Title

EVALUATION OF THE CALIFORNIA TOBACCO CONTROL PROGRAM

Journal

CIRCULATION, 90(4)

ISSN

0009-7322

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Publication Date

1994

Peer reviewed

Tobacco Use in California

An Evaluation of the Tobacco Control Program, 1989–1993

A Report to the California Department of Health Services

Pierce JP, Evans N, Farkas AJ, Cavin SW, Berry C, Kramer M, Kealey S, Rosbrook B, Choi W, Kaplan RM.

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Suggested Citation:

Pierce JP, Evans N, Farkas AJ, Cavin SW, Berry C, Kramer M, Kealey S, Rosbrook B, Choi W, Kaplan RM. *Tobacco Use in California. An Evaluation of the Tobacco Control Program, 1989–1993.* La Jolla, Calif: University of California, San Diego; 1994.

ACKNOWLEDGMENT

This report was prepared by the staff of the Cancer Prevention and Control Program of the University of California, San Diego (UCSD) for the Tobacco Control Section of the California Department of Health Services (CDHS) under contracts # 89-97872 and # 92-10601. The contracts were overseen by Michael Johnson, Ph.D., and Dileep G. Bal, M.D., for CDHS. The fieldwork for the California Tobacco Surveys was performed by Westat, Inc. under subcontract to UCSD.

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This report has undergone three cycles of peer review since the first draft of November 1993. The first review was performed by the advisory committee established for the project by the UCSD team. The second draft was submitted for examination by external reviewers at the request of CDHS. CDHS conducted a final internal review. This report has benefited considerably from the peer review process. We would like to thank the following individuals for their extensive review and valuable contributions to this document: Lester Breslow, David M. Burns, K. Michael Cummings, Gary Giovino, Stanton Glantz, Jeffrey Harris, C. Anderson Johnson, Terry Pechacek, Dorothy Rice, and Donald Shopland.

* Dr. Pierce is supported in part by an Established Investigator Award from the American Heart Association.

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Chapter 1

EXECUTIVE SUMMARY AND FINDINGS SUMMARIZED BY CHAPTER

EVALUATION OF THE CALIFORNIA TOBACCO CONTROL PROGRAM

PROGRESS TOWARD TOBACCO CONTROL GOALS [1]

Progress from 1988 through 1993

1. ***Protection of Nonsmokers from Environmental Tobacco Smoke (ETS)***

(a) *Children at Home*: **80%** of children younger than 17 years protected by 1993.

(b) *Nonsmokers at Work*: **23% decrease** in the number of nonsmokers exposed to ETS during 1990–1993.

2. ***Reduction in Smoking Prevalence***

(a) Tobacco consumption **declined 27%** between 1988 and 1993.

(b) Smoking prevalence **declined 28%** from an estimated 26.5% in 1988 to a best estimate of 19.1% [2] in 1993.

(c) The observed decline in consumption and prevalence resulted from an increase in successful quitting among California adults.

(d) No decline in adolescent smoking was observed after 1990. The Program appears to have halted the increases in adolescent smoking observed during 1988–1990.

Forecast to Year 1999

1. As currently implemented, the Tobacco Control Program will not meet the legislatively set goal of a 75% reduction in smoking prevalence.

2. To achieve the set goal, the Program should emphasize effective interventions in order to increase its annual impact by 50% for the period 1994 through 1999.

[1]For outline and rationale of these goals, see Chapter 2

[2]This best estimate was obtained using all available data sources. It should be noted that the 1993 California Tobacco Survey estimate was 20.5%, which was within the expected 95% confidence bounds of the best estimate.

IMPACT OF PROGRAM INTERVENTIONS

The Effect of Increasing the Excise Tax on Tobacco Products

1. Tobacco consumption declined by 13.7% between September 1988 and May 1989. This decline started before the passage of Proposition 99 and continued for 5 months after the imposition of the 25-cent excise tax.

2. The tax did not appear to influence adolescent smoking prevalence.

3. Californians strongly support a further increase in excise tax providing the revenue raised is used for smoking prevention and other health programs.

The Effect of Mass Media on Tobacco Use Behavior

The Antismoking Media Campaign

1. The antitobacco mass media campaign accounted for a relatively constant 12% of the tobacco control monies during 1989–1994. It was recalled by 60% of Californians.

2. The media campaign was associated with one period of accelerated decline in cigarette consumption (a 12% decline).

3. Quit attempts by adult smokers were more frequent during the media campaign.

The Tobacco Industry's Advertising and Marketing Campaign

1. The tobacco industry campaign outspends the Tobacco Control Program by a factor of 5 to 1.

2. The introduction of the "Joe Camel" advertising campaign in 1988 was associated with a major increase in smoking prevalence among California adolescents lasting until 1990.

3. The impact of tobacco industry marketing practices appears at least as large as exposure to peer smokers in predicting who will start to smoke.

The Effect of the Local Tobacco Control Program

1. Local programs (local lead agencies) focussed on protecting the nonsmoker. The budget for these programs decreased from 21% of total tobacco control monies in 1990–91 to 13% in 1993–94.

2. The proportion of smokefree workplaces almost doubled between 1990 and 1993.

3. Nonsmoker exposure to ETS at work decreased by almost a quarter between 1990 and 1993.

4. Maintaining a smokefree work area was associated with a 14% reduction in smoking prevalence.

The Effect of the Competitive Grant Program

1. This program supported assistance to quit and minority network programs, and received 16% of tobacco control monies.

2. The largest declines in smoking prevalence were observed among minority communities.

3. Cessation programs funded by the Tobacco Control Program have significantly increased access to quitting assistance for smokers. Rates of successful cessation increased during 1988–1993.

The Effect of the School Program

1. School programs received approximately 25% of tobacco control monies.

2. The proportion of teens recalling a class on the risks of smoking did not improve during 1990–93.

3. Compliance with school smoking policies was low and did not improve during 1990–93.

4. Less than 50% of schools provide a smokefree learning environment for adolescents.

The Effect of Medical Care Programs

1. These programs reimburse private health providers primarily for medical screenings of low income adolescents. Tobacco control funding for these services doubled during 1990–93 to 37% of total available monies.

2. No literature supports such a program as the largest intervention in a tobacco control program.

3. Smoking prevalence did not decline in California adolescents between 1990 and 1993.

4. Physician advice was not associated with an increase in cessation attempts.

DETAILED FINDINGS SUMMARIZED BY CHAPTER

Chapter 4. ASSESSING PROGRESS TOWARD PROGRAM GOALS

1. Between 1990 and 1993, the proportion of California children and nonsmoking workers who were protected from ETS exposure increased substantially.

2. Cigarette consumption in California declined by an estimated 13.7% following the passage of Proposition 99 and the mandated increase in excise tax on cigarette products. This accelerated decline in consumption lasted approximately 5 months after the imposition of the 25-cent tax.

3. The introduction of Tobacco Control Program interventions was associated with an increase in the rate of decline in cigarette consumption.

4. Between 1988 and 1993, we observed a 27% decrease in per capita tobacco consumption and a 28% decline in smoking prevalence. Based on multiple surveys, the best estimate of smoking prevalence in 1993 among California adults is 19.1%.

5. Following the passage of Proposition 99, smoking prevalence declined at twice the rate observed before Proposition 99. However, this new rate of decline must be increased by a further 50% in order to achieve the Program goal of a 75% reduction in prevalence by 1999.

6. Smoking prevalence among 16- to 18-year-old Californians appeared to be increasing sharply following the introduction of the "Joe Camel" tobacco advertising campaign. We were unable to identify a decline in prevalence associated with the imposition of the excise tax. No further increases in adolescent smoking prevalence were observed following the introduction of the Tobacco Control Program.

7. The decline in tobacco consumption and smoking prevalence in California appears to result from increases in successful smoking cessation among adults.

8. Popular support for a further increase in the excise tax on tobacco has grown. In 1993, 60% of Californians indicated support for an additional increase in the excise tax of at least 50 cents, provided that the money would be used for antitobacco and other health programs. Under these conditions, two thirds of current smokers favored an increase of at least 25 cents in the tobacco tax.

Chapter 5. THE IMPACT OF THE ANTITOBACCO MASS MEDIA CAMPAIGN IN CALIFORNIA

1. A period of accelerated decline in per capita cigarette consumption in California began in April 1990, coinciding with the start of the mass media campaign. During a 12-month period, consumption declined by 12%. At this time, the media campaign was the only major tobacco control intervention in the field.

2. The proportion of Californians who attempted to quit smoking for more than 1 day increased whenever the mass media campaign was in the field and decreased during the period when the campaign was withdrawn.

3. More than half of California adults and more than two thirds of adolescents recalled seeing the antitobacco mass media campaign.

4. Adults who saw the media campaign were more likely than adults who did not see the campaign to believe that ETS is harmful to nonsmokers, especially to children.

5. Adults who saw the media campaign were more likely than adults who did not see the campaign to ask someone not to smoke. Almost 60% of smokers reported that they had been asked not to smoke on at least one occasion.

6. Half of Californians had voluntarily made their homes smokefree by 1993. The number of smokers reporting a smokefree home increased substantially between 1992 and 1993. Smokers who had young children in the home were more likely than smokers living without children to report a smokefree home.

7. Smokefree home policies were more likely if adults believed in the danger of ETS to nonsmokers. The spread of smokefree homes in California may be an indirect effect of the media campaign.

Chapter 6. TOBACCO MARKETING AND SMOKING IN SCHOOLS AS BARRIERS TO EFFECTIVE ADOLESCENT PREVENTION PROGRAMS

1. Adolescents appear to be the most receptive audience for tobacco advertising. Awareness and liking of cigarette advertisements is higher among adolescents than among adults in California. Liking and awareness of the "Joe Camel" cigarette campaign was highest in the youngest age group studied (12 to 14 years).

2. Two thirds of adolescents have a favorite cigarette ad, and one quarter are willing to use products promoting tobacco.

3. Adolescents who are receptive to tobacco advertising are more likely than adolescents who are not receptive to be susceptible to smoke in the future.

4. Tobacco advertising and marketing practices are an important and independent predictor of smoking uptake. The effect of tobacco marketing on susceptibility is at least as large as the effect of exposure to peers or family members who smoke.

5. There appears to have been no improvement in the level of exposure of adolescents to smokers at school over the duration of the Tobacco Control Program.

6. While most schools are reported to have smoking policies, enforcement of those policies and compliance by students continued to be low over the duration of the Tobacco Control Program. Adolescents strongly support the existence of a strict smoking policy at school.

7. In 1993 as in 1990, 25% of students could not recall ever having received instruction on the health risks of smoking at school.

Chapter 7. THE ROLE OF SMOKEFREE POLICIES: WORKPLACES AND RESTAURANTS

Trends in the Prevalence of Workplace Smoking Policies in California

1. The percentage of California workplaces that prohibit smoking in the work area increased dramatically during the period covered by the antismoking campaign. Between 1990 and 1993, the proportion of indoor workers with smokefree workplaces nearly doubled, from 35% to 65%.

2. Large workplaces ($\geq$50 employees) were more likely than small workplaces to have smokefree policies in 1990 and to introduce new policies between 1990 and 1992.

3. By 1993, 87% of Californians employed indoors were covered by a policy that prohibited smoking in their work area.

Trends in the Protection of Nonsmokers in Indoor Workplaces

1. The type of smoking policy implemented by a workplace significantly affects levels of ETS exposure. In 1993, 89% of nonsmokers in smokefree workplaces were not exposed to ETS, compared to 66% of nonsmokers under a smokefree work area. Among the 13% of indoor workers who did not have a smokefree work area, only 24% of nonsmokers were not exposed to ETS.

2. Compliance with smokefree workplace policies was high in all survey years.

Changes in Smoking Behavior Related to Workplace Policies

1. The introduction of a smokefree work area is associated with a change in smoking behavior among employees. An estimated 10% decrease in per capita consumption was associated with the introduction of a new policy.

2. Maintenance of a smokefree policy led to increased quitting over time, particularly among light smokers.

3. Both prevalence and consumption increased among employees who moved from a smokefree work area in 1990 to a work area with lesser restrictions in 1992.

4. The implementation and continuation of a smokefree work area was associated with a 26% reduction in per capita consumption among workers.

Potential Impact of Ordinances for Smokefree Restaurants

1. Adult nonsmokers in California eat out as often as smokers, but there are 4 times as many nonsmokers as smokers.

2. More than two thirds of smokers do not feel the need to smoke when they eat out.

3. The introduction of a smokefree restaurant ordinance is likely to lead to an overall increase in restaurant business.

Chapter 8. THE ROLE OF SMOKING CESSATION PROGRAMS

1. The majority of smokers are worried about the difficulties associated with quitting smoking. However, few smokers use formal assistance despite evidence that cessation programs are helpful.

2. Between 1990 and 1993, the proportion of smokers who used formal assistance to quit smoking appeared to increase from 5% to 19%. This increase may be inflated by a change in the questionnaire and requires further validation.

3. Prescription medication, particularly the nicotine patch, was chosen more often than counseling by smokers in 1993.

4. The success rates of smokers who used assistance (based on 3 months or more abstention) were slightly but not significantly lower than the success rates of self-quitters. However, smokers who used assistance were significantly more addicted to smoking than smokers who did not.

5. White non-Hispanic smokers were more likely to seek assistance to quit than minority smokers in the first 2 years of the Tobacco Control Program (1990–1992). However, a telephone counseling service funded by the Program obtained substantial numbers of minority participants by tailoring its service to the language needs of different race or ethnic groups.

6. The quitting success rate of smokers who received the in-depth telephone counseling intervention were double the success rates of smokers in the control group. This type of cessation service merits further investigation.

Chapter 9. THE ROLE OF MEDICAL CARE IN PROMOTING SMOKING CESSATION

1. Access to medical care is high among both smokers and nonsmokers. In 1992, 11.8% of respondents were unable to obtain needed health care. Lack of insurance was the chief reason cited and appears to impose major limitations on health care access.

2. More than half (51%) of California smokers who visited the doctor received no advice to quit smoking.

3. Most smokers who are advised to quit by their doctor do not receive further assistance in the form of counseling referrals or prescription medication.

4. Smokers who received assistance *in addition to* advice from their doctors were significantly more likely to be successful in their attempts to quit smoking.

5. These data suggest that California physicians are not following the national guidelines, which suggest that doctors can effectively promote smoking cessation if they both advise and assist patients to quit smoking.

Chapter 10. PREDICTORS OF SUCCESSFUL SMOKING CESSATION: THE RELATIVE IMPORTANCE OF DIFFERENT INTERVENTIONS

1. Smokers and former smokers were classified based on their probability of quitting and maintaining a quit attempt in the future. This classification was termed a measure of progress toward successful cessation.

2. Between 1990 and 1992, a quarter of California smokers made progress toward successful cessation.

3. For current smokers, a history of previous quit attempts is an important indicator of progress if the last quit attempt was maintained for 7 days or more.

4. Daily cigarette consumption and latency to smoke the first cigarette of the day are important indicators of progress toward successful cessation. Evidence supports advising smokers who wish to quit to reduce daily consumption to less than 15 cigarettes and to delay their first cigarette for at least 30 minutes after they awake.

5. Smokers and former smokers who had a smokefree work area made significant progress toward long-term abstinence. Other predictors of progress included beliefs that personal smoking can harm others, and having a smokefree home.

6. The provision to smokers of formal cessation assistance appears to predict long-term cessation.

Chapter 2

OVERVIEW OF TOBACCO CONTROL IN CALIFORNIA 1989–1993

INTRODUCTION

In November 1988, the Tobacco Tax and Health Protection Act (Proposition 99) was passed by voters of the state of California, mandating the start of the California Tobacco Control Program: the largest and most comprehensive program ever undertaken to reduce the impact of tobacco on society. This report assesses the achievements of this program in its first 5 years of operation. We begin in this chapter by providing a brief overview of the California Tobacco Control Program and its component interventions.

Section 1 of this chapter reviews the rationale for the California Tobacco Control Program and the outcome goals by which the effectiveness of the overall program must be evaluated. Section 2 describes the main interventions developed by the Program and the amount of tax monies budgeted for each intervention. We note for each intervention the data that were available to us to evaluate progress toward the goals of the Tobacco Control Program.

SECTION 1
Rationale and Goals of the Program

Rationale for a Tobacco Control Program in California

Smokers at Risk. The public health impact of smoking has been thoroughly documented.[1] An estimated 42,207 Californians die each year from diseases attributable to smoking: this includes 17,816 deaths from cardiovascular disease, 13,764 deaths from cancers, and 9,967 deaths from respiratory disease.[2] Cigarette smoking causes one in every five deaths in California. Further, a strong dose-response effect exists: smoking-related death and disease occur more frequently in heavy smokers.

Cigarette smoking has been classified as an addictive behavior.[3] Numerous studies have demonstrated that once smokers have formed a nicotine dependency, the process of quitting

smoking is arduous and frequently unsuccessful. Smokers who achieve long-term cessation significantly reduce their chances of later death and disability and lower the health care costs to the community. Thus, a strong rationale exists for public funding of interventions that encourage and assist smokers to quit.

Nonsmokers at Risk. Although the individual's own smoking behavior is responsible for most of the death and disability related to smoking, nonsmokers who are exposed to tobacco smoke are also at risk for some of these health effects. Environmental tobacco smoke (ETS) has been classified by the U.S. Environmental Protection Agency as a Group A carcinogen, a classification used for compounds that have been shown to cause cancer in humans.[4] Exposure to ETS—also known as passive smoking — is estimated to cause approximately 3,700 lung cancer deaths annually in U.S. nonsmokers, and many more deaths from heart disease.[5,6] In California, ETS exposure is responsible for an estimated 390 lung cancer deaths in nonsmokers each year.[2] The workplace is a common location where nonsmokers are exposed to ETS: this report estimates that in 1993, 1.8 million nonsmoking indoor employees were exposed to ETS in their workplace. Passive smoking presents a serious health risk to children: it is associated with an increased risk of respiratory tract infections, increased prevalence of fluid in the middle ear, increased severity of asthma symptoms, and it is a risk factor for new cases of asthma.[4] In 1993, an estimated 1.6 million California adolescents living with a smoker were not protected from ETS exposure. That community members, particularly young children, can be harmed by the behavior of others without any action or consent on their part constitutes strong justification for public policy action to protect nonsmokers from ETS exposure.

Need for Prevention Programs. Health professionals have had little success with the methods currently available to help people overcome behavioral addictions such as smoking. Because of the difficulty in quitting and the large public health costs that result from smoking, a priority for public policy on tobacco control is the development of effective strategies to prevent nonsmokers from starting to smoke. This report estimates that in 1993, more than 102,000 California adolescents started to smoke regularly, representing 280 new smokers each day. The fact that more than 75% of smokers take up the habit when they are still minors (younger than age 18),[7] strengthens the rationale for public policy action, since the State accepts many responsibilities for protecting minors from untoward harm. In addition, there is good evidence that population-based and public policy interventions provide a more cost-effective way to deal with smoking prevention and cessation than clinically-based approaches, which concentrate on delivering services to individuals on a one-on-one basis.[1]

Figure 2-1. PUBLIC POLICY GOALS FOR THE CALIFORNIA TOBACCO CONTROL PROGRAM

Scientific evidence on the health hazards of smoking and passive smoking indicate that a public health program in tobacco control should have the following goals:

(1) **to protect nonsmokers** by reducing exposure to ETS among:

- (a) children at home and in schools
- (b) adults, particularly in worksites and public places

(2) **to reduce smoking prevalence** by:

- (a) reducing smoking uptake among adolescents
- (b) increasing successful quitting among smokers

California legislators introduced a goal of a 75% reduction in smoking prevalence by the year 1999 in the enabling legislation for Proposition 99. If this goal is met, smoking prevalence will fall to 6.5% by 1999—approximately equivalent to the prevalence of smoking among U.S. physicians in the late 1980s.

The tobacco control interventions examined in this report will be assessed on the basis of their effectiveness in advancing these program goals.

SECTION 2
A Brief Overview of the California Tobacco Control Program

Overall Funding of the Tobacco Control Program

A number of sources provide information on interventions funded by the Tobacco Control Program of California. An initial plan for interventions was published by the administrative leaders of that Program.[8] An update on progress in implementing this plan was provided by the California Department of Health Services and the California Department of Education in their most recent report entitled *Toward a Tobacco Free California*.[9] The Institute of Health Policy Studies at the University of California, San Francisco, received funding from the research program supported by monies from Proposition 99 (the Tobacco-Related Disease Research Program, coordinated by the University of California) and has published a series of reports on the implementation of Proposition 99.[10,11]

Table 2-1 presents the level of funding per year for each of the five categories of interventions that have specific budgetary line items. The total of revenues from the tax in fiscal year 1989–1990 was $934.8 million, of which $97.5 million (12.7% of all expenditures) went into the health education account and was used to start the California Tobacco Control Program. Proposition 99 mandated that 20% of expenditures (total revenues minus reserve) should be in the health education account. From 1989 through 1993, $599.3 million (19.5% of all expenditures) were placed in the health education account.

Both the Tobacco Education Oversight Committee and the Institute for Health Policy Studies have claimed that the legislature has not funded the Tobacco Control Program at the mandated level since its inception.[10,12] Their claims are based on arguments that medical care programs do not constitute tobacco control activities. Using this logic, the Tobacco Control Program has received an average of 15% of tax monies available for expenditure, which is only three quarters of the amount mandated by the voters in Proposition 99. Under this accounting, the lowest percent of funding expended on tobacco control activities was 11% in 1991–1992. Both the Tobacco Education Oversight Committee and the Institute for Health Policies have argued that the failure to fund the Program at the mandated level may have impaired the capacity of the Tobacco Control Program to meet its goals.

The following sections contain a more detailed description of the antitobacco interventions conducted by the Tobacco Control Program.

Table 2-1
Funding Level for Interventions of the California Tobacco Control Program from the Health Education Account: 1989–1994 (millions of dollars)

	FISCAL YEAR						
INTERVENTION	**Actual 1989–1990**	**Actual 1990–1991**	**Actual 1991–1992**	**Actual 1992–1993**	**Projected 1993–1994**	**Total 1989–1994**	**% of Total Funding**
Local Lead Agencies	35.6	35.4	14.5	17.8	13.5	116.8	19.5
Media Campaign	14.3	14.3	16.0	15.4	12.9	72.9	12.2
Competitive Grants Program	3.3	49.7	1.1	27.5	15.1	96.7	16.1
School Programs	35.7	35.9	27.2	25.8	22.4	147.0	24.5
Medical Care Programs	8.6	26.3	58.2	35.3	37.5	165.9	27.7
TOTAL	97.5	161.6	117.0	121.8	101.4	599.3	100
% of Tobacco Surtax Fund	12.7%	24.1%	20.7%	22.1%	19.3%	19.5%	

Source: Begay & Glantz, 1994[11]

(1) Local Lead Agencies

An important component of the California Tobacco Control Program was the establishment of local health departments as local lead agencies to provide tobacco control education. Funding for these agencies was $103.3 million for 1989 through 1993, and this line item accounts for almost 20% of total tobacco control funding through 1994 (see Table 2-1). The lead agencies coordinate tobacco control activities at the local level. Typically, these agencies are involved in a broad range of activities to promote tobacco control in the community. These activities have the following primary objectives[9]:

(a) to increase dissemination of information on the health consequences of smoking and of ETS exposure at the local level. Activities have included local agenda setting through "magnet" events and specialized education programs, and the provision of prevention or cessation services.

(b) to advise local policy makers on options for tobacco control, with a particular emphasis on the protection of nonsmokers from the harmful effects of ETS. The impact of this advice to policy makers is evident in the rapid spread of local ordinances relating to tobacco control. By mid-1992, an estimated 51 local jurisdictions in California had passed an ordinance to make common work areas smokefree.[13] Local lead agencies also supply technical assistance to local businesses on the implementation of these ordinances.[14]

Evaluation. In a previous report, we demonstrated that the passage of local ordinances was associated with a rise in the number of workplaces that instituted smoking policies.[15] Further analysis suggested that restrictions on smoking in the workplace would be effective in reducing exposure of nonsmokers to ETS.[16] Since these early reports, local tobacco control programs have significantly increased both the number and the strength of local ordinances and have worked to ensure effective implementation of workplace smoking policies. To assess the impact of interventions supported by these local lead agencies, we consider changes in the prevalence of smokefree workplaces in California between 1990 and 1993. In addition, we examine compliance with these policies, the level of protection that they afford to nonsmoking workers, and their impact on the behavior of smokers.

(2) Media Campaign

The antitobacco mass media campaign was an especially visible component of the Tobacco Control Program. The budget for this campaign comprised $60 million for the period 1989 through 1993 (Table 2-1). Despite its high profile, it is important to note that funding for the media campaign accounted for only **12%** of the total program budget. The chief function of the media campaign was to set the agenda and raise community awareness of smoking issues, as a prelude to the activities of other program interventions. The goals of the paid advertising component of the campaign have been set out in *Toward a Tobacco Free California* as follows[9]:

(a) **to deglamorize tobacco use** with messages that "expose the predatory aspect of the profit-driven tobacco business and re-position(s) tobacco marketers as part of the problem."

(b) **to emphasize the negative health effects of smoking during pregnancy** by informing pregnant women of the harmful effects of smoking on the fetus. These advertisements often concluded with messages reminding smokers that nonsmokers are placed at risk by ETS.

(c) **to promote cessation behavior** among smokers and encourage them to seek help to quit smoking.

(d) **to provide information-oriented messages** on the dangers of smoking, particularly to recent immigrants.

Evaluation. To assess the impact of this intervention, we report on the proportion of the population who were able to recall antitobacco advertisements aired by the campaign. We present evidence on how many people exposed to the media campaign accepted and internalized the major messages regarding the tobacco industry and the health effects of ETS. Using information from the statewide California Smokers Helpline, we investigated whether the media campaign encouraged more smokers to seek cessation assistance.

In a previous report, we noted that the start of the media campaign coincided with the beginning of a significant decline in cigarette consumption.[17] Since the media campaign was only intermittently in the field, we were able to examine whether consumption declines paralleled the timing of the media advertisements, thus strengthening the case for a causal connection between the mass media intervention and changes in cigarette consumption. In addition, we analyzed whether these declines in cigarette consumption were due to changes in quitting rates or changes in uptake behavior.

(3) Competitive Grants

Another key initiative is the competitive grants program. From 1989 through 1993, actual funding for this program was $81.6 million, or 16% of the total budget (see Table 2-1). The competitive grants program emphasizes projects that build on existing community services and resources. In the first 2 years of the program, almost 70% of the grants and the funding from these competitive grants have targeted ethnic minority communities.[9] In 1991, the grants program established networks of agencies serving each of four major ethnic groups in California. These networks are designed to ensure that culturally sensitive antitobacco materials and programs are available to ethnic populations.

Other statewide projects have included the California Medical Association's project in which physicians were trained to provide advice and quitting assistance to patients who smoke. The grants program also supports innovative projects that offer solutions to known tobacco control problems. One such project funded in the first round of competitive grants focused on improving the access of smokers to assistance in quitting. The success of this project led to the funding of the statewide California Smokers' Helpline in 1992.

Evaluation. To evaluate the effectiveness of interventions funded by the competitive grants mechanism, we examined whether smoking behavior changed more among ethnic minority communities than in the non-Hispanic white community. This report also evaluates the role played

by physician advice and assistance in prompting smokers to quit smoking. We present evidence on which smokers are most likely to receive this advice and/or assistance and we review data on whether the California Smokers' Helpline was associated with a change in access to assistance among minority smokers.

(4) Tobacco Control Programs in Schools

There is a broad consensus that a reduction of long-term health consequences of smoking is best accomplished by preventing adolescents from starting to smoke. For many adolescents, the school environment is an important source of information on behavioral norms and a place where adolescents develop and hone socialization skills. The Tobacco Control Program strongly endorses the prevention of youth smoking, and support for school tobacco control initiatives is projected to be $124.6 million from 1989 through 1993, representing more than 24% of the total budget. These monies are distributed by the California Department of Education to county offices of education and school districts through the Drug, Alcohol and Tobacco Education (DATE) Application process.

Evaluation. For this report, our assessment is limited to analyzing changes in tobacco use behavior reported by adolescents. We present data on school policies, perceived compliance with these policies, exposure to role models (teachers and seniors) who smoke, and recall of health education classes on smoking. In a previous report, we suggested that the potential effectiveness of school health education may be undermined by the fact that the schools are not smokefree and by the persuasive influence of tobacco advertising.[17] With the benefit of the additional questions on tobacco advertising and the larger sample of the 1993 California Tobacco Survey, we revisit the issue of barriers to successful prevention programs.

(5) Medical Care Programs

Medical Care Programs received $128.4 million between 1989 and 1993 and are projected to receive over 27% of the total budget from 1989 through 1994, making them the largest intervention funded by the Health Education Account of Proposition 99. Among medical care interventions, the highest budget allocation is for the Child Health and Disability Program. This program reimburses private health providers for screenings designed for early detection and prevention of disease and disability in children (younger than 19 years) from low income families. Included in the screening guidelines is the recommendation that health providers attempt to dissuade children from beginning to smoke and disseminate information on the health risks of smoking. The California Department of Health Services anticipated that over 500,000 such screenings would be funded by tobacco control monies by the end of the 1992 financial year.[9]

Evaluation. This program has reimbursed physicians for the delivery of an enormous number of patient screenings. Data were not available to us to assess whether antitobacco education was

effectively incorporated into these medical care screenings. Indirect evidence of the likelihood of physicians following an antitobacco protocol in these patient contacts can be ascertained by our data of adult smokers who report receiving physician advice to quit. The national protocol for such advice has been widely disseminated and physician training to give advice was the main objective of a project funded by the competitive grants program. We note that there is no evidence in the scientific literature to suggest that this type of intervention is effective in preventing the uptake of smoking. The Tobacco Education Oversight Committee has called for the elimination of funding for these programs from the health education account.[12] As this program targets a large number of California adolescents, we assess its possible effectiveness by reviewing the adolescent smoking data.

Chapter 3

DATA SOURCES

INTRODUCTION

Several data sources are available for studying changes in the smoking-related behavior, beliefs, and attitudes of the California population before and after the passage of Proposition 99. To evaluate the impact of the Tobacco Control Program on the California population, we used the following data sources:

(1) The California Tobacco Surveys: (a) cross-sectional, 1990
(b) cross-sectional, 1992
(c) cross-sectional, 1993
(d) longitudinal, 1990–1992

(2) The California Telephone Health Surveys, 1991 and 1992

(3) The National Health Interview Surveys, 1974–1991

(4) The Current Population Survey, 1992

(5) Cigarette Consumption data from the State Board of Equalization, 1980–1993

In this chapter, we review the methods and procedures of each of the data sources and indicate how they were used in this report.

