2)	

Table A.8.7 compares the characteristics of respondents living in households with a total home smoking ban with those who have either a partial smoking ban or no ban at all. It shows that men, low-income households, households that do not include children or those that include a smoker, were less likely to have a total home ban.

Table A.8.7 Comparison of Characteristics of Respondents Living in Households with a Total Home Smoking Ban Versus Respondents Living in Households with a Partial or No Home Smoking Ban					
	Total Home Ban	Less than Total Ban %			
Mean age	45.9 (±0.4) yrs.	44.3 (±1.1) yrs.			
% male	47.4 (±1.0)	58.0 (±4.0)			
Race/ethnicity					
African American	5.7 (±0.2)	6.5 (±0.9)			
Asian/PI	12.6 (±0.8)	10.1 (±1.5)			
Hispanic	31.9 (±1.3)	35.1 (±4.7)			
Non-Hispanic White	47.0 (±0.9)	45.2 (±3.5)			
Other	2.8 (±1.0)	3.1 (±1.0)			
Education					
Less than 12 years	14.2 (±1.6)	14.3 (±3.7)			
High school graduate	27.5 (±1.7)	30.5 (±3.7)			
Some college	22.1 (±1.3)	27.5 (±3.3)			
College graduate	36.2 (±1.6)	27.7 (±4.1)			
Income					
\$20,000 or less	11.6 (±1.6)	14.9 (±3.0)			
\$20,001 to \$30,000	9.8 (±1.4)	12.7 (±3.2)			
\$30,001 to \$50,000	13.5 (±2.2)	15.8 (±3.0)			
\$50,001 to \$75,000	14.0 (±2.1)	11.1 (±2.0)			
\$75,001 to \$100,000	12.8 (±1.8)	9.5 (±2.6)			
\$100,001 to \$150,00	13.8 (±1.7)	12.6 (±2.2)			
over \$150,000	12.3 (±1.4)	9.5 (±1.8)			
Missing	12.1 (±1.4)	13.9 (±2.8)			
Work status	· · · ·	· · · · ·			
Worker, with smokefree workplace	45.0 (±2.6)	40.3 (±3.9)			
Worker, < smokefree workplace	1.6 (±0.7)	1.9 (±0.8)			
Non-worker	53.4 (±2.7)	57.8 (±4.0)			
Presence of smokers		· ·			
No smokers in household	85.1 (±1.3)	61.9 (±3.4)			
Respondent NS, smokers in household	6.9 (±1.2)	13.8 (±2.6)			
Respondent only smoker	5.3 (±0.3)	14.2 (±1.4)			
Respondent + others smoke	1.3 (±0.2)	4.1 (±0.8)			
All smokers	1.6 (±0.2)	6.1 (±1.0)			

Table A.8.7 (cont'd) Comparison of Characteristics of Respondents Living in Households with a Total Home Smoking Ban Versus Respondents Living in Households with a Partial or No Home Smoking Ban					
	Total Home Ban %	Less than Total Ban %			
# Adults					
Single adult	15.0 (±1.6)	17.4 (±2.4)			
More than 1 adult	85.0 (±1.6)	82.6 (±2.4)			
Presence of children					
No children	55.0 (±1.9)	65.4 (±4.4)			
Children less than 6	21.2 (±1.9)	14.3 (±4.7)			
Children, all 6+	23.8 (±2.2)	20.3 (±4.1)			
Race/ethnicity and education					
Hispanic, some college	29.2 (±2.1)	41.6 (±7.0)			
Hispanic, no college	70.8 (±2.1)	58.4 (±7.0)			
Non-Hispanic White, some college	73.6 (±1.0)	62.8 (±3.8)			
Non-Hispanic White, no college	26.4 (±1.0)	37.2 (±3.8)			
African American, some college	62.6 (±2.1)	54.1 (±6.9)			
African American, no college	37.4 (±2.1)	46.0 (±6.9)			
Asian/PI, some college	77.8 (±3.9)	73.4 (±8.3)			
Asian/PI, no college	22.2 (±3.9)	26.7 (±8.3)			
Other, some college	35.8 (±14.9)	43.5 (±17.2)			
Other, no college	64.3 (±14.9)	56.5 (±17.2)			

Appendix Table A.8.8 shows the overall prevalence of total home smoking restrictions (smoking bans) has increased significantly over time. As described in the chapter text, although progress has been made across demographic groups, differences between groups still remain. The demographic details of those with total home smoking bans are provided in **Table A.8.8** below.

Table A.8.8 Current Smokers with a Total Home Smoking Ban								
	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008	Percentage Change 1992-2008
Overall	19.4 (±1.8)	35.9 (±1.2)	46.8 (±1.8)	51.9 (±1.9)	57.8 (±3.6)	59.3 (±2.6)	65.2	204.9
Gender		I		I		l		
Male	24.6 (±2.7)	41.7 (±1.8)	50.5 (±2.6)	54.2 (±2.6)	59.6 (±5.0)	60.2 (±4.1)	44.4	145.0
Female	12.9 (±2.1)	28.3 (±2.1)	41.5 (±2.5)	48.4 (±2.7)	55.1 (±4.1)	57.8 (±4.3)	104.5	349.5
Age								
18-24	30.0 (±6.9)	47.8 (±3.8)	54.1 (±4.6)	54.9 (±3.1)	63.8 (±7.5)	66.6 (±7.3)	39.3	121.7
25-44	19.6 (±3.2)	39.9 (±1.6)	51.6 (±2.5)	57.6 (±2.7)	61.8 (±5.0)	66.5 (±4.9)	66.7	239.0
45-64	14.7 (±2.0)	25.9 (±2.4)	38.1 (±2.7)	43.3 (±3.5)	52.6 (±8.3)	52.6 (±3.9)	102.7	257.0
65+	10.6 (±3.2)	18.2 (±3.5)	28.9 (±5.1)	39.2 (±6.4)	42.8 (±6.3)	34.1 (±5.9)	87.6	222.0
Race-Ethnicity								
Africa American	9.3 (±3.9)	23.0 (±4.4)	36.4 (±6.5)	41.3 (±4.9)	41.8 (±15.6)	46.6 (±9.2)	103.1	399.6
Asian/PI	19.6 (±7.8)	42.0 (±5.8)	57.0 (±7.3)	63.6 (±6.2)	61.1 (±11.1)	68.6 (±11.7)	63.4	249.5
Hispanic	30.4 (±6.5)	55.6 (±3.4)	64.2 (±3.6)	59.8 (±3.8)	66.4 (±9.6)	65.1 (±7.3)	17.0	114.0
Non-Hispanic White	18.0 (±2.1)	30.5 (±1.3)	40.4 (±1.7)	48.2 (±2.0)	55.8 (±3.2)	57.7 (±3.4)	88.8	220.3
Other	13.3 (±8.5)	25.6 (±7.0)	29.2 (±13.3)	44.9 (±6.2)	51.1 (±8.8)	49.3 (±11.1)	92.6	271.2
Education			•					-

Less than 12 years	23.2 (±4.4)	42.7 (±3.6)	53.9 (±5.0)	51.0 (±4.4)	57.0 (±10.3)	65.9 (±7.4)	54.5	184.1
High school graduate	16.2 (±2.3)	32.5 (±2.3)	45.2 (±2.9)	48.5 (±2.6)	59.5 (±4.7)	55.6 (±4.5)	71.3	244.2
Some college	19.8 (±2.9)	34.8 (±2.4)	43.0 (±2.3)	53.3 (±2.5)	55.9 (±4.4)	57.3 (±5.4)	64.6	189.8
College graduate	20.9 (±3.6)	34.2 (±2.7)	45.7 (±3.8)	57.4 (±3.4)	59.2 (±6.4)	64.5 (±5.6)	88.5	208.2
Income								
\$20,000 or less		33.0 (±2.7)	44.1 (±4.3)	46.2 (±3.8)	53.8 (±6.8)	48.1 (±5.3)	46.0	
\$20,001 to \$30,000		32.1 (±3.3)	46.3 (±5.1)	49.0 (±3.8)	54.6 (±18.6)	49.0 (±10.3)	52.4	
\$30,001 to \$50,000		34.7 (±2.3)	41.4 (±4.2)	50.8 (±3.8)	50.6 (±6.7)	58.5 (±7.4)	68.5	
\$50,001 to \$75,000		38.4 (±4.1)	44.8 (±3.1)	54.7 (±4.4)	62.2 (±5.3)	66.1 (±6.6)	72.0	
\$75,001 to \$100,000		42.3 (±4.3)	57.2 (±3.5)	57.9 (±3.3)	67.2 (±5.0)	67.3 (±6.9)	59.1	
\$100,001 to \$150,00						64.3 (±8.0)		
over \$150,000						64.2 (±8.3)		
Missing		41.5 (±4.4)	51.1 (±6.5)	53.7 (±6.8)	55.7 (±10.2)	64.8 (±10.3)	56.1	

Appendix Table A.8.9 shows the percentages of household 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. However, households where all adults smoke remain less likely to protect their children, although in 2008, this difference was only significant for households with older children (\geq 12 years of age). The confidence intervals for this data are large and should be interpreted with caution.

Appendix Table A.8.9								
Home Smoking Bans in Households with Children, By Age of Youngest Child								
	1993	1996	1999	2002	2005	2008		
	%	%	%	%	%	%		
0-5 years								
No adult smokers	71.6 (±2.1)	79.6 (±3.2)	88.4 (±2.2)	88.1 (±2.0)	89.3 (±5.8)	88.6 (±5.9)		
At least 1 smoker	43.2 (±4.5)	64.7 (±4.8)	74.7 (±4.0)	75.7 (±3.0)	79.6 (±6.9)	80.1 (±10.7)		
All adults smoke	18.0 (±6.5)	40.3 (±5.4)	56.1 (±5.4)	64.6 (±6.5)	57.8 (±24.1)	76.7 (±10.2)		
6-11 years								
No adult smokers	69.0 (±2.6)	76.1 (±4.0)	86.2 (±2.5)	88.1 (±2.6)	81.5 (±19.5)	85.8 (±5.1)		
At least 1 smoker	33.4 (±5.3)	55.0 (±6.8)	69.3 (±5.9)	67.4 (±6.1)	70.2 (±10.1)	73.7 (±11.9)		
All adults smoke	7.8 (±4.0)	22.1 (±5.2)	40.8 (±6.5)	49.1 (±6.3)	59.3 (±13.0)	65.8 (±14.9)		
12-17 years								
No adult smokers	66.3 (±3.2)	78.7 (±3.7)	83.8 (±3.2)	86.7 (±2.3)	81.9 (±8.5)	85.5 (±4.2)		
At least 1 smoker	31.6 (±6.3)	52.7 (±7.7)	59.5 (±6.1)	64.5 (±6.8)	67.9 (±9.4)	71.8 (±8.9)		
All adults smoke	7.6 (±3.9)	16.9 (±4.9)	36.1 (±7.9)	42.2 (±8.5)	38.6 (±9.2)	55.7 (±16.6)		

3. Support for Restrictions on Smoking

Appendix Table A.8.10 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 and women in particular, strongly support additional smoking restrictions.

Table A.8.10 Places Smoking Should Not be Allowed, 2008							
	Outdoor Public Places %	Outdoor Restaurant Dining Patios %	Outside Entrances To Buildings %	Indian Casinos %	Inside Cars When Children Are In Them %		
Overall	60.4 (±2.0)	75.0 (±1.5)	72.1 (±1.5)	66.5 (±2.0)	95.2 (±0.8)		
Gender	•						
Male	55.3 (±3.1)	70.7 (±2.4)	67.0 (±2.9)	62.2 (±3.1)	93.6 (±1.5)		
Female	65.3 (±2.7)	79.3 (±2.1)	77.2 (±1.6)	70.8 (±2.0)	96.7 (±0.6)		
Age			1				
18-24	58.4 (±2.4)	69.0 (±2.1)	67.7 (±2.7)	52.9 (±2.8)	95.5 (±1.3)		
25-44	64.0 (±3.6)	75.1 (±2.8)	76.1 (±3.1)	67.2 (±3.5)	95.2 (±1.6)		
45-64	59.1 (±3.3)	76.4 (±2.4)	71.9 (±2.9)	69.6 (±3.1)	94.7 (±1.1)		
65+	55.5 (±5.2)	77.0 (±4.0)	66.5 (±5.3)	70.0 (±3.6)	96.1 (±1.4)		
Race/Ethnicity		1	1		1		
African American	59.5 (±3.2)	71.7 (±3.3)	71.9 (±3.6)	69.4 (±2.8)	96.0 (±1.4)		
Asian/PI	64.0 (±3.5)	75.4 (±2.3)	69.9 (±3.5)	67.6 (±3.5)	96.9 (±1.0)		
Hispanic	70.8 (±3.4)	78.4 (±2.9)	78.4 (±3.7)	74.2 (±3.7)	97.7 (±1.4)		
Non-Hispanic White	52.2 (±2.9)	73.2 (±2.2)	68.1 (±2.5)	61.2 (±2.9)	92.9 (±1.1)		
Other	61.4 (±13.7)	72.1 (±12.8)	77.3 (±9.7)	55.4 (±18.8)	95.9 (±2.8)		
Education		1	1		1		
Less than 12 years	79.8 (±4.3)	78.9 (±5.2)	83.5 (±4.6)	77.6 (±5.4)	98.8 (±0.5)		
High school graduate	56.1 (±4.0)	71.8 (±3.5)	71.6 (±2.8)	65.9 (±5.0)	95.0 (±1.3)		
Some college	53.5 (±3.0)	71.6 (±2.7)	68.7 (±3.0)	61.3 (±3.8)	94.8 (±1.7)		
College graduate	60.5 (±3.2)	78.4 (±2.3)	70.3 (±2.6)	66.0 (±2.8)	94.1 (±1.5)		
Income		1	1		1		
\$20,000 or less	69.9 (±4.7)	74.3 (±5.1)	75.6 (±5.5)	71.5 (±5.1)	97.5 (±0.6)		
\$20,001 to \$30,000	67.4 (±7.2)	77.4 (±5.6)	74.9 (±5.3)	77.7 (±4.3)	97.0 (±1.4)		
\$30,001 to \$50,000	60.7 (±4.6)	75.1 (±4.8)	71.3 (±4.1)	67.3 (±4.9)	95.1 (±3.2)		
\$50,001 to \$75,000	56.6 (±5.5)	76.4 (±4.4)	73.0 (±4.6)	64.8 (±6.0)	95.5 (±1.4)		
\$75,001 to \$100,000	58.4 (±6.0)	74.6 (±4.3)	71.9 (±6.1)	65.8 (±4.5)	94.8 (±2.8)		
\$100,001 to \$150,00	56.8 (±5.1)	74.4 (±3.9)	71.3 (±5.4)	63.8 (±4.8)	94.6 (±2.2)		
over \$150,000	55.1 (±4.4)	73.3 (±5.1)	69.0 (±4.3)	57.7 (±6.1)	94.7 (±2.0)		
Missing	59.9 (±4.8)	74.8 (±4.1)	70.7 (±4.5)	65.5 (±6.3)	92.7 (±3.0)		
Appendix Table A.8.11 presents those with no exposure (not exposed at work, total home smoking ban, no exposure in other places, no smokers in the household) to secondhand smoke by demographic category. Only 33.6% of the population reported no exposure. The youngest age group was less likely to report no exposure to SHS. Asian/PIs and the oldest age group were the most protected from SHS exposure.

	Table A.8.11.										
Perce	entage With No E	Exposure To SHS	, By Demograph	ic Category.							
No E	Exposure: Not E	Exposed At Work,	, Total Home Sm	oking Ban,							
	No Exposure O	ther Places, No S	Smokers In Hous	ehold	2000						
	1990	1999	2002	2005	2008						
Overall	17.9 (±1.1)	35.3 (±1.5)	37.5 (±1.4)	35.8 (±2.5)	33.6 (±2.4)						
Gender											
Male	16.4 (±1.5)	34.6 (±2.1)	37.2 (±2.2)	34.8 (±4.0)	33.8 (±3.1)						
Female	19.2 (±1.8)	36.0 (±1.9)	37.8 (±1.6)	36.7 (±3.6)	33.4 (±3.0)						
Age											
18-24	12.6 (±2.8)	17.9 (±2.6)	20.2 (±1.3)	19.2 (±2.6)	19.9 (±1.9)						
25-44	16.8 (±1.4)	35.3 (±2.2)	37.4 (±2.3)	34.4 (±4.3)	32.4 (±4.5)						
45-64	17.1 (±2.0)	36.8 (±2.5)	38.3 (±2.9)	37.7 (±4.7)	33.5 (±4.3)						
65+	26.8 (±4.3)	48.0 (±3.5)	52.6 (±3.4)	49.6 (±5.4)	46.7 (±4.7)						
Race/Ethnicity											
African American	20.6 (±4.6)	33.9 (±5.8)	38.6 (±3.6)	32.8 (±5.4)	35.1 (±3.3)						
Asian/PI	25.9 (±5.2)	37.5 (±5.1)	37.4 (±5.5)	33.7 (±5.3)	40.5 (±3.7)						
Hispanic	23.3 (±2.9)	33.8 (±3.0)	36.5 (±3.1)	32.7 (±4.8)	29.9 (±5.0)						
Non-Hispanic White	13.6 (±1.2)	35.8 (±1.3)	38.1 (±1.6)	38.9 (±3.5)	34.6 (±3.1)						
Other	14.0 (±7.3)	36.9 (±18.4)	36.5 (±9.5)	35.3 (±15.4)	24.0 (±17.4)						
Education			_								
Less than 12 years	25.6 (±4.2)	34.7 (±4.0)	38.2 (±3.7)	36.3 (±9.2)	38.0 (±7.4)						
High school graduate	18.5 (±2.1)	34.7 (±2.8)	40.2 (±3.0)	35.6 (±5.4)	31.9 (±4.2)						
Some college	14.9 (±1.4)	34.7 (±2.4)	32.8 (±2.3)	34.5 (±4.8)	29.2 (±4.0)						
College graduate	14.5 (±1.7)	36.9 (±2.3)	38.6 (±1.9)	36.8 (±4.1)	35.8 (±4.2)						
Income	•	•	-	•							
\$20,000 or less	22.8 (±3.7)	36.9 (±3.9)	37.6 (±3.7)	34.1 (±6.0)	37.9 (±8.8)						
\$20,001 to \$30,000	20.6 (±3.6)	33.8 (±4.3)	37.5 (±3.9)	34.2 (±13.4)	29.1 (±7.0)						
\$30,001 to \$50,000	14.6 (±1.7)	34.4 (±3.2)	36.5 (±3.5)	39.0 (±6.9)	33.0 (±7.6)						
\$50,001 to \$75,000	14.9 (±2.2)	33.6 (±3.1)	36.9 (±3.2)	35.5 (±5.1)	30.8 (±5.7)						
\$75,001 to \$100,000	13.6 (±2.6)	35.3 (±2.9)	37.9 (±2.7)	34.8 (±4.9)	34.4 (±5.5)						
\$100,001 to \$150,00					34.0 (±5.6)						
Over \$150,000					37.0 (±5.7)						
Missing	21.1 (±3.7)	38.5 (±3.5)	38.6 (±4.8)	38.2 (±7.0)	32.1 (±6.1)						

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TWO DECADES OF THE CALIFORNIA TOBACCO CONTROL PROGRAM: CALIFORNIA TOBACCO SURVEY, 1990-2008

CHAPTER 9

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Chapter 9 Media and Marketing Influences on Smoking

KEY FINDINGS

- Per capita media expenditure has remained stable over the past few years for both the California Tobacco Control Program (CTCP) and the tobacco industry; the tobacco industry (\$41.86 per capita) has maintained a 100 fold advantage in per capita media funds compared to the CTCP (\$0.43 per capita). The CTCP media funding was at its peak in 2001-02 (\$1.33 per capita) and has since stabilized at about one third of that level.
- In 2005 and 2008, approximately 20% of young adults (18-24 years) reported seeing a lot of antismoking advertisements, nearly half of the rate observed at the peak of the media campaign (2002). Young adults were more likely than older adults to report seeing a lot of antismoking advertisements. Among older adults, the proportion seeing a lot of antismoking advertisements has continued to decline since 2002.
- Messages targeting tobacco industry practices continued to be the most popular anti-smoking ads for young adults and, while health consequences messages were popular at all ages, they were most popular with adults over 30 years of age.
- Prior to the Master Settlement Agreement (MSA), 18-24 year old adults were 50% more likely than older (i.e., 41+ yrs) adults (60% vs. 32%) to report having a favorite tobacco industry advertisement–a known predictor of initiation. Since 1999, the proportion of 18-24 year olds with a favorite cigarette advertisement has halved, so that, by 2008, there was little age difference in this measure (31% for 18-24 year olds vs. 26% for 41+ year olds).
- Willingness to use a tobacco industry promotional item-known predictor of initiation-decreased by 36% between 1999 and 2008 (18% to 12%) in 18-24-year old young adults and decreased by a lower percentage for adults 25 years or older to reach approximately 10% in 2008.
- The proportion of young adults (18-29 years) who saw a tobacco industry logo on a televised sporting event very often halved from 13.7% in 2002 to 6.1% in 2008. This decline was consistent regardless of cigarette smoking status or smokeless tobacco use.
- The proportion of young men (18-24 years) who reported attending an event sponsored by a tobacco company in the past year declined from 30% in 2002 to 20% in 2008, a 30% decline.
- Point of sale (POS) tobacco advertising appears to be more attractive to younger compared to older never smokers. Among 18-24 year old never smokers, 85% reported noticing POS advertising compared to 46% of never smokers over 45 years of age. Of never smokers who noticed in-store advertising, a strong majority thought Marlboro was the brand most advertised.