(1) The California Tobacco Surveys

The California Tobacco Surveys (CTS) were the principal data sources used in this report. These surveys were undertaken and funded as part of the Tobacco Tax and Health Protection Act, Proposition 99, which was passed in 1988. Data were collected via random-digit dialed telephone interviews. Previous experience with telephone surveys at the national level (included as a backup mode to household interviewing in the National Health Interview Surveys), has demonstrated that this survey model does not introduce any major bias into the estimates of trends in smoking behavior.[1] As the purpose of these surveys was to provide population estimates of smoking behavior, the main design used was the cross-sectional survey. Each survey undertaken draws a new sample from the population of interest and estimates are weighted to the population for the year that the survey was in the field. Thus, the cross-sectional survey provides the equivalent of a photographer's "snapshot" of what the population was like at a single point in time.

The other design used in the CTS was the longitudinal or panel survey. In this design, a random sample is chosen from a given cross-sectional survey and this sample is reinterviewed at a later point in time. The longitudinal survey is a powerful instrument for identifying factors associated with individual change in behavior or other variables of interest. However, the follow-up

interviews cannot always be completed on all those who are scheduled for a second interview, and the additional nonresponse may introduce a bias into estimates of population characteristics at the second time point.

(a) The 1990 Cross-Sectional CTS

The 1990 CTS consisted of three separate surveys: a 5-minute "screener" survey, an extended 25-minute adult survey, and an extended 25-minute adolescent survey. Interviews were conducted from June 1990 through February 1991. Between February 1991 and July 1991, additional interviews were conducted in Los Angeles to increase representation of minorities in the sample. Details of the methodology of this survey have been described elsewhere.[15,18] Figure 3-1 presents a flowchart of the sample sizes and the response rates for the 1990 CTS.

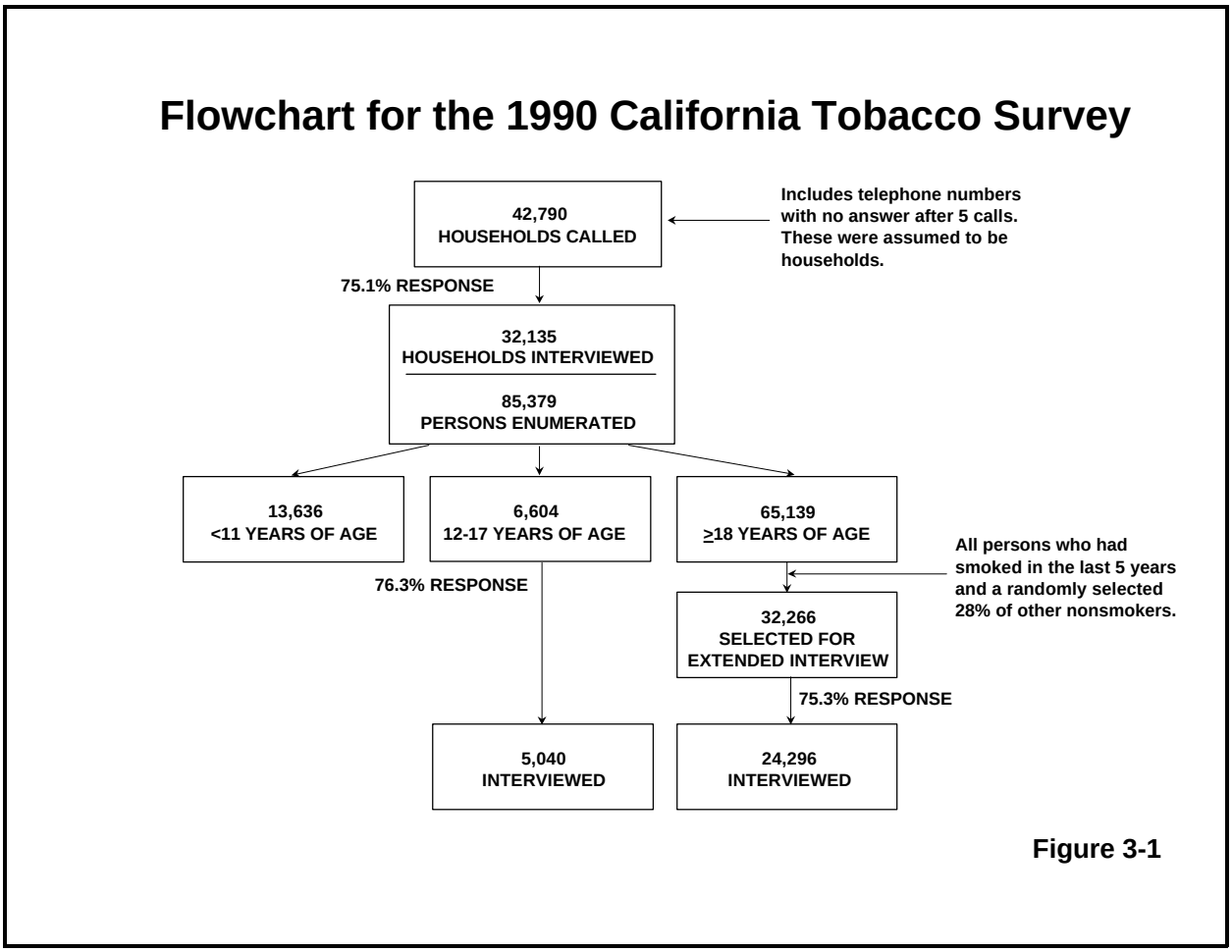


Figure 3-1

The survey was designed to be representative of the California population at the regional/county level, providing estimates of population behaviors, beliefs, and attitudes relating to tobacco use.

Interviewers attempted to contact 42,790 households using a modified Waksberg-Mitofsky random-digit dial methodology.[19] The short screener survey included questions on household composition and the sociodemographic and smoking status of each household member, and was completed in 75.1% of the households contacted. Of the 85,379 people enumerated in these households, 6,604 were between 12 and 17 years of age. All 12- to 17-year-olds were scheduled for an extended interview, and 76.3% of these were completed. Almost half of the adults enumerated were selected for an extended interview; a specific selection criteria reduced the probability that someone who had not smoked in the last 5 years would be interviewed.[18] An extended interview was completed for 75.3% of adults enumerated.

(b) The 1992 Cross-Sectional CTS

The 1992 survey methodology was very similar to that used in the 1990 survey, with the exception that it was designed to be representative at the state level only and not at the county/regional level. The state-approved plan for evaluation of the Tobacco Control Program called for regional estimates of smoking behavior at 3-year intervals supplemented by statewide estimates in other years. Interviews for the 1992 CTS were conducted from March 1992 through July 1992. The flowchart for this survey is presented in Figure 3-2. Because estimates at the county/regional level were not needed, a smaller sample size could be used. Screener interviews

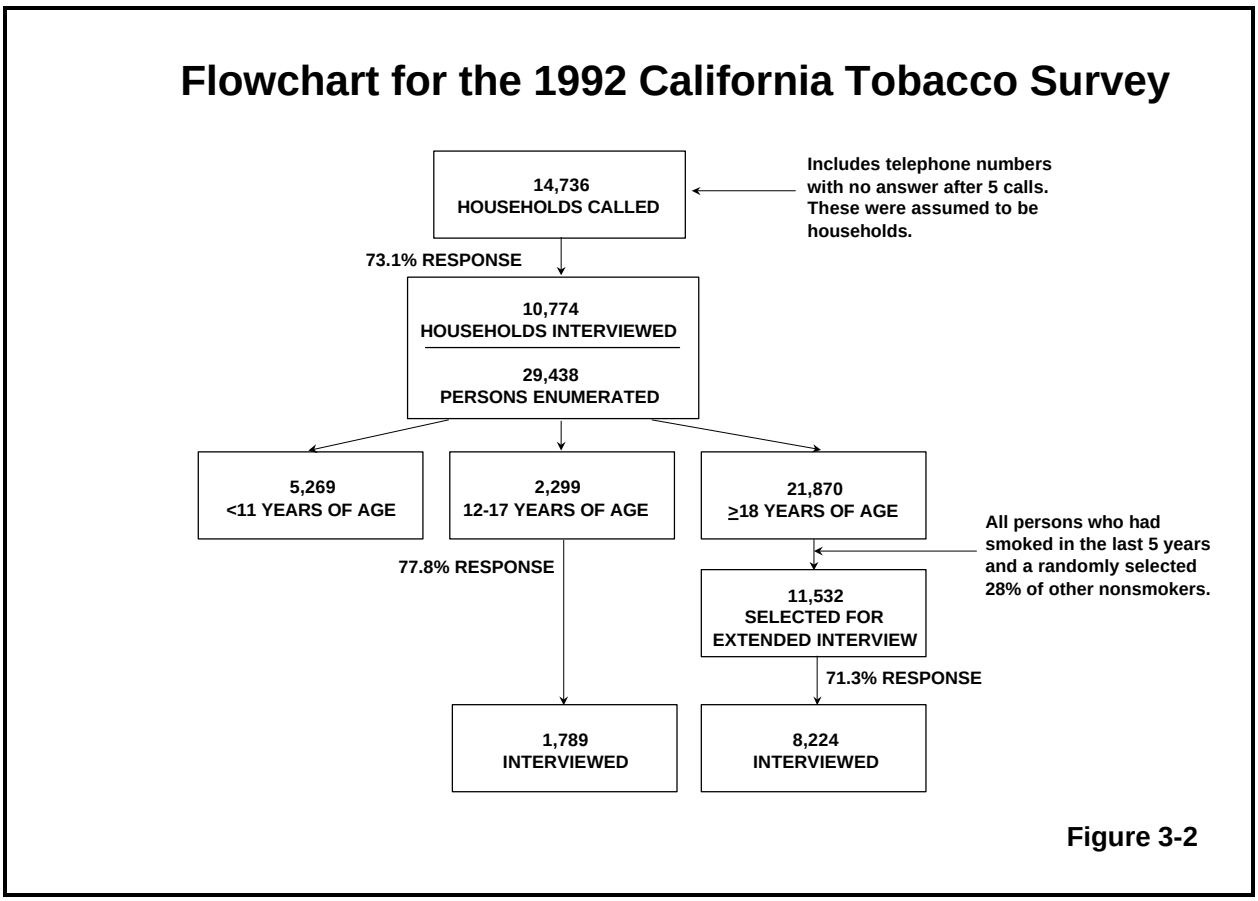


Figure 3-2

were completed for 73.1% of the 14,736 households included in the screener sample. This survey identified 29,438 people of whom 2,299 were between the ages of 12 and 17 years. An in-depth interview was completed for 77.8% of these adolescents. As in the 1990 survey, a separate sample was drawn from the enumerated adults to reduce the probability that a long-term nonsmoker would be interviewed (thus increasing the efficiency of the survey). An in-depth interview was completed for 71.3% of the adults enumerated.

(c) The 1993 Cross-Sectional CTS

The 1993 CTS, like the 1990 CTS, was intended to provide estimates for the population at the county/regional level, so the initial sampling procedures were similar to those used in the 1990 CTS. However, it differed from the previous two surveys in that a separate sample was not drawn from the enumerated adults and the 25-minute in-depth survey was not undertaken for adults (these changes were dictated by cost constraints). Instead, the individual who responded to the screener survey was asked an average of 20 additional questions about attitudes and behaviors related to tobacco use from previous surveys. Interviews were conducted from January 1993 through May 1993. A screener survey was completed in 70.0% of the households called (Figure 3-3). We were able to obtain responses to the additional questions from 99.4% of the adults who completed the initial screener survey.

Among the 85,174 people enumerated in these California households, 6,892 were adolescents between the ages of 12 and 17 years. The 1993 in-depth adolescent CTS (with only minor changes from the 1992 adolescent CTS) was completed for 5,531 (80.3%) of these adolescents.

(d) The 1990–1992 Longitudinal Panel CTS

In order to identify which Californians are changing their smoking behavior, and what factors influence these changes, a sample of respondents to the 1990 CTS was chosen for a follow-up interview. This second interview took place in 1992, an average of 18 months after the 1990 CTS. The selection criteria for the follow-up interview emphasized the importance of measuring behavior change that might be associated with different tobacco control interventions. Accordingly, we oversampled persons who were 18 through 29 years of age at the 1990 interview, and smokers (current smokers, and smokers who had quit within the 5 years before the 1990 interview). We undersampled those who were 40 years of age and older who had either never smoked or who had quit more than 5 years before the 1990 interview. The sampling fraction was 42% for the first two groups and 6% for the latter group.

Flowchart for the 1993 California Tobacco Survey

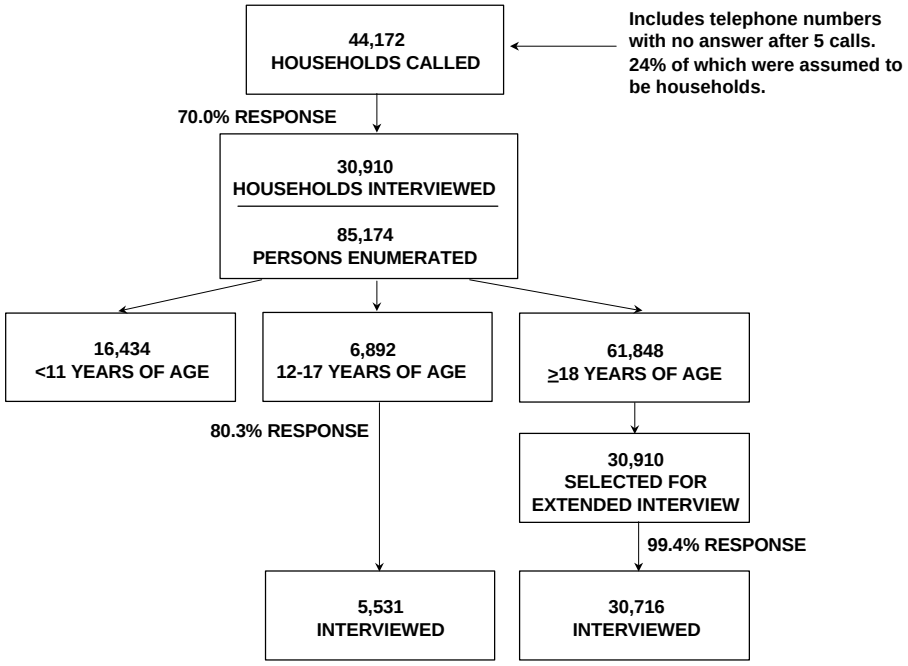


Figure 3-3

A total of 7,498 respondents to the 1990 CTS were originally selected for a follow-up interview (Table 3-1). Unfortunately, fieldwork for this second interview coincided with the Los Angeles riots of 1993 and the disruption to the community had a marked effect on the completion rate. When it was obvious that this noncompletion rate would have a significant impact on the ability to identify factors associated with change within key subgroups, a decision was taken to release an extra sample of 1,812 respondents approximately 1 month before the end of the fieldwork period. This late release meant that the full fieldwork protocol had to be condensed, leading to a lower completion rate. The longitudinal sample received the same 25-minute questionnaire that was used in the 1992 cross-sectional CTS and 4,642 interviews were completed. On this follow-up survey, approximately 7% (688 Californians) of the total sample refused to be interviewed. We

Table 3-1
Response Rates for Longitudinal CTS

Initial Sample	**7,498**
Additional Sample	**1,812**
Total Completed	4,642
Unable to be Located	2,539
Total Refused	688
Incompletes	538
Unable to Respond	149
Not Reached in 10 Callbacks	608
Ineligible	146

were unable to locate 2,539 of the selected respondents for this follow-up interview, and a further 608 were located but contact was unsuccessful within 10 callback attempts. An analysis of the original address of those who did not complete this follow-up survey found that Los Angeles County was the county of residence of nonrespondents 6 times more than expected. No other county was so disproportionately represented among the nonrespondents, suggesting that the Los Angeles riots may indeed have affected completion rates.

Longitudinal panel studies must address the issue of whether nonrespondents to the second interview were different with respect to important variables from those who did provide a second interview. A significant difference might indicate a bias in the results of the second survey. Table 3-2 presents information on smoking behavior and sociodemographics for those who completed the 1992 follow-up and those who were selected for follow-up but did not complete a second interview. We observed little difference in the distribution of respondents and nonrespondents by self-reported smoking status in 1990. Differences were observed on age (the 18- to 24-year-old respondents were less likely to complete the second interview than any other age group),

Table 3-2
Smoking Status and Sociodemographics of Respondents and Nonrespondents to the Longitudinal CTS

		Respondents (%)	Nonrespondents (%)
Smoking Status	Daily Smokers	38.3	40.4
Sex	Male	47.6	50.5
	Female	52.4	49.5
Race/Ethnicity	Non-Hispanic White	75.9	64.2
	Hispanic	12.8	21.1
	Black	5.5	6.9
	Asian/Other	5.8	7.8
Educational Level (Years)	< 12	10.1	15.8
	12	33.1	33.8
	> 12	56.8	50.4
Age	18–24	13.0	23.0
	25–44	47.2	51.9
	45 +	39.8	25.1

race/ethnicity (Hispanics were less likely to complete the second interview), and education (the lowest educated group was less likely to complete the follow-up). Sociodemographic differences in response of this kind are expected with population surveying. We adjust for these differences using standard methods of weighting[20]: each respondent is assigned a weight so that the demographic distribution of the panel sample is representative of the demographic characteristics of the state of California. Hence, we anticipate no significant bias in the results for smoking behavior from the longitudinal sample.

Another important comparison to make in assessing the potential for bias is to compare the distribution of the final longitudinal sample with that of the original cross-sectional sample. This comparison is presented in Table 3-3. The results demonstrate that respondents selected for the longitudinal sample did not differ significantly on any sociodemographic variables from all those

Table 3-3
Demographic Comparisons of Longitudinal and Cross-Sectional CTS Samples in 1990

		Longitudinal	Cross-Sectional
n		4,642	24,296
Age (mean ± SD)		43.8 (15.7)	41.4 (15.9)
		%	**%**
Smoking Status	Current Smokers	45.0	39.2
	Former Smokers < 5 Years	18.5	18.6
Sex	Male	47.7	47.3
	Female	52.3	52.7
Race/Ethnicity	Non-Hispanic White	75.4	74.0
	Hispanic	13.1	14.2
	Black	5.7	5.0
	Asian/Other	98.5	98.3
Educational Level (Years)	< 12	10.3	12.2
	12	31.5	32.9
	13–15	35.1	31.9
	16 +	23.1	22.9

who could have been chosen for this sample. Our design oversampled smokers for efficiency reasons. No difference was observed in the weighted proportion of 1990 smokers in the reinterviewed sample compared with the original sample (21.8% vs 21.6%).

In conclusion, the longitudinal survey provides excellent information for assessing how people changed their smoking behavior, as well as predictors of that behavioral change. Given that the longitudinal survey involves an additional nonresponse rate, we do not use the longitudinal data to identify changes in population behavior.

(2) The California Telephone Health Surveys of 1991 and 1992

The Tobacco Control monies have been used to increase the sample size, improve quality control procedures, and collect additional information on tobacco use behavior obtained in conjunction with the Behavioral Risk Factor Survey (BRFS) for California. The BRFS has been undertaken in California every year since 1984. However, before the addition of Tobacco Control monies, this survey had small sample sizes and there is no documentation on the application of rigorous quality control procedures. Since 1991, the BRFS has been a component of the California Telephone Health Survey (CTHS), a random-digit dialed telephone survey that is conducted by state Departments of Health using a core questionnaire designed by the Centers for Disease Control. Data collection was supported in part by funds from Cooperative Agreement No. U58/CCU900590-07 between the Centers for Disease Control and Prevention, U.S. Public Health Service, and the Cancer Surveillance Section, California Department of Health Services. A detailed technical report on survey methodology is available for the CTHS.[21] The CTHS estimates of smoking prevalence in California are used in Chapter 4 of this report.

(3) The National Health Interview Surveys of 1974–1991

This national survey provides information obtained from household and telephone follow-back interviews on health-related behaviors including smoking.

The National Health Interview Surveys (NHIS) are household surveys of the adult noninstitutionalized population of the United States. Since 1974, these surveys have only accepted self-reported information on smoking status; if the randomly selected household member was unavailable at the time of the scheduled household interview, the interview was conducted by telephone. The NHIS are designed and supervised by the National Center for Health Statistics, with interviews conducted by the Bureau of the Census. The NHIS are widely recognized as the definitive data source for trends in smoking behavior nationwide. These surveys are not intended to provide estimates of behavior at the state level but rather at the regional level (with the United States divided into four regions). Because California has such a large population, on any particular survey, the proportion of participants from the western region who come from California can be as high as 75%; further, Californians comprise approximately

10% of the total national sample. Data from the NHIS surveys were used to establish the trend in smoking behavior prior to the 1988 Tobacco Tax Initiative. Information on smoking prevalence from all surveys with supplements on smoking conducted from 1974 through 1991 are used in Chapter 4 of this report. Data from the 1992 survey are not yet available. For comparison purposes, we used ratio estimation to produce prevalence estimates weighted to the 1990 California population distribution for age, sex, race, and education.

(4) The Current Population Survey of September 1992

The Current Population Surveys (CPS) conduct household interviews with a random sample of nonmilitary and noninstitutionalized households in the United States. Questions are addressed to an adult respondent in the household who provides information on other members of the household. The CPS are designed to provide state-specific estimates and are undertaken by the Bureau of the Census for the Bureau of Labor Statistics. The main purpose of these surveys is to obtain unemployment estimates. In any given month, the Census Bureau allows other federal agencies to design supplemental questions to be asked of the approximately 45,000 households that are scheduled for interview. Supplements on smoking were included in 1985, 1989, and 1992. The methodology of the 1992 smoking supplement was changed significantly to improve the accuracy of estimates of smoking behavior obtainable from this type of survey. The 1992 survey is part of the baseline data for assessing the impact of state-level tobacco control initiatives funded by the National Cancer Institute and the American Cancer Society. This survey provides estimates of smoking prevalence in California and it is used in Chapter 4 of this report.

(5) Data on Consumption Based on Sales of Cigarettes

Population surveys, no matter how carefully designed and executed, are subject to a number of errors, including errors associated with sampling. Some research has suggested that decreases in self-reported smoking behavior may result from survey respondents who underreport their smoking behavior because of the increasing social stigma associated with tobacco use,[22] although these findings have been challenged. [23,24]

Tobacco consumption estimates obtained from data on cigarette sales are not subject to these errors and represent the most objective data available on population consumption patterns. Data on cigarette sales are available from the State Board of Equalization based on the excise taxes that are levied on tobacco products. The government collects excise taxes at the warehouse level and this information is reported on a monthly basis. These data are subject to seasonal variations that are unrelated to actual retail sales or to consumer behavior. Seasonal variations typically follow a quarterly pattern associated with the fiscal year. They also vary considerably from month to month in a somewhat random pattern, probably reflecting patterns of stocking at the retail level. However, with the systematic seasonal variations removed, collective sales data

provide the best available estimate of total tobacco use by Californians. Additionally, these data are reported monthly, thus allowing "shocks" to the system to be identified. Such shocks or deviations from expected sales patterns may be associated with the beginning or end of major tobacco control interventions.

The main limitation of these data is that they do not provide information on the cigarette consumers. Thus, while trends in per capita consumption of cigarettes can be estimated, it is not possible to use these data to assess whether changes in consumption result from either uptake or quitting behavior, or to identify whether some groups changed behavior more than others. For example, a drop in cigarette sales may be the result of fewer people smoking or of the same people smoking a smaller amount. In Chapter 4 of this report, we use these data as our main source for detecting changes in tobacco consumption and the timing of these changes.

SUMMARY

Multiple sources of data are used to assess whether smoking-related behavior changed in California as a result of the California Tobacco Control Program and what particular factors were associated with that change. In this report, we use all major sources of population data that have adequate quality control.

Chapter 4

ASSESSING PROGRESS TOWARD PROGRAM GOALS

INTRODUCTION

In Chapter 2 we identified two public health goals for tobacco control programs: (1) to maximize protection of nonsmokers from the harmful effects of environmental tobacco smoke (ETS) and (2) to reduce the prevalence of smoking, particularly among the young. We noted further that the enabling legislation for the California Tobacco Control Program called for a 75% decline in the prevalence of smoking by the year 1999. This chapter examines changes in tobacco use behavior in California to determine whether the Tobacco Control Program has made significant progress toward these goals.

EVIDENCE FOR PROGRESS ON GOAL 1: Protecting Nonsmokers

Protecting Children from Exposure to ETS

Among nonsmokers, children are a priority for efforts to reduce exposure to ETS and its associated health costs. Many public institutions frequented by children, including schools and day care centers, are mandated to become smokefree in California by the end of this decade. However, the home is likely to remain a potential source of ETS exposure for children, since protection against ETS in the home depends on household smokers voluntarily placing restrictions on their own smoking habits. In 1992 and 1993, the California Tobacco Surveys (CTS) obtained data on the proportion of households that include children and in which restrictions on smoking have been implemented. We were therefore able to ascertain whether the proportion of children protected from home exposure to ETS is increasing in California.

For this analysis, children were considered to be protected against ETS exposure in the home if the household did not include smokers, or if a household that included smokers was explicitly reported to be smokefree.

Table 4-1 shows the proportion of children protected from ETS in California households. In 1992, 75.7% of California minors (younger than 18 years) were protected from ETS; by 1993, this proportion had increased significantly to 80.4% ($p<0.05$). The ultimate goal is to achieve a 100% protection level among children. Between 1992 and 1993, California moved 19% closer to achieving this goal.

Some race and ethnic differences emerged in the protection of children: in 1993, the proportion of protected children was highest among Hispanics and Asian/Others (83.4% and 84.4%, respectively), and lowest among blacks (74.9%). Two factors may have contributed to the increase in proportion of children protected from home exposure to ETS. First, smoking prevalence among California adults has declined generally (as discussed later in this chapter), and thus the number of children who live in households without smokers has increased. Second, the fraction of smokers who voluntarily impose or accept restrictions on smoking in the home is also increasing in California (see Chapter 5).

Table 4-1
Change in Protection from ETS for Children and Adolescents at Home*

Demographics		% Protected		% Change
		1992	1993	
Overall		75.7	80.4	6.2
Age	0–5	77.9	82.3	5.7
	6–11	73.4	79.7	8.6
	12–17	71.5	78.9	10.3
Race/Ethnicity	Non-Hispanic White	74.9	78.3	4.5
	Black	76.6	74.9	-2.2
	Hispanic	76.6	83.4	8.9
	Asian/Other	77.4	84.4	9.0

Source: CTS 1992, 1993
*Percent protected equals percent who do not live with a smoker plus percent who do live with a smoker in a smokefree home

Protecting Nonsmoking Workers from ETS Exposure

A second group at risk for ETS exposure are nonsmoking indoor workers in California. We consider an indoor worker to be exposed to ETS if that worker reports that someone smoked in his or her work area in the previous 2 weeks.[15,16] Table 4-2 presents levels of ETS exposure for nonsmoking indoor workers in the 2 weeks before the 1990 and 1993 CTS interviews. Between 1990 and 1993, the proportion of indoor workers who reported ETS exposure in their work area declined significantly from 29.0% to 22.4% ($p<.001$). This decrease represents a 22.8% reduction in the proportion of nonsmokers reporting exposure to ETS over the 3-year study period.

ETS exposure decreased at this rapid rate in both genders and in all age groups. However, certain sociodemographic groups with higher exposure to ETS in 1990 were still more likely to report ETS exposure in the work area in 1993. Thus in both survey years, men were more likely to report ETS exposure than women, and younger adults were more likely to report exposure than older adults. Hispanics and adults with less than 12 years of formal education were most likely to report exposure to ETS in the work area.

Table 4-2
Change in Nonsmoker Exposure to ETS at Indoor Workplaces in California

Demographics		% Exposed		% Change
		1990	1993	
Overall		29.0	22.4	22.8
Sex	Male	35.4	27.6	22.0
	Female	22.4	17.2	23.2
Age	18–24	41.7	31.3	24.9
	25 +	26.0	20.7	20.4
Race/Ethnicity	Non-Hispanic White	25.7	19.0	26.1
	Black	23.1	19.1	17.3
	Hispanic	40.3	32.0	20.6
	Asian/Other	25.9	26.5	+ 2.3
Education	< 12 Years	43.1	36.1	16.2
	> 12 Years	23.0	17.1	17.5
	12 Years	33.8	27.8	17.8

Source: CTS 1990, 1993

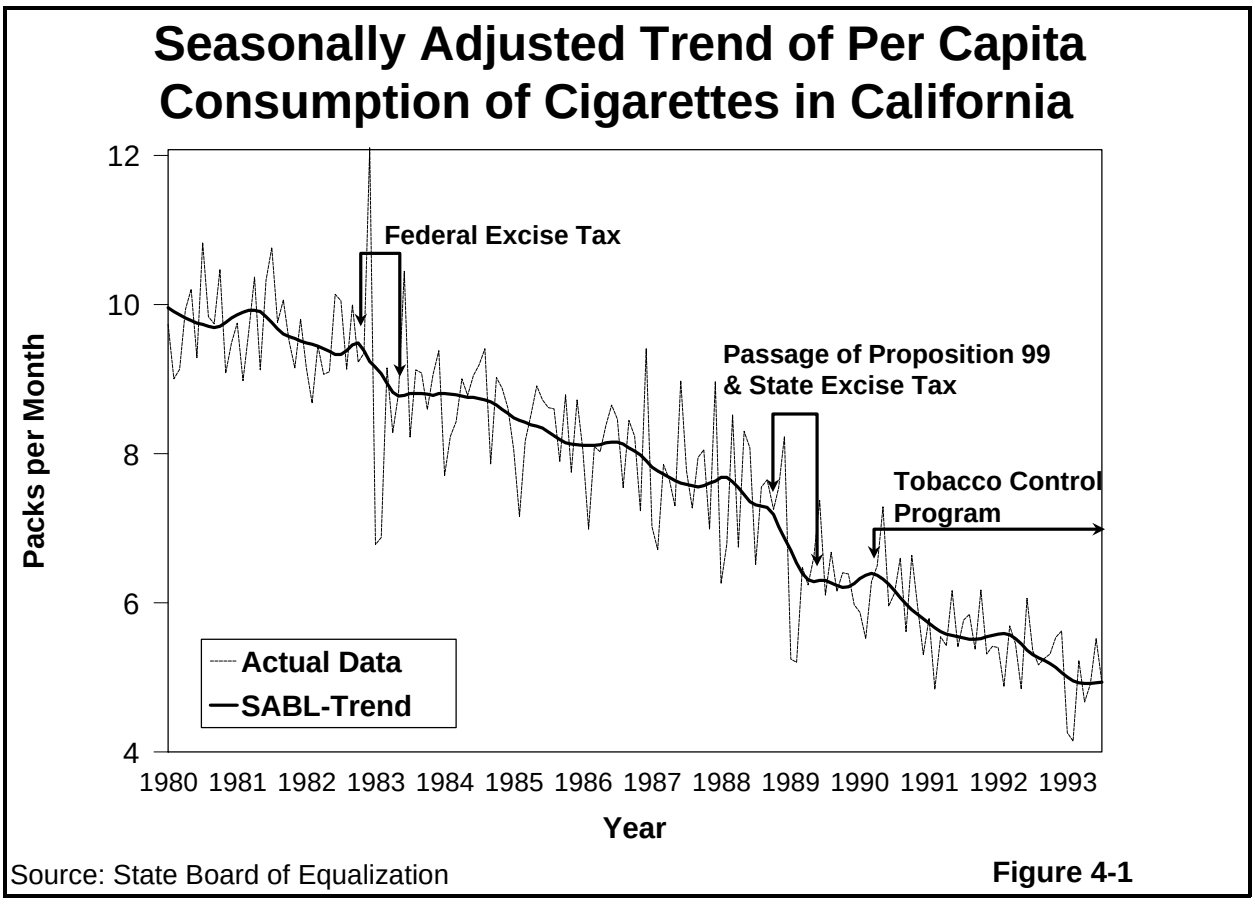
EVIDENCE FOR PROGRESS ON GOAL 2: Reducing Smoking Prevalence

The two sources of information used to assess changes in smoking behavior are (1) excise tax data on per capita consumption of cigarettes, which is available from the State Board of Equalization; and (2) individual data on smoking behavior collected from population surveys.