Chapter 9

Media and Marketing Influences on Smoking

Introduction

Evidence suggests that mass media marketing can profoundly impact tobacco use, including smoking initiation, maintenance and cessation (Pierce 1998; Bauer et al., 2000; Farrelly et al., 2002; NCI 2008). Exposure to tobacco industry advertisements have been linked to increased positive cognitions about smoking and smokers (Pechmann & Ratneshwar, 1994; Donovan et al., 2002; Pechmann & Knight, 2002). The National Cancer Institute (NCI) Monograph on the effects of media on smoking concluded that there is "a causal relationship between tobacco advertising and promotion and increased tobacco use" (NCI, 2008).

Traditionally, the tobacco industry has used integrated marketing communication (IMC) techniques to influence the publics' perceptions about tobacco use. Following exposure, receptivity to tobacco advertisements include varying degrees of attention and interpretation of the messages followed by the development of an affective response (Evans et al., 1995; McGuire, 1985). Tobacco companies have previously used television or radio commercials, billboard messages, POS advertisements, and event sponsorship to get pro-smoking messages to potential consumers. Tobacco industry advertisements on the broadcast media were banned in 1971, although they have continued to appear on television as logos on sports teams or billboard advertising at sports events. In 1998, the Master Settlement Agreement (MSA) between the tobacco industry and state attorneys general prohibited tobacco advertisements on billboards, malls, arenas, sports stadiums, video arcades, and other public locations where youth might be exposed. Additionally, the MSA prohibited the use of cartoon characters, as well as the use of a number of marketing strategies using promotional items.

However, the tobacco industry is not restricted from marketing to adults. Promotional items, giveaways and price discounting are allowed as well as more traditional print media in venues where adolescents are not allowed to attend, such as clubs or bars (Ling & Glantz, 2005). It uses models that appeal to young adults (Biener et al., 2004; Ling et al., 2004; Ling et al., 2002), exotic blends and flavorings, interactive internet marketing techniques (Freeman, 2008; Dewhirst, 2009) and direct mailings to people who indicate that they are over 21 years of age.

Analysis of tobacco industry documents by Lavack and Toth (2006) reveal that POS has become one of the most common areas for the tobacco industry marketing (Lavack and Toth, 2006; Sloan et al., 2004). POS marketing may facilitate impulse purchasing while waiting in line at stores, undermining a smoker's decisions to reduce their easily accessible supply of cigarettes, thereby promoting relapse (Feighery et al., 2001). Bar and club venues are places where alcohol use can undermine intentions not to smoke, particularly among young adults (Orlando et al., 2005). Indeed, many otherwise nonsmokers report being "social smokers" on party or drinking occasions. (Schane et al., 2009). Product placement in movies promotes smoking as part of the normative behavior and has been linked with youth smoking (Distefan et al.,1999; Sargent et al. 2001; Sargent et al. 2002; Dalton et al. 2003; Jackson et al. 2007; Titus-Ernstoff et al. 2008; Dalton et al. 2009; Wilkinson et al. 2009). The NCI Monograph on media effects of smoking concluded there is a causal relationship between exposure to smoking in movies and youth smoking (NCI, 2008).

In this chapter we consider respondent receptivity to media marketing by both the CTCP and the tobacco industry. For the CTCP we present per capita expenditure on anti-tobacco media in California and look at indicators of its effectiveness such as recall of advertisements, having a favorite advertisement, and cessation assistance calls to the California Helpline that are attributable to the media. For the tobacco industry we examine per capita media marketing expenditure, recall of advertisements, favorite advertisement, willingness to own/use tobacco industry promotional items, tobacco sponsorship, the presence of promotional items in bars/clubs, perceptions of new tobacco products, and impact of movie star smoking on youth smoking behavior.

1. Per Capita Media Expenditures

California Tobacco Control Expenditures

The CTCP media expenditure has remained relatively stable since 2003, with only \$0.43 being spent per capita. This is one-third the \$1.33 per capita expenditure level in 2001-02. Currently, media expenditure accounts for only 27.8% of CTCP budget, a reduction of 51% spent in 2000-01). **Table 9.1** presents the CTCP Media Expenditure data for 1999 to 2009. Comparisons of the CTCP expenditure data to that of the tobacco industry media and promotions expenditures indicates a consistent 100 fold higher expenditure by the tobacco industry compared to the CTCP in recent years.

	Table 9.1 California Tobacco Control Expenditure Data, 1999-2009										
Year	California Population	Media Budget	Total Budget	% Media Budget	Total Per Capita	Mass Media Per Capita	% Change Compared to 1999-00 Media Budget				
1999-00	33,499,204	\$19,624,000	\$60,770,604	32.30%	\$1.81	\$0.59	N/A				
2000-01	33,998,767	\$45,264,000	\$88,217,022	51.30%	\$2.61	\$1.33	125				
2001-02	34,507,030	\$45,264,000	\$108,094,867	41.90%	\$3.19	\$1.31	122				
2002-03	34,916,495	\$21,112,000	\$61,718,395	34.20%	\$1.83	\$0.60	2				
2003-04	35,307,398	\$16,781,000	\$61,818,428	27.10%	\$1.80	\$0.48	-19				
2004-05	35,629,666	\$15,695,000	\$56,821,383	27.60%	\$1.64	\$0.44	-25				
2005-06	35,885,415	\$15,695,000	\$58,499,094	26.80%	\$1.66	\$0.44	-25				
2006-07	36,121,296	\$19,995,000	\$65,036,806	30.70%	\$1.82	\$0.55	-7				
2007-08	36,377,534	\$15,695,000	\$56,558,205	27.80%	\$1.57	\$0.43	-27				
2008-09	36,756,666	\$15,695,000	\$56,518,612	27.80%	\$1.54	\$0.43	-27				

Source: Extrapolated from CTCP sources

Figure 9.1 presents change over time in dollars for the CTCP per capita media expenditure. The years 2000-02 saw abnormally high CTCP expenditures as additional monies became available following the MSA. In 2008-09 the CTCP budget was approximately half that of the peak year. The peak year for mass media expenditure was 2000-01. In recent years expenditure on the CTCP mass media campaign has stabilized at approximately one third the level of the peak years.





Tobacco Industry Expenditures

The national per capita media expenditure by the tobacco industry is in the billions, with the most recent data available (2006) showing a per capita expenditure of \$41.86 (FTC, 2009). Although the data cannot be partitioned by state, evidence indicates that the tobacco industry tends to spend concentrated efforts on targeting communities with strong tobacco control programs (Slater et al, 2001; Lavack and Toth, 2006). **Table 9.2** presents tobacco industry media expenditure data.

	Table 9.2 Tobacco Industry Media Expenditures: 1996-2006 Domestic Cigarette										
	Advertising										
	and Promotional Expenditures (1996-2001) (Dollars in Thousands*)										
			IIS Per Canita	% Change	% Chang						
		Total Media	Total Media	Previous	e from						
Year	U.S. Population	Expenditure	Expenditure***	Year	1996						
1996	265,229,000**	\$5,107,700	\$19.26	NA	NA						
1997	267,784,000**	\$5,660,014	\$21.14	10	10						
1998	270,248,000**	\$6,733,157	\$24.91	18	29						
1999	272,691,000**	\$8,237,631	\$30.21	21	57						
2000	282,171,936**	\$9,592,627	\$34.00	13	77						
2001	285,039,803**	\$11,216,220	\$39.35	16	104						
2002	287,726,647	\$12,466,358	\$43.33	10	125						
2003	290,210,914	\$15,145,998	\$52.19	20	171						
2004	292,892,127	\$14,149,859	\$48.31	-7	151						
2005	295,560,549	\$13,110,958	\$44.36	-8	130						
2006	298,362,973	\$12,489,692	\$41.86	-6	117						

Sources:

*Federal Trade Commission Cigarette Report (2009)

**Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2008 (NST-EST2008-01 & Population Estimates Program,

Population Division, U.S.Census Bureau, Washington, D.C. 20233

*** Actual dollar amount per capita

2. California Tobacco Control Advertisements

Adult Recall of Anti-Tobacco Media in California

Unaided recall is an important indication of a media campaign's success. In 1996, 1999, 2002, 2005 and 2008 the California Tobacco Survey (CTS) included the following questions to assess recall of anti-tobacco media messages:

In the <u>last month</u>, have you seen anything on TV against smoking? **(I10a)** In the last month, have you heard anything on the radio against smoking? **(I10b)** In the last month, have you seen a billboard with a message against smoking? **(I10c)**

Summary data for recall of anti-smoking commercials from each of the CTS surveys are presented in **Figure 9.2**. The gray box indicates the proportion of individuals who reported having seen a lot of anti-smoking advertisements on television in the past year, and the total height of the bar indicates the total proportion of respondents who indicated seeing a few or a lot of televised anti-smoking ads in the past month. As expected, the peak year of recall was coincident with the peak year of CTCP expenditure on the media campaign. In 2008, approximately 20% of young adults age 18-24 recalled seeing a lot of anti-tobacco advertisements on television in the past month, which was similar to the 2005 recall numbers. Young adults were twice as likely as adults aged 25-40 and four times as likely as adults over the age of 40 to report seeing a lot of antismoking advertisements. That recall is higher among young adults (aged 18-24 years) probably reflects the greater media use/awareness in this population age group and the Legacy media campaign.



Figure 9.2: Californian Adults Seeing Anti-Tobacco Ads on TV in the Last Month.

	A lot					A few				
Age	1996	1999	2002	2005	2008	1996	1999	2002	2005	2008
18-24	16.1	29.9	37.9	21.2	20.8	58.4	57.3	47.7	58.9	55.0
25-40	13.0	20.1	23.2	15.7	10.8	52.2	56.5	54.9	54.2	48.3
41+	10.3	14.9	13.6	8.9	5.6	44.0	49.1	49.5	47.9	44.9

Favorite Tobacco Control Advertisement

A measure of receptivity to the anti-tobacco media campaign messages was assessed only in 2005 and 2008 when CTS asked the open-ended question:

What is your favorite ad against smoking? (I10d)

The proportion of those who reported having a favorite tobacco control advertisement from among those who had seen a tobacco control advertisement in the past month is described in **Figure 9.3**. Among current smokers, there was a marked age trend among those who had a favorite antismoking advertisement with young adults (18-24 years) being almost twice as likely to have a favorite advertisement as those over 45 years of age. A much smaller but similar age trend was seen among the never smokers. However, the highest proportions with a favorite antismoking advertisement were the former smokers in each of the lower three age groups (18-44 years). This suggests that the antismoking ads are particularly salient to young smokers and to a wide range of former smokers. Thus, this campaign may be having a significant impact on supporting quitting by reducing relapse to smoking.

Figure 9.3: Adults Seeing an Anti-Tobacco Advertisement in the Past Month Who Have a Favorite Anti-Tobacco Advertisement by Smoking Status.



Age	Current Smoker	Former Smoker	Never Smoker
18-24	60.1	63.9	57.9
25-29	51.7	61.4	55.4
30-44	49.4	63.2	50.4
45+	33.5	46.7	42.1

The reported favorite ads were coded and grouped into the following nine categories: no favorite ad, general anti-smoking, anti-industry (such as the 'Truth' campaign ads), health consequences, second hand smoke, tobacco industry supported, quitting assistance, general anti-drug, and unable to categorize. The two most popular categories were health consequences advertising and messages

attacking tobacco industry practices (**Figure 9.4a**). There was a marked age difference in reporting between these two favorite advertising categories. Young adults aged 18-24 years preferred anti-industry ads $(27.3\%\pm2.2)$ followed by health consequences ads $(16.8\%\pm2.3)$. Slightly older adults aged 25-29 years equally preferred anti-industry and health consequences ads $(19.7\%\pm3.3, 19.1\%\pm3.1, respectively)$. Adults aged 31+ years, were much more likely to indicate that advertisements with a health consequences message were their favorite. Among adults aged 30-39 years who had a favorite ad, twice as many preferred an advertisement with a health consequences message $(23.3\%\pm6.5)$ than one with an anti-industry message $(11.9\%\pm3.5)$.



Figure 9.4a: Favorite Type of Anti-Tobacco Advertisement: Anti-Industry and Health Consequences

		2005	2008			
Age	Anti-industry	Health consequences	Anti-industry	Health consequences		
18-29	29.1	29.1 16.1		16.9		
25-29	19.4	16.4	9.7	19.1		
30-39	10.2	16.7	11.9	23.3		
40-49	6.1	25.0	8.7	27.1		
50-59	3.5	3.5 16.9		24.5		
60+	1.1	13.3	0.8	16.6		

There was considerable stability in the age-specific reporting of ads on secondhand smoke, quitting assistance, and those supported by the tobacco industry between 2005 and 2008 except for the proportion who nominated an advertising message that was supported by tobacco industry advertising (**Figure 9.4b**). **Figure 9.4b** provides evidence for a decrease in preference for tobacco industry sponsored anti-smoking advertisements between 2005 and 2008. The considerable drop across age groups in this category probably reflects a similar change in the frequency of this type of advertising between the two years. Preference for secondhand smoke advertisements has also decreased for those between the ages of 25 and 59, despite slight increases in preference for those in the youngest and oldest age groups (18-24 and 60 and older) (**Figure 9.4b**).



Figure 9.4b: Favorite Type of Anti-Tobacco Advertisement: Secondhand Smoke, Tobacco Industry and Quitting Assistance.

		2005		2008				
Age	Secondhand	Tobacco	Quitting	Secondhand	Tobacco	Quitting		
	smoke	industry ads	assistance	smoke	industry ads	assistance		
18-29	4.5	1.1	2.5	4.8	0.5	2.1		
25-29	7.8	1.8	2.0	4.5	0.5	4.6		
30-39	9.1	1.1	3.6	5.8	0.3	2.8		
40-49	7.4	2.7	1.6	4.4	0.1	2.4		
50-59	8.3	5.5	1.8	3.9	1.1	2.0		
60+	2.6	3.5	2.3	3.0	0.5	1.3		

3. Tobacco Industry Marketing and Advertisements

Changes in Tobacco Advertising

The following question was asked in the 2008 CTS to determine if the perception of respondents about tobacco industry advertising has changed:

In the past few years, do you think advertising for tobacco products has...increased a little, increased a lot, stayed the same, decreased a little, decreased a lot? **(I13c)**

The majority of the California population reported that they thought tobacco advertising had decreased over the past few years (**Figure 9.5**). This was particularly the case for those over 45 years of age where over one third thought that there had been a large decrease. The only age group in which the majority did not think that tobacco advertising had declined was young adults aged 18-24 years, this could be explained by their less exposure to ads for tobacco products when it was allowed in previous times, or that after the MSA, the tobacco industry may be focusing their advertising on younger populations. Indeed, there is other evidence to support this suggestion. RJ Reynolds has been accused of violating the MSA in the images and message associated with its 2007 Camel #9 campaign. Further, data indicate that this campaign was associated with increased initiation only among girls (Pierce, 2010).



Figure 9.5: Perceived Increase or Decrease in Tobacco industry Advertising according to age groups in 2008.

Perceived Changes in	Age	A lot	A little
Tobacco Industry Ads			
	18-24	9.3	13.9
Increased	25-44	7.5	8.4
	45-64	4.6	7.9
	65+	5	5.5
	18-24	17.9	30.5
Decreased	25-44	26.9	27.6
	45-64	35.6	25.2
	65+	34.6	27.1

Favorite Tobacco Industry Advertisement

The 1992, 1996, 1999, 2002, 2005, and 2008 CTS asked the following open-ended question to assess the favorite tobacco ads for adults:

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

In 2008, approximately 30% of adults still reported having a favorite cigarette advertisement, the vast majority of whom nominated either the Marlboro or Camel brands as their favorite (**Figure 9.6** and Appendix Table A.9.1). Prior to the 1998 MSA (NAAG, 1998), young adults 18-24 were 50% more likely than older adults (41+ years) to report having a favorite industry advertisement (60% vs. 32%). Participants who specifically reported that they did not have a favorite industry advertisement are categorized as "no favorite ad". Since the restrictions imposed in 1999 by the MSA, the proportion of 18-24 year olds reporting a favorite advertisement has reduced to half, so that in 2008, there was little age difference in the percentage of people reporting not having any favorite cigarette advertisement across age groups (18-24 yrs: 68.8%, vs.25-40 yrs:70.7% vs. 41+ yrs: 74.1%).

Reporting of the Camel brand as the favorite advertisement started to decline rapidly among all age groups in 1999, probably because of the removal of the Joe Camel campaign. Among young adults, reporting Camel as the favorite advertisement plateaued after 2002 when it was half the level of 1996. The lack of a continued significant decline from the 5-8% levels seen in older adults, may suggest continued influence of current RJ Reynolds advertising campaigns.

The favorite advertising data for the Philip Morris' Marlboro campaign did not show an immediate impact from the MSA. Approximately one quarter of 18-24 year olds nominating it as favorite cigarette advertisement in each survey year from 1992 through 2002. The popularity of the brand increased from 1992 to 1996 among older adults, possibly because of the effectiveness of the Marlboro Miles and Adventure Team campaigns that were run during this period (Sumner and Dillman, 1995). Nomination of Marlboro as a favorite advertisement has declined among those under 40 years of age since 2002, and the decline has been particularly marked among the 18-24 year olds. It was half as popular in 2008 as in 2002, and there has been an approximate 40% decline since 2005. The first indication of a decline in popularity among adults over age 40 years is observed in 2008.



Figure 9.6 Favorite Cigarette Brand Advertisements: Camel, Marlboro, and No Favorite Ad.





SOURCE: CTS 1992/93, 1996, 1999, 2002, 2005, 2008

Favorite Brand Advertisement by Brand Smoked

Across age groups, Marlboro and Camel smokers more frequently reported that the brand they smoke was also the brand of their favorite cigarette advertisement (**Figure 9.7**). This correlation was particularly strong among young adults aged 18-24 years who were Camel smokers. Two thirds of those who smoked Camel cigarettes nominated the Camel brand as their favorite cigarette advertisement. However, over a quarter of both Marlboro and Camel smokers (higher in older age groups) also reported that they did not have any favorite cigarette advertisement.



Figure 9.7: Adult Favorite Cigarette Brand Ad by Brand Smoked and Age Group.

		Age Group						
	Favorite Ad	18-24	25-29	30-44	45+			
	Marlboro	44.7	52.8	53.5	49.6			
Marlboro smokers	Camel	17.0	7.6	5.0	2.3			
	None	27.8	33.2	35.3	42.0			
	Marlboro	7.7	4.0	1.0	4.2			
Camel smokers	Camel	62.7	46.8	44.7	46.1			
	None	23.1	38.8	39.4	41.6			

4. Tobacco Industry Marketing and Advertisements

Pro and Anti Tobacco Media Joint Impact

To explore the relationship between tobacco control ads and pro-tobacco advertisements and smoking behavior, we examined the percentage of adults who reported having: 1) no favorite ad (tobacco control or pro-smoking), 2) a favorite tobacco control ad only (no favorite cigarette ad), 3) no favorite tobacco control ad but a favorite tobacco industry ad, or 4) both (tobacco control and pro-smoking ad). **Figure 9.8** presents the results for those who favored at least one kind of ad by smoking status. Among smokers, 16.8±2.0% had only a favorite tobacco control ad and no favorite cigarette ad. Having a favorite tobacco brand advertisement was more common among smokers than former and never smokers, independent of having a favorite tobacco control advertisement.



Figure 9.8: Adults with Favorite Anti and/or Pro Advertisements.

5. Other Marketing and Advertisement

Advertising at Point of Sale

To assess tobacco advertising at point of purchase/sale, the 2008 CTS asked the following question of adults.

Thinking about the stores you visit most often, such as convenience store, supermarket or grocery store, what brand of cigarettes do you recall seeing advertised the most? (**I11a**)

One third (33.5%) of respondents were unable to recall any cigarette ad, indicating at least 66.5% of respondents remember seeing some cigarette advertisement at point of sale with Marlboro and Camel being the most commonly reported brands (Appendix Table A.9.2). Marlboro was the most

popular (41.9%), being recalled more than four times as often as Camel (9.9%). **Figure 9.9** presents the data on recall of tobacco industry advertising at the point of sale by age and smoking status. The figure only presents Camel and Marlboro brand recall as these were the most commonly-named brands, as well as data for those who recalled no brand advertising. A larger proportion of former and never smokers reported seeing no cigarette advertisements when compared to current smokers, this difference was particularly apparent among adults aged 45 and older. Only a few of the young adult never smokers reported not seeing any advertisements ($15.2\% \pm 2.3$) compared to a majority of older 45+ years adults ($53.5\% \pm 4.1$) who did not recall any advertisement of cigarettes (**Figure 9.9**).

The 2008 CTS results indicate over 70% of adults 18-24 years notice some point of sale marketing regardless of smoking status. That the vast majority of former smokers aged 25-44 noticed the advertising suggests that it has the potential to play a role in relapse to smoking. The impulse purchase of cigarettes in response to effective point of sale marketing may be a major factor in slowing down the decline in prevalence in the population.





Age	Smoking Status	Marlboro	Camel	None	Age	Smoking Status	Marlboro	Camel	None
10.04	Never	54.2	16.8	15.2	20.44	Never	44.7	7.7	32.7
10-24	Former	61.2	12.0	14.9	30-44	Former	59.0	13.2	16.9
	Current	57.2	21.3	5.3		Current	56.6	15.7	13.0
05 00	Never	56.5	8.8	22.0	45.	Never	23.9	7.1	53.5
20-28	Former	63.6	15.9	9.1	40+	Former	35.3	8.0	41.0
	Current	62.1	16.6	7.3		Current	50.2	10.7	23.6

Favorite Advertisements by Brand Seen at Point of Sale

Having a favorite tobacco advertisement appears to be associated with recall of POS tobacco industry advertising (**Figure 9.10**). Seeing a Marlboro advertisement was particularly likely for individuals who nominated Marlboro as their favorite cigarette advertisement, especially among young adults. Among individuals whose favorite advertisement is Camel, a greater proportion also reported seeing a Marlboro advertisement in stores compared to seeing Camel or no advertisement. This could be explained by a much larger prevalence of Marlboro POS advertising. However, reporting a Camel POS advertisement was highest among those with Camel as their favorite advertisement. Across all age groups, respondents who did not have a favorite cigarette ad were least likely to recall any point of purchase cigarette advertising. Young adults (aged 18-24) were the most likely to report having seen any POS tobacco ad.





		Age				
Favorite Ad	Brand Most Seen	18-24	25-29	30-44	45+	
Marlhoro	Marlboro	71.6	67.3	61.9	50.2	
IVIAIIDUIU	Camel	14.8	9.7	11.6	9.2	
	None	5.2	11.1	14.3	31.0	
Comol	Marlboro	60.8	63.9	47.7	27.5	
Calliel	Camel	29.2	26.1	29.1	21.9	
	None	3.1	3.9	12.0	36.7	
Nono	Marlboro	51.8	57.0	46.1	26.8	
NULLE	Camel	16.2	9.6	7.0	6.6	
	None	18.9	22.3	35.9	53.1	

Tobacco Logos at Sporting Events Seen on Television

The 1996, 1999, 2002, 2005 and 2008 CTS asked all adults 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 proportion who reported having seen a tobacco industry logo on television has declined considerably so that by 2008 it was half the level seen in 2002 (Appendix Table A.9.3). A range of 4% to 6% of young adults (18-29 years) across all smoking categories indicated that they had seen such a logo very often, but a higher 10.2% of susceptible never smokers reported seeing such a logo. Overall, there has been a decline in the percentage of young adults who saw a tobacco logo at a televised sporting event from 13.7% in 2002, to 10.4% in 2005 to 6.1% in 2008. Since most sporting events (such as car racing, and rodeos) that recently advertised tobacco products are more often followed by young adults who use smokeless tobacco, we wanted to determine the reports of seeing tobacco logos on a televised sporting among this population. Similar to the general population, the decline in reporting seeing a tobacco logo on a televised sporting event has declined in 2008 to half or more that reported in 2002 regardless of use of smokeless tobacco product (**Figure 9.11**).

Figure 9.11: Young Adult Report of Seeing a Tobacco Logo on a Televised Sporting Event "Very Often" in the Past Year by their Smokeless Tobacco Use.



Smoking, Advertising and Promotions in Bars or Clubs

To assess exposure to tobacco advertising in bars and clubs, the 2002, 2005, and 2008 CTS asked the following questions of adults under the age of 30 who reported going to clubs or bars often or sometimes:

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)

Overall, since 2002, there has been a continuous decrease in the percentage of young adults (18-29 years) who are club or bar patrons (i.e., attended a bar/club often or sometimes) who reported that in the past year they had seen a tobacco advertisement at a bar or club, on the walls or furniture ($34.5 \pm 3.9\%$ in 2008), napkins, coasters or giveaways ($30.9\pm 3.7\%$), or products being given away by a tobacco company representative ($12.3\pm 2.5\%$) (Appendix Table A.9.4). Among these young adult club or bar patrons in 2008, former smokers ($67.6\pm 15.3\%$) were the most likely to recall seeing such a promotion. However, a substantial $47.1\pm 5.1\%$ of never smokers recalled one or more promotional items in bars or clubs; this rate was only slightly lower than that of current smokers ($53.2\pm 7.4\%$) seeing such promotions (**Figure 9.12**). Tobacco promotions in bars or clubs may be particularly influential with young adults and may influence former smokers to relapse.



Figure 9.12: Young Adults 18-29 Years Old Attending Bars/Clubs, Recall of ≥1 Promotional Item in Bars/Clubs by Smoking Status.

6. Response to Advertisements

Action Response to California Tobacco Control Program Media: Calls to Smokers' Helpline

A major goal of the CTCP media campaign is to encourage smokers to seek help quitting and many media advertisements and other promotional materials encourage smokers to call the centralized Smokers' Helpline. Studies have shown that behavioral counseling from this helpline can double the rate of successful quitting. (Zhu, 2002) In 2008 and based on the CTS smoking prevalence of 11.6% there were 3.1 million adult smokers in California, and approximately 1% of smokers called the Smokers' Helpline.

The Helpline collects information on what prompted each caller to contact the Helpline. These data are presented for each year since 2002 (**Figure 9.13**). The largest number of Helpline calls was received in 2002, coinciding with the time that the CTCP budget was at its highest. In 2008, there were just over 30,000 calls, 40% lower than in 2002. Over the 2002-08 periods, the number of calls that were not prompted by the mass media campaign stayed relatively constant at a little over 20,000 per year. In the year of the peak of the media budget, there were over 50,000 calls to the Helpline with over 30,000 being prompted by the media campaign. In 2008, the media campaign was successful in prompting about one third of calls to the Helpline (i.e., ~10,000).





Percentage of Helpline Calls Attributable to Media							
Year	2002	2003	2004	2005	2006	2007	2008
% Calls Attributable to Media	58	47	51	46	40	37	32

Possession and Willingness to Use Tobacco industry Promotional Items

To assess ownership and willingness to own or use cigarette brand promotional items, the 1996, 1999, 2002, 2005, and 2008 CTS asked the following questions:

Some tobacco companies offer promotional items identified with their brands, such as clothing and bags which 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? (I14db)(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)?

Across age groups, the proportion of respondents who reported owning a tobacco brand promotional item has declined since 1996 but has been relatively stable at 7-10% for those aged 18-40 years since 2002 (**Figure 9.14**). The intention question (e.g., "would ever use") was not added to the survey until 1999. In 1999, almost one-third of 18-24 year olds either owned or were willing to use a tobacco brand promotional item, which was higher than either of the older two age groups. While the MSA appears associated with a decline in this proportion for adults aged 18-40 years, the proportion stabilized at over 20% for young adults (i.e.,18-24 years). In 2008 it was 16% for respondents aged 25-40 years and 13% for those over the age of 40 years. At all time points, willingness to use an item was considerably higher than currently having such an item.



Figure 9.14: Adults Who are Willing to Own or Who Own a Tobacco Brand Promotional Item.

Age		1996	1999	2002	2005	2008
-		%	%	%	%	%
18-24	Own	15.9	11.9	7.9	9.7	8.5
	Would use		18.8	14.1	12.2	12.1
25-40	Own	13.6	9.9	6.8	8.1	6.1
	Would use		16.2	13.9	13.1	10.2
41+	Own	6.5	6.6	4.2	3.7	3.0
	Would Use		13.1	13.2	10.5	10.1

Appendix Table A.9.5 presents data for willingness to use promotional items. Among men, 20.3 \pm 2.2% reported being willing to use a promotional item, twice the percentage for women (9.6 \pm 1.6%). Only 6.9 \pm 1.8% of committed never smokers reported that they would be willing to use a promotional item, compared to 13.3 \pm 5.4% of susceptible never smokers, 16.7 \pm 4.6% of former experimenters, and 23.4 \pm 6.2% of former established smokers. Current smokers were generally more likely to be willing to use a promotional item than non-smokers (28.4 \pm 5.1% for non-daily smokers and 37.7 \pm 6.7% among daily smokers).

People who had promotional items in 2008 more frequently reported receiving them for free than through exchange or purchase (**Figure 9.15**). Overall, only 6.6% of respondents to the 2008 CTS reported getting a tobacco promotional item in the past year (Appendix Table A.9.6). Twice as many males (9.1%) reported obtaining a promotional item by any method as females (4.2%) (Appendix Table A.9.6). As expected, current smokers were the most likely to report receiving a promotional item (20.7%) compared to only 6.2% of former smokers and 4.1% of never smokers.

Among adults who obtained a promotional item, one quarter of the18-24 year olds purchased the promotional item rather than receiving it for free or in exchange for coupons, which is a considerably higher proportion than purchases for adults over 25 (**Figure 9.13**). Purchasing of a promotional item indicates a higher level of receptivity to the advertising. Overall, it appears that the tobacco industry is continuing to market their promotional items toward young adults.



Figure 9.15: Adults Acquiring Any Promotional Item in the Past Year by Age.

į,				
	Age	Exchanged	Received	Purchased
	18-24	2.6	5.7	3.2
	25-44	1.5	4.5	1.5
	45-64	1.2	2.5	0.6
	65+	2.1	1.2	1.7

Tobacco Brand Name Event Sponsorship

The 2002, 2005, and 2008 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)

Figure 9.16 presents the data for Californian adults' (younger than 50) self-reported attendance at an event sponsored by a tobacco company by gender and smoking status. As expected, for both males and females, adults under the age of 50 were more likely than adults aged 50+ to have attended an event sponsored by a tobacco company (Appendix Table A.9.7). Across smoking status, males were approximately twice as likely as females to have attended such an event in the past year. In 2008, self-reported attendance of such events had dropped by over 30% to 17.3-19.9% among males, regardless of smoking status and by 8.1-12.2% among females. The percentage of young adult males aged 18-24 attending a tobacco sponsored sporting event has decreased from $30.8\pm2.1\%$ in 2002 to $20.0\pm3.1\%$ in 2008, while female young adults aged 18-24 have decreased from $20.9\pm1.9\%$ in 2002 to $14.9\pm2.8\%$ in 2008 (Appendix Table A.9.5).



Figure 9.16: Adults <50 Attending an Event Sponsored by a Tobacco Company in 2008.

Gender	Smoking Status	2002	2005	2008
Mala	Never smoker	28.0	22.6	18.7
Male	Former smoker	27.6	17.6	19.9
	Current smoker	23.8	18.8	17.3
Fomolo	Never smoker	18.2	13.7	10.9
remale	Former smoker	14.9	12.0	12.2
	Current smoker	15.0	9.0	8.1

7. Perceptions and Future Tobacco Use

Adult Perceptions of New Tobacco Product Ads

To assess perceptions of advertising for new tobacco products, the 2008 CTS asked two questions assessing the desirability of the current advertising of Camel No. 9 Cigarettes and a new smokeless tobacco product called snus. Participants were asked:

What do you think of the ads for...

Camel No. 9? Do you...(**I12a**) Snus tobacco products? Do you...(**I12b**) Like them a little, like them a lot, not like them, or have not seen them?

It has been argued that both of these products are targeted at adolescents (Pierce et al, 2010; Henningfield, 2001). Accordingly it may not be surprising that, overall, 80.7% of participants reported never having seen a Camel No. 9 ad, and 89.9% reported never having seen an ad for Snus, regardless of sociodemographic category. Furthermore, for both products, those who reported that they had seen the ads indicated that they did not like them (5-21%), compared to a high of 10.8% who liked the ad at all. **Figure 9.17** presents the percentage of people who liked Camel No. 9 and snus ads a little or a lot by smoking status. Current smokers were much more likely to have seen a Camel No. 9 advertisement (22.5%) compared to 17.2% of never smokers and 15.5% of former smokers. A total of 10.8% of current smokers reported liking the ad a little or a lot compared to only 3.6% of both never and former smokers.



Figure 9.17: Adults Who Liked Camel No. 9 and Snus Ads "A Little" or "A Lot".

		Likes A little	Likes a lot
	Never smoker	3.2	0.4
Camel No 9	Former smoker	2.8	0.8
	Current smoker	8.1	2.5
	Never smoker	0.7	0.1
Snus	Former smoker	0.5	0.1
	Current smoker	1.4	0.5

Adult Perceptions of Youth Susceptibility

Because the 2008 CTS did not collect data from youth (under the age of 18), adults were asked about their perception of the impact of actors and actresses smoking on-screen on youth smoking behavior. Respondents were asked if they agree or disagree with the following statement:

Young teenagers are more likely to smoke if the movie stars that they like smoke on screen.

Overall, approximately 70% of both the adult male and female population agreed that teenagers are more likely to smoke if the movie stars they like smoke on screen. **Figure 9.18** presents the data by age. Younger adults (i.e., 18-44 year olds) were less likely to agree (~65%) that teenagers are more likely to smoke if the movie stars they like smoke compared to 71.6% of 45-64 year olds and 79.8% of those 65 and older. As might be expected current smokers agreed less frequently (55.4%) than did former (74.8%) or never smokers (70.3%). Increased years of education also significantly corresponded with increased agreement that young adults are more likely to smoke if they observe the movie stars they like smoking on screen. Among race/ethnic groups, Asians were the most likely (80%) to agree with influence of movie stars' smoking on teenagers (Appendix Table A.9.8).



Figure 9.18: Adults Who Agree of Teens Being More Likely to Smoke if Movie Stars Smoke on Screen.

Summary

Mass media marketing is known to influence tobacco use cognitions and behaviors. The tobacco industry has a nearly 100-fold advantage over tobacco control in per capita expenditure to influence smoking behavior. While the CTCP has been successful at changing and maintaining anti-smoking norms (Pierce, 2007). Declining media expenditure has coincided with decreases in adult recall of media campaign messages and decreased Helpline calls.

Young adults aged 18-24 appear to be the particularly responsive to both the CTCP and the Tobacco industry's marketing and media campaigns. Young adults age 18-24 are still twice as likely to see a lot of tobacco industry advertisements as 25-40 year olds and four times as likely to see them as those over the age of 40. Similarly, young adults (i.e., 18-29 year olds) were more likely to have a favorite anti-smoking advertisement against the tobacco industry than those over the age of 30. Health consequences advertisements were the preferred advertisements by adults over the age of 30. Tobacco control messages focused on the negative attributes of the tobacco industry may be among the most effective methods for reaching young adults.

Young adults 18-24 were more likely to believe that tobacco advertising has increased and less likely to perceive tobacco marketing as having decreased a lot in recent years compared to adults over the age of 25. Adult recall of industry advertisements indicate Marlboro continues to have the most successful industry marketing campaign among adults over the age of 25, while adults aged 18-24 are equally likely to report Marlboro and Camel as their favorite advertisement. Since the MSA, the percentage of young adults (18-24) with a favorite tobacco industry advertisement has been halved, eliminating the age difference in percentage of adults with a favorite tobacco industry advertisement. The tobacco industry appears to be shifting their marketing efforts away from traditional techniques towards strategies that continue to impact young adults, such as promotional items, POS advertisements and bars or clubs where young adults (i.e., potential new smokers) are likely to frequent. A greater proportion of young adults (18-24 years) obtained promotional items, a strong predictor of initiation and cigarette use, than did those over the age of 25, suggesting specific targeting of this age group by the tobacco industry. While television and event sponsorship appear to be on the decline, a high percentage (~50% depending on age and smoking status) of bar-going adults under the age of 30 reported seeing tobacco promotional items in bars in the past year. Marlboro, in particular, gets a high recall from their POS marketing.

Taken together, the CTCP continues to be successful in implementing anti-tobacco social norms in California, but increased efforts may be needed to maintain and further promote strong smoke-free norms, particularly among young adults. The tobacco industry appears to continue to direct its considerable efforts towards young adults and has managed to maintain a significant level of receptivity to their messages. The recent decline in funding for the CTCP has hampered its ability to combat tobacco industry marketing that promotes smoking behavior.

APPENDIX

Chapter 9 Media and Marketing Influences on Smoking

The key findings and analyses are provided in the chapter. The Appendix offers additional data, which includes other brands not addressed in the primary findings and more detailed demographic data. In some instances, these tables provide supplementary analysis to the tables and figures presented in the text.

1. Favorite Tobacco Industry Advertisement

Appendix Table A.9.1 presents the data for favorite tobacco industry advertisement by age. This table accompanies **Figure 9.6** (Section 3: Tobacco Industry Marketing and Advertisements), providing details about the percentages in each age group who report having a favorite Camel or Marlboro advertisement as well as those who report they do not have any favorite tobacco industry advertisement.