As discussed in Chapter 3, per capita consumption data are available monthly and are thus a source of detailed information on when changes in smoking behavior took place in California and how long the changes in cigarette consumption patterns endured. To investigate which population subgoups changed their smoking behavior and whether some groups are making more progress than others, we use survey data on smoking prevalence.

Trends in Per Capita Cigarette Consumption in California, 1980–1993

Figure 4-1 presents trends in per capita consumption of cigarette packs per month for California from January 1980 through July 1993. As indicated earlier, considerable seasonal variation is expected in the raw data, which are represented in this figure by the dotted line. To separate real changes in consumption from changes due to seasonal variations, we used the SABL seasonal and calendar adjustment procedure, available on the standard statistical package, S-Plus.[25] The seasonally adjusted trend in consumption is represented by a solid line in Figure 4-1. This trend indicates that cigarette consumption declined in California between January 1980 and July 1993. The decline was not uniform, and is best characterized as periods of accelerated decline alternating with periods in which cigarette consumption stabilized or corrected upward.



Source: State Board of Equalization

Figure 4-1

The first two periods of accelerated decline occurred at times that the excise tax was increased, as we have previously reported.[17] In January 1983, the federal excise tax doubled from 8 to 16 cents (the total excise tax increased from 18 cents to 26 cents). This tax increase was associated with a

7.5% decline in per capita cigarette consumption that began in September 1982 in anticipation of the tax and lasted until April 1983. In September 1988, the tobacco industry began to campaign extensively in the media against Proposition 99. This campaign was unsuccessful and on January 1, 1989, the excise tax increased from 26 cents to 51 cents. We observed a second period of accelerated decline in consumption that began in September 1988 and lasted until May 1989. During this period, per capita cigarette consumption decreased by 13.7%.

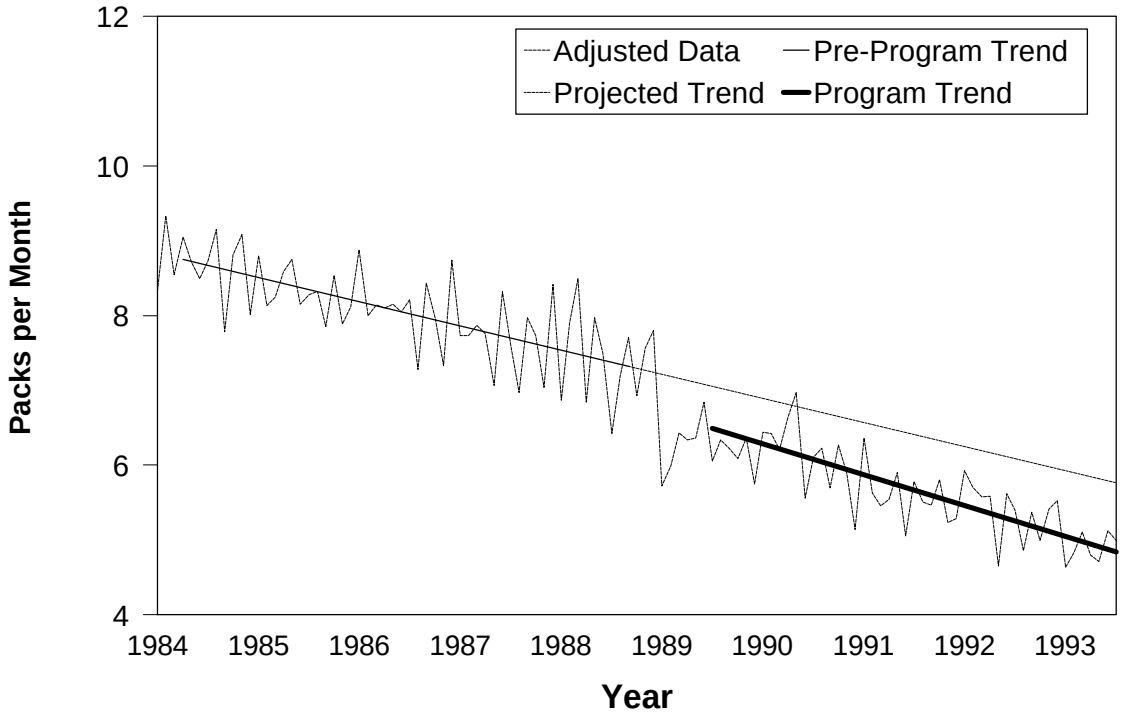
The passage of Proposition 99 was associated with a short-term decline of 13.7% in cigarette consumption.

Following this second period of accelerated decline, tobacco consumption remained stable for 11 months (through April 1990). However, in Figure 4-1, we identify two additional periods of decline in per capita consumption, each of which was followed by an upward correction in the per capita consumption numbers. The first of these two periods coincided with the initiation of interventions funded by the Tobacco Control Program in April 1990, as reported previously.[17] From the start of Tobacco Control Interventions through July 1993, per capita cigarette consumption in California declined by 23%.

The evaluation of progress made by the Tobacco Control Program toward the goal of a reduction in smoking prevalence must take into account changes in consumption that would have occurred in California if no interventions had taken place. As indicated above, per capita cigarette consumption in California was already decreasing before the start of the Tobacco Control Program interventions. To demonstrate progress, interventions conducted by the Tobacco Control Program beginning in 1990 must be shown to have *accelerated* the rate of consumption decline in California between 1990 and 1993.

To assess whether an accelerated rate of decline took place, we estimated what the consumption level would have been in July 1993 if no interventions had taken place and the pre-Program consumption trend had continued. We then calculated the actual per capita cigarette consumption level in July 1993 (the last month for which consumption data are available).

The comparison between projected and actual cigarette consumption trends in California in 1993 is presented in Figure 4-2. The projected trend line, represented by the line of dashes, was calculated by fitting linear regression lines to consumption estimates between 1984 and 1988 *(i.e.*, before Proposition 99) and projecting this trend through to July 1993. To calculate the actual consumption trend, a second linear regression line was fitted to consumption estimates beginning in April 1990 when the Tobacco Control Program interventions started and ending in July 1993. The actual trend in consumption is represented by a thick solid line on Figure 4-2.



Source: State Board of Equalization

Figure 4-2

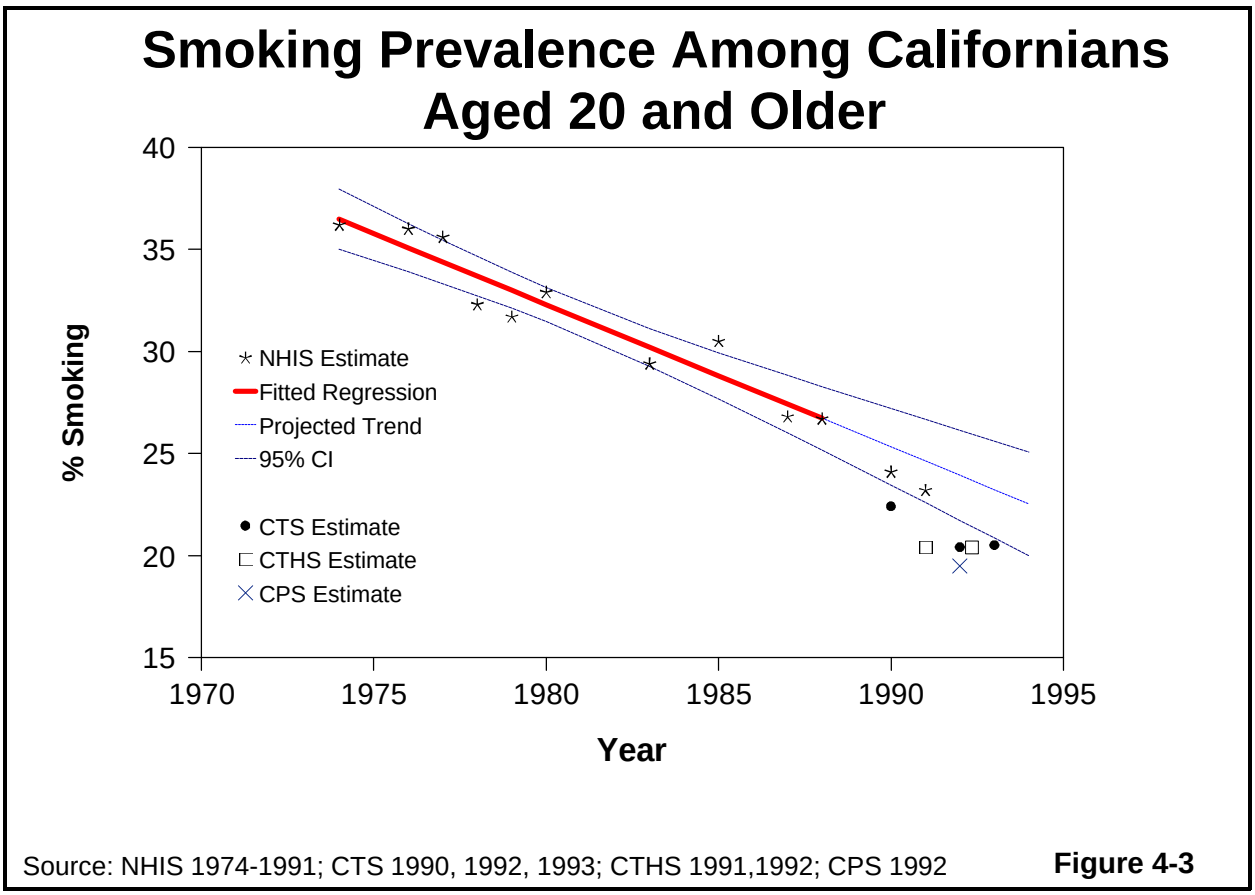
Between 1984 and 1988, cigarette consumption declined at an annual rate of 0.32 packs per person in California. If this rate of decline had continued, the monthly per capita consumption in July 1993 would have been 5.77 packs per person. However, beginning in 1990 and coinciding with the start of the Tobacco Control Program, cigarette consumption declined at an annual rate of 0.41 packs per person. This represents a substantial increase in the rate of decline by comparison with the 1984–1988 trend. In July 1993, actual per capita consumption was 4.84 packs per person, or 16% lower than the expected level if the pre-Program trend had continued. The impact of the Program is also evident in the marked decline in total revenues received from tax dollars since the start of the Program, which decreased from a total of $934.8 million in fiscal year 1989–1990 to less than $600 million in fiscal year 1992–1993.[10,11]

The Tobacco Control Program was associated with a marked increase in the rate of change in per capita consumption in California. Between 1988 and 1993, per capita consumption of cigarettes in California decreased by 27%.

Trends in Smoking Prevalence Among Californians Aged 20 and Older

We report smoking prevalence for adults older than 20 years as some national surveys do not interview below this age. Information on smoking prevalence for adults older than 18 years is presented for the CTS 1990–1993 in Appendix Table 1.

Figure 4-3 presents the estimates of adult (aged 20+) prevalence of smoking in California from surveys conducted between 1974 and 1993. All estimates for the period preceding the passage of Proposition 99 were obtained from the National Health Interview Surveys (NHIS), some of which, as noted, did not include data on people younger than 20 years of age. Previous studies of the national trend in smoking behavior have shown that between 1974 and 1987, smoking prevalence among adults in the U.S. declined at a nearly constant rate of 0.5% per year.[1,26] We assumed for this analysis that changes in prevalence in California over this time period followed a similar linear pattern to that of the nation as a whole, and we used all the individual data points to calculate this linear trend (the solid line in Figure 4-3). The dotted lines in the figure represent the 95% confidence limits around the linear trend line. The pattern of deviation of the estimates from this trend is consistent with a linear decline in smoking prevalence in California. We estimate that if this decline had continued unchanged, then the prevalence of smoking in California in 1993 would have been 23.4%.



Source: NHIS 1974-1991; CTS 1990, 1992, 1993; CTHS 1991,1992; CPS 1992

Figure 4-3

Estimating Change in Smoking Behavior in California Since 1988

To obtain the best estimate of the actual prevalence of smoking in California in 1993, and to assess whether this estimate differs substantially from the projected level, we used estimates from all the major surveys that measured smoking prevalence in the California population after 1988. For this analysis, we considered potential sources of bias that would reduce our ability to identify significant changes in California smoking prevalence since 1988. The surveys used to calculate a best estimate of smoking prevalence employed different data collection procedures. We therefore examined first whether the prevalence estimates they report are systematically biased by the methodology used. A second issue is whether the linear model used to fit the consumption data also appears to be a good fit for the prevalence data. Should the same model provide a good description of both types of data, this would indicate that the decline observed in cigarette consumption was due to a change in prevalence rather than to a reduction in the consumption of current smokers.

Potential Bias in Estimates of Prevalence

Since 1988, eight separate surveys have provided estimates of smoking behavior in California. Each of these estimates is lower than the level anticipated if no change had occurred in the rate of decline in smoking prevalence (see Figure 4-3). Six of the estimates are outside the lower bound of the 95% confidence interval around this trend line, indicating that the magnitude of the change in smoking prevalence in California is statistically significant.

In contrast to the estimates obtained for 1974 and 1988 based on NHIS data, the estimates of prevalence since 1988 are drawn from four separate survey designs that used two different methods of data collection. Two estimates for prevalence in 1990 and 1991 were available from the NHIS and one estimate for 1992 was available from the national Current Population Survey (CPS). Both the NHIS and the CPS used essentially the same survey methodology in which smoking information was collected via in-person household interviews. The other five estimates were obtained from computer-assisted telephone interviews (the California Tobacco Survey and the California Telephone Health Survey). We considered whether the different survey designs (in-person interview or telephone interview) produced a systematic bias in the estimates of smoking prevalence provided by each survey.

For comparison purposes, we were fortunate to have 3 separate years (1990, 1991, and 1992) in which prevalence estimates were available from surveys using both types of data collection procedure. The NHIS of 1990 and 1991 provided estimates based on in-person interviews that were both higher than the estimates obtained from telephone surveys conducted in those years. However, in 1992, the CPS estimate based on in-person interviews provided a lower estimate of smoking prevalence than either of the two telephone surveys conducted in 1992. Thus, evidence for the introduction of bias

from data collection procedures is equivocal, and we therefore used all estimates to calculate trends in smoking prevalence in California since 1988.

Fitting a Linear Model to the Prevalence Estimates

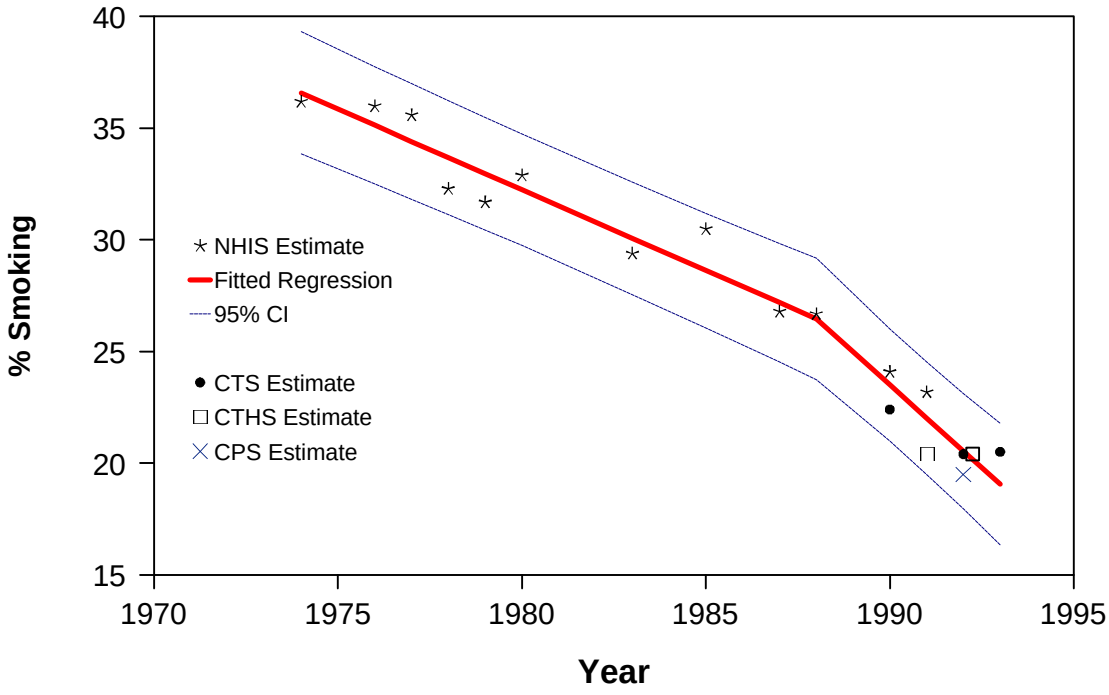
Earlier in this chapter, we suggested that monthly data were the appropriate unit of analysis to detect short-term changes in *per capita cigarette consumption*. Based on the monthly data, we identified three periods of accelerated decline in consumption since 1988, each of which was followed by a period during which consumption did not decrease. Although monthly data were used to assess the impact of different interventions on tobacco consumption, we also fitted a linear model to the consumption data (see Figure 4-2) in order to evaluate the overall impact of all the interventions. From this analysis, it became evident that the start of the Tobacco Control Program was associated with an overall change in the rate of decline in cigarette consumption. The linear model also appeared to offer a reasonable representation of the data over the longer term. Based on the evidence from the consumption data, we decided to fit a linear model to the prevalence data. In this model, we assume that the data between 1974 and 1988 represent one linear trend and the data from 1989 through 1993 represent a different linear trend. We use this model to assess changes in the rate of decline of smoking prevalence and to provide the best estimate of prevalence in 1993.

The results are presented in Figure 4-4. As shown, the linear model provides a good fit to the data; the average deviation from the line (root mean square error) was 1.12%. According to this model, smoking prevalence in California declined from 36.6% in 1974 to 26.5% in 1988 at an annual rate of decline of 0.72% (95% confidence interval: 0.58% to 0.86%). After 1988, the rate of decline in prevalence more than doubled to 1.48% per year (95% confidence interval: 1.08% to 1.87%). This increase in the rate of decline after 1988 is highly significant ($p < .0001$).

Based on this model, the best estimate of smoking prevalence in California in 1993 is 19.06%. The observed data point from the California Tobacco Surveys in 1993 was higher than this estimate (20.5%). However, the CTS estimate is well within the confidence limits that indicate the expected impact of sampling variation on the prevalence estimate.

> ***The rate of decline in smoking prevalence has doubled since the passage of Proposition 99. The best estimate of smoking prevalence in California in 1993 is 19.1%. Based on this estimate, smoking prevalence has declined in California by 28% since 1988.***

The estimated decline in smoking prevalence from 1988 to 1993 (28%) parallels the decline observed in total tobacco consumption during the same period (27%). The similarity between the two estimates of behavioral change suggests that declines in total tobacco consumption were the result of decreases in the number of smokers in California and not the product of reductions in tobacco consumption among continuing smokers.



Source: NHIS 1974-1991; CTS 1990, 1992, 1993; CTHS 1991,1992; CPS 1992

Figure 4-4

If the decline in prevalence observed in California between 1988 and 1993 continues through the 1990s, smoking prevalence among California adults will be 10.2% by the year 1999. ***This would represent a 61% reduction in smoking prevalence from prevalence levels before the passage of Proposition 99.***

The legislative goal set for the California Tobacco Control Program was a 75% reduction in smoking prevalence to 6.5% by the year 1999. The California Tobacco Control Program appears to have doubled the rate of decline in smoking prevalence in California. However, this is not sufficient to achieve the set goal. To achieve a 75% reduction in prevalence, the current rate of decline has to be further accelerated from 1.48 to 2.09 percentage points per year for the period 1994 through 1999.

> ***To achieve the goal set by the legislature, the impact of the Tobacco Control Program on smoking in the first 5-year period must be increased by a further 40% over the next 5 years.***

Changes in Smoking Prevalence Among Demographic Groups

The California Tobacco Control Program created specific objectives and interventions targeting racial and ethnic minorities, and women and individuals with less formal education. Table 4-3 presents our best estimate of the annual rate of change in smoking prevalence before and after the passage of Proposition 99 for each of these demographic groups. Good estimates are not available for Hispanics and Asians before 1988. The final column provides an assessment of the change in smoking prevalence from the pre-1988 trend within subgroups.

Table 4-3
Change in Smoking Prevalence in California Among Adults Aged 20 and Older

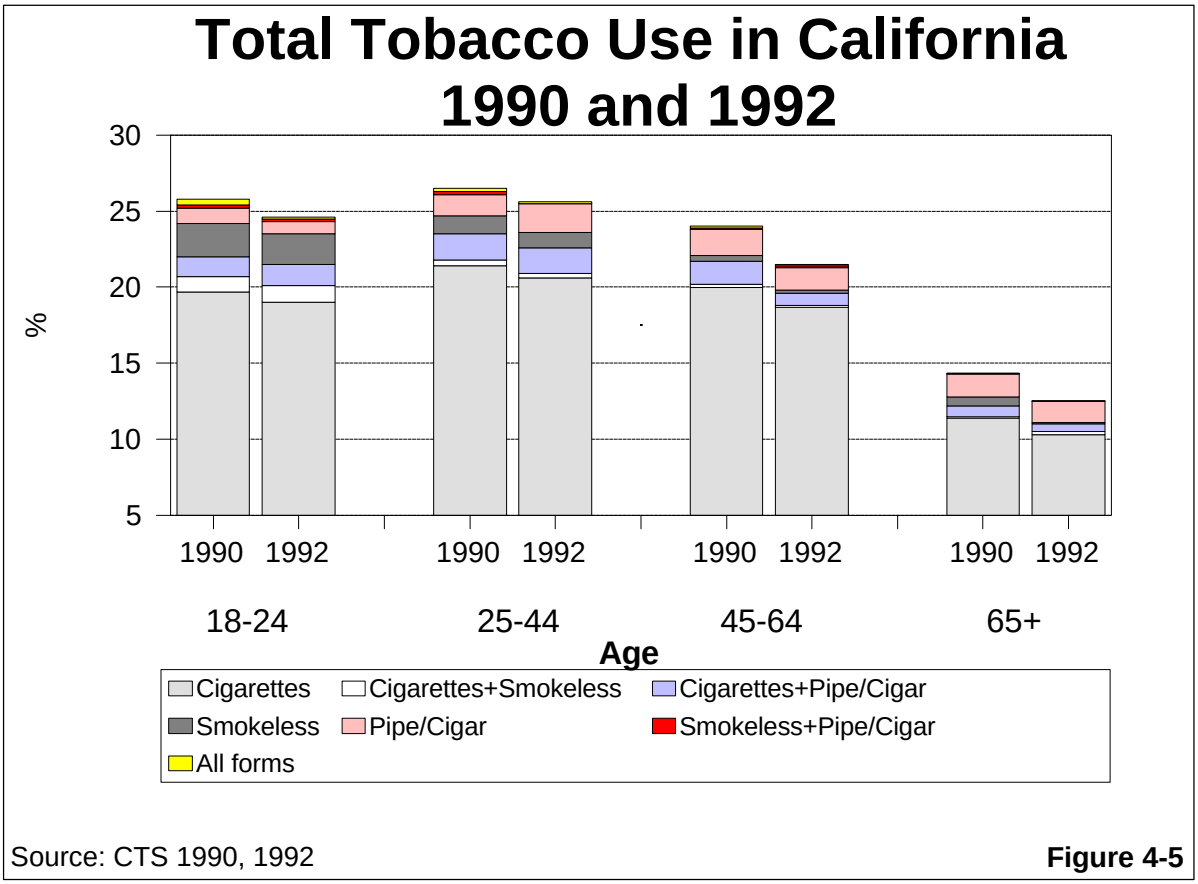
Demographics		Rate of Decline 1974–1988 (% per year)	Smoking Prevalence 1988 (%)	Smoking Prevalence 1993 (%)	Rate of Decline 1988–1993 (% per year)	Change in Rate of Decline (%)
Sex	Male	0.91	29.2	23.8	1.08	+27
	Female	0.52	24.4	17.4	1.40	+165
Race/Ethnicity	Non-Hispanic White	0.73	26.3	22.2	0.82	+15
	Black	0.58	36.0	23.6	2.48	+366
	Hispanic	–	22.4*	16.8	1.12	–
	Asian/Other	–	21.0*	13.0	1.6	–
Education	No College	0.63	32.4	24.5	1.58	+144
	College	0.78	19.8	15.7	0.82	+19

* estimated
Source: CTS 1993, NHIS 1974–1988

The available data indicate that the increased rate of decline in smoking behavior observed for the population is particularly striking in the subgroups nominated for special consideration by the Tobacco Control Program. For example, the rate of decline in smoking prevalence more than doubled among adults who did not attend college and increased almost fourfold among blacks. Our findings suggest that since the start of the Tobacco Control Program, the gap between minority and majority groups with respect to smoking behavior may have begun to narrow. A more detailed analysis of changes in subgroup smoking behavior will be included in a future report.

TOTAL TOBACCO USE

Total tobacco use includes, in addition to cigarettes, the use of other forms of tobacco including pipes, cigars, and smokeless tobacco. Data on total tobacco use among California adults is only available from the 1990 and 1992 CTS. Figure 4-5 presents changes in the prevalence of total tobacco use for these years.



Source: CTS 1990, 1992

Figure 4-5

In both years, cigarette smoking accounted for approximately 75% of total tobacco use. Also in both years, Californians aged 18 to 24 years were most likely to be using smokeless tobacco (3.4% and 3.3% in 1990 and 1992, respectively), either on its own or in conjunction with other tobacco forms. Between 1990 and 1992, the prevalence of total tobacco use declined in California. This decline was observed in all age groups. Use of smokeless tobacco declined slightly across all age groups, and the proportion of individuals who smoke pipes or cigars also declined slightly except among 25- to 44-year-olds. However, most of the decline in prevalence of tobacco use appears to have occurred among cigarette smokers.

REDUCING SMOKING UPTAKE IN CALIFORNIA ADOLESCENTS

Trends in Smoking Prevalence for 16- to 18-year-old Californians, 1975–1990

The process of taking up smoking is typically a lengthy affair characterized by episodic, irregular bouts of cigarette consumption.[27-29] For this reason, the validity of measures of smoking behavior captured during these uptake years is limited. Further, surveys that use the same measures but different interview modes (*e.g.*, school versus home interviews) have been reported to obtain significantly different estimates of adolescent smoking behavior.[30]

An alternative approach to assessing adolescent smoking prevalence is to reconstruct the smoking history of adults, based on responses to surveys of tobacco use behavior. Using information reported by adults on the age at which they became regular smokers, and information on their cessation history, it is possible to estimate how many adolescents were smoking in a particular year (prevalence) and how many adolescents started to smoke regularly in that year (uptake). This approach provides conservative estimates of smoking behavior because the estimates only include adolescents who became regular, addicted smokers in adulthood.

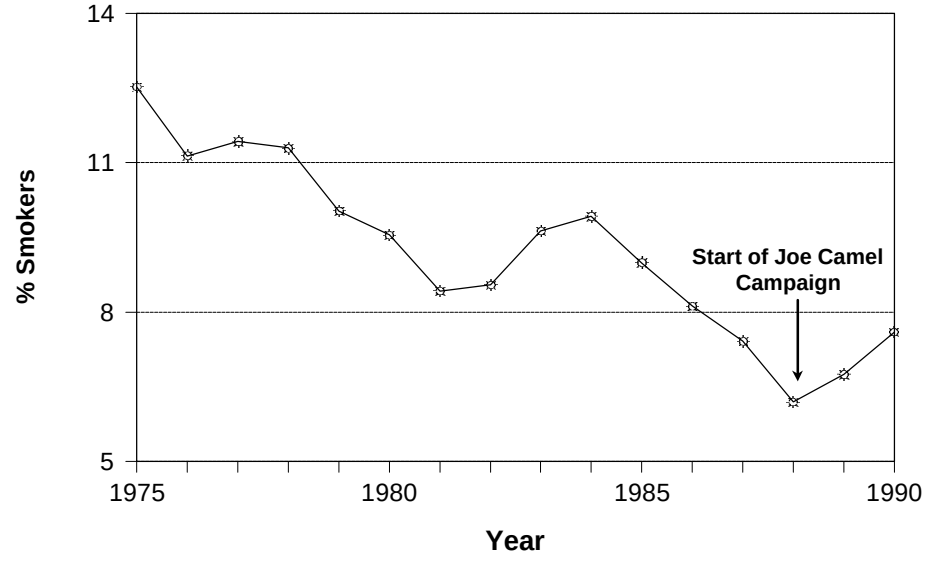
Previous research used this approach to reconstruct smoking histories for national samples of adults. The results showed that the age of smoking initiation in the U.S. has declined substantially.[37] Few individuals older than 21 years now take up smoking. At present, the incidence of smoking initiation peaks among 16- to 18-year-olds.

To establish trends in smoking prevalence among 16- to 18-year-olds in California, we combined data from the 1990 and 1992 CTS and reconstructed prevalence for this age group for each year from 1975 through 1990 (Figure 4-6). Smoking prevalence among 16- to 18-year-olds declined fairly steadily from 1975 through 1981 and underwent a second period of continuous decline between 1984 and 1988. During the latter period, prevalence declined at an average rate of 1 percentage point per year. After 1988, this declining trend was abruptly reversed and smoking prevalence among California adolescents began to increase rapidly at an average of 0.7 percentage points per year. Thus, it would appear that at the start of the California Tobacco Control Program, adolescent smoking prevalence was increasing rapidly.

Trends in Smoking Prevalence for California Adolescents, 1990–1993

The California Tobacco Surveys assessed smoking prevalence in large samples of adolescents in both 1990 and 1993. Figure 4-7 presents estimates of smoking prevalence for boys by age, based on self-reports of smoking in the last month. Smoking prevalence among boys increases with age. Between 1990 and 1993, prevalence appears to increase among boys aged 12 to 15 years, but this increase was not statistically significant. Among California boys aged 16 to 17 years, smoking prevalence was virtually identical in 1990 and 1993.