Appendix Table A.9.1							
	Favorite Cigarette Advertisement by Age and Year						
	1992	1996	1999	2002	2005	20008	
	%	%	%	%	%	%	
			Camel				
Age							
18-24	26.41 (±3.6)	26.69 (±2.5)	22.02 (±2.7)	13.71 (±1.1)	14.15 (±1.8)	13.64 (±1.6)	
25-40	20.7 (±1.6)	18.95 (±1.5)	13.89 (±1.3)	10.76 (±1.3)	11.64 (±2.5)	8.11 (±2.4)	
Over 41	9.42 (±1.1)	12.81 (±1.0)	8.21 (±0.9)	7.36 (±0.9)	5.88 (±1.2)	5.74 (±1.5)	
			Marlboro				
Age							
18-24	24.55 (±5.5)	24.14 (±2.6)	26.54 (±3.2)	24.48 (±1.3)	20.37 (±2.2)	12.29 (±1.7)	
25-40	17.38 (±1.9)	22.67 (±1.7)	24.03 (±1.7)	23.61 (±1.6)	18.83 (±4.4)	16.7 (±3.0)	
Over 41	12.86 (±1.4)	16.48 (±1.2)	20.5 (±1.7)	20.53 (±1.2)	20.88 (±2.6)	16.58 (±1.9)	
No Favorite							
Age							
18-24	40.69 (±5.9)	41.8 (±2.9)	42.84 (±3.6)	54.84 (±1.5)	58.27 (±2.9)	68.77 (±2.1)	
25-40	51.48 (±2.1)	50.44 (±2.0)	53.93 (±1.6)	58.99 (±2.0)	65.13 (±5.2)	70.67 (±3.8)	
Over 41	68.19 (±1.9)	63.8 (±1.8)	64.06 (±1.6)	66.34 (±1.5)	67.61 (±2.8)	74.13 (±2.2)	

2. Cigarette Brand Recall in Stores

Table A.9.2 presents cigarette brand recall in stores for all cigarette brands reported in the 2008 CTS. This table provides all of the cigarette brands in the denominator for **Figure 9.9** in the text. Marlboro was by far the brand most commonly recalled, followed by no recall of any advertisement, and then followed by Camel.

Table A.9.2 2008 CTS: Cigarette Brand Recall in Stores					
Brand	Ν	Weighted %			
Don't know	779	7.8			
Missing	20	0.3			
None*	3191	33.6			
Marlboro*	4396	41.9			
Salem	30	0.4			
Merit	1	0.0			
Winston	73	1.1			
Benson & Hedges	6	0.0			
Kool	202	1.7			
Camel*	1199	9.9			
Newport	289	1.7			
Pall Mall	6	0.0			
Generic	28	0.2			
Virginia Slims	21	0.3			
Carlton	1	0.0			
More	1	0.0			
Capri	1	0.0			
Doral	8	0.0			
Lucky Strike	12	0.2			
Parliament	9	0.2			
Philip Morris	6	0.0			
Raleigh	1	0.0			
American Spirit	10	0.1			
Basic	15	0.1			
GPC	7	0.0			
Djarum	1	0.0			
Other	84	0.8			

*Indicates variables displayed in Figure 9.9

3. Tobacco Marketing at Televised Events

Table A.9.3 presents data on adults aged 18-29 reporting seeing a tobacco logo on a televised sporting event very often in the last year. Across groups, the percentage of adults under 30 reporting having seen a tobacco logo on a televised sporting event is decreasing, with the exception of the susceptible never smoker (10.2±6.8%) who reported sighting more tobacco logos, while all other groups percentages were under 7%. This may indicate that tobacco companies continue to use television advertising to specifically target younger never smokers who may be susceptible to becoming future smokers and new clients for the tobacco industry.

Table A.9.3 Young Adults Who Reported Seeing a Tobacco Logo on a Televised Sports Event "Very Often" in the Past Year*				
	2002	2005	2008	
• · · ·	% 13.7 (±0.0)	% 10.4.(±1.4)	% 6.1 (±1.2)	
Overall Conder	$13.7 (\pm 0.9)$	10.4 (±1.4)	0.1 (±1.2)	
Gender	40.0 (4.0)	40.4 (. 0.0)	00(10)	
Male	16.2 (±1.2)	12.4 (±2.3)	6.8 (±1.6)	
Female	10.8 (±1.1)	8.1 (±1.6)	5.1 (±1.3)	
Age				
18-21	13.5 (±1.3)	10.9 (±2.9)	6.6 (±1.5)	
22-25	12.9 (±1.4)	11 (±2.3)	6.1 (±2.1)	
26-29	14.6 (±1.6)	9.1 (±2.1)	5.4 (±2.2)	
Race/Ethnicity				
African American	13.7 (±3.2)	11.1 (±5.2)	3.2 (±2.6)	
Asian/PI	10.5 (±2.4)	7.6 (±3.3)	5.2 (±2.5)	
Hispanic	16.2 (±1.7)	12.9 (±2.8)	7.1 (±2.0)	
Non-Hispanic White	12.4 (±1.2)	8.2 (±1.7)	6.0 (±1.5)	
Other	9.2 (±3.0)	14.1 (±6.9)	1.4 (±2.0)	
Smoking Status				
Committed never smoker	14.3 (±1.3)	9.9 (±1.7)	6.2 (±1.4)	
Susceptible never smoker	12.7 (±4.1)	8.8 (±5.1)	10.2 (±6.8)	
Former experimenter	14.4 (±1.8)	12.7 (±3.8)	6.9 (±3.1)	
Former established	13.8 (±3.3)	8.3 (±2.7)	6.7 (±4.5)	
Non-daily social smoker	16.1 (±6.0)	16.0 (±16.9)	4.9 (±3.0)	
Other non-daily smoker	12.4 (±2.8)	9.4 (±4.3)	5.0 (±2.6)	
Daily smoker	10.5 (±2.0)	9.6 (±3.2)	3.1 (±2.1)	

*Previously done for adolescents

4. Advertisements in Bars or Clubs

Table A.9.4 presents data on recall of tobacco advertisements in bars or clubs for adults under 30. These questions were only asked of adults under thirty, as a larger percentage of this age group likely attends the bar or club more frequently than older adults. In 2008, adults under 30 continue to be most likely to have seen tobacco advertisements on walls or furniture $(34.5\pm 3.9\%)$, followed by on napkins, coasters or giveaways $(30.9\pm 3.7\%)$, and a tobacco representative giveaways $(12.3\pm 2.5\%)$.

Table A.9.4 Adults <30 Recall of Tobacco Advertisements in Bars or Clubs					
2002 2005 2008 % % %					
Walls or Furniture	41.8 (±2.1)	36.0 (±3.7)	34.5 (±3.9)		
Napkins, Coasters or Giveaways	36.5 (±2.0)	34.8 (±4.1)	30.9 (±3.7)		
Tobacco Representative Giveaway	15.4 (±1.6)	18.7 (±4.0)	12.3 (±2.5)		

5. Cigarette Promotional Items

Table A.9.5 provides demographic data on adults under 30 who were willing to use promotional items. As adults under 30 appear more likely to use promotional items than adults over 30, their

information is particularly relevant to fut use of tobacco related produc Males are approximately twice as likely females to be willing to use promotional ite Current daily smokers conti to be much me likely to (37.7±6.7%) to be willing to us promotional ite than other smoking statuses. This difference is particularly apparent when compared to committed new smokers (6.9±1.8%).

Table A.9.5. Young Adults 18-29 Willing to Use a Promotional Item					
	2002	2005	2008	Percenta	ge Change
	%	%	%	2002-2008	2005-2008
Overall	18.2 (±0.9)	16.8 (±1.7)	15.8 (±1.5)	-13.2	-5.7
Gender					
Male	24.6 (±1.4)	23.8 (±3.3)	20.3 (±2.2)	-17.5	-14.8
Female	11.0 (±1.0)	8.6 (±1.4)	9.6 (±1.6)	-13.5	11.2
Age					
18-21	17.2 (±1.4)	16.6 (±3.5)	13.9 (±2.1)	-19.1	-16.5
22-25	20.0 (±1.7)	17.8 (±3.2)	19.2 (±3.0)	-3.9	8.1
26-29	17.8 (±1.7)	15.9 (±2.8)	15.7 (±2.7)	-12.0	-1.5
Race/Ethnicity					
African American	16.3 (±3.9)	16.4 (±6.5)	13.0 (±6.4)	-19.9	-20.4
Asian/PI	20.8 (±3.1)	22.1 (±6.2)	16.9 (±4.7)	-18.8	-23.5
Hispanic	13.1 (±1.4)	11.5 (±2.6)	11.6 (±2.1)	-11.4	0.8
Non-Hispanic White	22.9 (±1.5)	21.1 (±2.4)	20.6 (±2.4)	-10.2	-2.5
Other	23.1 (±5.3)	15.0 (±7.3)	21.6 (±8.9)	-6.6	43.6
Smoking status					
Committed never smoker	8.4 (±1.0)	8.5 (±2.0)	6.9 (±1.8)	-18.5	-19.5
Susceptible never smoker	10.1 (±3.8)	12.3 (±4.5)	13.3 (±5.4)	31.4	8.2
Former experimenter	16.7 (±2.1)	17.7 (±5.3)	16.7 (±4.6)	-0.3	-5.8
Former established	23.5 (±3.2)	18.7 (±3.9)	23.4 (±6.2)	-0.7	25.0
Social	26.1 (±6.0)	15.6 (±8.0)	19.4 (±10.8)	-25.7	24.4
Other non-daily	27.8 (±3.7)	28.3 (±6.8)	28.4 (±5.1)	2.1	0.3
Daily	42.8 (±3.0)	38.3 (±6.9)	37.7 (±6.7)	-11.8	-1.5

Table A.9.6 presents data for all adult respondents who obtained some form of tobacco company promotional items. In general, males were more likely than females to obtain a promotional item by any method (i.e., exchanged, received or purchased). Similarly, young adults aged 18-24 were more likely to obtain a promotional item by any method than adults 25 and older. As was expected, current smokers were much more likely to obtain a promotional item as a gift or for free than the other ethnic groups, potentially indicating targeting of African Americans by cigarette companies.

Table A.9.6 2008 CTS Adult Response Some tobacco companies offer promotional items identified with their brand such as clothing and bags, which the public can buy or receive for free. In the past <u>12 months</u> have you					
	Exchanged Coupons For An Item With A Tobacco Brand Name Or Logo On It? %	Received As A Gift Or For Free, Any Item With A Tobacco Brand Name Or Logo On It? %	Purchased Any Item With A Tobacco Brand Name Or Logo On It? %		
Overall	1.6 (±0.6)	3.5 (±0.7)	1.5 (±0.4)		
Gender					
Male	2.1 (±1.0)	4.6 (±1.1)	2.4 (±0.8)		
Female	1.2 (±0.6)	2.5 (±0.6)	0.5 (±0.1)		
Age					
18-24	2.6 (±0.8)	5.7 (±1.2)	3.2 (±0.8)		
25-44	1.5 (±0.9)	4.5 (±1.4)	1.5 (±0.8)		
45-64	1.2 (±0.5)	2.5 (±0.6)	0.6 (±0.2)		
65+	2.1 (±2.2)	1.2 (±0.9)	1.7 (±2.1)		
Race/Ethnicity					
African American	1.6 (±0.9)	4.6 (±1.7)	2.5 (±1.4)		
Asian/PI	1.4 (±0.8)	3.6 (±1.1)	1.2 (±0.7)		
Hispanic	1.8 (±1.0)	3.5 (±1.4)	1.6 (±0.9)		
Non-Hispanic White	± 1.6 (±0.8)	3.4 (±1.0)	1.3 (±0.7)		
Other	1.5 (±1.4)	3.6 (±2.3)	2.0 (±1.5)		
Smoking Status		• •			
Never smoker	0.9 (±0.6)	2.4 (±0.8)	0.8 (±0.5)		
Former smoker	1.9 (±1.5)	2.9 (±1.3)	1.4 (±1.4)		
Current smoker	5.0 (±1.1)	10.6 (±1.4)	5.1 (±1.3)		

6. Attendance at Tobacco-Sponsored Events

Appendix Table A.9.7 presents data for adults reporting that they attended a tobacco sponsored event in the last year. Males continue to be more likely than females to have attended an event sponsored by a tobacco company. For both males and females, the youngest adults (i.e., 18-24 years olds) reported having attended an event sponsored by a tobacco company at the highest percentage, while adults over 50 reported the lowest percentage of attending such an event.

Table A.9.7 Percentage of Adults Attending a Tobacco-Sponsored Event						
	2002 2005 % %		2008 %			
Male						
Age						
18-24	30.8 (±2.1)	27.6 (±4.3)	20.0 (±3.1)			
25-29	29.5 (±2.3)	18.2 (±4.2)	16.5 (±4.5)			
30-39	25.3 (±3.2)	17.5 (±9.0)	19.6 (±7.8)			
40-49	24.6 (±4.7)	21.0 (±7.6)	17.6 (±5.9)			
50-59	15.9 (±3.4)	9.8 (±2.8)	9.6 (±3.4)			
65+	10.1 (±2.3)	9.6 (±3.3)	10.6 (±4.8)			
Female						
Age						
18-24	20.9 (±1.9)	15.0 (±2.6)	14.9 (±2.8)			
25-29	18.3 (±1.7)	13.4 (±3.3)	12.3 (±3.1)			
30-39	16.8 (±3.3)	11.0 (±4.8)	9.2 (±4.3)			
40-49	15.2 (±3.2)	13.6 (±7.1)	9.8 (±4.8)			
50-59	11.5 (±3.1)	12.8 (±7.5)	6.4 (±3.0)			
65+	10.6 (±3.4)	4.6 (±2.0)	6.43 (±2.3)			

7. Cigarette Brand Recall in Stores

Table A.9.8 presents adults perception about the influence of smoking in movies on youth smoking. Compared to other smoking groups, current smokers were least likely to agree $(55.4\pm3\%)$ and most likely to disagree $(40.9\pm2.9\%)$ that smoking in movies influences youth smoking behavior. Former smokers were slightly more likely to agree $(74.8\pm3.4\%)$ and less likely to disagree $(20.6\pm3.1\%)$ that movie stars smoking on screen influence youth behavior than never smokers $(70.3\pm2.4\% \text{ vs.} 25.3\pm3.1\%, \text{ respectively})$. As age and education increased, agreement increased and disagreement decreased. Asians were most likely to agree $(80.0\pm3.1\%)$ that movie stars' smoking influences youth behavior. Approximately 70% Non-Hispanic Whites and the other race category agreed, and a slightly lower $62.8\pm4.9\%$ Hispanics and $64.3\pm3.9\%$ African Americans agreed about movie stars' influence on youth smoking.

Table A.9.8 Young Teens are More Likely to Smoke if the Movie Stars They Like Smoke on Screen			
	Agree %	Disagree %	Don't Know %
Overall	69.6 (±1.7)	26.2 (±1.4)	4.3 (±1.0)
Gender			
Male	69.1 (±2.1)	26.4 (±2.0)	4.5 (±1.6)
Female	70.1 (±2.9)	25.9 (±2.5)	4.0 (±1.1)
Age			
18-24	64.6 (±2.6)	34.1 (±2.7)	1.3 (±0.6)
25-44	65.6 (±3.1)	30.6 (±3.2)	3.9 (±1.7)
45-64	71.6 (±3.2)	23.6 (±3.3)	4.9 (±1.9)
65+	79.8 (±3.6)	13.8 (±3.0)	6.4 (±2.0)
Race/Ethnicity			
African American	64.3 (±3.9)	30.5 (±3.7)	5.2 (±1.6)
Asian/PI	80.0 (±3.1)	16.9 (±2.8)	3.1 (±1.0)
Hispanic	62.8 (±4.9)	32.8 (±4.3)	4.4 (±2.1)
Non-Hispanic White	72.3 (±2.0)	23.2 (±1.9)	4.5 (±1.5)
Other	70.3 (±13.0)	28.6 (±12.1)	1.2 (±1.7)
Education			
Less than 12 years	58.0 (±7.6)	36.7 (±7.3)	5.3 (±3.3)
High school graduate	64.0 (±3.8)	32.9 (±3.8)	3.2 (±1.5)
Some college	70.1 (±2.9)	25.3 (±3.1)	4.6 (±2.1)
College graduate	78.6 (±2.8)	17.0 (±2.4)	4.5 (±1.6)
Smoking status			
Never smoked	70.3 (±2.4)	25.5 (±2.1)	4.2 (±1.3)
Former smoker	74.8 (±3.4)	20.6 (±3.1)	4.6 (±1.5)
Current smoker	55.4 (±3.0)	40.9 (±2.9)	3.8 (±0.9)

Source: CTS 2008

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Chapter 10

A Summary of Findings for Racial/Ethnic Groups

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Chapter 10

A Summary of Findings for Racial/Ethnic Groups

KEY FINDINGS

African Americans

- Between 1990 and 2008, there has been a significant decline of 41% in smoking prevalence among African American adults. Furthermore, a substantial 26.0% decline in adult smoking prevalence among African Americans occurred between 2005 and 2008 (19.2±2.6% to 14.2±1.6%).
- Across surveys, smoking prevalence among African Americans age 18-24 has been lower than that for Non-Hispanic Whites in that age group. In contrast, smoking prevalence for African Americans aged 45-64 has been consistently higher than for Non-Hispanic Whites in the same age group.
- The overall percentage of all African Americans reporting a total home smoking ban has increased significantly from 46.4±7.0% in 1992 to 78.6±2.6% in 2008.

Asian/Pacific Islanders (Asian/PIs)

- The overall adult smoking prevalence among Asian/PIs has declined approximately 41% between 1990 and 2008 (13.9±1.1% to 8.1±1.1%).
- Asian/PI smoking prevalence declined by 39.9% for men and 45.7% for women. Smoking prevalence in Asian/PI women remains less than one-third the smoking prevalence among their male counterparts.
- In California, the largest percentage of Asian/PIs initiated smoking between age 18-21 years (43.3±6.4%) and almost one-quarter (24.9±6.7%) initiated between ages 22-25 years compared to nearly one-third (32.7±2.8%) of Non-Hispanic Whites who initiated smoking between the ages of 18-21 years.

Hispanics

- Since 1990, the overall adult smoking prevalence among Hispanics has declined approximately 41% and women have consistently had a lower prevalence than men. In 2008, smoking prevalence among Hispanic women was approximately one-third the prevalence in their male counterparts.
- Education level may be less related to smoking prevalence among Hispanics compared to Non-Hispanic Whites. In 2008, Hispanics with less than high school education had only a 2.4-fold higher prevalence than those with a college degree or more, compared to a five-fold difference for Non-Hispanic Whites.
- Since 2005, there has been a significant increase in the percentage of Hispanic smokers making a quit attempt from 52.8±9.1% in 2005 to 74.8±5.0% in 2008.

Chapter 10

A Summary of Findings for Racial/Ethnic Groups

Introduction

Patterns of tobacco use and its health consequences vary by racial/ethnic groups (USDHHS,1998; CDC, 2004c; CDC, 2008). Recent data from the 2008 National Health Information Survey (NHIS) noted that in the United States, Asians had the lowest adult smoking prevalence (9.9%), followed by Hispanics (15.8%), Non-Hispanic Blacks (21.3%), and Non-Hispanic Whites (22.0%), while American Indians/Alaskan Natives had the highest prevalence (32.4%) (CDC, 2009a). Furthermore, there have been some consistent trends in prevalence over time. Data from the 1997-2008 NHIS found that for each year during that period, the percentage of Hispanic smokers was considerably lower than the percentage of Non-Hispanic White and Non-Hispanic Black smokers (CDC, 2009b).

In addition to smoking prevalence, national studies have found racial/ethnic differences in other areas of tobacco control such as age of daily smoking, cessation and second-hand smoke exposure. For example, a national study using data from the Tobacco Use Supplement of the Current Population Survey (TUS-CPS) found that between 1992-93 and 2001-02, the peak age range of daily smoking shifted to an older age group for African Americans but not for Non-Hispanic Whites (Trinidad et al., 2007). A different study using data from the 2003 TUS-CPS found that the likelihood of making a quit attempt in the past 12 months was similar among Whites and African Americans, while Hispanic and "Other" ethnicities were more similar in their likelihood to have made a quit attempt in the past year (Shiffman et al., 2008). In a study examining secondhand smoke exposure in homes with children, home exposures were more prevalent among Non-Hispanic Whites than among African Americans, Asian Americans, and Hispanics in 2000 (Soliman et al., 2004). A further analysis in the same study compared data across time and found that prevalence of secondhand smoke at home had declined significantly among Hispanics, Non-Hispanic Whites and African Americans between 1992 and 2000.

On a state level, the Centers for Disease Control and Prevention's (CDC) "Best Practices for Comprehensive Tobacco Control Programs" (CDC, 2007) recommends identifying and eliminating tobacco-related disparities as a primary goal for every state tobacco control program. In California, with its diverse population, there has been an ongoing emphasis on examining tobacco use and tobacco control efforts in different racial/ethnic groups. For example, the California Department of Public Health conducted the California Chinese American Tobacco Use Survey, California Korean American Tobacco Use Survey (Carr et al, 2005a; Carr et al., 2005b), California Asian Indian Tobacco Use Survey, and California Lesbians, Gays, Bisexuals, and Transgender Tobacco Survey. In addition, the University of California Tobacco Related Disease Research Program (TRDRP) has funded multiple studies on diverse populations including diverse ethnic groups (TEROC, 2009).

The California Tobacco Surveys (CTS) have also played an ongoing role in helping to identify trends in tobacco use in different racial/ethnic groups. This chapter summarizes some of the key findings from the 2008 CTS that have been presented in earlier chapters. In addition, for each of the three main racial/ethnic minority groups (African American, Asian/Pacific Islander, Hispanic), there are new, more detailed analyses of certain topics, with Non-Hispanic Whites as the primary comparison group.

1. African Americans

Adult Smoking Prevalence by Demographic Subgroups

In California, the overall adult smoking prevalence among African Americans has declined significantly since 1990, from 24.1±2.4% in 1990 to 14.2±1.6% in 2008, a decline of 41.1%

Between 1990 and 2008, there was a 41% decline in adult smoking prevalence among African Americans. (**Table 10.1**). During the period 1993-2005, the prevalence estimates seemed to have reached a plateau of around 20%. However, since the last survey in 2005, there has been a significant 26% decline from 19.2±2.6% to 14.2±1.6%. On a national level, according to data from the NHIS, there has also been a decline over time in smoking prevalence among African Americans (CDC, 2009b). Between 1997 and 2008, the percentage of Non-Hispanic Black adults in the U.S. who were current smokers decreased from

26.8% to 21.2% (CDC, 2009b).

	Standardizer	l Prevalence Es	Table 10.1	can Americans	(Screener Surv		
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %
Overall	24.1 (±2.4)	20.2 (±2.2)	20.8 (±1.5)	19.3 (±1.1)	18.3 (±1.6)	19.2 (±2.6)	14.2 (±1.6)
Gender			· · · ·			· · · · ·	
	26.4 (±2.6)	23.6 (±3.1)	23.1 (±2.1)	23.2 (±1.8)	20.5 (±2.0)	21.1 (±3.9)	16.3 (±2.6)
Female	21.8 (±3.1)	16.8 (±2.3)	18.6 (±2.0)	15.6 (±1.2)	16.2 (±2.3)	17.4 (±3.7)	12.1 (±1.8)
Age							
18-24	15.9 (±3.8)	8.9 (±4.5)	12.8 (±2.9)	15.5 (±2.9)	13.4 (±3.3)	12.6 (±5.2)	7.8 (±3.4)
25-44	29.9 (±3.6)	23.3 (±3.3)	23.9 (±2.3)	22.4 (±1.9)	21.1 (±2.1)	24.0 (±5.1)	14.7 (±3.4)
45-64	26.7 (±4.5)	25.7 (±4.9)	26.2 (±2.7)	22.3 (±2.0)	22.8 (±2.7)	21.9 (±3.4)	20.1 (±3.2)
65+	14.1 (±7.1)	14.5 (±3.9)	12.7 (±3.5)	10.9 (±2.9)	9.2 (±2.8)	10.2 (±4.5)	9.3 (±3.0)
Education							
Less than 12 years	30.9 (±7.6)	21.2 (±7.3)	32.2 (±4.7)	31.9 (±4.9)	27.7 (±5.7)	29.3 (±10.9)	22.6 (±6.8)
High school graduate	27.6 (±4.2)	26.7 (±4.6)	23.9 (±2.7)	23.3 (±2.3)	21.8 (±2.8)	21.3 (±5.0)	18.9 (±3.4)
Some college	24.0 (±3.7)	19.0 (±3.6)	18.1 (±2.0)	17.5 (±1.9)	18.1 (±2.8)	16.7 (±3.0)	13.9 (±3.0)
College graduate	12.2 (±3.4)	13.8 (±3.7)	12.6 (±2.3)	10.7 (±2.2)	10.7 (±2.1)	14.7 (±6.3)	6.5 (±2.4)
Income							
\$20,000 or less	28.5 (±6.0)		26.2 (±3.5)	24.6 (±3.4)	25.3 (±5.5)	21.6 (±7.0)	14.8 (±3.8)
\$20,001-\$30,000	24.6 (±6.2)		19.7 (±4.2)	21.0 (±3.9)	17.9 (±4.5)	17.7 (±10.2)	21.2 (±9.0)
\$30,001-\$50,000	21.1 (±5.2)		17.6 (±3.9)	18.3 (±2.8)	18.8 (±3.3)	19.6 (±6.1)	18.5 (±5.9)
\$50,001-\$75,000	18.3 (±6.1)		17.5 (±3.5)	16.9 (±3.6)	16.7 (±3.3)	19.2 (±4.4)	16.6 (±5.8)
\$75,001-\$100,000	14.4 (±5.9)		17.6 (±5.6)	15.6 (±4.5)	12.9 (±3.2)	14.2 (±6.7)	12.8 (±5.5)
\$100,001-\$150,000				· · ·			7.5 (±4.5)
Over \$150,000							5.7 (±5.6)
Missing	21.3 (±5.4)		15.3 (±3.5)	15.3 (±2.8)	19.0 (±4.2)	14.8 (±7.2)	10.2 (±3.3)

Smoking prevalence among both African American men and women has declined significantly since 1990. There seemed to be declines in both genders between 2005 and 2008; however, the changes did not reach statistical significance. In 2008, smoking prevalence was highest in African Americans age 45-64 (20.1±3.2%). Among African Americans aged 25-44, smoking

prevalence declined significantly between 2005 and 2008, from $24.0\pm5.1\%$ to $14.7\pm3.4\%$. By 2008, adult smoking prevalence for African Americans age 18-24 and age 65+ were at the Healthy People 2010 goal of less than 12% (7.8±3.4% and 9.3±3.0%, respectively).

The smoking prevalence among African Americans with a college degree $(6.5\pm2.4\%)$ was similar to the estimates reported for college graduates in other racial/ethnic groups (Asian/PI: $5.3\pm1.1\%$, Hispanic: $5.0\pm1.1\%$, Non-Hispanic White: $6.2\pm0.5\%$). African Americans with a college degree or more had a significantly lower smoking prevalence compared to African Americans with less years of formal education. Compared to African Americans with a college degree, smoking prevalence among those with less than 12 years of education was approximately three and a half times higher, among those with a high school degree smoking prevalence was three times higher, and among those with some college smoking prevalence was two times higher.

Trends in Prevalence by Age Group

A comparison of African American and Non-Hispanic White smoking prevalence by age group shows recurring patterns over time. As shown in the figure panels below: across surveys (1990-2008), smoking prevalence among adults aged 18-24 has been <u>lower</u> in African Americans compared to Non-Hispanic Whites. In 2008, the smoking prevalence for African American young adults was 7.8±3.4% compared to 13.4±1.7% for Non-Hispanic Whites (**Figure 10.1**). A similar pattern has also been seen on the national level since the early 1980's (Robinson, 2010).



Figure 10.1: Adult Smoking Prevalence of African American and Non-Hispanic White (Ages 18-24), 1990-2008.

In the next older age group (25-44 years-old), smoking prevalence among African Americans and Non-Hispanic Whites has been much more similar over time. In 2008, the smoking prevalence for African Americans aged 25-44 was $14.7\pm3.4\%$ and for Non-Hispanic Whites was $16.5\pm1.1\%$ (**Figure 10.2**).



Figure 10.2: Adult Smoking Prevalence of African American and Non-Hispanic White (Ages 25-44), 1990-2008.

For adults aged 45-64, there is a switch and smoking prevalence in African Americans is <u>higher</u> than for Non-Hispanic Whites. In 2008, 20.1±3.2% of African Americans (aged 45-64) were current smokers while 12.8±0.7% of Non-Hispanic Whites were smokers (**Figure 10.3**).

Figure 10.3: Adult Smoking Prevalence of African American and Non-Hispanic White (ages 45-64), 1990-2008.



Among the oldest age group (65+), the adult smoking prevalence in the two groups has been similar across time (**Figure 10.4**).





A study using combined data from the 1990-2002 CTS also found higher smoking prevalence among older African Americans compared to older Non-Hispanic Whites (Trinidad et al., 2005). The study went on to examine possible explanations for this finding. This study found that smoking uptake rates for African Americans were not higher than uptake rates for Non-Hispanic Whites of different adult age groups (i.e., aged 18-29, 30-44, and 45+). However, there was less successful quitting (5+ years) among older African American smokers (i.e., aged 30-44 and 45+) compared to older Non-Hispanic White smokers, suggesting the discordance may be related to differences in cessation.

A different study utilizing data from the NHIS examined the differences in smoking patterns between White and African American women (Moon-Howard, 2003). This study found that rates of smoking are lower among African American women than White women up to the mid-30's, after which the rates for African American women are higher than those for White women until the late 40's. To explore possible factors influencing the prevalence rates by age, this study examined differences in age of onset. They found that African American women initiate smoking later than White women in each age group, suggesting the discordance in prevalence by age group may be influenced by age of initiation. Age-related trends in California and across the country should continue to be followed.

Age of Regular Smoking

A 2004 study used national data from the TUS-CPS, to examine age of initiation among different ethnic groups during the 1990s (Trinidad et al., 2004). Their study found that the majority of Asian/PIs and African Americans initiated smoking as young adults, in contrast to Hispanic/Latinos and Non-Hispanic Whites who had larger percentages of initiating smoking as adolescents. In their study, 39.8% of African Americans initiated smoking between ages 18-21 and 12.9% initiated smoking between the ages of 22-25 years. Combining the two results, over half (52.7%) of African American regular smokers initiated smoking between as young adults (i.e., ages 18-25).

To examine whether similar ethnic differences also occur in California, data from the most recent CTS (2002, 2005, and 2008) were combined in a similar analysis. Age of initiation was determined for 26-50-year-old ever-smokers (100+ cigarettes in lifetime). **Figure 10.5** presents each racial/ethnic group and the percentage of smokers initiating smoking by age of initiation. Similar to the national study cited above, in California, the majority of African Americans initiated between ages 18-25 years (35.2%+25.4% = 60.6%). A significantly lower percentage of African Americans initiated smoking between the ages of 10-13 years compared to Non-Hispanic Whites ($5.0\pm1.7\%$ vs. 11.8±1.6\%) and a significantly higher percentage of African Americans initiated smoking between ages of 22-25 years compared to Non-Hispanic Whites ($25.4\pm5.0\%$ vs. 13.1±1.8\%).



Figure 10.5: Age of Regular Smoking by Race/Ethnicity.

As mentioned earlier in this chapter, a study utilizing national data found differences in age of onset of smoking in African American women compared to White women (Moon-Howard 2003). Specifically, in 2000, mean age of onset for African American women was 19.28 years (SD=5.60) compared to 18.21 years (SD=5.56) for White women. Furthermore, a comparison of mean age of onset by current age found that for each age group, African American women had a later age of onset compared to White women. Thus, in addition to continued efforts to prevent initiation in African American adolescents, efforts to prevent initiation in African American American.

Consumption Patterns

Table 10.2 shows the consumption patterns for the four racial/ethnic groups across time. Among African American smokers, conclusions are limited due to small sample sizes. In 2008, light-daily smokers (i.e., 1-10 cigarettes per day) seemed to make up the largest percentage of African American smokers ($50.5\pm10.2\%$). The percentage of African American heavy-daily smokers declined significantly from $8.6\pm4.8\%$ in 1990 to $1.5\pm1.2\%$ in 2008. By 2008, the percentage of heavy-daily smokers was also below 2% for Asian/PIs and Hispanics, but not for Non-Hispanic Whites ($11.2\pm1.8\%$).

	Table 10.2 Consumption by Race/Ethnicity												
	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %						
African American													
Non-daily	21.7 (±5.6)	14.6 (±6.5)	18.5 (±2.9)	28.3 (±5.6)	18.0 (±4.4)	23.1 (±10.0)	26.1 (±8.4)						
1-10 cigs/day	41.4 (±5.1)	44.0 (±7.5)	43.8 (±5.2)	40.3 (±6.4)	47.4 (±5.9)	56.5 (±12.8)	50.5 (±10.2)						
11-20 cigs/day	28.4 (±5.9)	31.4 (±6.4)	31.5 (±4.7)	27.6 (±5.2)	31.0 (±4.7)	17.4 (±7.4)	21.9 (±7.0)						
More than 20 cigs/day	8.6 (±4.8)	10.1 (±5.3)	6.3 (±2.2)	3.8 (±2.4)	3.6 (±2.3)	3.0 (±2.5)	1.5 (±1.2)						
Asian/Pl													
Non-daily	16.1 (±6.7)	20.0 (±9.3)	24.5 (±5.5)	26.6 (±7.3)	30.0 (±7.5)	35.6 (±11.9)	37.0 (±13.1)						
1-10 cigs/day	41.5 (±7.8)	39.7 (±10.7)	38.6 (±5.3)	42.9 (±7.0)	41.5 (±6.9)	41.1 (±10.4)	44.7 (±10.5)						
11-20 cigs/day	34.5 (±11.0)	34.4 (±10.9)	30.9 (±5.9)	25.8 (±7.4)	24.3 (±4.9)	19.5 (±7.7)	18.3 (±8.7)						
More than 20 cigs/day	7.9 (±3.5)	5.9 (±5.2)	6.0 (±3.1)	4.7 (±2.9)	4.2 (±2.4)	3.8 (±5.3)	0.0 (±0.0)						
Hispanic													
Non-daily	27.9 (±5.1)	28.5 (±5.9)	38.0 (±3.6)	41.2 (±4.1)	38.1 (±3.5)	37.3 (±7.9)	37.0 (±6.6)						
1-10 cigs/day	41.8 (±5.5)	39.1 (±6.2)	39.3 (±3.2)	36.9 (±3.3)	40.0 (±3.3)	37.2 (±9.6)	41.4 (±7.7)						
11-20 cigs/day	24.2 (±3.2)	25.4 (±5.4)	19.2 (±2.4)	18.1 (±2.3)	19.7 (±3.1)	23.5 (±13.3)	19.9 (±5.0)						
More than 20 cigs/day	6.0 (±1.8)	7.0 (±3.0)	3.4 (±1.0)	3.9 (±1.6)	2.2 (±1.2)	2.0 (±1.4)	1.7 (±1.1)						
Non-Hispanic White													
Non-daily	10.5 (±1.1)	10.9 (±3.4)	15.4 (±1.5)	18.2 (±1.8)	19.6 (±1.5)	17.5 (±2.4)	23.1 (±2.7)						
1-10 cigs/day	18.7 (±1.3)	19.8 (±2.1)	22.8 (±1.4)	25.1 (±1.7)	25.5 (±1.8)	29.9 (±2.7)	28.5 (±2.7)						
11-20 cigs/day	46.0 (±1.8)	47.7 (±2.1)	42.8 (±1.6)	41.3 (±2.2)	42.6 (±1.8)	40.6 (±3.2)	37.2 (±2.5)						
More than 20 cigs/day	24.8 (±1.3)	21.6 (±2.9)	19.1 (±1.2)	15.4 (±1.2)	12.3 (±1.4)	12.0 (±2.3)	11.2 (±1.8)						

Smoking Cessation

The percentage of African American smokers who reported making a quit attempt in the last year increased from $62.2\pm6.7\%$ in 1990 to $77.7\pm4.5\%$ in 1999 (**Table 10.3**). In 2002 and 2005, this percentage had dropped to around 59%. Similar to Asian/Pacific Islander and Hispanic smokers, the percentage of African American smokers making a quit attempt improved in 2008, close to the earlier levels in 1999. In 2008, approximately 75% of African Americans, Asian/PIs and Hispanics reported making a quit attempt. A significantly higher percentage of African American smokers overall reported making a quit attempt compared to Non-Hispanic White smokers overall ($75.9\pm5.3\%$ vs. $60.4\pm3.4\%$).

Table 10.3 Quit Attempt In The Last Year By Race/Ethnicity (1990-2008)												
1990 1992 1993 1996 1999 2002 2005 2008 % % % % %												
African American	62.2 (±6.7)	50.2 (±7.7)	65.4 (±7.4)	65.2 (±5.2)	77.7 (±4.5)	59.5 (±5.7)	58.8 (±14.4)	75.9 (±5.3)				
Asian/PI	56.9 (±8.2)	52.9 (±11.1)	59.9 (±9.1)	62.5 (±5.0)	75.4 (±5.4)	59.4 (±5.5)	48.7 (±9.1)	75.1 (±7.7)				
Hispanic	65.4 (±4.1)	49.2 (±8.2)	69.5 (±3.4)	72.6 (±2.7)	76.7 (±2.7)	62.2 (±3.5)	52.8 (±9.1)	74.8 (±5.0)				
Non-Hispanic White	50.2 (±1.3)	43.5 (±2.6)	51.1 (±1.7)	56.8 (±1.4)	70.6 (±1.6)	53.6 (±2.1)	53.7 (±2.8)	60.4 (±3.4)				

Home Smoking Restrictions

Among African American smokers and non-smokers, those reporting a total home smoking ban has increased significantly from $46.4\pm7.0\%$ in 1992 to $78.6\pm2.6\%$ in 2008 (**Table 10.4**). By gender, a similar percentage of African American men and women reported a total home ban (77.1±4.2 in men vs. $80.1\pm3.5\%$ in women). A lower percentage of African Americans younger than 30 years reported a total ban compared to those over 30 years ($67.7\pm7.7\%$ vs. 81.9 ± 2.4). This pattern is consistent across all ethnic groups and most likely reflects the higher likelihood of a having children in a home with adults over the age of 30 years. By education level, the percentage of African Americans with a college degree who reported a total home smoking ban was higher compared to African Americans with less years of formal education, and was significantly higher compared to those with a high school degree or those with some college.