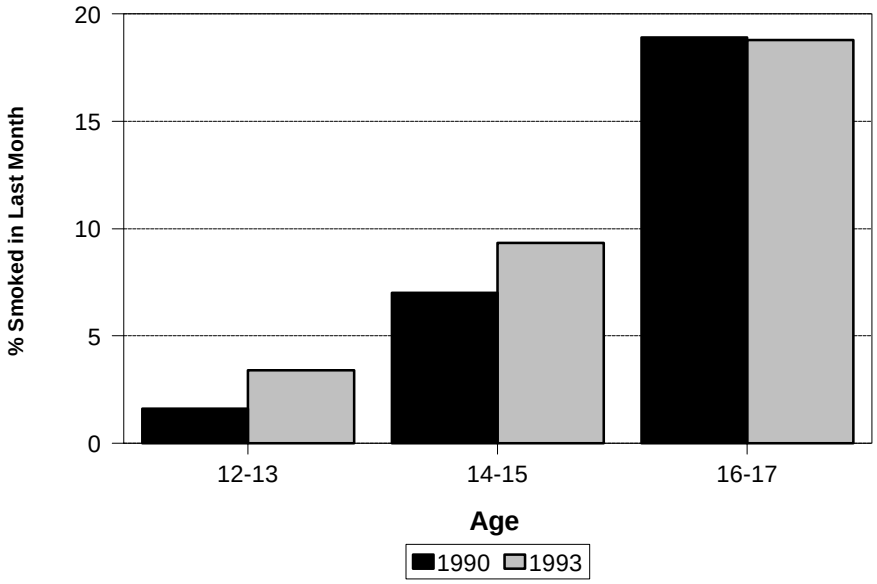
Trends in Smoking Prevalence Among 16- to 18-Year-Old Californians



Source: reconstructed from CTS 1990, 1992

Figure 4-6

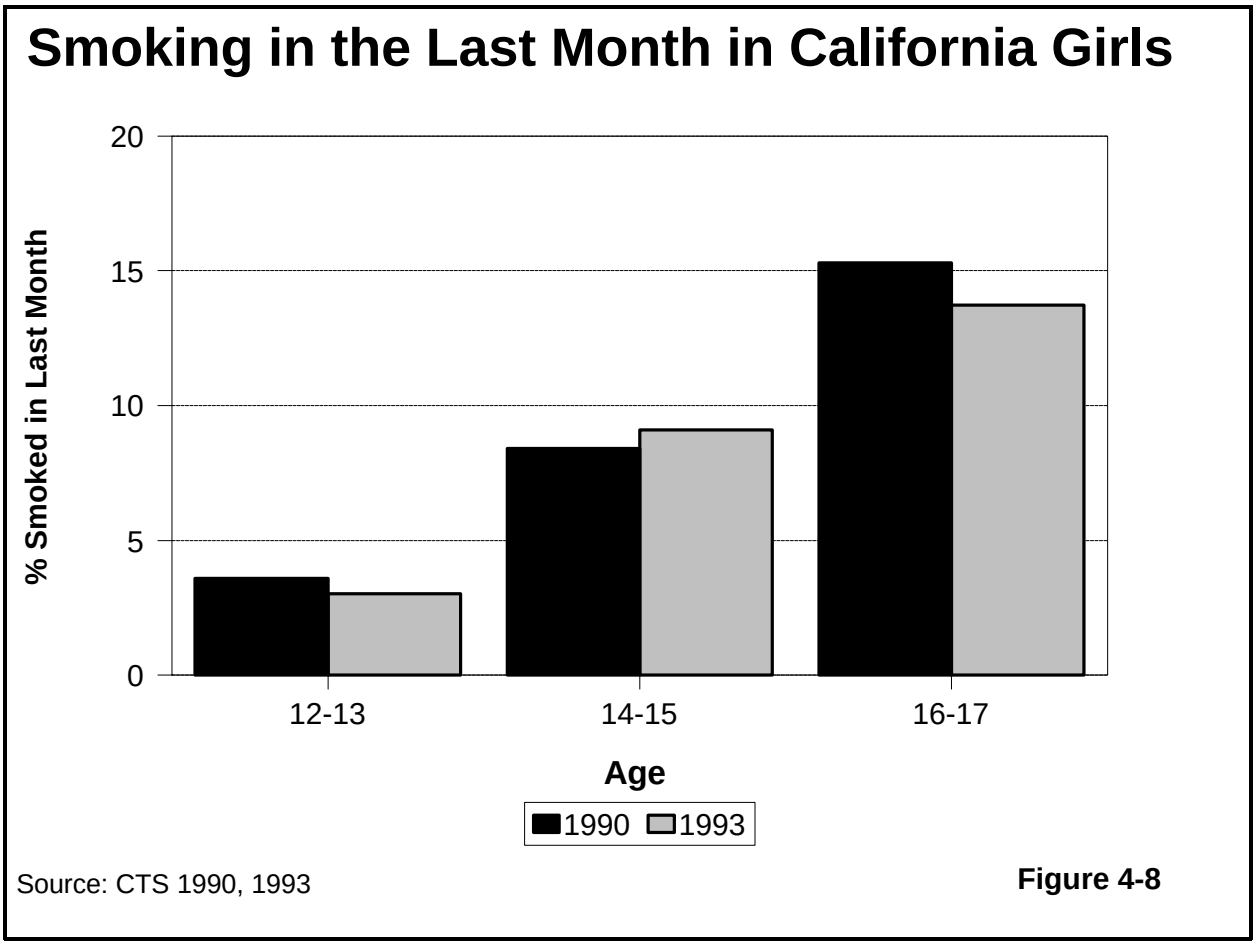
Smoking in the Last Month in California Boys



Source: CTS 1990,1993

Figure 4-7

Figure 4-8 shows the level of smoking prevalence among California girls for the same period. Once again, we observed no consistent or significant pattern of change in smoking prevalence between 1990 and 1993. Smoking prevalence among 16- to 18-year-olds was slightly lower in 1993 than in 1990.



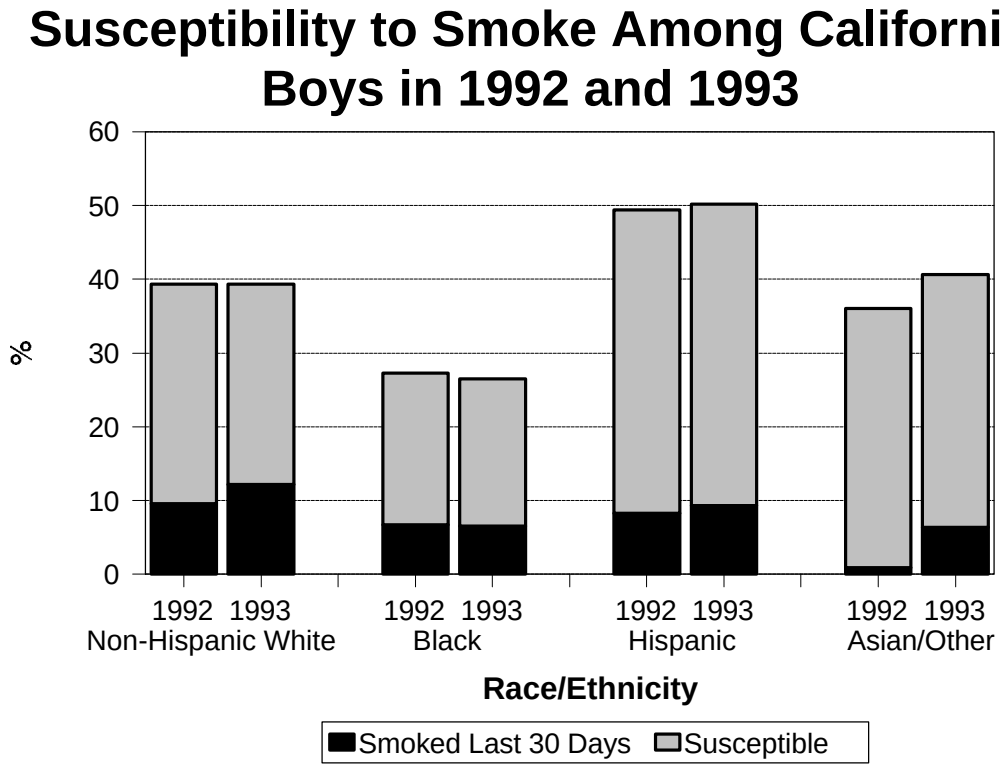
Although smoking prevalence among California adolescents has not declined since the start of the Tobacco Control Program, we note that before the program smoking prevalence was increasing in this age group. This increase appears to have been halted.

> ***Our data suggest that the introduction of the Tobacco Control Program in California may be associated with the end of a period of increasing smoking prevalence among California adolescents.***

Susceptibility to Smoke Among California Adolescents

In a previous report focusing on adolescents, we introduced a new measure of *susceptibility to smoke* as an indicator of future smoking behavior.[17] This measure may be used to supplement conventional measures of adolescent smoking prevalence that usually rely on self-reports of smoking in the last month. The susceptibility measure identifies adolescents who are predisposed to try cigarettes or to continue smoking. Susceptibility to smoke is defined as the absence of a conscious decision not to smoke in the future (this measure is presented in more detail in Chapter 6). Information on adolescent susceptibility to smoke and smoking in the last month is available from the 1992 and 1993 CTS.

Figure 4-9 presents changes in susceptibility to smoke and in smoking prevalence among California boys of different race or ethnic groups. In both 1992 and 1993, white non-Hispanic boys



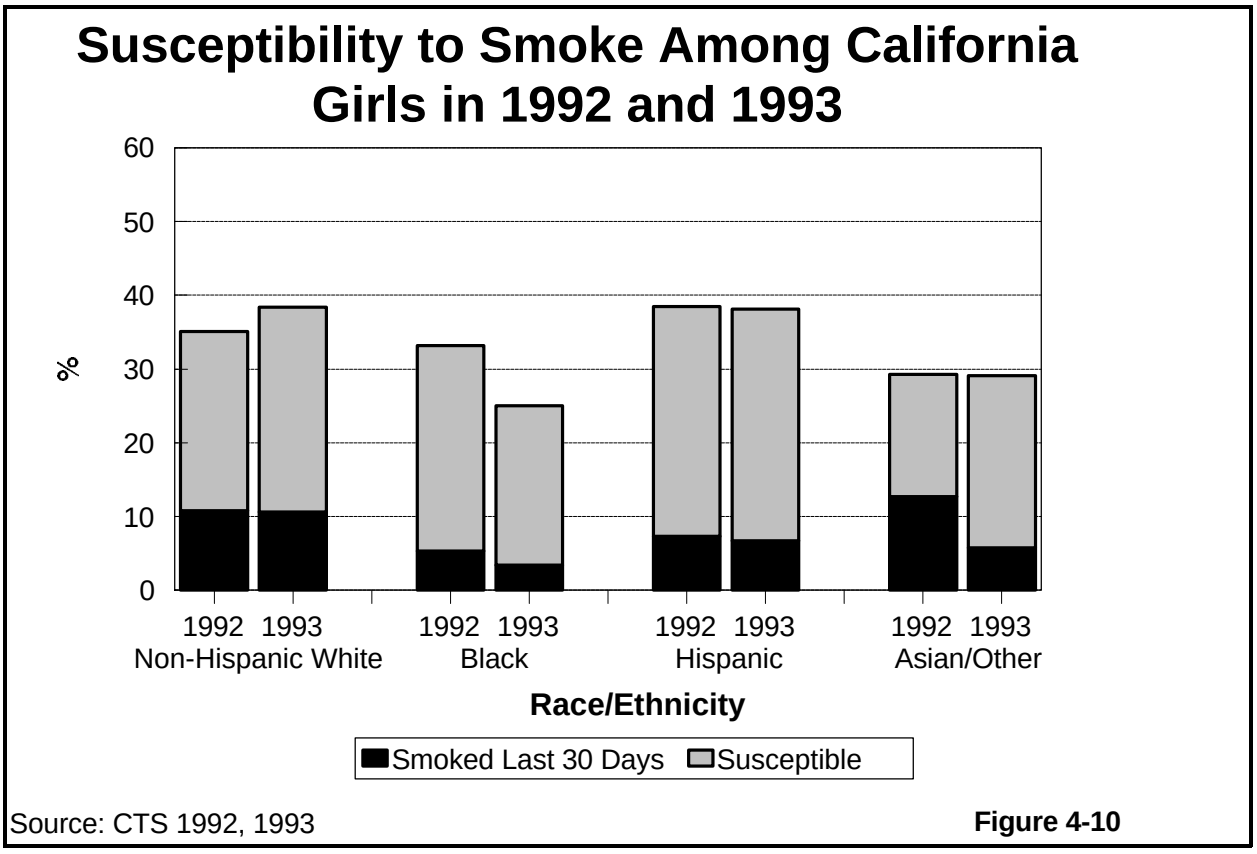
Source: CTS 1992, 1993

Figure 4-9

demonstrated the highest rates of smoking in the last month. However, susceptibility to smoke was highest among Hispanic boys; in both years, approximately half of Hispanic boys were classified as

susceptible to smoke, compared to around 40% of non-Hispanic white boys. Smoking prevalence and susceptibility to smoke were lower in black adolescents than in other race or ethnic groups. This finding is consistent with national trends indicating that smoking is declining in the black population.[1] Overall, we found no evidence that smoking prevalence or the likelihood of smoking uptake changed significantly among California adolescents between 1992 and 1993.

Figure 4-10 presents similar data for California girls in 1992 and 1993. As observed for boys, non-Hispanic white girls were more likely to report smoking in the last month than any other ethnic group in both survey years. More than one third of Hispanic and non-Hispanic white girls were classified as susceptible to smoking in both survey years. Between 1992 and 1993, susceptibility to smoke in the future appeared to decline among black girls. Due to the small sample sizes in the 1992 survey, this decline was not significant. Again we found no evidence of increases in susceptibility to smoke or smoking prevalence, implying that the rising trend in adolescent smoking behavior before the start of the Tobacco Control Program has not continued.

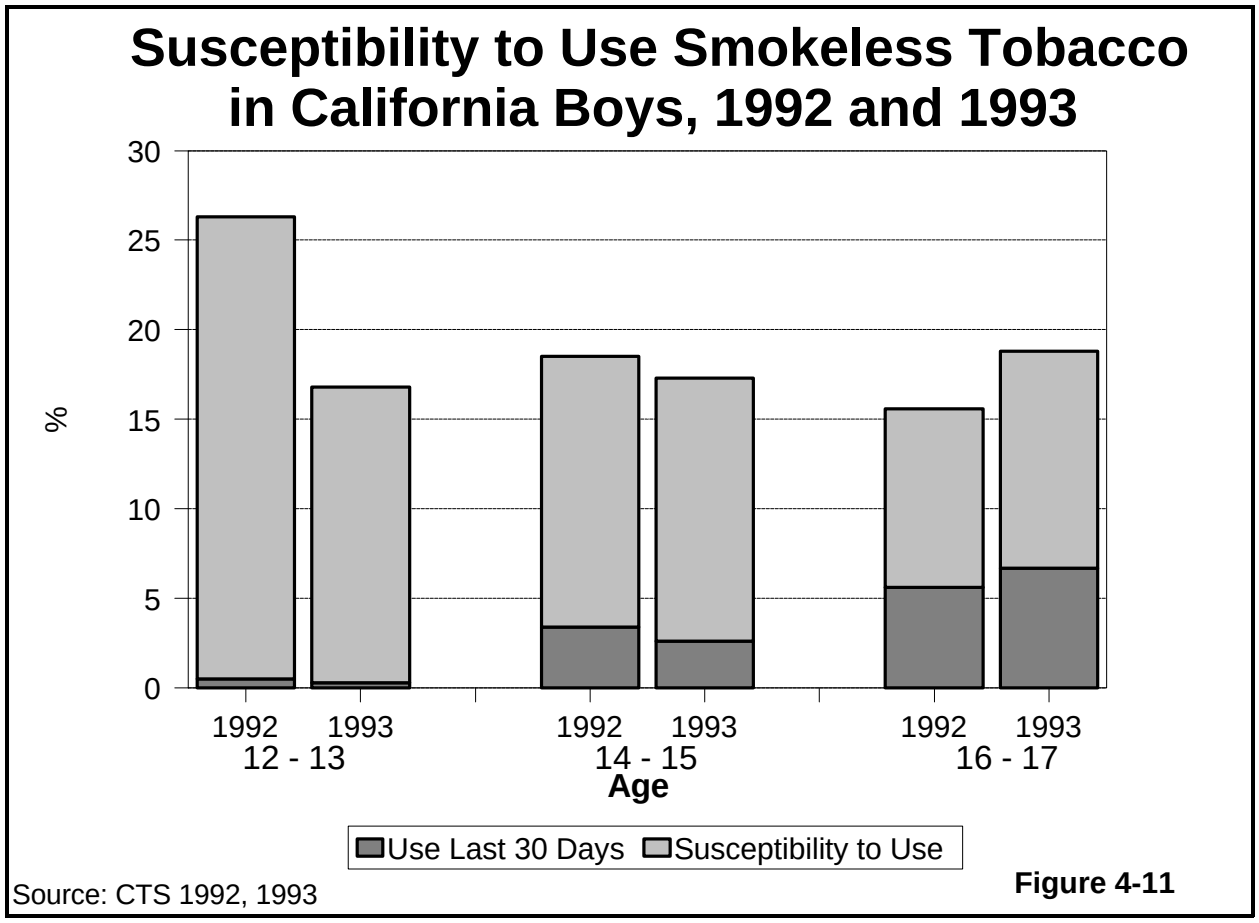


Source: CTS 1992, 1993

Figure 4-10

Susceptibility to Use Smokeless Tobacco Among California Boys, 1992–1993

Use of smokeless tobacco is rare among girls, and therefore we report smokeless tobacco use for boys only. Susceptibility to use smokeless tobacco and reported use in the last 30 days are presented for California boys in Figure 4-11. There was no detectable difference between years in the proportion of adolescent boys who had used smokeless tobacco, regardless of age. However, the proportion of 12- to 13-year-olds who were susceptible to start using smokeless tobacco decreased substantially (by 36%) over this time period.



Source: CTS 1992, 1993

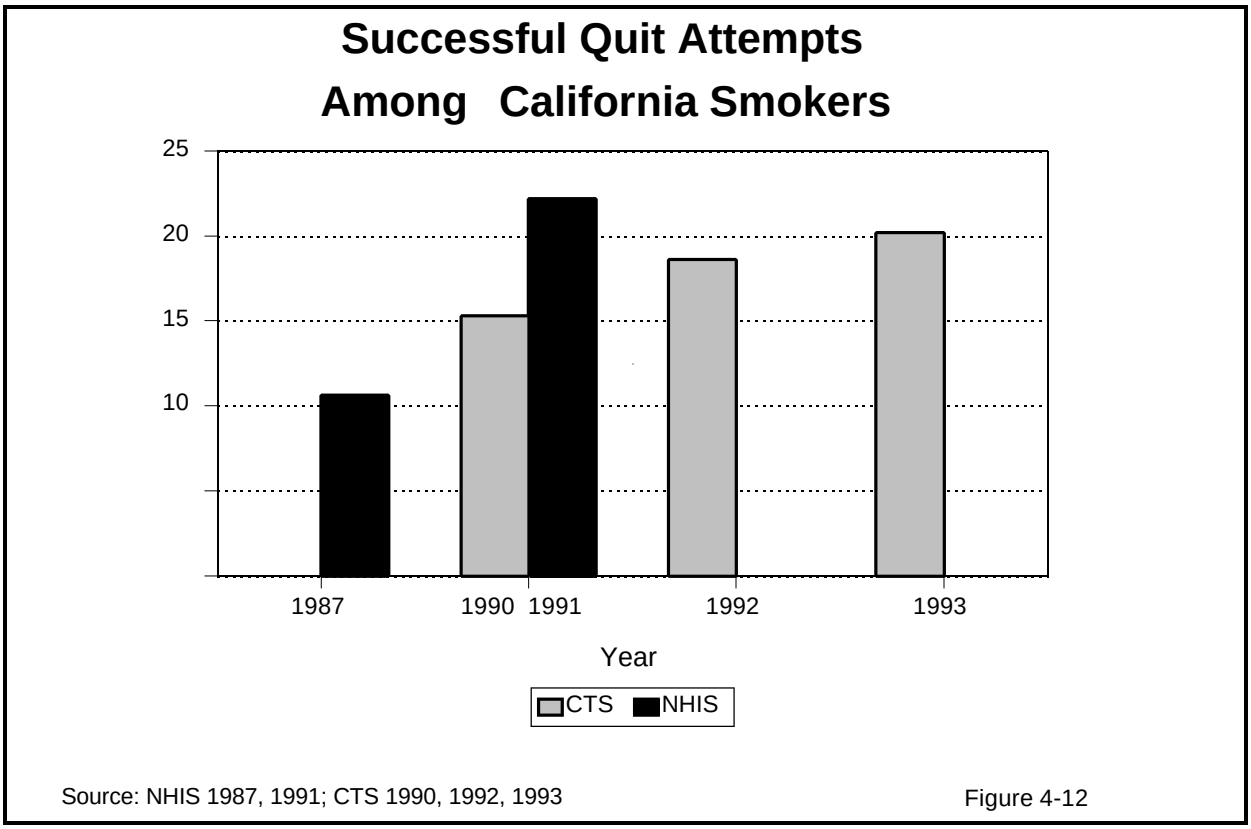
Figure 4-11

INCREASING SUCCESSFUL QUITTING AMONG SMOKERS

In an earlier report, we indicated that approximately 90% of adults who attempt to quit smoking are unsuccessful.[15] Several studies have demonstrated that the probability of successful cessation is time-dependent and increases the longer that smokers are able to maintain abstention.[3,31] In Chapter 10, we present data showing that the probability of long-term quitting success increases substantially after the quit attempt has been maintained for at least 3 months. Accordingly, a successfully quit smoker is defined in this report as any individual who had smoked during the past year but who had been off cigarettes for 3 months or more at the time of the survey.

To assess whether Californians have enjoyed greater success in quitting smoking since the start of the Tobacco Control Program, we compared the proportion of successful quits in California in different years. We report the estimates from two different survey methodologies (the NHIS for 1987 and 1991, and the CTS for 1990, 1992, and 1993). As we discussed earlier in this chapter, the different methodologies used to collect data may bias the comparison of estimates from the different survey designs. In this instance, we have no way of assessing the validity of this concern and hence, only compare estimates using the same survey methodology. Further, the confidence of our assessment of change is limited by the small number of surveys that we can use for estimating the effect.

As shown in Figure 4-12, in 1987 an estimated 10.6% of Californians surveyed by the NHIS who had smoked in the previous year made a successful attempt to quit smoking. In 1991, this estimate had more than doubled to 22.2%. Data from the three California Tobacco Surveys suggest that the rate of successful quitting increased over the duration of the Tobacco Control Program from 15.3% in 1990, to 18.6% in 1992, to 20.2% in 1993.



Source: NHIS 1987, 1991; CTS 1990, 1992, 1993

Figure 4-12

Evidence from both the NHIS and the CTS suggest that the California Tobacco Control Program was associated with a major change in the rate of successful quitting in California..

WILLINGNESS TO USE EXCISE TAXES TO ACHIEVE TOBACCO CONTROL GOALS

In 1992 and 1993, Californians were asked about their willingness to increase taxes on tobacco if the tax monies were to be used for tobacco control or other health programs. The results are presented in Table 4-4. The percentage of respondents willing to increase the tax by at least $2.00 increased by 5 percentage points to 30% in 1993. Just under half the population favored a further tobacco tax increase of at least 75 cents. The percentage favoring an increase of 25 cents or more was 78% in 1993. Importantly, a total of 65% of current smokers also favored a further increase in the tobacco tax provided that the monies raised were used for smoking prevention or other health care programs.

Table 4-4
Response to: 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?

	1992		1993	
	%	Cumulative	%	Cumulative
$3.00	22.3	22.3	27.0	27.0
$2.00	3.5	25.8	3.5	30.5
$1.50	2.7	28.5	1.9	32.4
$1.00	10.3	38.8	12.0	44.4
$0.75	2.9	41.7	3.1	47.5
$0.50	12.5	54.2	12.1	59.6
$0.25	19.8	74.0	18.4	78.0
No Increase	16.3	90.3	14.7	92.7
Refuse/Don't Know	9.8	100	7.3	100

SUMMARY OF FINDINGS

1. Between 1990 and 1993, the proportion of California children and nonsmoking workers who were protected from ETS exposure increased substantially.

2. Cigarette consumption in California declined by an estimated 13.7% with the passage of Proposition 99 and the mandated increase in excise tax on cigarette products. This accelerated decline in consumption lasted approximately 5 months after the imposition of the 25-cent tax.

3. The introduction of Tobacco Control Program interventions was associated with an increase in the rate of decline in cigarette consumption.

4. Between 1988 and 1993, we observed a 27% decrease in per capita tobacco consumption and a 28% decline in smoking prevalence. Based on multiple surveys, the best estimate of smoking prevalence in 1993 among California adults is 19.1%.

5. Following the passage of Proposition 99, smoking prevalence declined at twice the rate observed before Proposition 99. However, this new rate of decline must be increased by a further 50% in order to achieve the Program goal of a 75% reduction in prevalence by 1999.

6. Smoking prevalence among 16- to 18-year-old Californians appeared to be increasing sharply following the introduction of the "Joe Camel" tobacco advertising campaign. We were unable to identify a decline in prevalence associated with the imposition of the excise tax. No further increases in adolescent smoking prevalence were observed following the introduction of the Tobacco Control Program.

7. The decline in tobacco consumption and smoking prevalence in California appears to result from increases in successful smoking cessation among adults.

8. Popular support for a further increase in the excise tax on tobacco has grown. In 1993, 60% of Californians indicated support for an additional increase in the excise tax of at least 50 cents, provided that the money would be used for antitobacco and other health programs.

Chapter 5

THE IMPACT OF THE ANTITOBACCO MASS MEDIA CAMPAIGN IN CALIFORNIA

INTRODUCTION

The size and scope of the California antitobacco mass media campaign is unprecedented in the field of health promotion. In this chapter, we use two sources of information to evaluate the mass media component of the Tobacco Control Program:

(1) The Timing of the Mass Media Campaign

The mass media campaign against the use of tobacco was the first intervention to be fully implemented by the Tobacco Control Program. Section 1 of this chapter examines smoking behavior among Californians for the period when the mass media campaign appeared to be the only intervention in operation at the statewide level. Changes in behavior during this period may be considered specific to the media intervention.

(2) Changes in Attitudes and Behaviors Targeted by the Media Campaign

The antitobacco mass media campaign aimed to raise community awareness in California on a number of issues that have previously received little emphasis in tobacco control. In Section 2, we present data on norms and behaviors among Californians that were directly addressed by the mass media campaign. It is important to stress that long-term changes in community norms and behaviors related to smoking are unlikely to be the result of media interventions alone. Research in this area has consistently demonstrated that the factors contributing to the formation of an enduring health belief or behavior are extremely varied.

In addition, analysis of one of the few media campaigns comparable to the California project suggests that antitobacco media campaigns may be primarily effective in stimulating immediate and short-lived changes in health behavior.[32-34] In this earlier campaign, the initial dramatic declines in smoking prevalence that accompanied the introduction of antitobacco media ads were gradually replaced by more moderate declines limited to certain sociodemographic groups. A comprehensive and continuing program of multiple antitobacco interventions is required to (1) maintain the effects of the initial "boost" supplied by the mass media, and (2) to make inroads into deeply rooted norms and beliefs of the general public that sustain behavior.

SECTION 1
Timing of the Antitobacco Mass Media Campaign

The timing of the mass media campaign with respect to other program interventions isolates changes in smoking behavior that are specifically associated with media interventions. We begin by reviewing briefly the time-tabling of interventions funded by Proposition 99.

The excise tax on cigarette products mandated by Proposition 99 came into effect January 1, 1989. The first antitobacco television advertisements were shown at a press conference held on April 10, 1990, which was extensively covered by the news media. In the same month, an intensive antitobacco media campaign was fully implemented in California, using both radio and television channels. Shortly afterward, the media campaign was extended to include advertisements in the print media and billboard advertising. All types of media periodically targeted adolescent and adult markets, in addition to certain minority populations. The intensive phase of the mass media campaign focussing particularly on adults lasted from April 1990 to March 1991, after which the campaign was slowly phased out, ending in June 1991.

The first interventions sponsored by the Tobacco Control Program were announced in 1990 but were not fully operational until a considerable time after the media campaign. Informal communications from intervention leaders suggest that a significant developmental period preceded full implementation of the interventions, to allow for hiring of project personnel, coalition building and various analyses, including a detailed needs assessment at the local level. The need for a developmental phase before tobacco control interventions are fully implemented is consistent with the experience reported by other comprehensive antitobacco programs. The 17-state ASSIST — the American Stop Smoking Intervention Study for Cancer Prevention — sponsored in part by the National Cancer Institute and the American Cancer Society, supports a 2-year planning phase for this kind of program.[35] Thus, for the period April 1990 through June 1991, the mass media campaign appears to have been the only component of the Tobacco Control Program that was fully operational.

The Tobacco Control Program inadvertently received a short period of intensive news media coverage between February and May of 1992, as a result of the governor's controversial decision to veto the mass media contract and the ensuing lawsuit brought by the American Lung Association. This lawsuit was won, resulting in a second media campaign which began in October 1992 and continued through May 1993. The budget for this phase of the mass media campaign was substantially lower at $15 million, compared to the $28 million allocated to the first campaign.

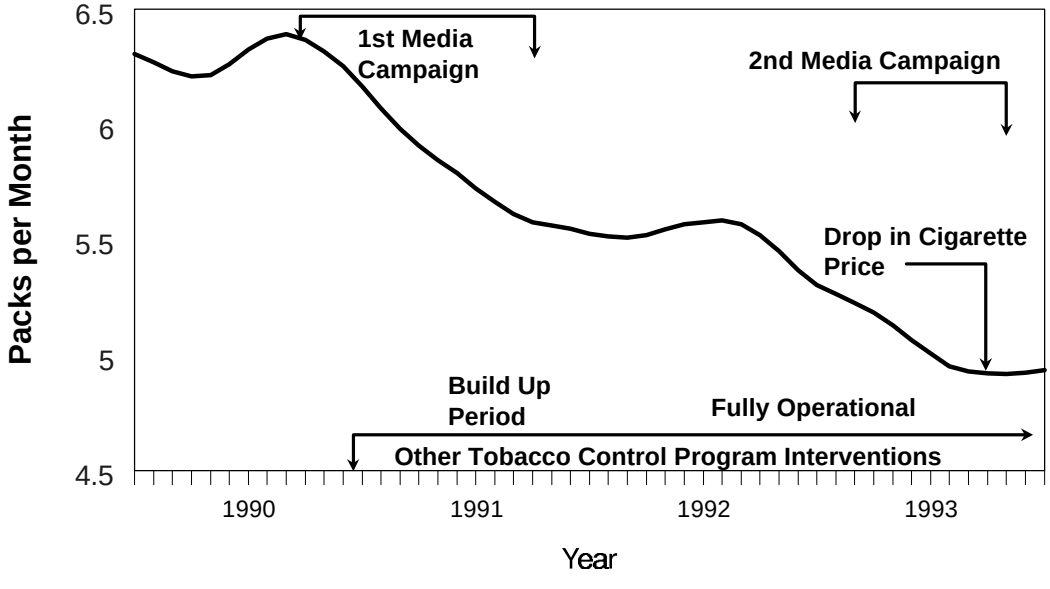
Throughout the operation of the second mass media campaign in California, there were many other Tobacco Control Program interventions in effect. Changes in smoking behavior that occurred during

the second media campaign are therefore likely to be attributable to program interventions and not to the mass media campaign alone.