Table 10.4 Total Home Bans (All Adults) African American												
	1992 1993 1996 1999 2002 2005 2008 % % % % % % % %											
Overall	46.4 (±7.0)	47.1 (±3.1)	55.9 (±4.3)	68.5 (±3.7)	72.8 (±2.6)	74.4 (±5.3)	78.6 (±2.6)					
Gender												
Male	53.2 (±9.0)	47.4 (±4.8)	51.5 (±6.5)	65.0 (±6.3)	69.9 (±4.2)	70.2 (±10.4)	77.1 (±4.2)					
Female	38.8 (±8.1)	46.9 (±4.5)	59.8 (±5.2)	71.2 (±5.2)	75.6 (±2.6)	77.9 (±5.4)	80.1 (±3.5)					
Age												
Younger than 30	49.7 (±15.3)	53.0 (±6.4)	56.0 (±9.9)	74.0 (±7.5)	69.4 (±4.7)	70.3 (±8.6)	67.7 (±7.7)					
Age 30 and above	45.1 (±8.5)	44.6 (±3.6)	55.8 (±4.4)	66.4 (±4.9)	73.9 (±2.8)	75.6 (±6.0)	81.9 (±2.4)					
Education												
Less than 12 years	48.5 (±19.9)	40.2 (±9.4)	52.9 (±15.5)	66.6 (±19.5)	64.3 (±8.0)	55.8 (±16.2)	78.2 (±12.4)					
High school graduate	45.6 (±12.6)	45.6 (±5.2)	50.4 (±7.5)	62.4 (±8.6)	71.2 (±5.4)	76.6 (±9.2)	74.0 (±5.4)					
Some college	41.3 (±10.1)	49.0 (±5.6)	58.0 (±9.1)	71.8 (±5.8)	71.7 (±4.0)	80.2 (±4.8)	74.8 (±5.0)					
College graduate	58.4 (±12.2)	56.5 (±7.2)	62.0 (±9.5)	72.3 (±8.1)	79.5 (±3.9)	81.4 (±8.2)	87.6 (±3.0)					

2. Asian/Pacific Islanders

Adult Smoking Prevalence by Demographic Subgroups

The overall adult smoking prevalence among Asian/PIs declined significantly since 1990 from 13.9 \pm 1.1% in 1990 to 8.1 \pm 1.1% in 2008, a decrease of 41.7% (**Table 10.5**). Asian/PI men declined by 39.9% and women declined by 45.7%. In 2008, the overall smoking prevalence in Asian/PI women was less than one-third the smoking prevalence among their male counterparts (3.8 \pm 1.0% vs. 12.8 \pm 1.8%). Among women, smoking prevalence among Asian/PI women (3.8 \pm 1.0%) and Hispanic women (5.3 \pm 0.8%) was significantly lower than that for African American and Non-Hispanic White women (African Americans: 12.1 \pm 1.8, Non-Hispanic Whites: 10.8 \pm 0.6%).

Table 10.5 Standardized Prevalence Estimates From Screener, By Race/Ethnicity Asian/PI												
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %					
Overall	13.9 (±1.1)	11.2 (±1.3)	11.9 (±0.9)	12.7 (±0.9)	11.7 (±0.9)	10.8 (±1.9)	8.1 (±1.1)					
Gender												
Male	21.3 (±1.7)	17.4 (±2.0)	17.5 (±1.3)	18.4 (±1.4)	17.5 (±1.5)	16.0 (±2.6)	12.8 (±1.8)					
Female	7.0 (±1.3)	5.5 (±1.5)	6.7 (±1.1)	7.4 (±0.9)	6.3 (±0.9)	5.9 (±1.9)	3.8 (±1.0)					
Age												
18-24	14.0 (±3.7)	9.7 (±3.2)	13.5 (±2.6)	15.6 (±2.3)	13.8 (±2.5)	13.1 (±7.2)	6.1 (±2.4)					
25-44	15.9 (±2.0)	13.3 (±2.0)	13.4 (±1.3)	14.2 (±1.2)	12.6 (±1.2)	10.9 (±2.6)	9.6 (±2.0)					
45-64	15.3 (±3.0)	11.4 (±2.0)	10.6 (±1.5)	12.3 (±1.5)	12.2 (±1.8)	12.1 (±2.7)	8.5 (±1.8)					
65+	4.1 (±2.2)	5.4 (±2.8)	8.8 (±3.0)	6.2 (±2.0)	5.9 (±2.1)	5.3 (±2.5)	4.1 (±1.8)					
Education												
Less than 12 years	18.9 (±6.5)	8.8 (±3.3)	14.0 (±3.9)	20.7 (±3.9)	18.2 (±5.9)	21.4 (±10.0)	7.1 (±5.0)					
High school graduate	18.4 (±2.6)	16.7 (±3.3)	15.5 (±1.9)	15.9 (±2.0)	15.8 (±2.1)	15.5 (±3.5)	12.4 (±3.1)					
Some college	12.9 (±2.6)	13.2 (±2.7)	12.9 (±1.4)	14.7 (±1.5)	13.0 (±1.7)	12.1 (±3.4)	11.3 (±2.5)					
College graduate	10.5 (±1.8)	8.4 (±1.9)	9.0 (±1.4)	8.4 (±0.9)	8.8 (±1.2)	6.4 (±1.5)	5.3 (±1.1)					
Income	•				•	•	•					
\$20,000 or less	11.1 (±3.7)		12.3 (±2.4)	12.0 (±2.3)	14.1 (±3.6)	12.8 (±5.8)	13.8 (±7.4)					
\$20,001-\$30,000	19.5 (±7.0)		12.8 (±3.0)	14.2 (±2.6)	14.6 (±3.6)	8.5 (±6.7)	6.8 (±6.9)					
\$30,001-\$50,000	11.3 (±2.6)		13.5 (±2.3)	13.3 (±2.1)	11.0 (±2.6)	12.5 (±4.4)	12.1 (±3.9)					
\$50,001-\$75,000	13.9 (±3.0)		10.6 (±1.9)	12.9 (±1.9)	11.4 (±2.4)	13.5 (±5.0)	9.5 (±4.0)					
\$75,001-\$100,000	14.4 (±4.2)		9.6 (±2.0)	11.6 (±1.7)	9.7 (±1.7)	10.2 (±2.8)	5.4 (±2.3)					
\$100,001-\$150,000							9.1 (±3.9)					
Over \$150,000							8.3 (±2.8)					
Missing	12.3 (±4.2)		8.8 (±1.9)	8.0 (±1.7)	8.6 (±2.3)	7.3 (±2.6)	6.6 (±2.4)					

Other studies of specific Asian/PI subgroups have found variation in the magnitude of the gender difference. For example, in the 2004 California Korean American Tobacco Use Survey, 27.9% of Korean men were current smokers compared to 4.3% of women, over a 6-fold difference (Carr et al., 2005b). In the 2004 California Chinese American Tobacco Use Survey, 14% of Chinese men were current smokers compared to 2% of Chinese women, a 7-fold difference (Carr et al., 2005a).

In the CTS, conclusions about Asian/PI demographic subgroups other than gender are limited by small sample sizes. In 2008, smoking prevalence among Asian/PIs age 65+ years (4.1 \pm 1.8%) remained lower than other age groups, significantly lower than Asian/PIs age 25-44 years (9.6 \pm 2.0%) or age 45-64 years (8.5 \pm 1.8%). There has been a statistically significant decline in smoking prevalence among Asian/PIs with less than a high school degree, from 18.9 \pm 6.5% in 1990 to 7.1 \pm 5.0% in 2008. There was also a significant decline over time among Asian/PIs with a college degree, from 10.5 \pm 1.8% in 1990 to 5.3 \pm 1.1% in 2008. In 2008, Asian/PIs with a high school degree or some college both had higher prevalence rates of smoking than those with a college degree.

Age of Regular Smoking

As described earlier in this chapter in the section on African American smoking, Trindad et al. (2004) used national data from the TUS-CPS, to examine age of smoking initiation among different ethnic groups during the 1990s. In their study, 47.8% of Asian/PIs started between ages 18-21 years and 17.6% started between ages 22-25 years (Trinidad et al., 2004). **Figure 10.5** (see Section 1–African Americans) presents each racial/ethnic group and the percentage of smokers initiating within each age group. Similar to the national study cited above, in California, the largest percentage of Asian/PIs initiated smoking between age 18-21 years

Asian/PIs initiate regular smoking later than Non-Hispanic Whites do. $(43.3\pm6.4\%)$ and nearly one-quarter of Asian/PIs $(24.9\pm6.7\%)$ initiated smoking between ages 22-25 years. This is in contrast to Non-Hispanic Whites, in which the primary age group of initiation was between age 14-17 years $(42.5\pm3.4\%)$ and in whom only $32.7\pm2.8\%$ initiated smoking between ages 18-21 years. Efforts to prevent initiation in Asian/PI young adults are an area for future research and outreach.

Consumption Patterns

Although the confidence intervals are wide, the percentage of Asian/PI smokers who are nondaily smokers has increased significantly since 1990, from $16.1\pm6.7\%$ in 1990 to $37.0\pm13.1\%$ in 2008 (**Table 10.6**). The percentage of non-daily smokers was very similar to that for Hispanic non-daily smokers in 2008 ($37.0\pm6.6\%$). Over time, the percentage of light-daily smokers (1-10 cpd) has remained stable around 39-44%. The percentage of Asian/PI moderate-daily smokers seems to have declined since 1990 but the difference is not statistically significant. The percentage of Asian/PI heavy-daily smokers (>20 cpd) dropped to negligible levels in 2008. By 2008, the percentage of heavy smokers was also very low (below 2%) for African Americans and Hispanics, but not for Non-Hispanic Whites ($11.2\pm1.8\%$).

Table 10.6 Consumption by Race/Ethnicity											
Asian/PI											
Consumption	on % % % % % % %										
Non-daily	16.1 (±6.7)	20.0 (±9.3)	24.5 (±5.5)	26.6 (±7.3)	30.0 (±7.5)	35.6 (±11.9)	37.0 (±13.1)				
1-10 cigs/day	41.5 (±7.8)	39.7 (±10.7)	38.6 (±5.3)	42.9 (±7.0)	41.5 (±6.9)	41.1 (±10.4)	44.7 (±10.5)				
11-20 cigs/day	34.5 (±11.0)	34.4 (±10.9)	30.9 (±5.9)	25.8 (±7.4)	24.3 (±4.9)	19.5 (±7.7)	18.3 (±8.7)				
More than 20 cigs/day	7.9 (±3.5)	5.9 (±5.2)	6.0 (±3.1)	4.7 (±2.9)	4.2 (±2.4)	3.8 (±5.3)	0.0 (±0.0)				

Smoking Cessation

From 1990 to 1999, the proportion of Asian/PI smokers making a quit attempt in the last year increased from approximately 55% to 75% (**Table 10.7**). This level dropped down in 2002 and 2005, but rebounded in 2008 for Asian/PIs. A similar drop and then increase occurred for other racial/ethnic groups as well. In 2008, the percentage of Asian/PI smokers making a quit attempt was significantly higher than the percentage of Non-Hispanic White smokers making a quit attempt (75.1 \pm 7.7% vs. 60.4 \pm 3.4%).

Table 10.7 Quit Attempt In The Last Year												
	1990 1992 1993 1996 1999 2002 2005 2008 % % % % % % % %											
Asian/PI	Asian/PI 56.9 (±8.2) 52.9 (±11.1) 59.9 (±9.1) 62.5 (±5.0) 75.4 (±5.4) 59.4 (±5.5) 48.7 (±9.1) 75.1 (±7.7)											
Non-Hispanic White	50.2 (±1.3)	43.5 (±2.6)	51.1 (±1.7)	56.8 (±1.4)	70.6 (±1.6)	53.6 (±2.1)	53.7 (±2.8)	60.4 (±3.4)				

Home Smoking Restrictions

Between 1992 and 2008, the overall prevalence of total home smoking bans among all Asian/PIs (smokers and non-smokers) increased significantly from $49.2\pm6.0\%$ to $84.0\pm2.4\%$, an increase of 70.7% (**Table 10.8**). By gender, the percentage of men and women with a home smoking ban was very similar ($83.4\pm3.8\%$ in men vs. $84.7\pm2.9\%$ in women). In 2008, Asian/PIs younger than age 30 years ($72.5\pm6.6\%$) had a significantly lower percentage of total home bans compared to those over the age of 30 years ($86.9\pm2.3\%$). A similar pattern was seen in other racial/ethnic groups; most likely this is related to a higher percentage of children in homes with adults over 30 years old. In 2008, the prevalence of total home bans was at least 80% for all educational levels and there were no statistically significant differences among educational groups.

Table 10.8 Total Home Bans (All Adults) Asian/Pl												
	1992 1993 1996 1999 2002 2005 2008 % % % % % % % %											
Overall	49.2 (±6.0)	60.1 (±3.2)	64.8 (±4.6)	71.3 (±3.5)	79.5 (±3.1)	80.2 (±3.7)	84.0 (±2.4)					
Gender												
Male	45.0 (±7.6)	56.6 (±5.0)	64.2 (±5.6)	71.6 (±5.0)	77.9 (±3.6)	78.8 (±5.8)	83.4 (±3.8)					
Female	53.3 (±8.3)	64.7 (±5.0)	65.4 (±6.9)	71.0 (±7.0)	81.2 (±4.8)	81.6 (±4.1)	84.7 (±2.9)					
Age												
Younger than 30	39.3 (±10.6)	50.4 (±6.3)	56.9 (±6.7)	65.6 (±7.3)	69.9 (±3.2)	70.9 (±5.6)	72.5 (±6.6)					
Age 30 and above	53.9 (±7.4)	65.2 (±4.2)	68.1 (±5.4)	73.7 (±4.9)	82.9 (±4.2)	82.1 (±4.2)	86.9 (±2.3)					
Education												
Less than 12 years	44.1 (±31.3)	55.7 (±14.8)	48.4 (±22.5)	31.8 (±19.7)	88.1 (±9.6)	76.0 (±17.3)	81.5 (±18.5)					
High school graduate	46.6 (±13.6)	62.9 (±6.6)	69.0 (±7.7)	73.2 (±7.4)	81.7 (±7.1)	84.3 (±6.5)	81.4 (±7.2)					
Some college	56.6 (±10.1)	57.7 (±5.3)	61.1 (±7.4)	72.7 (±5.5)	73.6 (±4.8)	71.5 (±10.8)	80.0 (±5.8)					
College graduate	47.6 (±8.9)	61.7 (±4.7)	68.3 (±5.5)	79.4 (±4.7)	80.2 (±4.5)	82.9 (±4.1)	86.3 (±2.1)					

3. Hispanics

Adult Smoking Prevalence by Demographic Subgroups

The overall adult smoking prevalence among Hispanics has declined from $17.2\pm1.0\%$ in 1990 to $10.2\pm0.7\%$ in 2008, a change of approximately 41% (**Table 10.9**). Smoking prevalence in both Hispanic men and women has declined significantly over time. In 2008, smoking prevalence in

Adult smoking prevalence in Hispanic women is approximately 1/3 the prevalence of Hispanic men. Hispanic men (15.1 \pm 1.0%) was similar to that for African American men (16.3 \pm 2.6%), Non-Hispanic White men (14.6 \pm 0.8%) and Asian/PI men (12.8 \pm 1.8%). In contrast, smoking prevalence in Hispanic women (5.3 \pm 0.8%) was significantly lower than that for African American and Non-Hispanic White women (African Americans: 12.1 \pm 1.85, Non-Hispanic Whites: 10.8 \pm 0.6%). Smoking prevalence among Hispanic women (5.3 \pm 0.8%) was approximately one-third the prevalence in their male counterparts (15.1 \pm 1.0%) in 2008.

Table 10.9 Standardized Prevalence Estimates From Screener, By Race/Ethnicity Hispanic												
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %					
Overall	17.2 (±1.0)	14.8 (±1.0)	13.8 (±0.8)	14.3 (±0.5)	12.7 (±0.6)	11.5 (±1.0)	10.2 (±0.7)					
Gender												
Male	23.0 (±1.4)	20.8 (±1.7)	18.9 (±1.2)	19.8 (±0.7)	18.3 (±1.0)	16.4 (±1.7)	15.1 (±1.0)					
Female	11.5 (±1.3)	8.9 (±1.1)	8.8 (±0.8)	8.9 (±0.6)	7.2 (±0.6)	6.8 (±1.0)	5.3 (±0.8)					
Age	• • •		· · ·		· · ·	•	• • •					
18-24	13.1 (±2.3)	13.0 (±2.0)	11.2 (±1.4)	14.9 (±1.3)	12.9 (±1.3)	10.5 (±1.9)	9.6 (±1.5)					
25-44	18.1 (±1.5)	15.3 (±1.5)	14.7 (±1.0)	14.7 (±0.7)	13.1 (±0.7)	12.1 (±1.3)	10.3 (±1.1)					
45-64	21.2 (±2.5)	16.8 (±2.3)	15.6 (±1.9)	15.2 (±1.2)	14.2 (±1.3)	12.8 (±2.1)	11.8 (±1.5)					
65+	9.2 (±2.4)	9.4 (±2.6)	8.7 (±2.0)	8.4 (±1.4)	6.3 (±1.4)	6.9 (±2.4)	6.4 (±1.8)					
Education												
Less than 12 years	19.4 (±2.1)	15.9 (±1.7)	16.2 (±1.5)	15.3 (±0.8)	13.5 (±1.0)	13.3 (±1.8)	12.0 (±1.2)					
High school graduate	18.7 (±1.9)	16.5 (±2.0)	13.9 (±1.1)	14.8 (±0.9)	14.1 (±1.1)	12.6 (±1.4)	10.9 (±1.2)					
Some college	13.4 (±2.0)	12.4 (±1.8)	10.4 (±1.2)	13.5 (±1.1)	11.3 (±0.9)	9.5 (±1.5)	9.2 (±1.3)					
College graduate	11.4 (±2.9)	10.6 (±2.5)	10.0 (±1.5)	9.8 (±1.2)	8.9 (±1.5)	6.7 (±1.8)	5.0 (±1.1)					
Income	• • •	•	· · ·		· · ·	•	• • •					
\$20,000 or less	18.9 (±2.6)		14.8 (±1.3)	15.6 (±1.0)	13.9 (±1.3)	13.1 (±1.9)	12.2 (±2.3)					
\$20,001-\$30,000	17.7 (±3.3)		14.2 (±1.5)	14.2 (±1.5)	12.7 (±1.6)	12.6 (±2.2)	11.0 (±2.1)					
\$30,001-\$50,000	17.7 (±3.8)		13.8 (±1.8)	15.1 (±1.1)	12.8 (±1.6)	13.3 (±3.3)	9.9 (±1.4)					
\$50,001-\$75,000	18.5 (±5.9)		15.2 (±3.1)	16.3 (±1.7)	14.7 (±2.1)	11.6 (±2.9)	11.1 (±2.8)					
\$75,001-\$100,000	24.5 (±9.7)		13.9 (±4.7)	16.8 (±3.1)	13.7 (±2.1)	11.9 (±2.9)	9.4 (±3.5)					
\$100,001-\$150,000							10.5 (±3.4)					
Over \$150,000							12.6 (±12.9)					
Missing	14.8 (±2.2)		12.6 (±1.9)	10.7 (±1.4)	10.4 (±1.5)	10.2 (±2.7)	9.9 (±2.6)					

Over time, there appear to have been declines among all age groups, although these are statistically significant only for Hispanics age 25-44 years and 45-64 years. In 2008, adult smoking prevalence among Hispanics age 45-64 years was nearly one-half the prevalence in

1990 (11.8 \pm 1.5% in 2008 vs. 21.2 \pm 2.5% in 2008). However, the smoking prevalence among Hispanics age 65+ years remained significantly lower than prevalence among Hispanics age 25-44 years and 45-64 years.

Trends in Smoking Prevalence by Education Level

An examination of Hispanic smoking prevalence by education found significant differences between those reporting the lowest level versus the highest level of formal education. In 2008, adult smoking prevalence for Hispanics with a college degree was $5.0\pm1.1\%$ compared to $12.0\pm1.2\%$ among those with less than a high school degree (**Figure 10.6**). However, the differences between each of the four levels of formal education (i.e., less than 12 years, high school graduate, some college and college graduate) were not statistically significant.



Figure 10.6: Hispanic Smoking Prevalence by Education.

Education	1990	1993	1996	1999	2002	2005	2008
<12 years	19.4	15.9	16.2	15.3	13.5	13.3	12.0
High school graduate	18.7	16.5	13.9	14.8	14.1	12.6	10.9
Some college	13.4	12.4	10.4	13.5	11.3	9.5	9.2
College graduate	11.4	10.6	10.0	9.8	8.9	6.7	5.0

Compared to Non-Hispanic Whites, 2008 smoking prevalence rates for Hispanics of corresponding education levels were significantly lower, except for among those with a college degree. Differences between Hispanics by education level were less pronounced than the differences seen between Non-Hispanic Whites by education level (**Figure 10.7**). For example, in 2008, Hispanics with less than high school degree had a 2.4-fold higher prevalence than those with a college degree or more, compared to a 5-fold difference for Non-Hispanic Whites. Among Non-Hispanic Whites, the differences between each of the four levels of formal education were statistically significant, in contrast to Hispanics where the differences were not statistically significant.