In March 1993, the tobacco industry responded to this intensive health promotion effort by creating a series of promotional campaigns to market cigarettes via attractive products bearing the company logo. In April, shortly after the start of the promotional campaigns, the industry effected a major reduction in the price of its premium cigarette brands, a move that was widely interpreted as a response to declining sales.

Changes in Cigarette Consumption During the First Media Campaign

Figure 5-1 presents data on per capita consumption of cigarettes in California for the period July 1989 through July 1993. To construct this figure, we took a small section of the trend line shown in Figure 4-1 (see Chapter 4) and enlarged this section in order to pinpoint changes in consumption within a shorter time period. As in Chapter 4, the deseasonalized trend is based on excise tax data that are available monthly from the State Board of Equalization. Figure 5-1 also indicates periods when the mass media campaign and other tobacco control programs were fully operational in California.



Source: State Board of Equalization

Figure 5-1

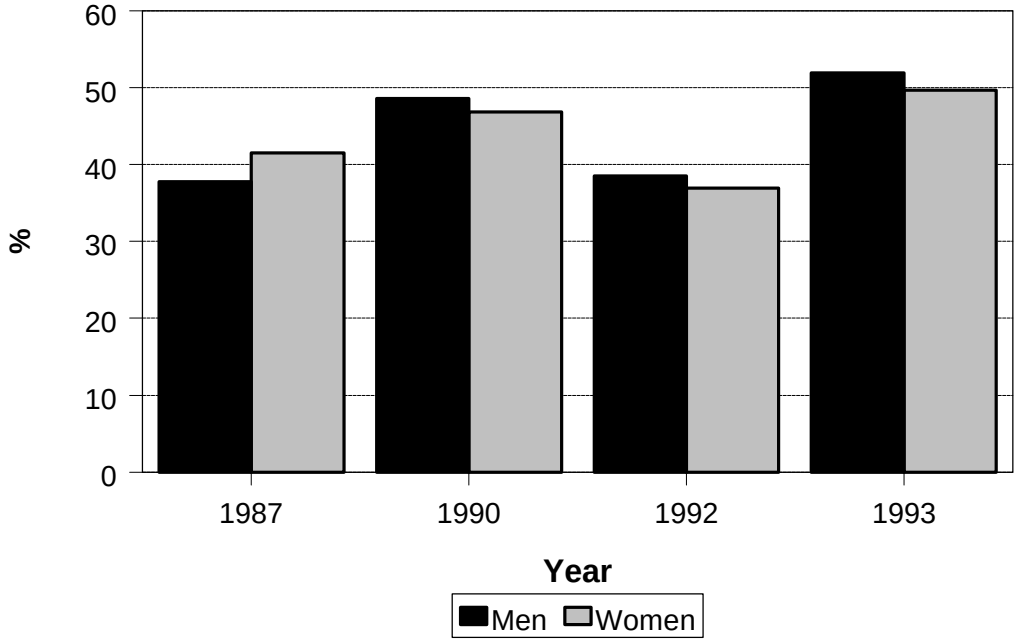
Between October 1989 and March 1990, per capita consumption of cigarettes increased by 3%. Beginning in April 1990, we observed a period of accelerated decline lasting until March 1991, during which cigarette consumption decreased by 12.2% (from 6.39 to 5.52 cigarette packs per person per month). This decline in consumption coincides with the intensive phase of the antitobacco mass media campaign in California. As noted above, the mass media campaign was the only intervention to be fully operational during this period of accelerated decline in cigarette consumption.

A second period of rapid decline in consumption began in February 1992 and continued through April 1993. During this period, cigarette consumption decreased by a further 12% (from 5.59 to 4.92 packs per capita per month). Although the beginning of this decline coincides with the high profile of the Tobacco Control Program in the media, owing to the controversy surrounding the governor's decision to veto the media campaign, the decline was into its sixth month before the second media campaign started. Thus, this decline cannot be attributed to the second mass media campaign. It is possible that this further period of accelerated decline in consumption reflects the impact of the full implementation of other Tobacco Control Program interventions.

Changes in Quitting Behavior During the First Media Campaign

Figure 5-2 shows the proportion of California smokers who made a quit attempt lasting more than 1 day in the previous year in 1987, and for the period 1990 to 1993. The source for the 1987 data is the National Health Interview Survey (NHIS), which included a significant sample of smokers from California, as discussed in Chapter 3. Data on the quitting behavior of smokers during the period following the establishment of the Tobacco Control Program are based on the California Tobacco Surveys (CTS) of 1990 through 1993.

In 1987, 39.5% of all California smokers reported a quit attempt the previous year that lasted more than 1 day. Women were slightly more likely to report quit attempts than men. In 1990, the proportion of smokers reporting a quit attempt increased to 47.8% and this time the differences between gender were reversed: men were more likely to have made a quit attempt than women. This new pattern of gender differences in quitting behavior was maintained throughout the early 1990s. Interviews for the 1990 CTS were conducted from late June of that year to January, 1991. In a previous report, we demonstrated that the majority of reported quit attempts occurred 3 months or less before the survey interview.[18] Hence, the quit attempts recorded by the 1990 CTS refer to quit attempts that took place between April and November of 1990. The marked increase in the proportion of smokers who made a quit attempt for more than a day parallels the decline in consumption over the same period, during which, as noted, the mass media campaign was the only intervention in the field.



Source: NHIS 1987, CTS 1990, 1992, 1993

Figure 5-2

The 1992 CTS interviewed Californians between January and May of that year. Reported quit attempts refer to attempts made in late 1991 or in early 1992, based on the 3-month lag time mentioned above. We note that over these months the mass media campaign was not in operation. During this period, the proportion of smokers reporting quit attempts decreased to 37.7% overall. This percentage is close to the pre-Program level of quit attempts reported in 1987. During the same period (late 1991 to early 1992), cigarette consumption did not decline.

The media campaign returned to California albeit with a reduced budget, in October 1992. Interviews for the 1993 CTS began in January 1993 and continued through May of that year. Reported quit attempts, most of which were made in late 1992 or early 1993, increased once more to 51%. Again, the increase in the proportion of smokers attempting to quit is consistent with the declines in cigarette consumption observed for this period, and coincides with the second phase of the mass media campaign.

These findings strikingly depict a pattern showing (1) increased attempts to quit among California smokers during the two periods when a multimedia campaign against tobacco use was in effect, and (2) a decrease to pre-Program levels in the proportion of smokers making a quit attempt during the

months when the media campaign was withdrawn. The results for quitting behavior are consistent with the timing of the observed declines in per capita cigarette consumption. Given that the incidence of smoking uptake did not decline during this period (see Chapter 4), it is likely that the decrease in consumption was partly an effect of increased attempts to quit among smokers. The analysis of quitting and consumption behavior presented here suggests that the mass media campaign may have made an independent contribution to smoking behavior change in California.

SECTION 2
Changes in Attitudes and Behaviors Targeted by the Media Campaign

The explicit objectives of the mass media campaign included the following:

- the dissemination of messages alerting the community to the dangers of environmental tobacco smoke (ETS)
- the creation of antitobacco advertising that contests the glamorous images used by the tobacco industry to dignify its participation in the sale of a dangerous product

(these goals are discussed in more detail in Chapter 2)

The California Tobacco Surveys measured attitudes and behaviors among the public that are relevant to the assessment of the campaign's success in meeting these objectives. The 1992 CTS examined whether Californians were ready to agree that ETS is associated with serious health consequences. In both 1992 and 1993, further questions explored the extent to which Californians were willing to take action to protect themselves or others from the harmful effects of passive smoking. Lastly, respondents to the 1992 CTS were asked for their views on the tobacco industry, specifically on whether this industry should remain a legitimate business in the future.

In this section, we present information on attitudes and behaviors that were particularly targeted by the mass media campaign. The last part of this section investigates whether a relationship exists between the position that Californians took on these issues and their recalled exposure to the antitobacco advertising featured in the media campaign.

Since the questions about ETS, behaviors associated with ETS beliefs, and attitudes toward the tobacco industry could not be included on all CTS due to cost constraints, our assessment of change in the attitudes and behaviors of Californians is limited on some issues. Further, we are not aware of any surveys that asked comparable questions of Californians before the mass media campaign was implemented.

We stress that the attitudes and behaviors considered here are not presumed to derive solely from exposure to the mass media campaign. A number of other Tobacco Control Program interventions may have affected community norms on these issues. For example, the publication of the Environmental Protection Agency report on ETS in January 1993, and the rapid spread of smokefree workplaces in California as a result of local lead agency activities are likely to have contributed significantly to community perceptions of the dangers of ETS. Further, efforts by state and local agencies and by medical care providers to make cessation assistance more available to California smokers may have helped to impress on the public that the contrasting activities of the tobacco industry are not in the public interest and perhaps should be curtailed. The role of workplace policies, cessation assistance, and medical care providers are considered in later chapters of this report.

Attitudes and Behaviors Concerning ETS

Beliefs About the Health Consequences of ETS

The 1992 survey asked all adult respondents about their beliefs in the health consequences of ETS. Respondents were invited to agree or disagree with the following two statements:

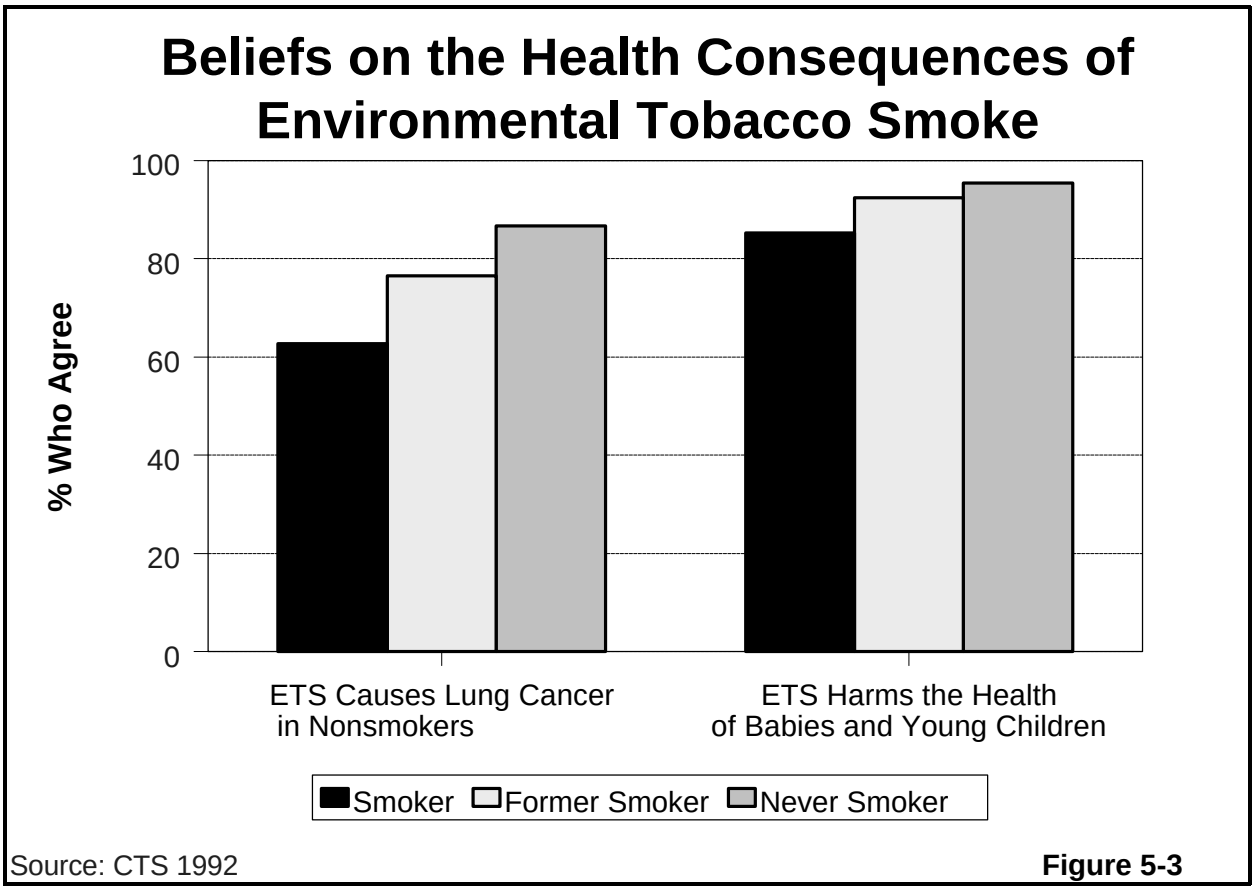
(1) Inhaling smoke from someone else's cigarette causes lung cancer in a nonsmoker

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

Figure 5-3 presents the results of these questions according to the smoking status of the respondent. In 1992, almost two thirds of smokers believed that ETS causes lung cancer in nonsmokers. An even greater percentage of respondents who had never smoked believed that smokers pose a health risk to them (86.7%). The opinions of former smokers fell midway between those of smokers and never smokers. Californians were especially convinced that ETS harms the health of babies and young children, irrespective of their smoking status (85.3% of smokers and 95.4% of never smokers).

Taking Action Against ETS

(1) Asking Smokers Not to Smoke. Social norms on smoking are often communicated by the behavior of nonsmokers when in the presence of someone smoking. Increased awareness of the dangers of ETS supplies nonsmokers with an additional reason to ask someone not to light up in their presence, beyond the irritation or inconvenience that smoking may represent to them.

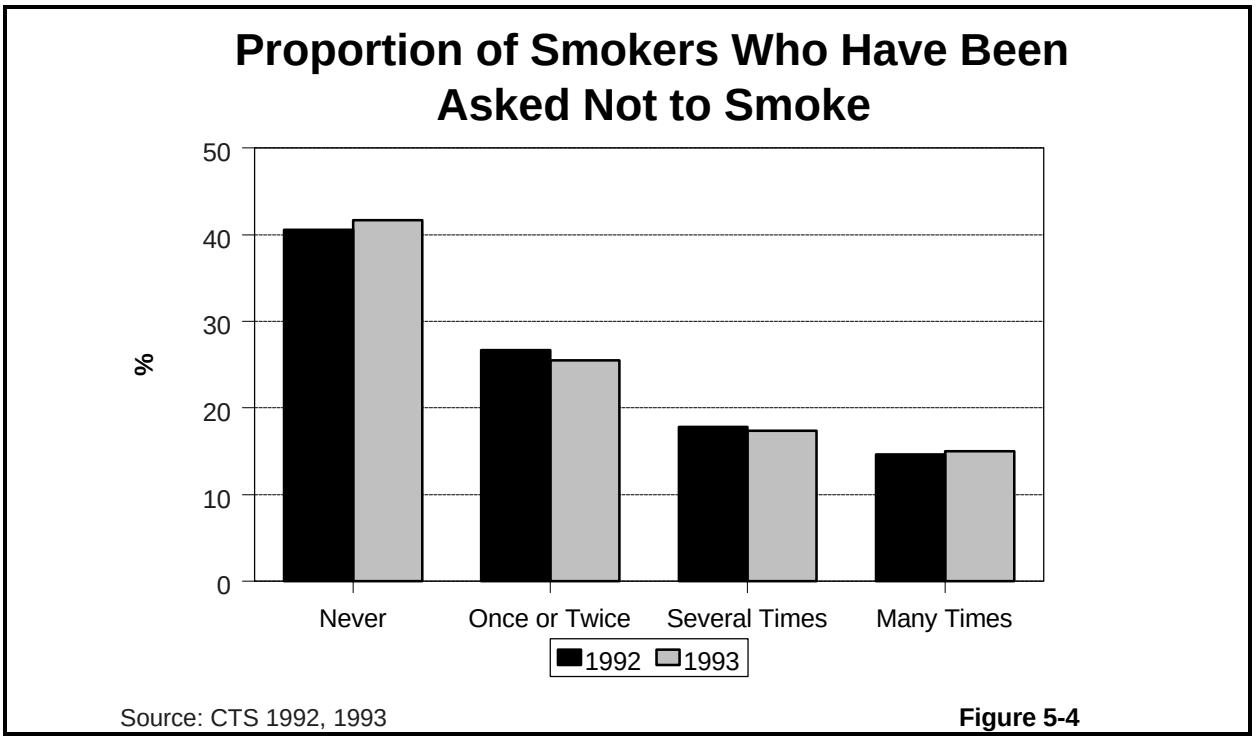


Source: CTS 1992

Figure 5-3

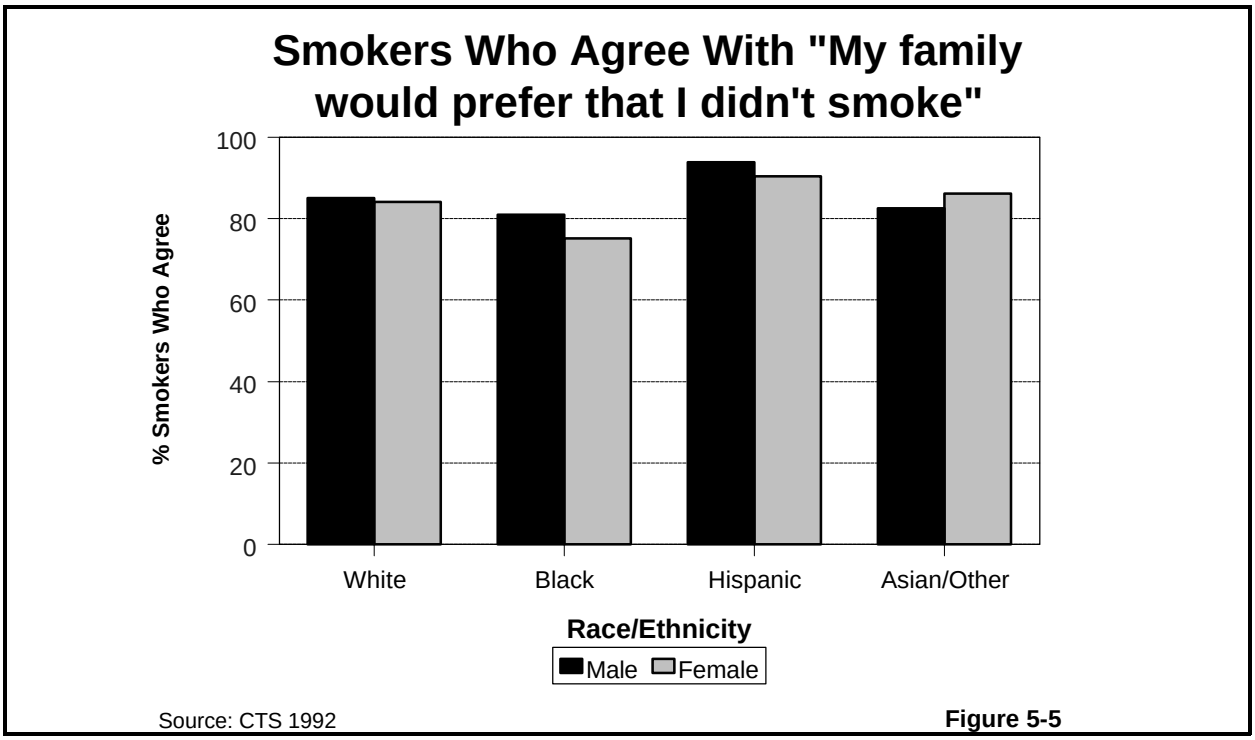
In 1992 and 1993, we asked smokers whether they had ever been asked not to smoke (Figure 5-4). In both years, just under 60% of smokers reported that they had been asked not to smoke on at least one occasion. Approximately one third of all smokers in both years indicated that they had been asked not to smoke on several or many occasions.

Another potential source of social pressure on smokers is the family. In 1992, we asked smokers if they agreed or disagreed with the statement "My family would prefer that I didn't smoke" (Figure 5-5). We had anticipated that tolerance for the smoker's habit would be somewhat higher among his or her family than in the general community. This expectation was not fulfilled. The majority of California smokers agreed that their family preferred them not to smoke and this finding was observed across all sociodemographic groups. Hispanics felt the most family pressure, with 93.8% of the men and 90.4% of the women in this group agreeing that their family would prefer that they not smoke. Black females were least likely to report that their family was opposed to smoking (75.2%).



Source: CTS 1992, 1993

Figure 5-4



Source: CTS 1992

Figure 5-5

(2) Voluntary Restrictions on Smoking in the Home. The willingness of smokers to set limits on smoking in their own home is perhaps the best test of the degree to which the public as a whole has become sensitized to the need to shield nonsmokers from the effects of ETS. The home is typically perceived to be a private bulwark and the intrusion of community norms into this domain is an indication of how far individuals have internalized the ideas promoted by health education efforts. Here we present data on voluntary self-regulation of smoking in the home and we investigate some factors that may prompt smokers to take action to protect the nonsmokers with whom they reside.

The 1992 and 1993 CTS asked all adults to describe their home rules on smoking by choosing from the following options:

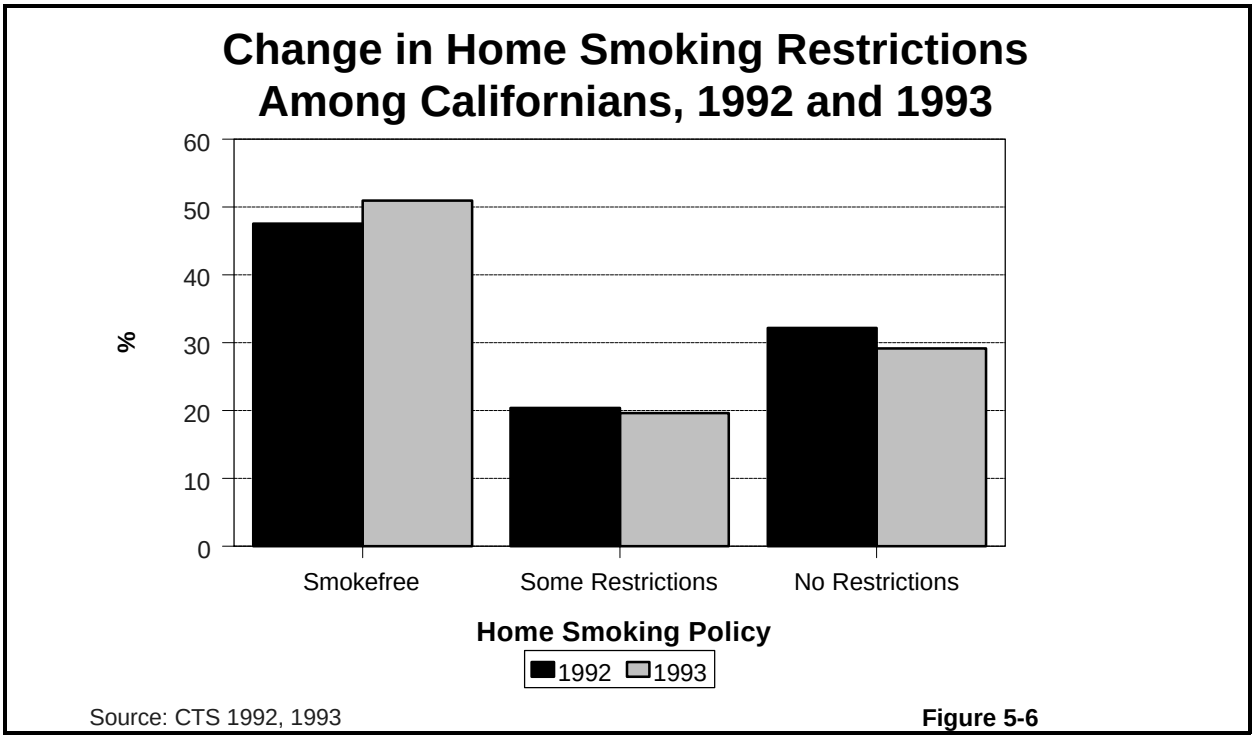
(1)	**Smokefree**	smoking is completely banned in the home
(2)	**Some Restrictions**	smoking is permitted in certain rooms or at certain times
(3)	**Unrestricted**	smoking is allowed anywhere in the home

Of Californians surveyed in 1992, 47.5% reported their homes to be smokefree, and 20.4% reported some kind of restriction on smoking in the home. Just under one third of respondents said that smoking was permitted anywhere in their home (Figure 5-6). One year later, the proportion of Californians who reported smokefree homes had increased slightly, such that half of all California households were reported to be smokefree in 1993.

As expected, the rules relating to smoking within the home varied according to the smoking status of the adults in the household. Figure 5-7 examines what proportion of smokers in California live in smokefree homes. In 1992, 18.8% of California smokers reported smokefree homes. This proportion increased substantially in 1993 to 27.1%. Correspondingly, the proportion of smokers who allowed smoking anywhere in the home declined from 53.6% in 1992 to 45.9% in 1993.

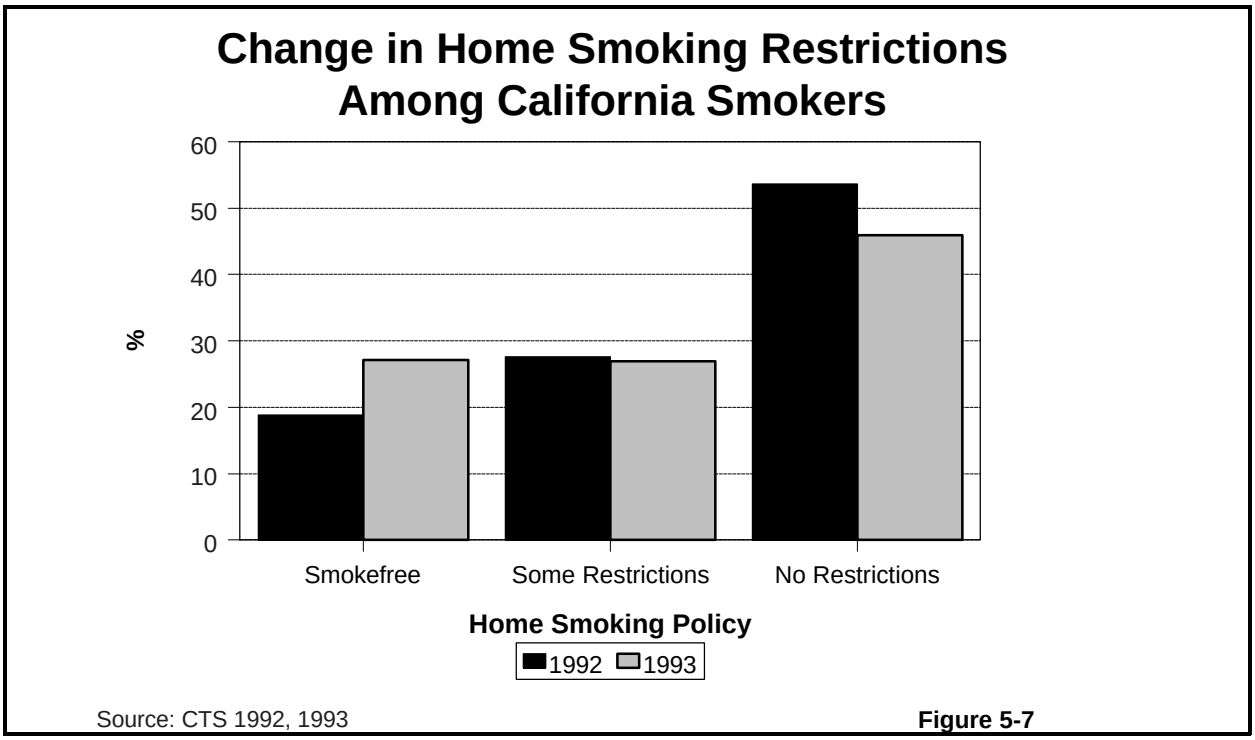
> ***Overall, 27.1% of California smokers reported a smokefree home in 1993, up from 18.8% of smokers in 1992.***

The presence of children appears to offer an important incentive to smokers to make their homes smokefree. The 1993 CTS obtained information on 21,786 households in which no one smoked, 6,663 "mixed" households including at least one nonsmoking adult and one smoking adult, and 2,267 "all-smoking" households in which all adults were smokers. Approximately 40% of households that included at least one adult smoker also included preschoolers or children younger than 18 years.



Source: CTS 1992, 1993

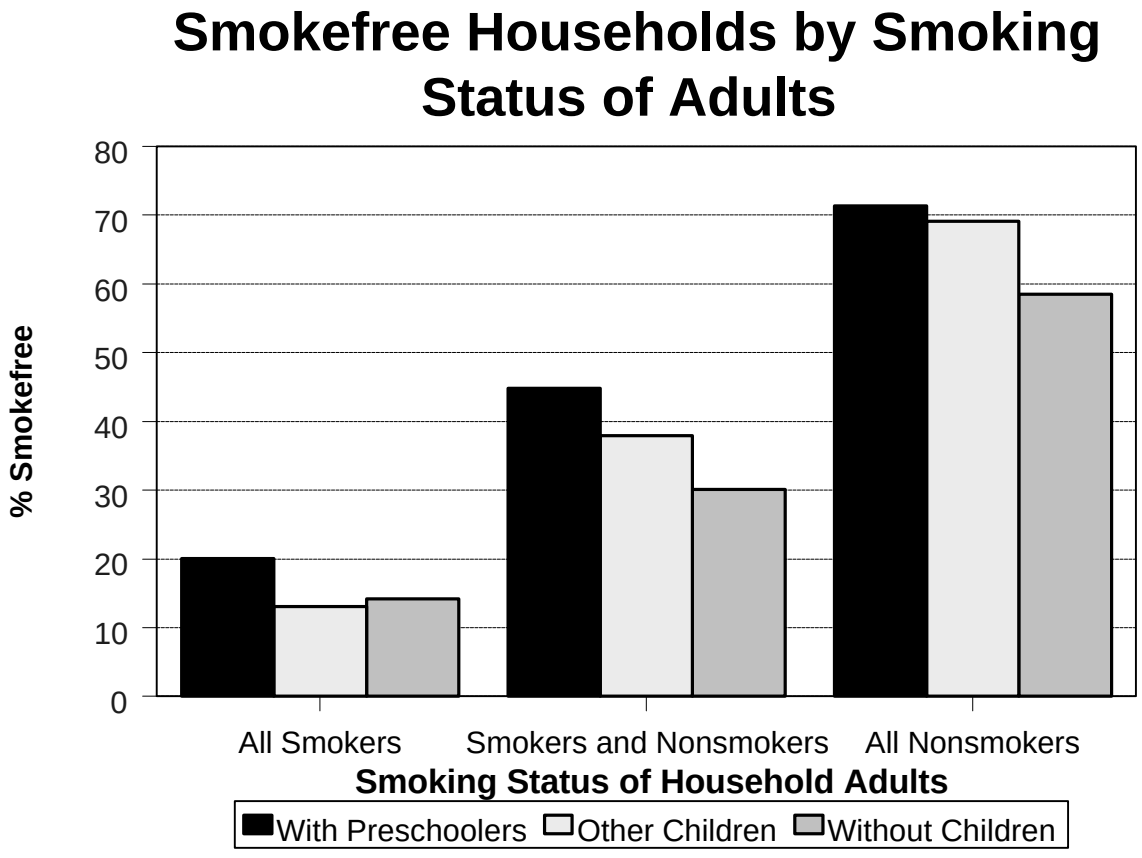
Figure 5-6



Source: CTS 1992, 1993

Figure 5-7

Figure 5-8 shows the proportion of households reported to be smokefree categorized by the smoking status of the resident adults and the presence or absence of preschoolers and older children. Among households that did not include children, nonsmoking households were approximately twice as likely to be smokefree as households in which both smokers and nonsmokers lived (59% versus 30%). We found clear indications that California households are more likely to be smokefree if preschoolers are present. This is true even if all adults resident in the household are smokers. One fifth of households with preschoolers present and in which all adults smoke were reported to be smokefree, compared to 14.2% of all-smoking households that did not include children.



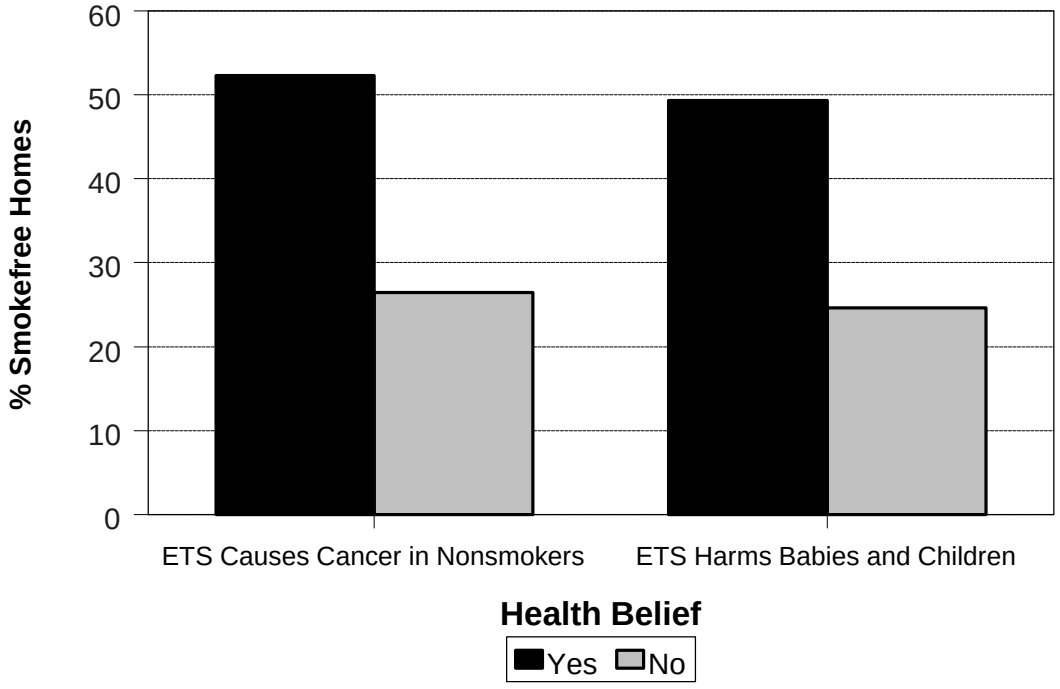
Source: CTS 1993

Figure 5-8

The impact of preschoolers and older children on home smoking restrictions was also apparent for mixed households including both smoking adults and nonsmoking adults. Approximately 45% of mixed households were smokefree in 1993 if they included preschoolers, compared to 30% of mixed households without children.

Within its overall goal of communicating the dangers of exposure to ETS, the mass media campaign placed special emphasis on the risk to children and pregnant mothers. The higher percentage of smokefree homes among adult smokers who live with a nonsmoker, and particularly among smokers who live with children, suggests that home smoking restrictions are related to health beliefs about ETS, rather than to irritation with the unpleasant odor of tobacco smoke. To examine this possibility, we looked at the relationship between having a smokefree home and beliefs about ETS.

As shown in Figure 5-9, the proportion of Californians with smokefree homes varied according to their ETS beliefs. In 1992, more than half of all those who responded that they believed that ETS



Source: CTS 1992

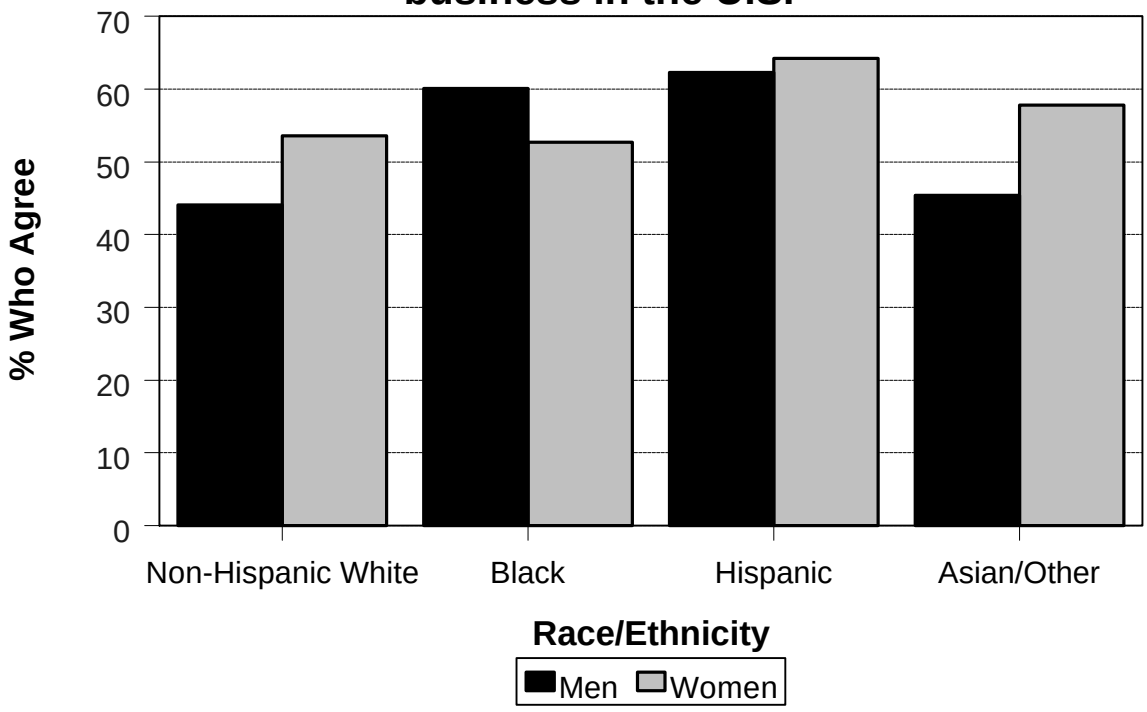
Figure 5-9

causes lung cancer in nonsmokers reported a smokefree household. This was approximately double the proportion of Californians with a smokefree home among those who were not convinced that ETS is harmful to nonsmokers. Similarly, the proportion of Californians who reported smokefree households was twice as high if they believed that ETS is harmful to children and babies, compared to Californians who disagreed with this statement.

Attitudes Toward the Tobacco Industry

Should the Tobacco Industry Be De-Legitimized?

Respondents to the 1992 CTS were asked to agree or disagree with the statement, "By the next century, the production and sale of cigarettes should not be a legitimate business in the United States." The responses are presented by race/ethnicity and gender in Figure 5-10. The majority of Californians (52.8%), including 35% of all current smokers, agreed that the industry should not be a legitimate business in the near future. Only two groups did not reach a majority on this issue: non-Hispanic white men and Asian/Other men. Black men and Hispanic men and women held the strongest views about de-legitimizing the tobacco industry; more than 60% of these groups agreed with this statement.



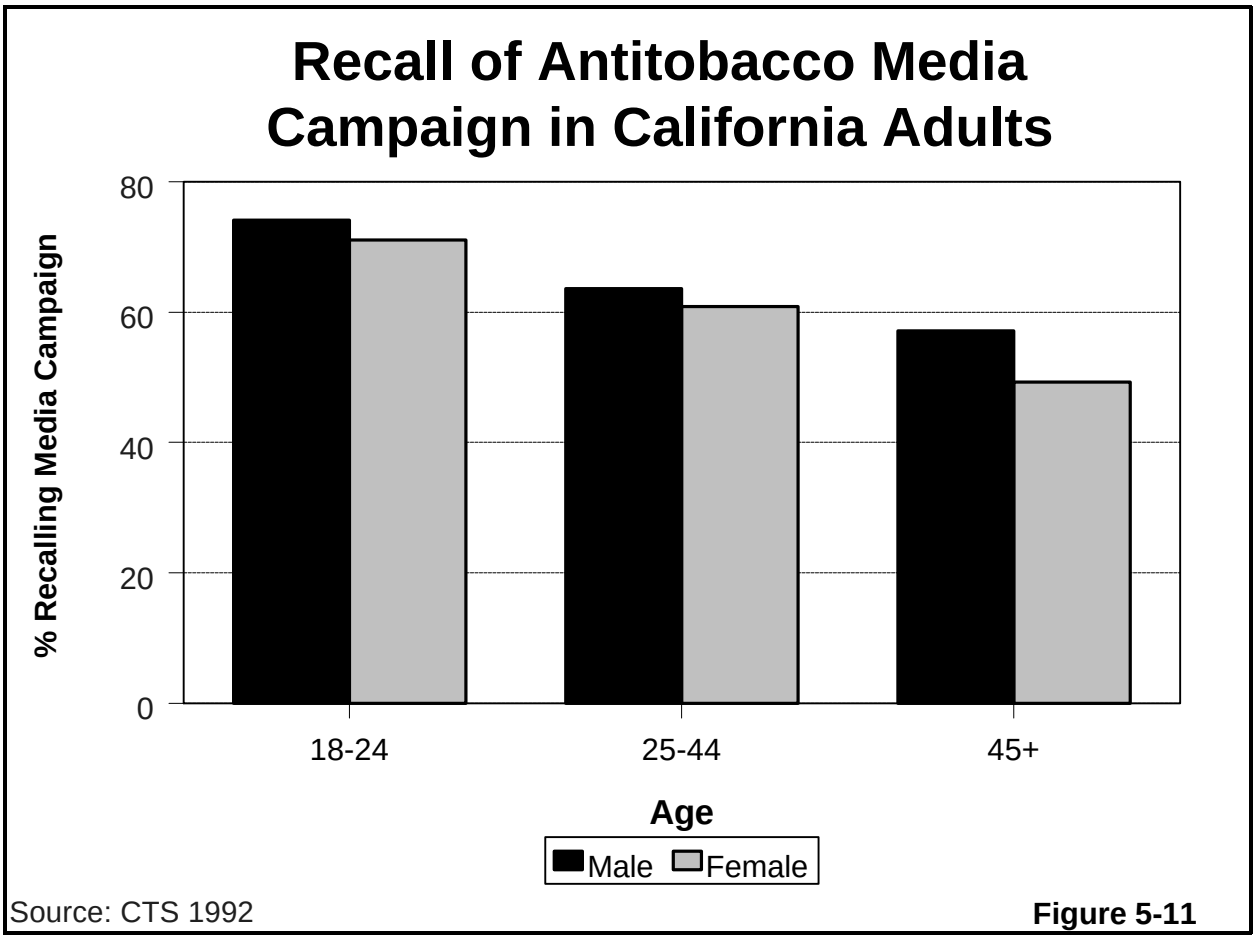
Source: CTS 1992

Figure 5-10

Our data show that the majority of Californians do not think that the tobacco industry should remain a legitimate business.

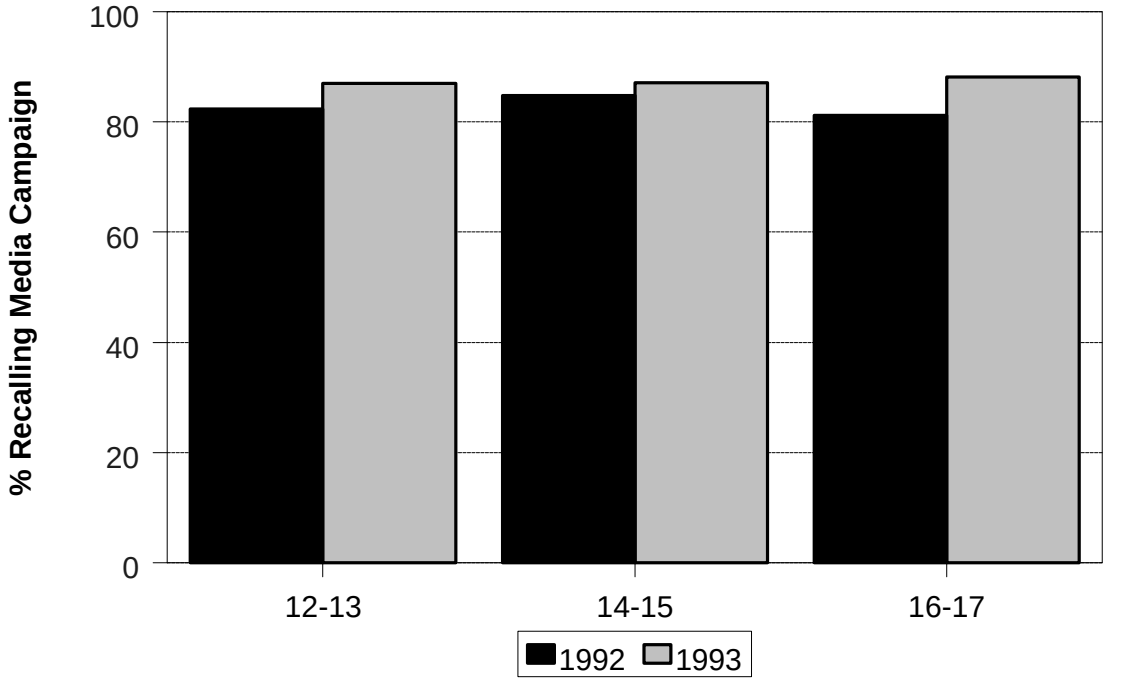
Exposure to the Media and its Association with ETS Attitudes and Behaviors

The proportion of adults who recalled seeing the antitobacco media campaign is presented in Figure 5-11 for 1992. Recall of the campaign was inversely related to age. In each age group, men recalled the media campaign more than women. This proportion decreased with age; approximately three quarters of 18- to 24-year-old men recalled the campaign, compared to just under half of women older than 45 years. Figure 5-12 presents information on recall for adolescents. In 1992, the media campaign produced exceptionally high rates of recall among adolescents of all ages. Recall of the campaign increased within all adolescent age groups between 1992 and 1993.



Source: CTS 1992

Figure 5-11



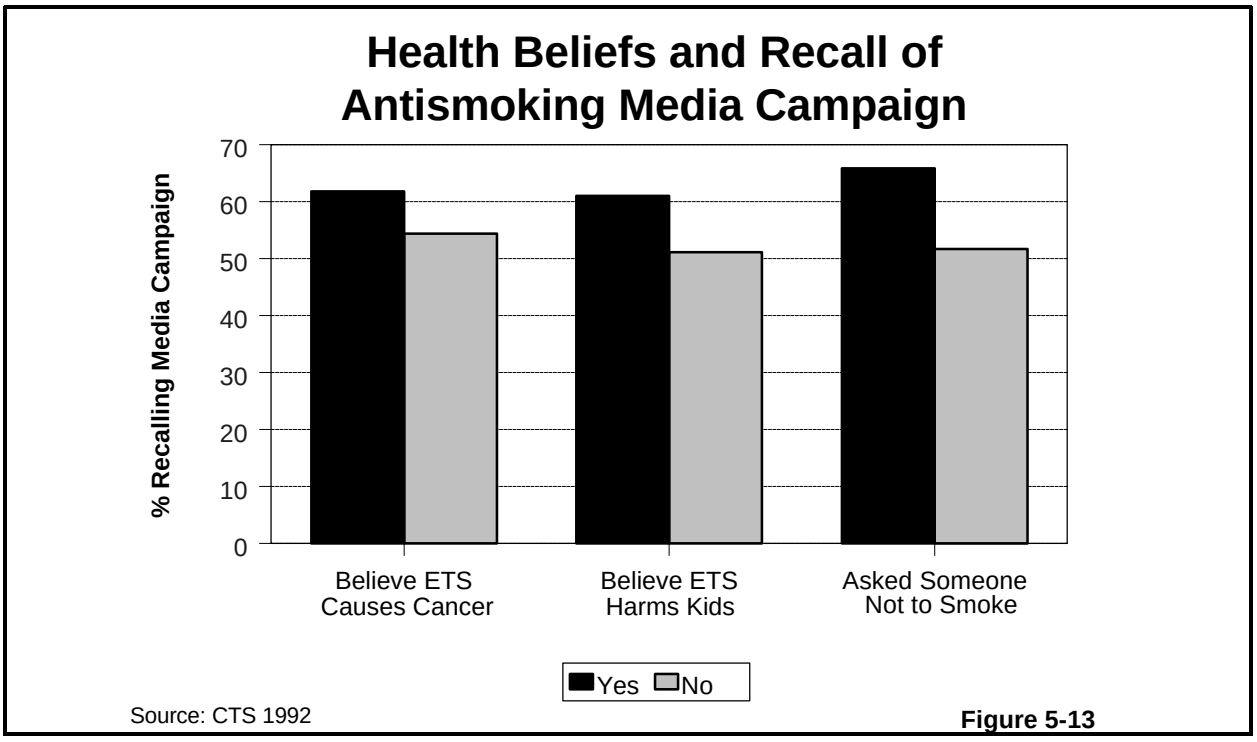
Source: CTS 1992, 1993

Figure 5-12

The relationship between recall of the media campaign, beliefs about ETS and taking action against ETS by asking someone not to smoke is presented in Figure 5-13. Respondents who recalled seeing the campaign were more likely to believe that ETS causes cancer in nonsmokers and is harmful to children. Further, a higher proportion of adults who recalled the antitobacco media campaign had asked a smoker not to smoke in the previous year.

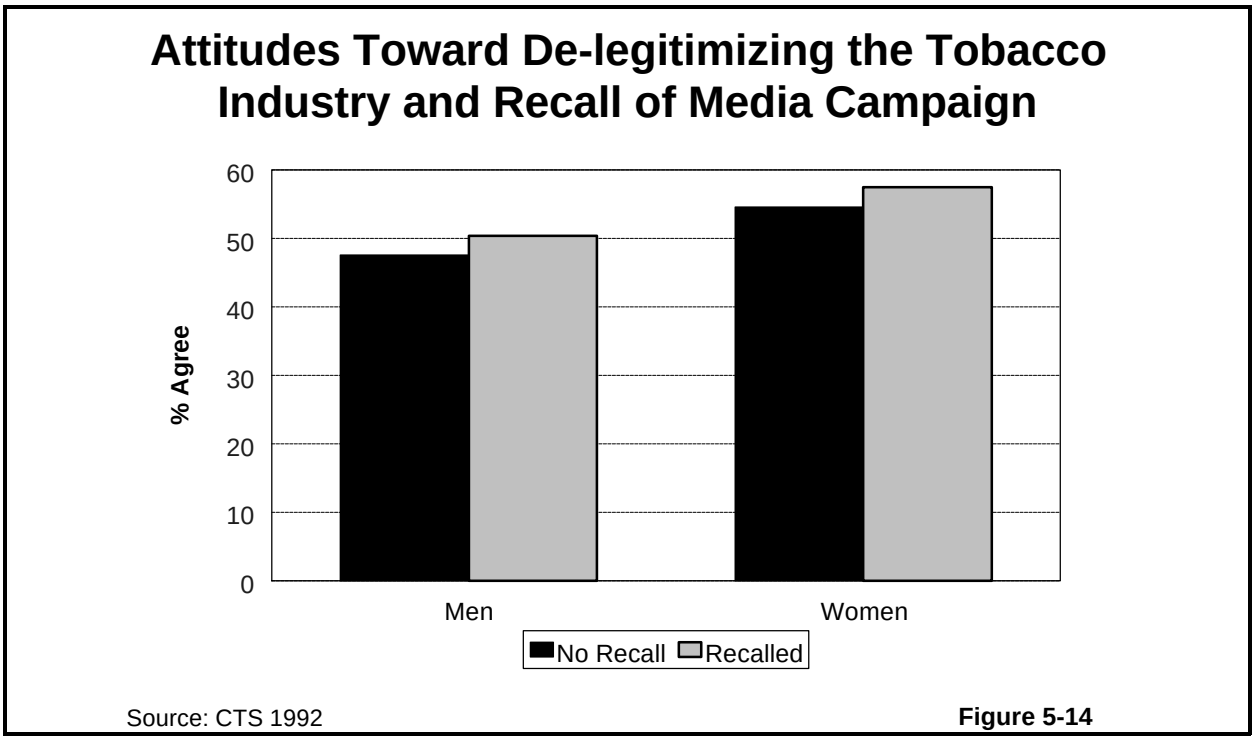
Exposure to the Media and Attitudes Toward the Tobacco Industry

Recall of the media campaign and its association with the position taken on the future de-legitimization of the tobacco industry is shown in Figure 5-14. We present results by gender because as mentioned above, men were more likely to recall the media campaign than women. Figure 5-14 suggests that recall of the media campaign is associated with slight increases in the proportion of both men and women who agreed that the tobacco industry should not remain a legitimate business in the next century.



Source: CTS 1992

Figure 5-13



Source: CTS 1992

Figure 5-14

We emphasize that even among men and women who could not recall the media campaign, the proportion who thought the tobacco industry should be de-legitimized was substantial in 1992. Our data suggest that many Californians are already doubtful that the continued permission given to corporations to sell cigarettes is in the best interests of the public.

Recall of the antitobacco media campaign was not associated with large differences in attitudes and behaviors related to ETS and the tobacco industry. This finding was not unexpected, given that the CTS were not designed to evaluate the media campaign specifically, and therefore our measures of potential media effects are not optimal. Nonetheless we note that all differences in attitudes and behaviors associated with recall of the media were in the direction of a greater awareness of the harmful effects of ETS exposure and less support for the tobacco industry as a whole.

SUMMARY OF FINDINGS

1. A period of accelerated decline in per capita cigarette consumption in California began in April 1990, coinciding with the start of the mass media campaign. During a 12-month period, consumption declined by 12%. At this time, the media campaign was the only major tobacco control intervention in the field.

2. The proportion of Californians who attempted to quit smoking for more than 1 day increased whenever the mass media campaign was in the field and decreased during the period when the campaign was withdrawn.

3. More than half of California adults and more than two thirds of adolescents recalled seeing the antitobacco mass media campaign.

4. Adults who saw the media campaign were more likely than adults who did not see the campaign to believe that ETS is harmful to nonsmokers, especially to children.

5. Adults who saw the media campaign were more likely than adults who did not see the campaign to ask someone not to smoke. Almost 60% of smokers reported that they had been asked not to smoke on at least one occasion.

6. Half of Californians had voluntarily made their homes smokefree by 1993. The number of smokers reporting a smokefree home increased substantially between 1992 and 1993. Smokers who had young children in the home were more likely than smokers living without children to report a smokefree home.

7. Smokefree home policies were more likely if adults believed in the danger of ETS to nonsmokers. The spread of smokefree homes in California may be an indirect effect of the media campaign.

Chapter 6

TOBACCO MARKETING AND SMOKING IN SCHOOLS AS BARRIERS TO EFFECTIVE ADOLESCENT PREVENTION PROGRAMS

INTRODUCTION

In the three decades following the release of the first Surgeon General's report on the health consequences of smoking,[36] the public health movement has been very successful in its efforts to convince adults not to start smoking. By 1990, smoking uptake among people older than 21 years was approaching zero.[3,37] This change in patterns of initiation presents a problem for the tobacco industry: to remain profitable, the industry needs to recruit new smokers in order to compensate for the attrition of adult smokers through cessation or mortality. Currently, adolescents are the only population group taking up smoking in significant numbers. In Chapter 4, we presented evidence suggesting that smoking initiation was increasing among adolescents before the start of the Tobacco Control Program. The imposition of excise taxes appeared to have little effect on that increasing trend. Although the end of the increase in smoking initiation coincided with the start of the Tobacco Control Program, we observed no decline in smoking among adolescents over the duration of the Program, as might be expected from an effective prevention program. In this chapter, we focus on barriers that may detract from the effectiveness of prevention efforts that have been funded by the California Tobacco Control Program.

Barriers to Change in Adolescent Smoking Behavior

(1) Tobacco Advertising. There is now considerable evidence to suggest that tobacco advertising is a major influence on adolescent smoking behavior and that it constitutes a significant barrier to the achievement of tobacco control goals for adolescents.[38,39]

In Chapter 4, we showed that between 1984 and 1988, smoking prevalence appeared to decline significantly among 16- to 18-year-old Californians. This declining trend was abruptly reversed in 1988 when the prevalence of smoking in this age group began to increase at a rapid rate. The turnaround in this trend in smoking prevalence among adolescents coincided with the introduction of a new marketing campaign for Camel cigarettes, featuring a cartoon character called "Joe Camel." A number of studies, including analyses of CTS data, have demonstrated high levels of recall and knowledge of this campaign in adolescents, and in children as young as 6 years.[40-43] The study of 6-year-olds sparked national controversy, prompting the tobacco industry to sponsor a replication of this research. Although the study sponsored by the tobacco industry reported lower levels of recall and knowledge of the Camel campaign than the initial study, the findings still revealed that two thirds of 6-year-olds recognized the Camel campaign and understood that it marketed cigarettes.[44]

Evidence of high awareness of tobacco advertising among adolescents and children is not sufficient to conclude that tobacco advertising causes minors to take up smoking. Few experts would argue that young children who are responsive to cigarette advertisements immediately begin smoking. However, considerable research on the uptake process suggests that experimentation with cigarettes

by adolescents is preceded by the development of a predisposition to smoke.[45] A period of perhaps 2 years may elapse before the child or adolescent converts a predisposition to smoke into the decision to try a cigarette.

For this reason, our earlier report introduced a measure of "susceptibility to smoke," a refinement of predispositional measures that enables us to examine whether tobacco advertising influences smoking initiation by cultivating in adolescents a positive attitude toward the idea of smoking.[17] This chapter extends previous analyses to explore further the relationship between various kinds of tobacco marketing strategies and adolescent susceptibility to smoke.

(2) Smoking in Schools. Exposure to other smokers has been repeatedly demonstrated to be a major predictor of youth smoking.[46-48] Close friends and peers who smoke are a particularly strong source of pressure to smoke on adolescents. A potential site where adolescents risk exposure to smoking is the school. Thus, the provision of a smokefree learning environment is an important tobacco control goal. The absence of smokefree schools may undermine the effectiveness of an antitobacco curriculum. According to the 1993 report of the Tobacco Education Oversight Committee, just one half of all public schools in California have declared themselves to be smokefree environments.[12] In this chapter, we examine whether the prevalence of smokefree schools in California changed between 1990 and 1993.

In a previous report, we suggested that adolescent recall of ever having had a class on smoking provides one indicator of the existence of effective antitobacco school curricula.[17] The effective use of tobacco control monies should lead to a decrease in the proportion of adolescents who are unable to recall such a class. In this report, we present information on the proportion of adolescents who recalled ever having a class on the health risks of smoking in 1990 and 1993.

Section 1 of this chapter draws on the 1992 CTS to analyze patterns of tobacco advertising awareness among adolescents and adults. The objective of this analysis was to see if adolescents appear to be a primary target audience for tobacco advertising. The 1993 youth CTS included additional questions on adolescent perceptions and attitudes toward the marketing of tobacco products. Using these additional questions, we created a summary index of adolescent receptiveness to tobacco marketing. Section 2 describes the measures used to construct this index, the susceptibility measure, and presents data on the relationship of the marketing index to adolescent susceptibility to smoke. In Section 3 we examine the relative importance of tobacco marketing by comparing the influence of tobacco marketing on adolescent susceptibility to the influence of peer and family smokers. Studies have consistently documented that exposure to peer and family smokers is one of the most important independent predictors of smoking initiation among adolescents.[46-48] If tobacco marketing plays a substantial role in adolescent initiation of smoking, we should be able to demonstrate that tobacco marketing is associated with adolescent susceptibility to smoke independently of other known predictors of susceptibility, such as exposure to family/peer smokers. Section 4 of this chapter compares data from the 1990 and 1993 CTS to determine if the proportion of schools reported to be smokefree has increased in California. This section also assesses changes

in student compliance with smokefree school policies and perceived exposure to teachers who smoke in schools. Students were asked about their level of support for smokefree policies in schools and about the existence of antitobacco curricula in their school.

SECTION 1
Does Tobacco Advertising Target Adolescents?