Figure 10.7: Non-Hispanic White Smoking Prevalence by Education.

Education	1990	1993	1996	1999	2002	2005	2008
<12 years	33.7	31.6	31.0	31.6	30.6	28.6	31.1
High school graduate	26.0	25.5	24.3	24.4	23.4	21.1	19.8
Some college	19.5	19.0	18.3	19.1	16.8	15.7	14.1
College graduate	12.7	11.2	9.7	10.1	8.9	7.2	6.2

Consumption Patterns

Conclusions regarding consumption patterns among Hispanic smokers are limited by small sample sizes and wide confidence intervals for the subgroups. It appears that the percentage of Hispanic smokers who are non-daily smokers has increased, from $27.9\pm5.1\%$ in 1990 to $37.0\pm6.6\%$ in 2008, although this difference is not statistically significant (**Table 10.10**). In 2008, the percentage of Hispanic smokers who are light-daily smokers was the same as it was in 1990 (approximately 41%) although there have been slight fluctuations in the intervening years. In 2008, over 78% of Hispanic smokers in California were non-daily or light-daily smokers (i.e., 1-10 cpd). A separate study utilizing data from the 2001 and 2003 California Health Interview Survey (CHIS), a general health survey, also found that most Latino/Hispanic smokers are low-frequency smokers (Zhu et al., 2007). In that study, more than 70% of Latino/Hispanic smokers who were non-daily smoking \leq 5 cigarettes per day (Zhu et al., 2007). The proportion of smokers who were non-daily smokers was higher in the study utilizing CHIS data compared to the CTS, possibly in part due to characteristics of the different surveys.

In the CTS, the proportion of Hispanic smokers who are moderate-daily smokers has remained relatively stable, between 18-25% over time. In 2005, the prevalence of moderate-daily smoking had a large confidence interval, making it difficult to determine recent trends in moderate smoking. The proportion of smokers who are heavy-daily smokers has declined significantly from $6.0\pm1.8\%$ in 1990 to $1.7\pm1.1\%$ in 2008.

Table 10.10 Consumption by Race/Ethnicity Hispanic									
1990 1992 1996 1999 2002 2005 2008 Consumption % <									
Non-daily	27.9 (±5.1)	28.5 (±5.9)	38.0 (±3.6)	41.2 (±4.1)	38.1 (±3.5)	37.3 (±7.9)	37.0 (±6.6)		
1-10 cigs/day	41.8 (±5.5)	39.1 (±6.2)	39.3 (±3.2)	36.9 (±3.3)	40.0 (±3.3)	37.2 (±9.6)	41.4 (±7.7)		
11-20 cigs/day 24.2 (±3.2) 25.4 (±5.4) 19.2 (±2.4) 18.1 (±2.3) 19.7 (±3.1) 23.5 (±13.3) 19.9 (±5.0)									
More than 20 cigs/day	6.0 (±1.8)	7.0 (±3.0)	3.4 (±1.0)	3.9 (±1.6)	2.2 (±1.2)	2.0 (±1.4)	1.7 (±1.1)		

In the 2008 CTS, a significantly higher percentage of Hispanic smokers were intermittent, nondaily smokers compared to Non-Hispanic White smokers (37.0±6.6% vs. 23.1±2.7%). In addition, a higher percentage of Hispanic smokers were light-daily smokers (i.e., 1-10 cigarettes per day) compared to Non-Hispanic White smokers (41.4±7.7% vs. 28.5±2.7%). These results are consistent with those of a national study which utilized data from the 2003 TUS-CPS to compare intermittent and light-daily smoking across racial/ethnic groups in the U.S., although the differences between Hispanics and Non-Hispanic Whites were more pronounced in the national study (Trinidad et al., 2009). The TUS-CPS study found that Hispanic/Latino smokers were three times more likely to be intermittent (i.e., non-daily) smokers and over four times more likely to be light-daily smokers (i.e., 1-5 cigarettes per day) compared to Non-Hispanic Whites. Furthermore, among intermittent smokers, Hispanics/Latinos reported smoking on fewer days out of the past 30 days compared with Non-Hispanic Whites and, on the days that intermittent smokers did smoke, Hispanics/Latinos reported smoking fewer cigarettes per day (CPD) compared with Non-Hispanic Whites.

Smoking Cessation

In 1990, 65.4 \pm 4.1% of Hispanic smokers reported making a quit attempt in the last year. This increased to over 76% in 1999 before dropping in 2002 and 2005. Since 2005, there has been a significant increase in the percentage of Hispanic smokers making a quit attempt, from 52.8 \pm 9.1% in 2005 to 74.8 \pm 5.0% in 2008 (**Table 10.11**). A similar pattern of increase and decreases in quit attempts was seen for other racial/ethnic groups. In 2005, a similar percentage of Hispanic smokers and Non-Hispanic White smokers made a quit attempt in the last year although the estimate for Hispanics was not very precise (Hispanic: 52.8 \pm 9.1%, Non-Hispanic White: 53.7 \pm 2.8%). By 2008, a significantly higher percentage of Hispanic smokers (74.8 \pm 5.0% vs. 60.4 \pm 3.4%).

Table 10.11 Quit Attempt In Last Year									
	1990 1992 1993 1996 1999 2002 2005 2008 %								
Hispanic	65.4 (±4.1)	49.2 (±8.2)	69.5 (±3.4)	72.6 (±2.7)	76.7 (±2.7)	62.2 (±3.5)	52.8 (±9.1)	74.8 (±5.0)	
Non-Hispanic White	50.2 (±1.3)	43.5 (±2.6)	51.1 (±1.7)	56.8 (±1.4)	70.6 (±1.6)	53.6 (±2.1)	53.7 (±2.8)	60.4 (±3.4)	

Home Smoking Restrictions

The prevalence of total home smoking bans among all Hispanic smokers and non-smokers increased significantly from 53.1±4.0% in 1990 to 79.3±3.8% in 2008 (**Table 10.12**). Since 1999, the prevalence of total home bans has been stable at approximately 78-79%. Comparisons regarding home smoking restrictions among Hispanic subgroups are limited by wide confidence intervals. Similar to other racial/ethnic groups, the percentage of Hispanics under the age of 30 with a total home ban was lower than for Hispanics aged 30 and above; however, this difference was not statistically significant among Hispanics.

Table 10.12 Total Home Bans (All Adults) Hispanic										
	1992 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %			
Overall	53.1 (±4.0)	57.1 (±2.1)	72.4 (±2.4)	78.0 (±1.9)	78.0 (±1.8)	78.8 (±6.8)	79.3 (±3.8)			
Gender										
Male	54.7 (±5.0)	54.9 (±3.3)	68.8 (±3.6)	76.7 (±2.8)	74.1 (±2.8)	70.0 (±13.4)	74.0 (±6.8)			
Female	51.6 (±5.4)	59.4 (±2.5)	75.7 (±2.9)	79.5 (±2.5)	81.5 (±2.3)	86.9 (±2.4)	83.9 (±5.1)			
Age										
Younger than 30	52.7 (±7.7)	56.4 (±3.2)	69.1 (±3.8)	74.5 (±3.5)	69.8 (±1.7)	72.8 (±2.9)	74.6 (±2.8)			
Age 30 and above	53.4 (±4.8)	57.6 (±3.2)	74.3 (±3.3)	79.8 (±2.5)	82.0 (±2.3)	81.1 (±9.5)	81.0 (±5.0)			
Education										
Less than 12 years	53.9 (±7.6)	59.5 (±3.3)	76.2 (±3.7)	81.5 (±2.8)	78.8 (±2.9)	76.2 (±13.5)	81.4 (±6.9)			
High school graduate	50.5 (±7.7)	54.1 (±3.8)	67.6 (±3.7)	74.0 (±3.1)	78.4 (±3.2)	78.0 (±6.8)	83.2 (±5.0)			
Some college	55.2 (±5.9)	52.9 (±4.7)	68.1 (±4.2)	78.1 (±3.9)	77.0 (±3.3)	82.3 (±4.6)	74.8 (±9.0)			
College graduate	55.2 (±13.1)	58.7 (±4.3)	72.4 (±7.8)	70.8 (±6.4)	75.0 (±5.3)	85.3 (±6.0)	69.8 (±11.5)			

Summary

Rates of tobacco use, smoking-related diseases and their impact vary by race/ethnicity (USDHHS, 1998; CDC, 2004a; CDC, 2004b; CDC, 2004c; CDC, 2005; CDC, 2009a; Max et al., 2010). Accordingly, one of the primary objectives of California's Tobacco Education and Research Oversight Committee (TEROC) continues to be to "eliminate disparities and achieve parity in all aspects of tobacco control" (TEROC, 2009). In this report, especially this chapter and appendix, some of the findings for different racial/ethnic groups in California are highlighted to assist in the development of successful, culturally competent tobacco control measures. Directions for future research can be developed from this and other key reports relevant to health disparities (Fagan et al., 2004).

African Americans

Between 1990 and 2008, overall African American smoking prevalence declined significantly by 41%. Smoking prevalence among African Americans remained significantly higher than that for Asian/PIs and Hispanics. By 2008, it was not significantly higher than the prevalence for Non-Hispanic Whites (African Americans: 14.2±1.6%, Non-Hispanic Whites: 12.7±0.5%). There were other encouraging signs for tobacco control among African Americans in California. Specifically, by 2008, certain African American subgroups had reached the Healthy People

2010 goal of adult smoking prevalence less than 12%: age 18-24 years, age 65+ years, with a college degree or more, or with a household income of \$100,000 or more.

An analysis by age group found that smoking prevalence among African Americans age 18-24 years has been consistently lower than that for Non-Hispanic Whites in the same age group. In contrast, over time, smoking prevalence for African Americans age 45-64 years has been consistently higher than for Non-Hispanic Whites in the same age group. A separate analysis found that the age of regular smoking in African Americans was delayed compared to Non-Hispanic Whites. Trends in overall prevalence, initiation and successful cessation should continue to be followed over time. In addition, more research is needed to help target tobacco control efforts for different age groups.

Asian/Pacific Islanders

Overall, the adult smoking prevalence rate among Asian/PIs declined by 41% between 1990 and 2008. Similar declines in prevalence were seen among both Asian/PI men and women, although 2008 prevalence among Asian/PI men remained three times higher than for their female counterparts (12.8±1.8% vs. 3.8±1.0%). Other studies of specific Asian/PI subgroups have found variation in the magnitude of the gender difference. For example, in the 2004 California Korean American Tobacco Use Survey, 27.9% of Korean men were current smokers compared to 4.3% of women, a 6-fold difference (Carr et al., 2005b). In the 2004 California Chinese American Tobacco Use Survey, 14% of Chinese men were current smokers compared to 2% of Chinese women, a 7-fold difference (Carr et al., 2005a). Furthermore, in the 2008 CTS, prevalence among Asian/PI men was similar to that for Non-Hispanic White men (Asian/PI men: 12.8±1.8%, Non-Hispanic White men: 14.6±0.8%). Continued efforts to prevent smoking initiation and improve successful cessation among Asian/PI men are needed. Another area for increased tobacco control research and outreach may be Asian/PI young adults. Similar to a national study (Trinidad et al., 2004), an analysis of age of regular smoking in the 2008 CTS suggests that more Asian/PIs may initiate in young adulthood, rather than early adolescence.

Lastly, there may be significant variation in smoking behaviors based on Asian/PI ethnic subgroup and acculturation status. Due to small sample sizes and the fact that the California Tobacco Survey is only conducted in English and Spanish, more detailed analyses were not conducted. Other studies, such as the 2004 California Chinese American Tobacco Use Survey and 2004 California Korean American Tobacco Use Survey (Carr et al., 2005a; Carr et al., 2005b) provide useful data and guidance on future tobacco control efforts in these groups. A study conducted by An et. al (2007), utilized data from the 2001 and 2003 California Health Information Survey to study 6 Asian American subpopulations (Chinese, Filipino, South Asian, Japanese, Korean and Vietnamese) in California. Their study, along with others (e.g., Tong et al., 2008; Tong et al., 2009), have found differences in smoking behavior, quitting and smoke-free homes based on subgroups, gender and acculturation variables. The development of culturally appropriate tobacco control measures in these subgroups is needed.

Hispanics

Between 1990 and 2008, there was a 40.8% decline in overall Hispanic adult smoking prevalence. By educational level, Hispanics with a college degree had the lowest smoking prevalence; however, the differences in smoking prevalence by educational level were less pronounced among Hispanics compared to Non-Hispanic Whites. It may be that other factors, such as gender, Hispanic subgroup and acculturation status, strongly influence Hispanic

smoking prevalence rates. For example, across CTS, the smoking prevalence in Hispanic men has been consistently higher than the prevalence in their female counterparts, nearly three-times higher in 2008. Nationally, according to the 2008 NHIS, 20.7% of Hispanic men were current smokers compared to 10.7% of Hispanic women (CDC, 2009). Differences have also been found based on different countries of origin. A survey in eight cities with Latino men and women of different national origin found that respondents of Puerto Rican and Cuban origin were more likely to smoke than other subgroups (Perez-Stable et al., 2001). Furthermore, acculturation had divergent effects on smoking behavior by gender. High acculturation was associated with more smoking among women and less smoking among men (Perez-Stable et al., 2001). Continued research on the interaction of these multiple factors and how best to reach the various subgroups are needed.

Of note, since 2005, there has been a significant increase in the percentage of Hispanic smokers making a quit attempt, from $52.8\pm3.5\%$ in 2005 to $74.8\pm9.1\%$ in 2008. In 2008, a significantly higher percentage of Hispanic smokers reported a quit attempt in the last year compared to Non-Hispanic White smokers ($74.8\pm5.0\%$ vs. $60.4\pm3.4\%$). Since 1990, there has also been a significant increase in total home smoking bans among Hispanic smokers and non-smokers. By 2008, $79.3\pm3.8\%$ of respondents reported a total home smoking ban. Home bans have shown a positive association with smoking cessation (IARC, 2009; Messer et al., 2008; Mills et al., 2009). Thus, the increase in smokers making a quit attempt and home bans are both positive signs in terms of successful cessation and public health support for these efforts should be continued.

APPENDIX

Chapter 10 A Summary of Findings for Racial/Ethnic Minority Groups

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 (Chapter 2)

Overall Trends

Table A.10.1 shows the overall standardized adult smoking prevalence by race/ethnicity. Since 1990, there has been an overall decline in adult smoking prevalence of 37%. African Americans, Asian/PIs and Hispanics have all seen around a 40% decline in prevalence since 1990, while Non-Hispanic Whites had a 35% change. African Americans and Asian/PIs showed the largest factor declines since 2005, but results should be interpreted with caution due to the greater variability in the prevalence estimates for these groups over time, as demonstrated by the wider confidence intervals.

Table A.10.1 Standardized Adult Smoking Prevalence (Screener Data)										
1990 1993 1996 1999 2002 2005 2008 1990-2008 2005-2008 % % % % % % % % %										
Overall	18.6 (±0.4)	16.6 (±0.5)	15.8 (±0.4)	16.1 (±0.3)	14.6 (±0.3)	13.3 (±0.5)	11.6 (±0.4)	-37.7	-12.8	
Race/Ethnicity										
African American	24.1 (±2.4)	20.2 (±2.2)	20.8 (±1.5)	19.3 (±1.1)	18.3 (±1.6)	19.2 (±2.6)	14.2 (±1.6)	-41.0	-26.1	
Asian/PI	13.9 (±1.1)	11.2 (±1.3)	11.9 (±0.9)	12.7 (±0.9)	11.7 (±0.9)	10.8 (±1.9)	8.1 (±1.1)	-41.6	-24.9	
Hispanic	17.2 (±1.0)	14.8 (±1.0)	13.8 (±0.8)	14.3 (±0.5)	12.7 (±0.6)	11.5 (±1.0)	10.2 (±0.7)	-40.8	-11.7	
Non-Hispanic White	19.6 (±0.4)	18.5 (±0.6)	17.3 (±0.3)	17.7 (±0.4)	16.0 (±0.4)	14.2 (±0.6)	12.7 (±0.5)	-35.3	-10.8	

Trends by Gender

Table A.10.2 shows the trends in standardized smoking prevalence for men. In 2008, overall smoking prevalence in men was 14.9±0.6%. Although African Americans had the highest smoking prevalence in men (16.3±2.6%), in 2008, there was not a statistically significant difference between the four racial/ethnic groups. Since 1990, all four groups have shown over a 30% decline in prevalence. Since 2005, African Americans and Asian/PI men have shown the largest declines in prevalence but results need to be interpreted with caution due to wide confidence intervals.

Table A.10.2. Standardized Adult Smoking Prevalence, Men (Screener Data)									
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change, 1990-2008	Percentage Change, 2005-2008
Overall	22.4 (±0.6)	20.2 (±0.8)	19.1 (±0.5)	19.8 (±0.5)	18.3 (±0.5)	16.4 (±0.8)	14.9 (±0.6)	-33.6	-9.5
Race/Ethnicity									
African American	26.4 (±2.6)	23.6 (±3.1)	23.1 (±2.1)	23.2 (±1.8)	20.5 (±2.0)	21.1 (±3.9)	16.3 (±2.6)	-38.1	-22.6
Asian/PI	21.3 (±1.7)	17.4 (±2.0)	17.5 (±1.3)	18.4 (±1.4)	17.5 (±1.5)	16.0 (±2.6)	12.8 (±1.8)	-39.9	-20.2
Hispanic	23.0 (±1.4)	20.8 (±1.7)	18.9 (±1.2)	19.8 (±0.7)	18.3 (±1.0)	16.4 (±1.7)	15.1 (±1.0)	-34.3	-7.8
Non-Hispanic White	21.0 (±0.5)	19.8 (±0.8)	18.8 (±0.4)	19.4 (±0.6)	17.9 (±0.6)	15.8 (±0.9)	14.6 (±0.8)	-30.6	-7.3

Table A.10.3 presents the trends in standardized prevalence for women. Across surveys, Asian/PI and Hispanic women have had prevalence rates approximately half that of African American and Non-Hispanic White women and less than half the rates of their male counterparts. In 2008, prevalence rates in Asian/PI, Hispanic and Non-Hispanic White women were less than the Healthy People 2010 objective of 12% and African American women were very close (12.1±1.8%).

Appendix Table A.10.3. Standardized Adult Smoking Prevalence, Women (Screener Data)									
	1990 %	1993 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change, 1990-2008	Percentage Change, 2005-2008
Overall	15.0 (±0.7)	13.1 (±0.6)	12.6 (±0.4)	12.7 (±0.3)	11.0 (±0.4)	10.2 (±0.5)	8.4 (±0.4)	-43.9	-17.6
				Rac	e/Ethnicity				
Afric an Amer									
ican	21.8 (±3.1)	16.8 (±2.3)	18.6 (±2.0)	15.6 (±1.2)	16.2 (±2.3)	17.4 (±3.7)	12.1 (±1.8)	-44.3	-30.2
Asia n/Pl	7.0 (±1.3)	5.5 (±1.5)	6.7 (±1.1)	7.4 (±0.9)	6.3 (±0.9)	5.9 (±1.9)	3.8 (±1.0)	-46.4	-36.5
Hisp anic	11.5 (±1.3)	8.9 (±1.1)	8.8 (±0.8)	8.9 (±0.6)	7.2 (±0.6)	6.8 (±1.0)	5.3 (±0.8)	-53.6	-21.0
Non- Hisp anic Whit	40.4 (. 0.0)			40.0 / 0.1		40.7 (0.0)	40.0 (0.0)	10.0	44.0
е	18.1 (±0.8)	17.4 (±0.7)	15.8 (±0.5)	16.0 (±0.4)	14.1 (±0.6)	12.7 (±0.6)	10.8 (±0.6)	-40.6	-14.9

Consumption Levels among Adult Smokers

Table A.10.4 presents consumption levels among current smokers in 2008 by race/ethnicity. In 2008, Hispanics and Asian/PIs seemed to have the highest percentages of non-daily never-daily smokers, but conclusions are limited by wide confidence intervals. Non-Hispanic White smokers had a much higher prevalence of heavy-daily smokers (11.2±1.8%) compared with the three other racial/ethnic groups examined (<2%).