One way of determining which population groups are most receptive to cigarette advertising is to examine how many people are able to name a favorite cigarette advertisement. Having a favorite ad implies that the individual is sufficiently aware of cigarette advertising to have established affective preferences for certain advertisements. The 1992 CTS asked both adult and adolescent respondents:

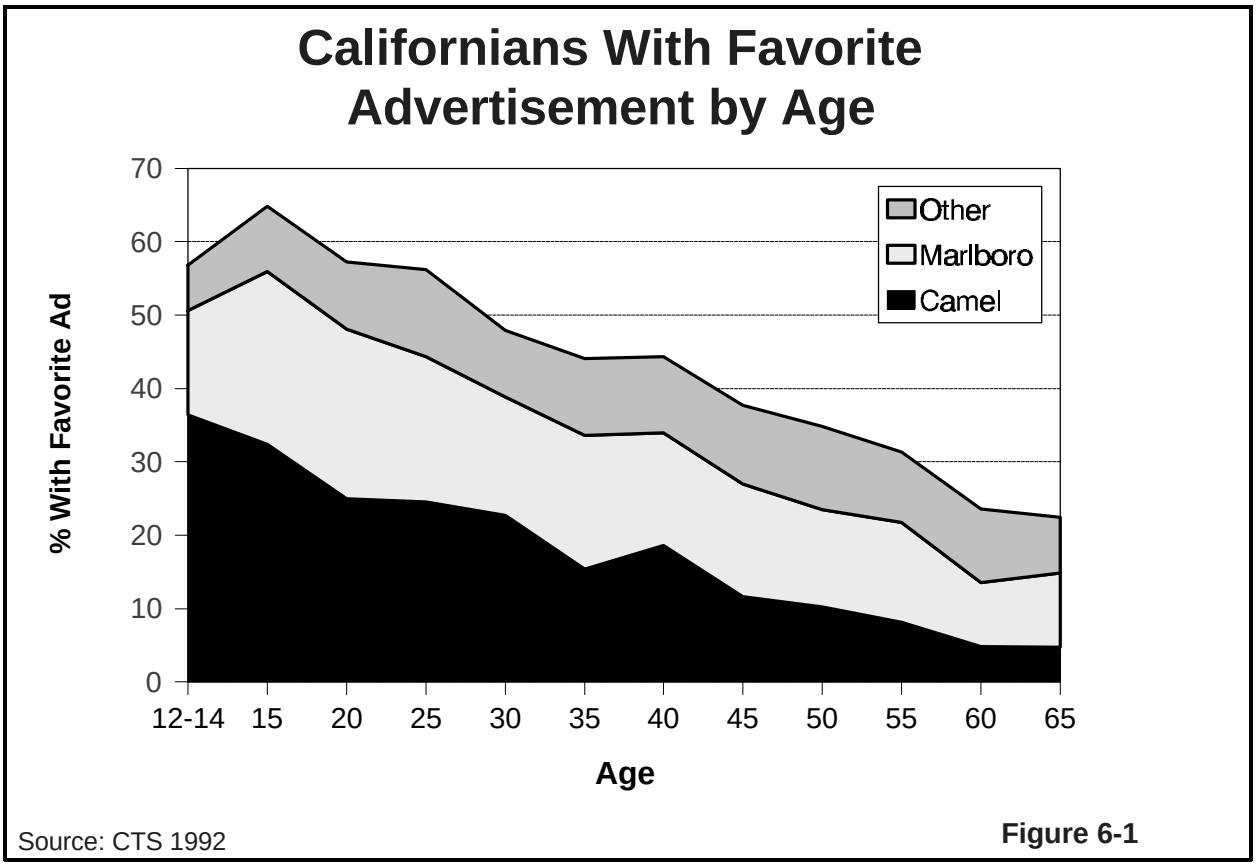
> *What is the name of the cigarette brand of your favorite cigarette advertisement?*

Respondents who could not name a brand were probed with the following question:

> *Of all the cigarette advertisements that you have seen, which do you think attracts your attention the most?*

Figure 6-1 presents the proportion of respondents who had favorite cigarette ads within different age groups. As shown, having a favorite cigarette advertisement is inversely related to the respondent's age. For each age group from 12 to 25 years, more than half of respondents were able to name a favorite cigarette ad. After age 25, the proportion of respondents with a favorite ad decreased dramatically and linearly to approximately 22% of adults older than 60 years. Two thirds of 16-year-old adolescents nominated a favorite advertisement, the highest level of any age group. We note that 16 years is the modal age for young people to start smoking.[7] Whether or not the tobacco industry specifically intends to advertise its products to adolescents is not an issue here. These data indicate that adolescents are significantly more likely than adults to see and to develop a liking for cigarette advertising.

Figure 6-1 also reports the brands of the favorite cigarette ads chosen by respondents. Older adolescents tended to choose Marlboro as the brand advertised in their favorite cigarette ads. Thus, 23.5% of 15- to 19-year-olds chose Marlboro compared to 14.2% of 12- to 14-year-olds who named this brand as their favorite ad. The choice of Marlboro (as is the case for all brands) declines in adulthood. Nomination of Joe Camel as the favorite advertisement was highest among 12- to 14-year-olds (36.6%) and declined rapidly with age. The latter finding suggests that the concerns expressed by the Surgeon General of the Unites States, the American Medical Association, and others — that the Joe Camel cartoon character featured in the Camel cigarette campaign may be particularly attractive to young children — are well-founded.



Source: CTS 1992

Figure 6-1

SECTION 2
Developing an Index of Receptiveness to Tobacco Marketing

Interpretation of Advertisement Messages

A considerable research literature suggests that advertisements are most effective when they are successful in eliciting high levels of cognitive involvement from the audience (see review by McGuire).[49] Before individuals can become cognitively involved with an advertisement, they must be able to interpret the message of the advertisement in order to develop a set of related cognitions that build on this message. To ascertain whether adolescents are capable of cognitively attending to and interpreting the message of cigarette advertising, the 1993 CTS asked all adolescents who had seen a cigarette advertisement (90.7%) what message they believed cigarette advertisements intended to communicate. Adolescents could select from any or all of the following options:

(1) Smoking as an enjoyable experience
(2) Smoking helping people to relax

(3) Smoking helping people to feel comfortable in social settings
(4) Smoking as a pleasurable way to pass time
(5) Smoking helping people to stay thin
(6) Smoking helping to reduce stress
(7) Smoking helping people when they are bored
(8) The idea that the "in" crowd are smokers
(9) The idea that successful people smoke

In 1993, 89% of adolescent surveyed in California said that cigarette advertising promoted at least one of these benefits.

Affective Response to Cigarette Advertisements

Research on the persuasive mechanisms of advertising suggests that advertisements may also be effective when they stimulate an affective response from the audience that may be distinguished from cognitive appraisals of the advertisement's message.[50-52] This affective response is best characterized by how much people like the advertisement.[50,53,54] As described above, we invited adolescents in the 1992 CTS to nominate their favorite cigarette advertisement and the two questions about their affective response to cigarette advertising were repeated for adolescents interviewed in the 1993 CTS.

Of adolescents surveyed in 1993, 65.4% had a favorite cigarette advertisement. The brands of the cigarette ads chosen as favorite were distributed among adolescents as in 1992, with Marlboro and Camel selected most often by adolescents as the brands of their favorite cigarette advertisements.

Establishment of Brand Preferences Among Adolescents

In 1993, only 9.3% of adolescents could not recall seeing any cigarette advertising or name a favorite cigarette ad. Given that the vast majority of adolescents are aware of cigarette advertising, we were interested in whether adolescents had moved beyond awareness to the establishment of brand preferences. Research on advertising in general suggests that advertisements are designed to create a demand for the general product category and to create a preference for particular product brands within that category.[55] To ascertain whether adolescents had established a preference for certain cigarette brands, the 1993 CTS asked all adolescents who had never smoked a cigarette:

> *If you wanted to buy a pack of cigarettes tomorrow, what brand do you think that you would buy?*

Adolescents who had smoked before were asked if they had ever bought their own cigarettes and if so, which brand they usually bought.

In 1993, more than half of the adolescents surveyed (54%) were able to name the specific brand of cigarettes that they would prefer to buy or usually bought. Marlboro was the preferred brand for 32% of adolescents surveyed, and 11% reported that they would or did purchase Camel cigarettes. These results suggest that the advertising effect on purchasing may be indirect and that the change in preferences is incremental over time.

The Role of Tobacco Promotional Items

Recently, the tobacco industry has moved its marketing emphasis toward promotional items, such as clothing, sports bags, and other gadgets bearing the tobacco company logo. Promotional items now represent more than one quarter of the tobacco industry's national marketing budget that is estimated to be approximately $4 billion.[56] The 1993 CTS attempted to assess the extent to which adolescents are willing purchasers of tobacco industry promotional products. The following question was asked of all adolescents surveyed in 1993:

> *Some tobacco companies provide promotional items to the public that you can buy or receive for free. Have you ever bought or received for free any product which promotes a tobacco brand or was distributed by a tobacco company?*

In 1993, 9% of adolescents (n = 529) indicated that they had received a promotional item. To gauge the attitudes of adolescents toward use of such products in the future, we asked those who had not received or bought a tobacco promotional item:

> *Do you think you would ever use a tobacco industry promotional item such as a t-shirt?*
>
> ***Approximately one quarter of all adolescents indicated that they would be willing to use such a promotional item.***

Measuring Adolescent Susceptibility to Smoke

Susceptibility to smoke is defined as the absence of a conscious decision not to smoke another cigarette.[17] The susceptibility measure was developed to discriminate between adolescents resolved not to smoke and those who are still open to the possibility of smoking, even if they have not yet tried a cigarette. We consider that adolescents classified as susceptible to smoke are relatively more vulnerable to personal, social, and environmental factors that may prompt adolescents to experiment with smoking. In the CTS youth interviews, a series of questions asked adolescents if they currently smoked or wanted to smoke in the future. Adolescents who responded negatively were then probed with further questions to test the strength of their resolve. The procedures for classifying adolescents as susceptible to smoke were as follows:

- Adolescents who indicated that they had never puffed on a cigarette were asked whether they would try a cigarette soon. A positive response to this question classified this individual as susceptible to smoke.

- Adolescents who did not intend to try a cigarette soon or who reported having puffed on a cigarette were asked if they would accept a cigarette from a best friend if offered. Any response other than "definitely not" classified this individual as susceptible to smoke. Those who were definite that they would not accept a cigarette from a best friend were then asked if they would smoke a cigarette at any time during the next year. Any response other than "definitely not" to this question classified an individual as susceptible to smoke.

- Adolescents who had ever smoked a whole cigarette were asked if they intended to smoke a cigarette at any time during the next year. Any response other than "definitely not" classified an individual as susceptible to smoke.

- All adolescents who had smoked in the last month were automatically classified as susceptible to smoke in the future.

Figure 6-2 presents a flowchart of the questions from the youth CTS used to define susceptibility to smoke.

An Index of Adolescent Receptiveness to Tobacco Marketing

Altogether, five sets of questions were used to explore adolescent receptiveness to tobacco advertising and promotional marketing. We investigated whether adolescents (1) cognitively attend to the messages of advertising (benefits of smoking); (2) affectively respond to cigarette advertising (having a "favorite ad"); (3) have established brand preferences for current or future cigarette purchases; (4) possess a tobacco industry promotional item; and (5) would be willing to use such a promotional item.

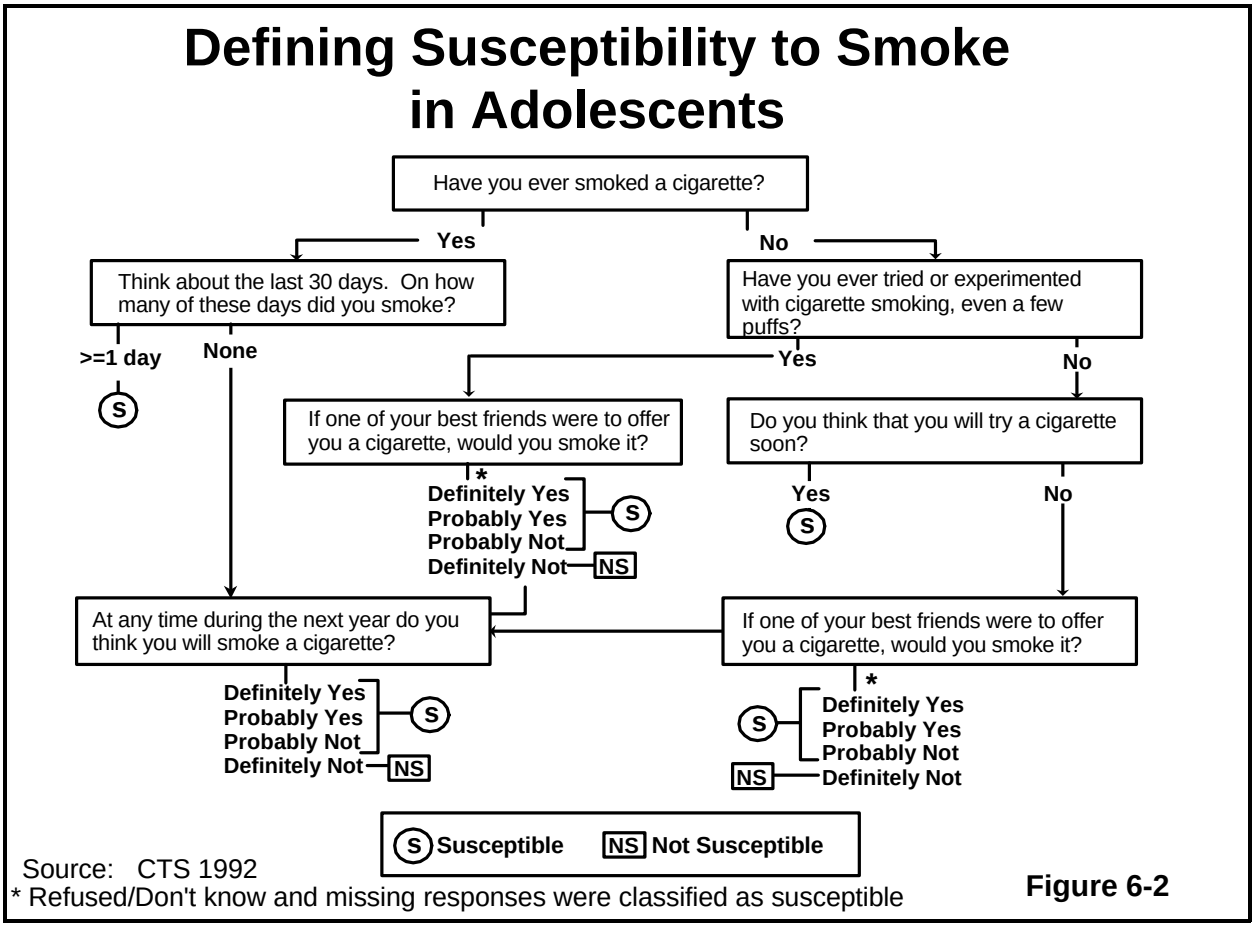


Figure 6-2

We collapsed each set of questions into a binary variable to which an adolescent could have responded either Yes or No. Table 6-1 shows how each of these variables is related to smoking susceptibility. In every case, a positive response indicating receptiveness to advertising greatly increases the proportion of adolescents who are susceptible to smoke in the future. For example, adolescents who indicated that they would be willing to use tobacco promotional items are almost twice as likely to be susceptible to smoke compared to adolescents who would not use such items. The confidence intervals for these estimates do not overlap and therefore the association between each advertising variable and smoking susceptibility is statistically significant.

To develop an index of receptiveness to tobacco advertising, we performed a factor analysis of the variables measuring receptiveness to advertising. Three of the items measuring receptiveness specifically to tobacco advertising (favorite ad, brand preference, ad messages) made up one factor and two items referring to tobacco promotional products (purchase or willingness to use) made up a second factor. However, the internal consistency of the five items was sufficient (Cronbach's á=0.56) to justify treating these items as a single index of receptiveness to tobacco marketing.

Table 6-1
The Impact of Cigarette Marketing Practices on Susceptibility to Smoke

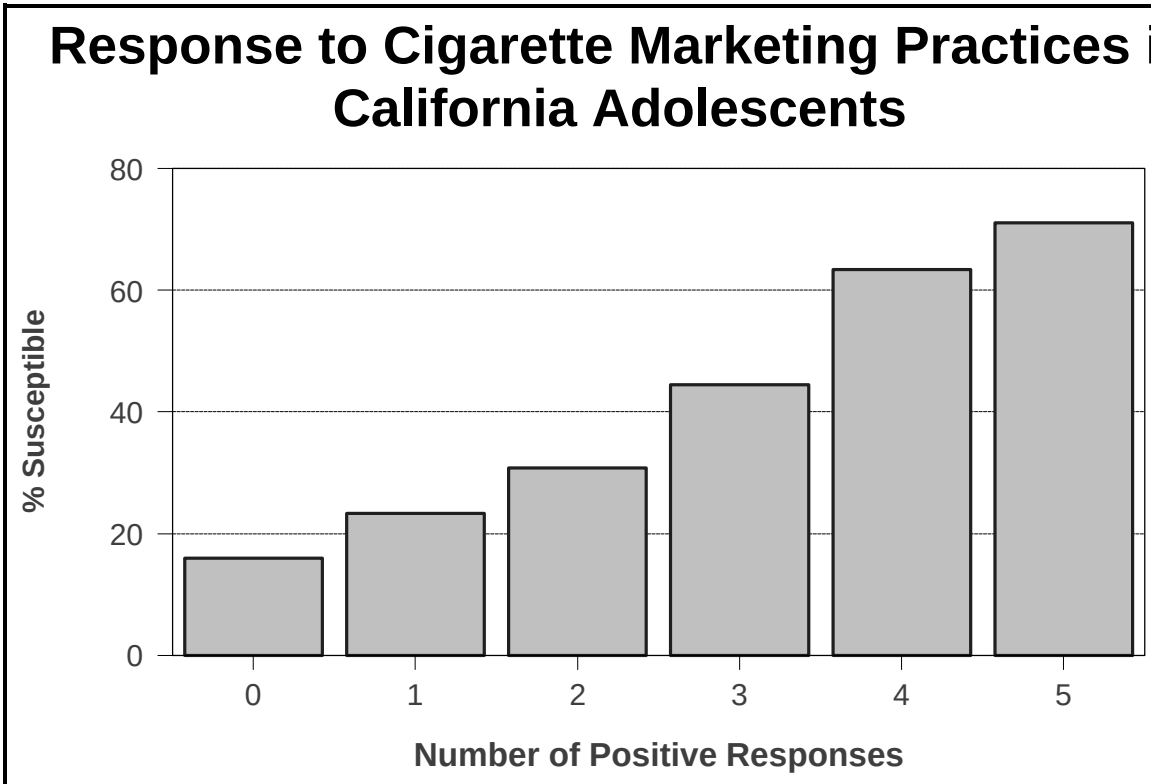
		n	% Susceptible	C.I.*
Ads Promote Benefits	No	635	23.4	18.2–28.6
	Yes	4896	41.1	38.9–43.3
Have Favorite Ad	No	1870	26.6	23.8–29.4
	Yes	3661	45.3	41.9–47.7
Would Buy Brand	No	2521	26.5	23.8–29.2
	Yes	3010	49.3	46.3–52.3
Willing to Use Item	No	4196	32.4	30.2–34.6
	Yes	1335	60.0	56.2–63.8
Received Promotional Item	No	5002	37.0	34.9–39.1
	Yes	529	57.7	50.1–65.3

Source: CTS 1993
* C.I. = 95% confidence interval

Adolescents were scored on the marketing index by counting the number of positive answers recorded for each adolescent in response to the five binary variables. Thus, adolescents could score from 0 to 5 on an index of receptiveness to tobacco marketing.

As shown in Figure 6-3, we observed a strong association between adolescent scores on the marketing index and their susceptibility to smoke in the future. Each index level includes at least 200 adolescents. Sixteen percent of adolescents who scored zero on receptiveness to tobacco marketing were classified as susceptible to smoke compared to almost two thirds of adolescents who scored 4 on the index. The differences between index levels are all statistically significant.

These data make a strong case for the potential impact of tobacco advertising and marketing practices on the future smoking behavior of adolescents.



Source: CTS 1993

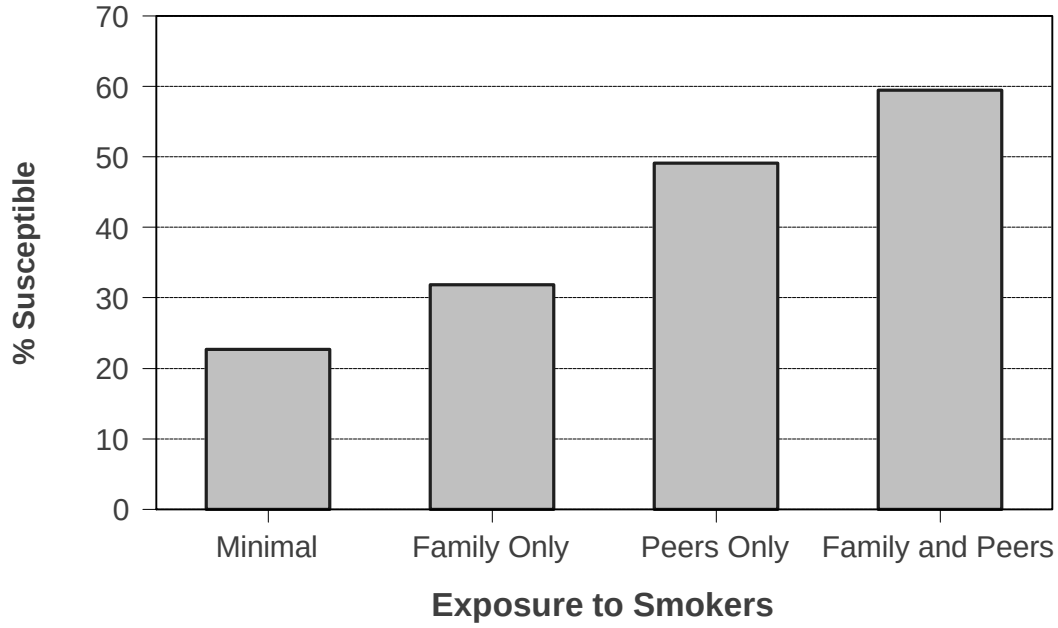
Figure 6-3

SECTION 3
The Importance of Tobacco Marketing Relative to Other Influences on Adolescent Smoking Uptake

Peer and Family Smokers

As noted earlier, one of the strongest predictors of smoking uptake among adolescents is the presence of smokers in the family or in the peer network. To assess the importance of tobacco marketing as a factor in adolescent smoking uptake, we created a comparison index measuring exposure to peer and/or family smokers. The relationship of the two indices to susceptibility could then be compared to give an idea of the significance of tobacco marketing relative to other influences that are known to predict adolescent smoking uptake.

The 1993 CTS asked adolescents whether any members of the four following groups used tobacco: (1) parents, stepparents, or guardians; (2) older brothers and sisters; (3) best friends who were male; and (4) best friends who were female. On the basis of responses received, adolescents were divided into four categories of "exposure to other smokers": (1) adolescents with smokers in their family and with best friends who smoked; (2) adolescents exposed to best friend smokers only; (3) adolescents exposed to smokers in their family only; and (4) adolescents with no smokers either among peers or in the family. Adolescents in the latter group were considered to be "minimally exposed" to other smokers. In 1993, each of the four categories contained more than 1,000 adolescents. The relationship of exposure to smokers to susceptibility to smoke is presented in Figure 6-4.



Source: CTS 1993

Figure 6-4

As expected, adolescents with minimal exposure were least likely to be susceptible to smoking (23%). Exposure to peer smokers only appeared to be more strongly associated with susceptibility than exposure to family smokers only. Sixty percent of adolescents with best friends who smoked and smokers in the family were classified as susceptible to smoke.

Comparing the Influence of Tobacco Marketing and Exposure to Peer/Family Smokers on Adolescent Susceptibility

The main purpose of a comparison between the exposure index and the tobacco marketing index is to assess whether tobacco marketing is a factor that should be considered in predicting adolescent smoking uptake. For this reason, we limited our comparison of the two indices to adolescents who had never smoked. In 1993, 3,536 adolescents (64%) indicated that they had never even puffed on a cigarette (never puffers).

A logistic regression of susceptibility to smoke was performed for adolescents who had never smoked, controlling for major sociodemographic variables (age, gender, race-ethnicity, and self-reported school performance). The results are presented in Table 6-2. Both receptiveness to tobacco marketing and exposure to other smokers were found to be independently associated with susceptibility to smoke among adolescent never puffers. Adolescents exposed to peer puffers, with or without smokers in the family were approximately twice as likely to be susceptible to smoke in the future compared to adolescents with minimal exposure. Similarly, a score of 2 on the receptiveness to tobacco marketing index (31% of adolescent never puffers) versus a score of zero doubled the proportion of adolescents susceptible to take up smoking. A score of 4 on the marketing index produced 4 times as many adolescents susceptible to smoke compared to a score of zero.

Table 6-2
Impact of Exposure to Smokers and Response to Cigarette Marketing on Susceptibility Among Adolescents Who Have Never Smoked

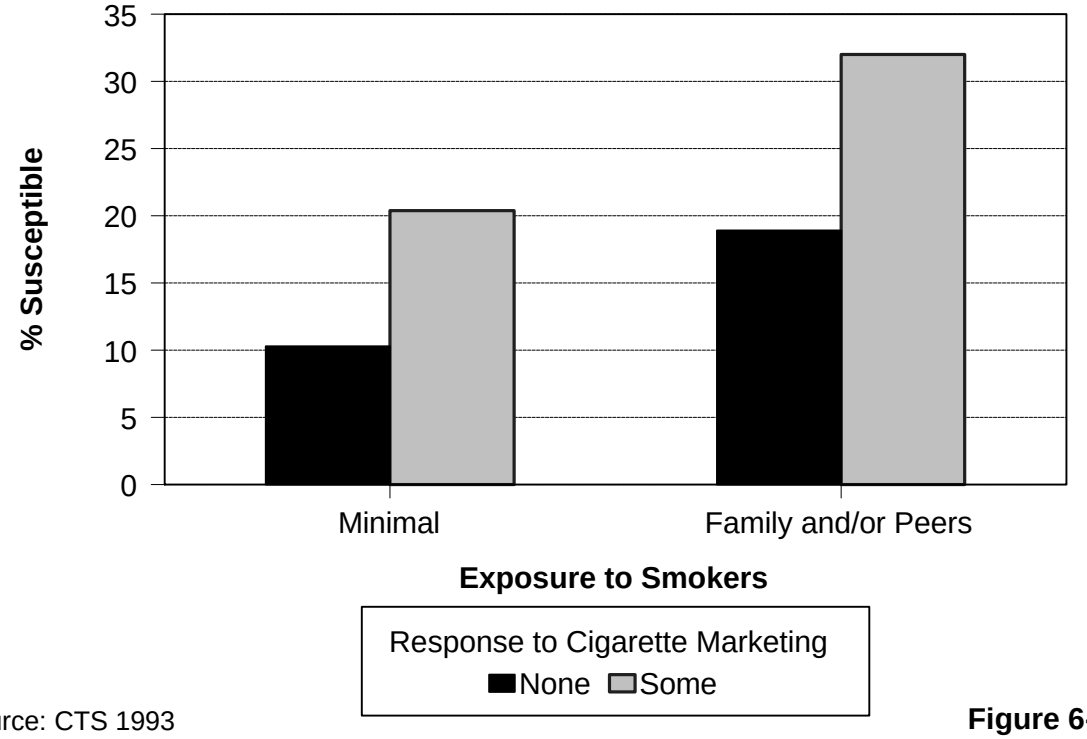
		n	% Susceptible	Adjusted Odds Ratio	C.I.
Exposure to Smokers	Minimal	1645	19.0	1.00	--
	Family Only	755	25.9	1.31	1.00–1.72
	Peer Only	647	33.2	1.92	1.36–2.70
	Family + Peer	489	36.7	1.89	1.30–2.74
Response to Cigarette Marketing	None	351	13.5	1.00	--
	1	747	18.9	1.59	1.00–2.51
	2	1090	24.0	2.03	1.31–3.15
	3	987	31.3	2.81	1.89–4.16
	4 +	361	40.5	3.91	2.38–6.42

Source: CTS 1993
C.I. = 95% Confidence Interval

It is important to note than only 10% (n=351) of adolescent never puffers scored zero with respect to their receptiveness to tobacco marketing. This finding disputes the frequent argument that tobacco advertising is primarily appreciated by or salient to adolescents who already smoke. We also observed a dose-response effect, in that as adolescents indicate higher levels of receptiveness to tobacco marketing, their susceptibility to smoke in the future increases.

Figure 6-5 compares the relative influence of exposure to family and/or peer smokers and receptiveness to tobacco marketing on adolescent susceptibility to smoke. The sample is again confined to adolescents who have never puffed on a cigarette, in order to weigh the relationship of these two factors to smoking uptake. As shown, tobacco marketing appears to be at least as

The Effect of Response to Cigarette Marketing and Exposure to Smokers on Susceptibility to Smoke in Never Puffers



Source: CTS 1993

Figure 6-5

important as exposure to other smokers as a factor influencing adolescent susceptibility to smoke. Of adolescents who did not have smokers in the family or among best friends, 20.4% were susceptible to smoke if they indicated any receptiveness to tobacco marketing. Conversely, of adolescents who were not receptive to tobacco marketing but were exposed to family and/or peer smokers, 18.9% were susceptible to smoke. When adolescents were both exposed to other smokers and receptive to

tobacco marketing, almost one third of this group of never puffers were classified as likely to take up smoking in the future, suggesting an additive relationship between tobacco marketing and exposure to smokers.

SECTION 4
Changes in Indices of Smoking Behavior in Schools, 1990–1993

The objectives for smoking prevention efforts in schools include the implementation of smokefree policies on school property, strict enforcement of such policies, and the incorporation of antitobacco education into the curriculum at many levels. The 1990 and 1993 CTS collected information on progress toward these objectives.

Student Smoking at School

All adolescents in both survey years were asked the following question:

> *Is there a rule at your school that students are not allowed to smoke on school property?*

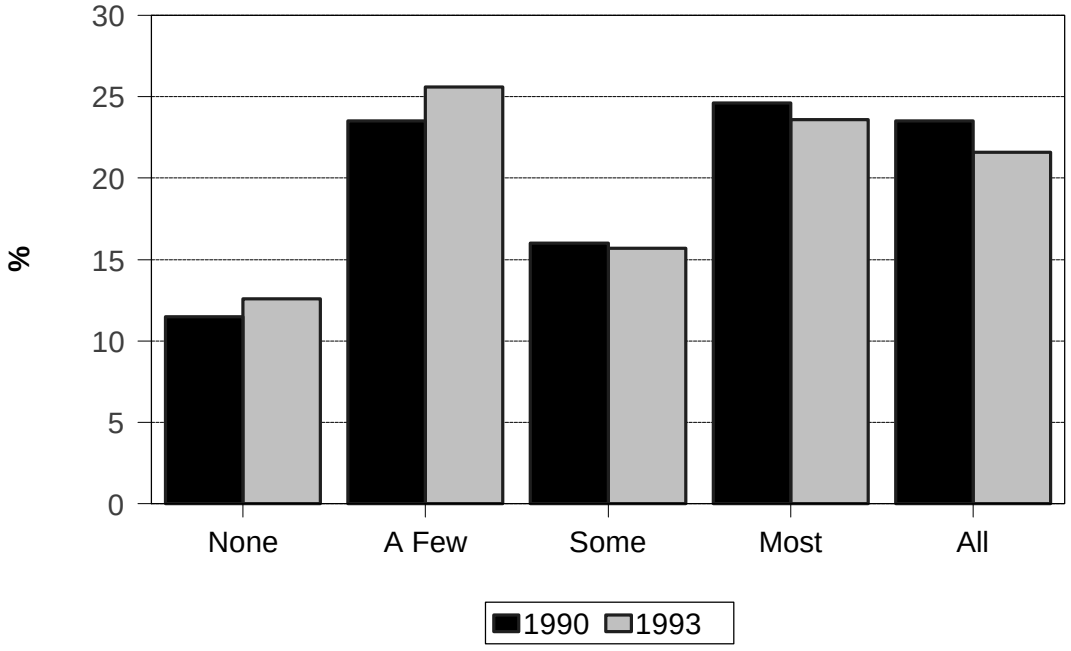
In 1990, 93.4% of adolescents indicated that their school had such a rule. In 1993, this proportion was marginally higher at 94.5%. These data indicate that officially, at least, most schools are perceived to have comprehensive smoking policies. However, the existence of a policy is not sufficient to ensure a smokefree environment for students unless compliance with the policy is also high.