Table A.10.4 Cigarette Consumption Among Current Smokers By Demographic Groups, 2008									
	Non-Daily Smokers Daily Smokers								
	Never-Daily %	Once-Daily %	1-10 Cigs/Day %	11-20 Cigs/Day %	More Than 20 Cigs/Day %				
Overall	13.1 (±1.9)	15.0 (±2.4)	35.4 (±3.1)	29.8 (±2.3)	6.8 (±1.1)				
Race/Ethnicity									
African American	13.6 (±7.3)	12.4 (±6.4)	50.5 (±10.2)	21.9 (±7.0)	1.5 (±1.2)				
Asian/PI	20.6 (±11.9)	16.5 (±9.4)	44.7 (±10.5)	18.3 (±8.7)	0.0 (±0.0)				
Hispanic	20.8 (±5.1)	16.2 (±6.4)	41.4 (±7.7)	19.9 (±5.0)	1.7 (±1.1)				
Non-Hispanic White	8.0 (±1.7)	15.1 (±2.1)	28.5 (±2.7)	37.2 (±2.5)	11.2 (±1.8)				

2. Adult Use of Other Tobacco Products (Chapter 4)

Current Tobacco Use

Table A.10.5 shows the prevalence of current tobacco use (i.e., within the last 30 days) in men, including any tobacco product, cigarettes, cigars, and chewing tobacco/snuff. Because the use of tobacco products other than cigarettes is primarily seen in men, the analysis by race/ethnicity is presented for men only. Use of cigars was less than 10% among men in all racial/ethnic groups and use of chewing tobacco/snuff was less than 5% in all groups.

Table A.10.5 Current Tobacco Use Status (2008 Adult CTS)									
	Any Tobacco %	Cigarettes %	Cigars %	Chewing Tobacco/ Snuff %	Population Size (n)	Sample Size (n)			
Overall	15.4 (±0.9)	12.3 (±0.5)	4.1 (±0.8)	1.1 (±0.4)	26,872,175	10,397			
Gender									
Men	21.6 (±1.6)	15.7 (±0.7)	7.7 (±1.5)	2.1 (±0.8)	13,270,719	4,667			
Women	9.3 (±0.7)	9.0 (±0.7)	0.6 (±0.2)	0.1 (±0.0)	13,601,456	5,730			
Males Only									
Race/Ethnicity									
African American	25.0 (±4.7)	17.9 (±4.5)	8.5 (±3.5)	1.0 (±1.1)	774,440	599			
Asian/PI	12.7 (±2.8)	10.2 (±2.3)	4.2 (±2.0)	0.9 (±0.9)	1,709,346	591			
Hispanic	21.4 (±3.3)	16.8 (±1.9)	5.6 (±2.7)	1.4 (±1.3)	4,113,303	992			
Non-Hispanic White	22.8 (±2.7)	15.4 (±0.9)	9.8 (±2.3)	3.0 (±1.3)	6,279,226	2,369			

Hookah Use

Table A.10.6 presents ever-use of hookahs for adults overall. A question about hookah use was asked for the first time in the 2005 survey. In 2008, ever-use of hookahs was higher in Non-Hispanic Whites than other racial/ethnic groups for both men and women, but small sample sizes limit conclusions. Hookah use remained significantly higher in Non-Hispanic White men (13.8 \pm 2.1%) compared to Non-Hispanic White women (4.0 \pm 1.4%).

Table A.10.6 Hookah Ever-Use (All) Adults, Standardized To 2008 Ever Used A Hookah									
Men Women									
2005 2008 2005 2008 % % %									
Overall	7.9 (±1.1)	11.2 (±1.4)	1.9 (±0.4)	2.8 (±0.7)					
Race/Ethnicity									
African American	4.8 (±2.7)	6.5 (±2.3)	2.0 (±2.4)	2.2 (±1.3)					
Asian/PI	5.2 (±2.4)	8.2 (±3.0)	1.4 (±1.2)	1.8 (±0.9)					
Hispanic 3.8 (±1.1) 8.8 (±3.5) 0.8 (±0.4) 1.6 (±0.6)									
Non-Hispanic White	10.9 (±2.0)	13.8 (±2.1)	2.6 (±0.7)	4.0 (±1.4)					

3. Young Adult Smoking (Chapter 5)

Smoking Prevalence among Young Adults (Age 18-29) by Race/Ethnicity

Table A.10.7 presents the current cigarette smoking prevalence in young adults (age 18-29) standardized to the 2008 population. Between 1999 and 2008, African Americans, Hispanics, and Non-Hispanic, and Whites had statistically significant declines in prevalence. During that period, Asian/PIs had a decline as well, but this was not statistically significant. Between 2005 and 2008, African Americans showed a significant decline in cigarette smoking among young adults. However, it should be noted that the 2005 prevalence estimate for African Americans had a wide confidence interval and the 2005 estimate may not be very accurate.

Table A.10.7 Current Cigarette Smoking Prevalence among Young Adults (Age 18-29) Standardized to 2008 Population									
	1990	1992	1993	1996	1999	2002	2005	2008	
	%	%	%	%	%	%	%	%	
Overall	18.0	15.6	16.0 (±1.0)	17.0 (±0.8)	18.8 (±0.6)	16.8 (±0.7)	15.0 (±1.3)	13.4	
	(±0.9)	(±1.3)						(±0.9)	
Race/Ethnicity									
African American	20.6	14.4	12.8 (±3.8)	15.4 (±2.6)	17.3 (±2.4)	15.6	19.8 (±4.6)	9.5 (±2.7)	
	(±3.5)	(±4.7)				(±3.1)			
Asian/PI	15.0	9.5 (±2.3)	11.7 (±2.8)	14.1 (±1.9)	15.4 (±1.8)	13.4	11.8 (±4.2)	11.0	
	(±2.8)	. ,	. ,	. ,	. ,	(±1.8)	. ,	(±2.7)	
Hispanic	14.6	12.6	13.3 (±1.5)	12.2 (±1.1)	14.2 (±1.0)	12.9	11.4 (±1.8)	11.7	
	(±1.5)	(±2.1)				(±0.9)		(±1.4)	
Non-Hispanic White	20.8	19.3	20.1 (±1.4)	22.5 (±1.0)	24.4 (±1.1)	21.8	19.3 (±1.7)	16.4	
,	(±1.1)	(±1.9)				(±1.3)		(±1.7)	

4. Smoking Cessation (Chapter 6)

Smokers in the Last Year Who Made a Quit Attempt of One or More Days

Table A.10.8 shows the percentage of smokers who made a quit attempt for a day or longer in the last year by race/ethnicity. Over time, Non-Hispanic Whites have consistently had a lower percentage of smokers making a quit attempt compared to the other three groups and, since 2002, this percentage has remained at approximately 53-54%. Between 1996 and 2008, African Americans have had the largest increase of 20.8% in smokers making quit attempt in the last year.

Table A.10.8 Percentage of Smokers In The Last Year Who Made A Quit Attempt (includes current and former smokers)									
	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008	Percentage Change 2005-2008		
Overall	53.7 (±1.2)	60.2 (±1.5)	58.9 (±1.4)	56.0 (±3.5)	60.2 (±2.8)	12.1	7.6		
Race/Ethnicity									
African American	59.5 (±5.8)	68.3 (±5.8)	62.7 (±5.8)	68.4 (±9.3)	71.8 (±5.9)	20.8	5.0		
Asian/PI	57.5 (±6.6)	64.8 (±6.1)	65.4 (±5.6)	54.5 (±11.1)	66.0 (±10.3)	14.8	21.0		
Hispanic	64.3 (±3.0)	66.5 (±3.6)	69.3 (±3.7)	59.2 (±12.4)	67.7 (±6.2)	5.2	14.4		
Non-Hispanic White	49.2 (±1.2)	56.8 (±1.8)	53.3 (±2.0)	53.0 (±2.9)	54.0 (±3.3)	9.8	1.8		

Duration of Quitting among Recent Former Smokers (2008)

Table A.10.9 presents the percentage of recent smokers (i.e., who smoked one year ago) who are now in a current quit attempt of 0-3 months or 3+ months. Overall, in 2008, around 20% of recent smokers are currently quitting, which includes approximately 12% who have been abstinent for 0-3 months and 8% for 3+ months. Conclusions for different racial/ethnic groups are limited by small sample sizes and wide confidence intervals. Among Asian/PIs, the percentage of recent smokers who are in a quit of 0-3 months (22.5 \pm 8.7%) is much higher than the percentage who are in a quit of 3+ months (2.5 \pm 2.5%).

Table A.10.9 Recent Former Smokers According to the Duration of Their Quitting, 2008									
Former (all) Former, 0-3 months Former, 3+ months %									
Overall	20.3 (±3.1)	12.2 (±2.7)	8.0 (±2.5)						
Race/Ethnicity									
African American	17.1 (±5.8)	6.7 (±2.8)	10.4 (±5.5)						
Asian/PI	25.0 (±8.3)	22.5 (±8.7)	2.5 (±2.5)						
Hispanic 23.4 (±7.6) 12.9 (±5.9) 10.6 (±7.4)									
Non-Hispanic White	18.6 (±3.5)	11.3 (±3.3)	7.3 (±1.9)						

Self-Efficacy (2008)

Table A.10.10 presents the reported self-efficacy of current smokers for different racial/ethnic groups. To assess self-efficacy, the 2008 CTS included two questions for smokers:

How sure are you that you could refrain from smoking for at least 1 month? (Very sure, somewhat sure, somewhat unsure or very unsure) (B27)

If someone offered you 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? (Very sure, somewhat sure, somewhat unsure or you could not do it) **(B26a_1)**

The answers from these two questions were used to create an index of self-efficacy. Those who answered "very sure" on both were categorized as having "high efficacy" (i.e., strong belief in ability to quit). Smokers who responded "very sure" on only one question were categorized as "indeterminate efficacy" and those with other less confident answer combinations were classified as "low efficacy".

Table A.10.10 Self-Efficacy Among Current Smokers By Race/Ethnicity, 2008								
High efficacy Intermediate Low efficacy %								
Overall	45.5 (±2.9)	28.2 (±1.9)	26.3 (±2.1)					
Race/Ethnicity								
African American	52.2 (±9.8)	32.3 (±9.0)	15.5 (±3.8)					
Asian/PI	35.5 (±10.6)	33.9 (±10.0)	30.6 (±10.0)					
Hispanic	53.9 (±6.3)	26.9 (±4.7)	19.2 (±4.5)					
Non-Hispanic White	40.3 (±2.6)	28.1 (±2.4)	31.7 (±2.3)					

In 2008, approximately half of Hispanics and African American smokers were categorized as having high self-efficacy, while only 40% of Non-Hispanic Whites and 35% of Asian/PIs had high self-efficacy. Approximately 30% of Non-Hispanic White and Asian/PI smokers had low self-efficacy. Development of higher self-efficacy may be an area to focus on in future outreach and education activities. The wide confidence intervals limit conclusions about differences between racial/ethnic groups.

Current Smokers with a Total Home Ban

Table A.10.11 shows the percentage of current smokers with a total home ban on smoking. Questions regarding home bans were first asked in the 1992 CTS. All racial/ethnic groups reported an increase in total home bans since 1992. In 2008, African American smokers were less likely than other racial/ethnic groups to have a total home ban on smoking, but they have shown the largest change since 1996 with an almost a four-fold increase.

Table A.10.11 Current Smokers With A Total Home Ban On Smoking									
	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008 %	Percentage Change 1992-2008 %	
Overall	19.4 (±1.8)	35.9 (±1.2)	46.8 (±1.8)	51.9 (±1.9)	57.8 (±3.6)	59.3 (±2.6)	65.2	204.9	
			Rad	ce/Ethnicity					
African American	9.3 (±3.9)	23.0 (±4.4)	36.4 (±6.5)	41.3 (±4.9)	41.8 (±15.6)	46.6 (±9.2)	103.1	399.6	
Asian/PI	19.6	42.0	57.0	63.6	61.1	68.6	63.4	249.5	

	(±7.8)	(±5.8)	(±7.3)	(±6.2)	(±11.1)	(±11.7)		
Hispanic	30.4	55.6	64.2	59.8	66 4 (+0.6)	65 1 (+7 3)	17.0	114.0
	(±6.5)	(±3.4)	(±3.6)	(±3.8)	00.4 (±9.0)	$05.1(\pm 1.5)$	17.0	114.0
Non-Hispanic	18.0	30.5	40.4	48.2	55 9 (12 2)	577(12A)	00 0	220.2
White	(±2.1)	(±1.3)	(±1.7)	(±2.0)	55.6 (±5.2)	57.7 (±3.4)	00.0	220.5

Smoking Cessation on Assistance

Table A.10.12 presents the percentage of smokers in the past year that used nicotine replacement therapy (NRT) on their last quit attempt by race/ethnicity. In 2008, Non-Hispanic Whites were significantly more likely than Hispanic smokers to have used NRT on their last quit attempt.

Table A.10.12 Smokers in the Past Year Who Used NRT on their Last Quit Attempt by Race/Ethnicity								
	1996 1999 2002 2005 2008 % % % %							
Overall	13.7 (±1.2)	15.1 (±1.4)	18.1 (±1.5)	18.8 (±3.0)	16.8 (±2.7)	22.6		
Race/Ethnicity								
African American	8.8 (±3.8)	9.7 (±4.1)	17.7 (±6.1)	19.5 (±12.1)	18.4 (±7.7)	109.7		
Asian/PI	11.9 (±6.6)	7.1 (±3.3)	19.4 (±9.0)	5.6 (±4.4)	9.8 (±9.2)	-17.9		
Hispanic	6.0 (±1.9)	7.6 (±2.5)	6.7 (±1.9)	9.7 (±4.4)	9.2 (±4.9)	51.7		
Non-Hispanic White	17.8 (±1.5)	20.4 (±1.9)	23.9 (±2.1)	25.5 (±3.8)	22.5 (±3.7)	26.5		

Physician Advice for Smoking Cessation

Table A.10.13 presents the percentage of smokers who reported being advised by their physician to quit smoking during the last year or in the year before they quit. Although the percentages have significantly increased since 1996, overall, there has not been a significant increase in physician advice between 2005 and 2008. In 2008, Hispanic smokers seemed to have the lowest percentage reporting physician advice to quit, but comparisons with other groups are limited by wide confidence intervals.

Table A.10.13 Physician Advice to Quit Among Smokers in the Last Year among Those Who Visited a Physician								
	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Change 1996-2008 %		
Overall	51.9 (±1.7)	55.3 (±2.2)	59.3 (±1.9)	62.6 (±3.5)	63.7 (±3.0)	22.6		
Race/Ethnicity								
African American	58.4 (±6.3)	56.5 (±6.8)	64.6 (±6.2)	65.4 (±10.1)	66.4 (±9.2)	13.7		
Asian/PI	50.3 (±8.7)	52.6 (±9.3)	60.8 (±8.3)	67.2 (±11.5)	65.8 (±17.2)	30.9		
Hispanic	40.0 (±3.9)	46.5 (±4.6)	50.4 (±4.8)	52.3 (±9.7)	56.2 (±6.5)	40.5		
Non-Hispanic White	54.5 (±1.7)	58.3 (±2.0)	61.3 (±2.3)	64.6 (±3.4)	65.4 (±3.2)	19.9		

5. Protection of Nonsmokers from Secondhand Smoke (Chapter 8)

Indoor Workers Reporting Smoke-free Workplaces

Table A.10.14 presents the percentage of indoor workers reporting smoke-free workplaces. In 2008, roughly 97% of African American, Asian/PI and Non-Hispanic White indoor workers reported smoke-free workplaces. Only 94.5±3.1% of Hispanic indoor workers reported smoke-free workplaces; however, this difference compared to the other three racial/ethnic groups was not statistically significant.

Table A.10.14 Indoor Workers Reporting Smoke-Free Workplaces									
	1990 1992 1996 1999 2002 2005 2008 % % % % % % % %								
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)	96.4 (±1.2)		
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)	97.3 (±1.6)		
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)	97.8 (±1.1)		
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)	94.5 (±3.1)		
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)	97.1 (±1.5)		

Exposure of Indoor Workers to Secondhand Smoke in the Past 2 Weeks

Table A.10.15 presents the percentage of non-smoking indoor workers exposed to secondhand smoke in their workplace in the past two weeks. From 1990 to 2008, significant declines in exposure were seen in all groups except for African Americans.

Table A.10.15 Exposure Of Indoor Workers To Secondhand Smoke In The Past 2 Weeks									
	1990 %	1992 %	1996 %	1999 %	2002 %	2005 %	2008 %	Percentage Decrease 1990-2008 %	
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)	13.5 (±2.3)	-53.6	
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)	18.7 (±6.6)	-17.9	
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)	12.6 (±3.3)	-54.8	
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)	19.2 (±6.5)	-51.8	
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)	8.8 (±2.0)	-66.2	

Total Household Bans on Smoking

Table A.10.16 shows the percentage of adult smokers and non-smokers by race/ethnicity reporting that their homes were completely smoke-free. Over time, all racial/ethnic groups have shown increases in the percentage of homes with a total household ban on smoking.

Table A.10.16 Adults with Total Household Bans on Smoking by Race/Ethnicity									
	1992 1993 1996 1999 2002 2005 2008 % % % % % % % %								
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)	80.8 (±1.4)		
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)	78.6 (±2.6)		
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)	84.0 (±2.4)		
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)	79.3 (±3.8)		
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)	81.4 (±1.5)		

Should Smoking Be Allowed in Venues Where It Is Not Currently Prohibited?

Table A.10.17 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 greater support for smoke-free venues than Non-Hispanic Whites.

Table A.10.17 Places Smoking Should Not Be Allowed, 2008									
	OutdoorOutsideInside CarsOutdoorRestaurantEntrances ToIndianPublic Places%%%%%%%								
Overall	60.4 (±2.0)	75.0 (±1.5)	72.1 (±1.5)	66.5 (±2.0)	95.2 (±0.8)				
Race/Ethnicity									
African American	59.5 (±3.2)	71.7 (±3.3)	71.9 (±3.6)	69.4 (±2.8)	96.0 (±1.4)				
Asian/PI	64.0 (±3.5)	75.4 (±2.3)	69.9 (±3.5)	67.6 (±3.5)	96.9 (±1.0)				
Hispanic	70.8 (±3.4)	78.4 (±2.9)	78.4 (±3.7)	74.2 (±3.7)	97.7 (±1.4)				
Non-Hispanic White	52.2 (±2.9)	73.2 (±2.2)	68.1 (±2.5)	61.2 (±2.9)	92.9 (±1.1)				

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Glossary

Current non-daily, never daily – has smoked at least 100 cigarettes in his or her lifetime and has never smoked on a daily basis.

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 lifetime, but does not smoke now (old question) or now smokes not at all (new question).

Heavy daily smoker – a *current smoker* who now smokes 'everyday' and reports consuming more than 20 cigarettes/day.

Light daily smoker - a current smoker who now smokes 'everyday' and reports consuming 1-10 cigarettes/day.

Moderate daily smoker – a *current smoker* who now smokes 'everyday' and reports consuming 11-20 cigarettes/day.

Never smoker – has smoked fewer than 100 cigarettes in his or her lifetime.

Non-daily smoker – a current smoker who smokes some days.

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.

Nonsmoker – a never smoker or a former smoker.

Recent quitter –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.