To assess compliance, adolescents who reported a school smoking policy were also asked the following question in both survey years:

> *How many students who smoke obey that rule?*

Adolescents could respond "all" "most" "a few" "none" or "don't know" to this question.

The results are presented in Figure 6-6. In 1990, just under a quarter of all students indicated that all students obeyed the no smoking rule, suggesting that there was some enforcement of the policy. However, between 1990 and 1993 this proportion decreased; by 1993 only 22% of students reported that all students obeyed the no smoking rule. A case can be made that a school smokefree policy is adequately enforced if respondents report that "most" students obey the rule. Under this definition, approximately 48% of students indicated high levels of enforcement of school smokefree policies in 1990. Again this proportion decreased to 45% in 1993.



Soruce: CTS 1990, 1993

Figure 6-6

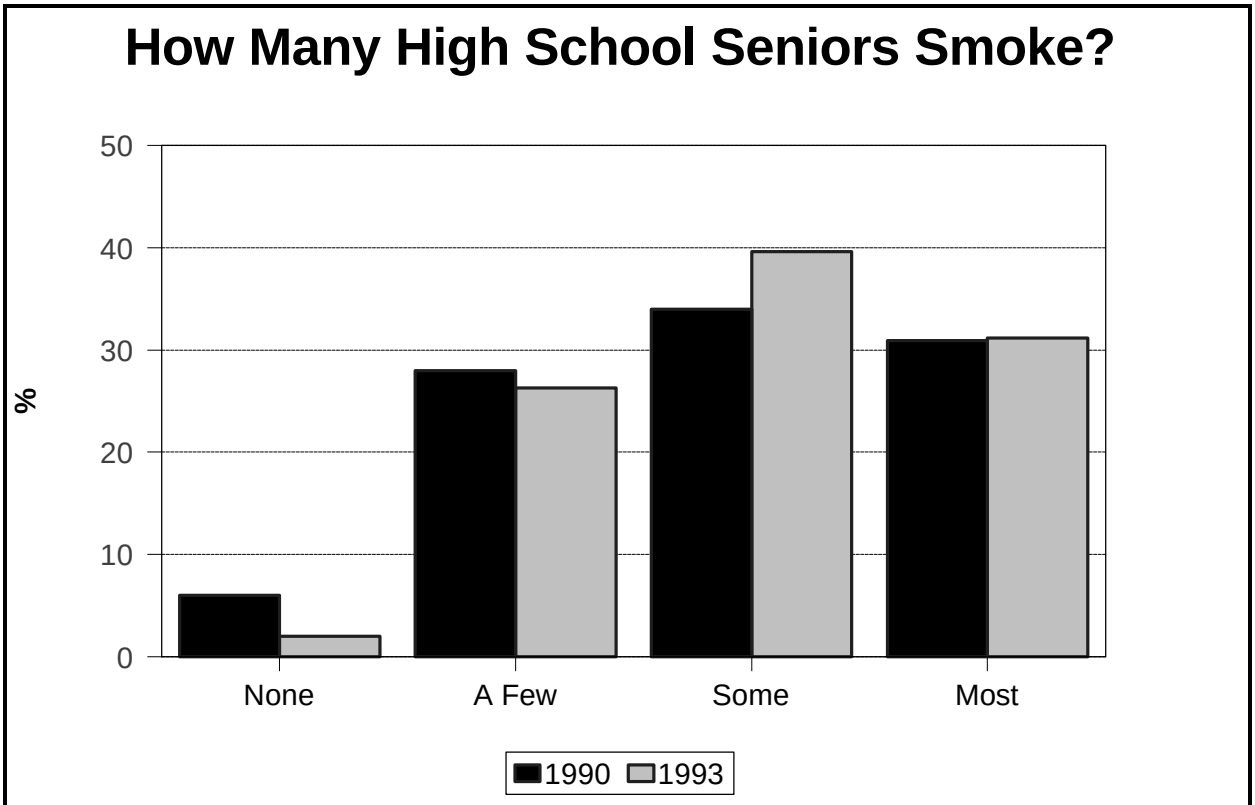
Although there appears to have been no improvement in enforcement or compliance with school smoking policies over the duration of the Tobacco Control Program, we considered the possibility that the number of schools that appeared to be lax in securing full compliance with smokefree policies might have decreased. In 1990, 12% of adolescents surveyed indicated that none of the student smokers at their school obeyed the no smoking rule. This proportion increased slightly to 13% in 1993.

To obtain an estimate of the perceived smoking level at school, we asked adolescents in both survey years:

How many high school seniors do you think smoke cigarettes?

Only 6% of adolescents surveyed in 1990 thought that none of the high school seniors at their school smoked (Figure 6-7). In 1993, this proportion was even lower at 2%. In both survey years, approximately one third of adolescents thought that the majority of high school seniors at their school were smokers. Several studies have shown that adolescents tend to overestimate the prevalence of smoking among their peers.[57,58] Actual prevalence estimates of teen smoking make it highly unlikely

that the majority of high school seniors in any school are smokers. Nevertheless perceptions that smoking is prevalent and acceptable among peers are known to be a factor in the decision by adolescents to take up smoking and many smoking prevention programs aim to correct such overestimations.[59,60] These findings do not indicate that programs have been successful in changing adolescent perceptions of peer smoking in California between 1990 and 1993.



Source: CTS 1990, 1993

Figure 6-7

Smoking Among School Teachers

Exposure to other smokers is one of the strongest predictors of smoking initiation among adolescents. Thus, teachers who smoke risk furnishing the student with negative role models that may undermine antitobacco education in schools.[61]

In both 1990 and in 1993, we asked all students the following question:

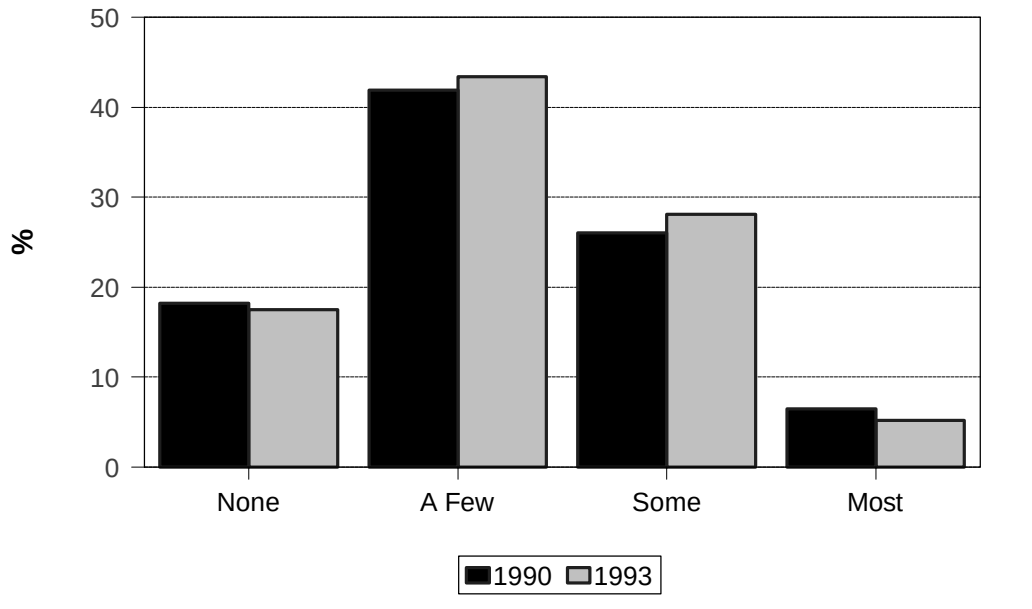
How many of the teachers in your school smoke cigarettes?

The findings are presented in Figure 6-8. In both survey years, only 18% of students indicated that none of their teachers smoked. It is important to emphasize that in general, adolescents do not think that the majority of their teachers smoke. Only 5% of adolescents in each survey year thought that most teachers smoked. It may also be argued that adolescents who report that their teachers smoke acquired this information from observation of teachers outside the school environment. It is however unlikely that this explanation can account for all reports of teachers who smoke in view of the high proportion of students who in each year indicated that at least some of their teachers smoked. Given the high salience of the teacher as a role model and a source of information about community norms, these results must raise some concern respecting the enforcement of smokefree policies in California schools.

Do Students Want Smokefree School Grounds?

Some observers warn that strict enforcement of smokefree policies is likely to meet with resistance and disruption from students. To address this issue, the 1993 CTS asked all adolescents the following question:

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



Source: CTS 1990, 1993

Figure 6-8

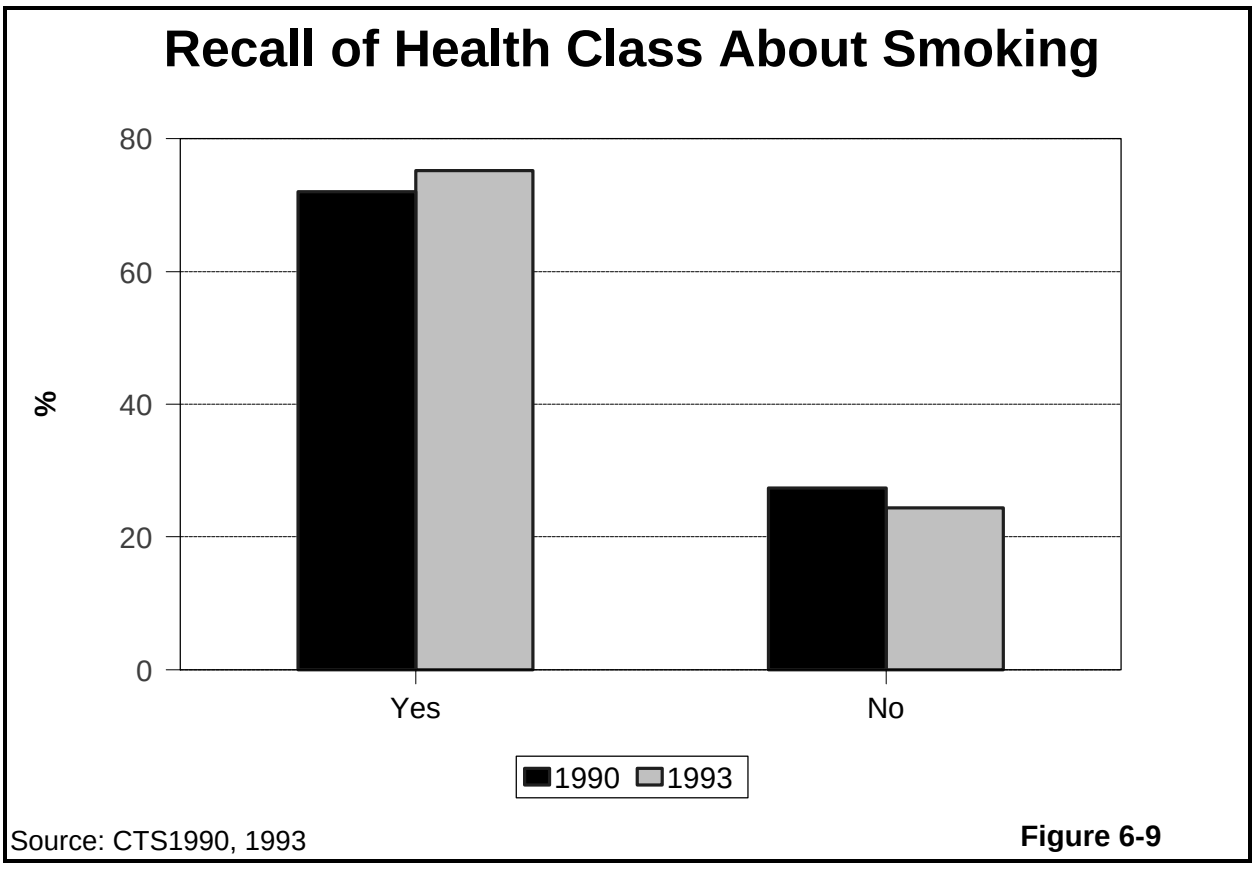
The word "ban" was deliberately included in this question to maximize the number of adolescents who would disagree and to thus provide a conservative estimate of student support for school smoking policies. Despite the contentious wording of this question, fourfifths (83.6%) of adolescents surveyed in 1993 supported the imposition of a smokefree policy prohibiting all smoking at any time on school grounds.

Health Education Classes on Smoking

In 1990 and 1993, we sought information on the extent to which schools in California have incorporated education on the health risks of smoking into their curricula. All adolescents were asked:

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

The question was purposely broad because it is unlikely that even the most comprehensive school prevention programs would be able to deliver information on smoking at every grade level. As shown in Figure 6-9, the proportion of adolescents who could not recall ever having such a class remained essentially unchanged between 1990 and 1993 at around 25%.



Source: CTS1990, 1993

Figure 6-9

SUMMARY OF FINDINGS

1. Adolescents appear to be the most receptive audience for tobacco advertising. Awareness and liking of cigarette advertisements is higher among adolescents than among adults in California. Liking and awareness of the "Joe Camel" cigarette campaign was highest in the youngest age group studied (12 to 14 years).

2. Two thirds of adolescents have a favorite cigarette ad, and one quarter are willing to use products promoting tobacco.

3. Adolescents who are receptive to tobacco advertising are more likely than adolescents who are not receptive to be susceptible to smoke in the future.

4. Tobacco advertising and marketing practices are an important and independent predictor of smoking uptake. The effect of tobacco marketing on susceptibility is at least as large as the effect of exposure to peers or family members who smoke.

5. There appears to have been no improvement in the level of exposure of adolescents to smokers at school over the duration of the Tobacco Control Program.

6. While most schools are reported to have smoking policies, enforcement of those policies and compliance by students continued to be low over the duration of the Tobacco Control Program. Adolescents strongly support the existence of a strict smoking policy at school.

7. In 1993 as in 1990, 25% of students could not recall ever having received instruction on the health risks of smoking at school.

Chapter 7

THE ROLE OF SMOKEFREE POLICIES: WORKPLACES AND RESTAURANTS

INTRODUCTION

Since the publication of the Surgeon General's report in 1986 that documented the health hazards of environmental tobacco smoke (ETS), the pressure to implement policies that protect the nonsmoker from exposure to ETS has increased. These pressures intensified with the January 1993 release of the Environmental Protection Agency (EPA) report classifying ETS as a carcinogen. The EPA action makes it possible for employers who do not provide protection for their nonsmokers to be held legally liable should a nonsmoking employee develop a smoking-related disease.

As discussed in Chapter 2, one of the major goals of the local tobacco control programs in California has been to develop better protection for nonsmokers in their jurisdiction. To further this goal, local lead agencies provided technical advice on the implementation of ordinances restricting smoking behavior and assistance to local businesses to introduce effective workplace policies. Policies that aim to make the work area or the entire workplace smokefree have the potential to reduce significantly nonsmoker exposure to ETS. Workplace smoking policies may additionally benefit smokers by providing incentives to quit smoking or to limit their consumption.

Section 1 of this chapter reports on trends in the implementation of workplace smoking policies in California. Section 2 analyzes compliance with workplace restrictions and examines the level of protection afforded to nonsmokers by different types of workplace smoking policies. The impact of workplace smoking policies on smokers is detailed in Section 3. In Section 4, we address the issue of smokefree restaurants. Using information on how often smokers and nonsmokers eat out, we investigate whether the provision of smokefree restaurants would have any impact on the restaurant business.

SECTION 1
Trends in the Implementation of Workplace Smoking Policies

Trends in Workplace Smoking Policies in California

In 1990, 26,815 adults were interviewed for the California Tobacco Survey (CTS); 17,943 of these respondents were employed outside the home and 13,199 worked primarily indoors. Of these, 8,580 were nonsmokers at the time of survey (78.9% of the sample of indoor workers). In 1992, 11,905 adults were interviewed; 7,746 of these respondents were employed outside the home and 5,662 worked primarily indoors. Of these, 3,528 were nonsmokers in 1992 (80.6% of the sample of indoor workers). The 1993 survey interviewed 15,745 indoor workers (employed outside the home); 12,946 of these respondents were nonsmokers (82.2% of indoor workers).

All workers were asked if a smoking policy was in effect at their place of employment. Further questions elicited information about the extent of this policy and details of the working environment.

Workplaces were categorized in three ways:

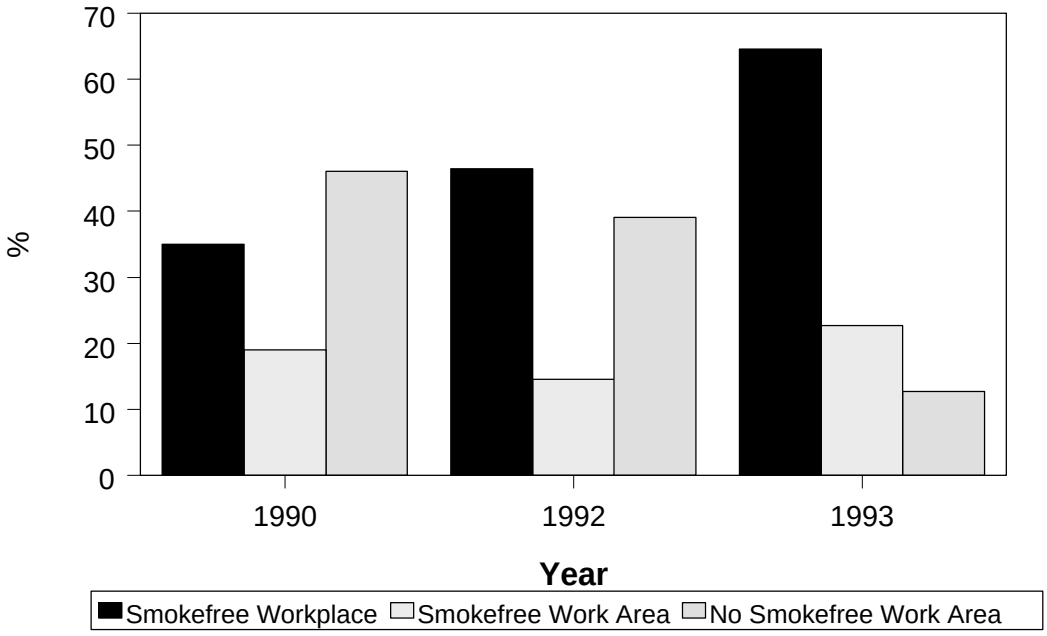
(1)	**Smokefree**	smoking is prohibited in all areas
(2)	**Smokefree Work Area**	smoking is prohibited in the work area*
(3)	**No Smokefree Work Area**	smoking is allowed in some or all work areas

Throughout this chapter, *work area* refers to the area in which work is performed, whereas *workplace* refers both to the work area and to common areas such as lobbies, lunch rooms, and rest rooms.

Between 1990 and 1993, the proportion of California workplaces reported to have implemented smoking restrictions increased dramatically. The percentage of indoor workers with smokefree workplaces had nearly doubled by 1993 (from 35% to 65%). The percentage of indoor employees working without at least a smokefree work area declined from 46% in 1990 to 12.7% in 1993 (Figure 7-1). Thus by 1993, 87.3% of Californians employed indoors outside the home were covered by at least work area bans on smoking, with two thirds of them working in entirely smokefree workplaces.

In 1990 and in 1992 only, we asked all indoor workers whether their workplace employed more than 50 people, to ascertain whether the implementation of workplace smoking policies is related to the size of the workplace. As shown in Table 7-1, employees at large workplaces ($\geq$ 50 employees) were more likely to report smokefree work conditions than employees at smaller workplaces. Large workplaces also appeared to be more likely to introduce smokefree policies between 1990 and 1992 (a 40% versus a 25% rate of increase for large versus small workplaces). In 1992, approximately half the workers in small enterprises reported that their workplaces had smokefree work areas, compared to three quarters of employees working for large enterprises. Over half the employees working in large enterprises worked in totally smokefree workplaces. As expected, there are sociodemographic differences in who is protected by a smokefree workplace policy. Data on the existence of policies by sociodemographic group are presented in Appendix Table 9.

* Category 2 refers to employees who reported that smoking was not allowed in work areas, but was permitted in some or all indoor common areas such as lunch rooms, lounges, etc.



Source: CTS 1990, 1992, 1993

Figure 7-1

Table 7-1
California Workplace Smoking Policy

	Small Workplaces (< 50 Employees)		Large Workplaces (> = 50 Employees)	
Workplace Policy	**1990 n = 6,505 (%)**	**1992 n = 1,644 (%)**	**1990 n = 6,635 (%)**	**1992 n = 1,780 (%)**
Smokefree Workplace	31.3	39.1	38.4	53.9
Smokefree Work Area	13.6	10.6	24.9	18.6
Not Smokefree	53.9	50.3	36.2	27.5

Source: CTS 1990, 1992

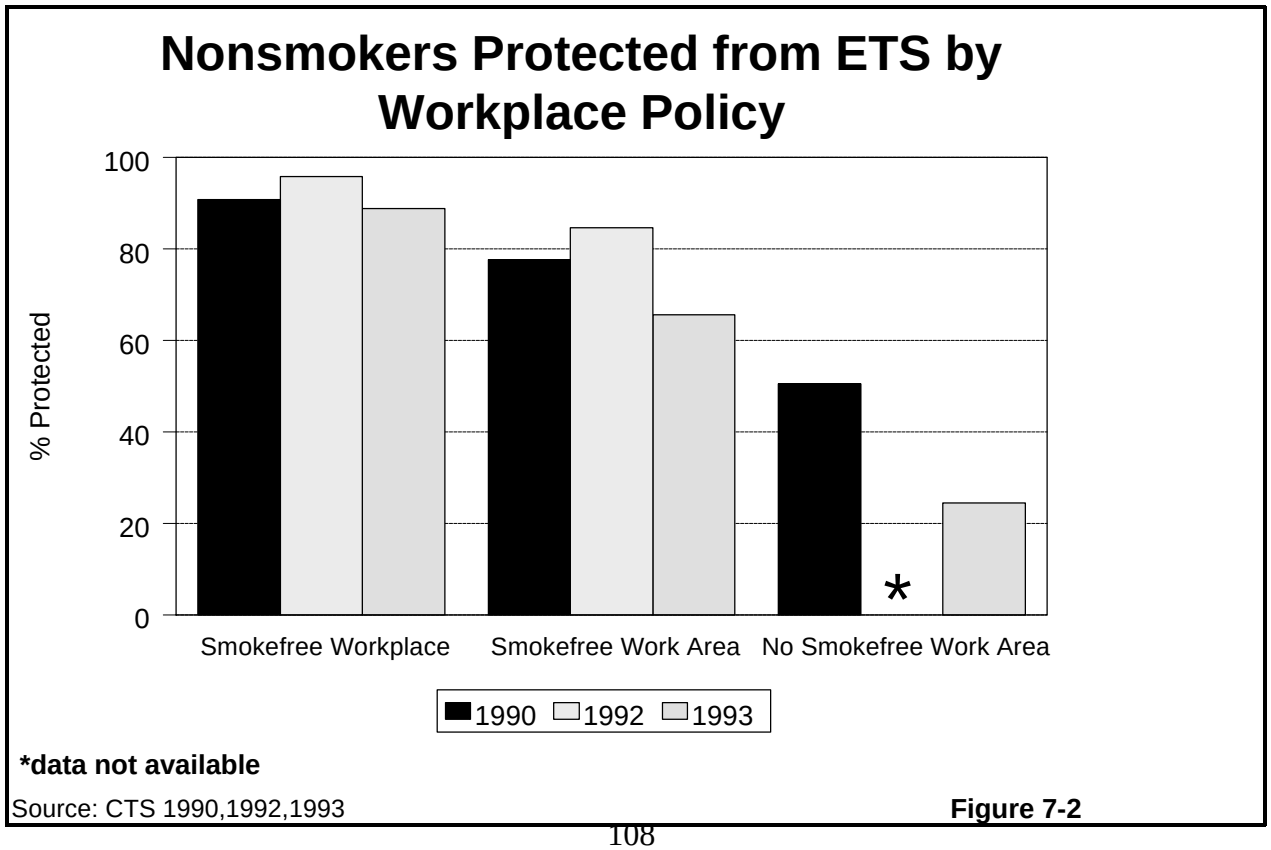
SECTION 2
Trends in the Protection of Nonsmokers in Indoor Workplaces

Nonsmoker Exposure to ETS at the Workplace, 1990–1993

Workplaces may be implementing smoking policies, but are smokers complying with the new restrictions and is nonsmoker exposure to ETS declining? To assess changes in the protection of nonsmokers from ETS exposure, we asked indoor workers who were not smoking at the time of survey: "During the past two weeks has anyone smoked in the area in which you work?" Based on reports of instances of smoking in the work area, we determined that, in 1990, 29% of California nonsmokers who work indoors were exposed to ETS in their work area. This represented 2.22 million nonsmokers who were exposed to ETS. In 1993, this proportion had declined to 22.4%, representing 1.83 million nonsmoking workers.

Nonsmoker Protection by Type of Smoking Policy

Not unexpectedly, the level of protection from ETS at the workplace varies with the type of smoking policy in effect (Figure 7-2). The more comprehensive the smoking policy, the less likely nonsmoking workers were to report any exposure to tobacco smoke.



***data not available**

Source: CTS 1990,1992,1993

Figure 7-2

Within both a total smokefree workplace and the more limited smokefree work area, the level of protection from ETS increased between 1990 and 1992, but declined between 1992 and 1993. Undoubtedly, the lower protection levels observed for each policy type in the 1993 survey relates to the rapid increase in the prevalence of these policies between 1992 and 1993. Many of these policies may have been in the initial phase of implementation when the 1993 survey was conducted (the issue of duration of a policy is discussed below). If — as many research reports indicate — compliance with smoking policies at work takes up to a year to stabilize, then we would expect the levels of protection of nonsmokers within each policy type to increase over time.[62-64] In all survey years, nonsmokers in smokefree workplaces reported the highest levels of protection from ETS (around 90% in each survey year). Although a smokefree work area is not the optimal strategy to protect nonsmokers, the provision of a smokefree work area provided significantly more protection than policies with lesser restrictions.

Importantly, we observed high exposure levels (75.6%) in the 12.7% of workplaces that had not implemented a smokefree work area policy by 1993. This represented a considerable increase from the 49.5% exposure levels that existed in workplaces that did not have a smokefree work area in 1990. This dramatic increase in the level of exposure to ETS suggests that businesses that implemented smokefree policies in 1993 were those with lower smoking rates among employees.

Given that both work area restrictions and smokefree policies are designed to prohibit smoking in the work area, why are nonsmoking workers with smokefree work areas reporting more instances of exposure to ETS in the work area than nonsmokers in smokefree workplaces? One reason may be that a totally smokefree environment is easier to implement and monitor than a policy that restricts smoking in the work area, but allows smoking in other areas, especially in places where the "work area" is ill-defined.

Details of sociodemographic differences in exposure levels given different levels of policy protection are presented in Appendix Table 10. These data demonstrate that, irrespective of policy type, women are less likely to be exposed to ETS than men. Exposure is also higher among younger Californians, among ethnic minorities, and among respondents with fewer years of formal education.

Nonsmoker Protection by Workplace Features

In Table 7-2, we examine whether the size of the workplace and the type of work area affects the level of protection against ETS that smoking policies at the workplace can provide.

Table 7-2
Nonsmoker Exposure to ETS by Workplace Features
1990 and 1992

	% Exposed to ETS Under a Workplace Smoking Policy	
	1990	**1992**
	% (± C.I.*)	**% (± C.I.*)**
OVERALL	20.8 (± 1.6)	11.9 (± 2.6)
Number of Employees:		
< 50	23.4 (± 2.5)	12.1 (± 5.2)
≥ 50	19.0 (± 2.3)	11.7 (± 2.4)
Type of Work Area		
Private Office with Door	15.0 (± 2.7)	3.2 (± 1.9)
Shared Office with Door	18.9 (± 5.2)	10.2 (± 6.6)
Open Area with Partitions	15.7 (± 2.5)	8.8 (± 4.3)
Open Area Without Partitions	25.1 (± 3.5)	16.0 (± 5.5)
No Regular Work Area	39.5 (± 7.9)	26.6 (± 14.1)
Other	26.4 (± 6.2)	16.1 (± 6.7)

Source: CTS 1990, 1992
*C.I. = 95% Confidence Interval

In large workplaces, the proportion of nonsmoking workers exposed to ETS almost halved between 1990 and 1992. In small workplaces, the exposure level decreased by almost 40%. Although we noted above that large workplaces were more likely to introduce smoking policies than small workplaces in this period, these results indicate that once a policy has been implemented, small workplaces are as efficient as large workplaces in ensuring nonsmoker protection.

Large declines in exposure occurred in all types of work area, but were particularly noticeable for employees who had control over their own work area *(i.e.*, they worked in private offices). There were no significant differences in the level of protection offered in 1993 between those who shared an office and those who worked in an open area with or without partitions.

Nonsmoker Protection by Workplace Policy Duration

As mentioned above, it may take time for a newly implemented policy to provide effective protection to nonsmokers. In our longitudinal sample, we interviewed people who worked under the same policy type in both the first and the second survey years. Thus, we are able to compare the levels of exposure to ETS in both survey years and identify whether compliance with the policy changed over time.

Among nonsmokers whose workplace was smokefree in both years, ETS exposure dropped from 6.7% in 1990 to 2.0% in 1992. A similar decline was evident for nonsmokers reporting a smokefree work area both years (from 15.2% in 1990 to 9.4% in 1992). This result supports the idea that a smoking policy requires a few years to achieve maximal protection of the nonsmoker. The transition period may be due to the gradual adjustment of the smoker, to increasingly efficient enforcement of the policy, or to changes in norms concerning smoking behavior in society at large.[#] In any event, although the effectiveness of smokefree policies increases over time, it is important to emphasize that there is high compliance and effectiveness even for newly created smokefree workplaces.

SECTION 3
Changes in Smoking Behavior Related to Workplace Policies

Some studies have suggested that workplace policies on smoking are effective in reducing consumption among smokers, but have little impact on smoking cessation rates.[65-67] Other research shows an effect on both prevalence and consumption. A longitudinal study conducted at Johns Hopkins Medical Center found declines in prevalence and declines in consumption among continuing smokers when Johns Hopkins became a smokefree workplace.[68] A cross-sectional analysis of the 1990 California Tobacco Survey found lower smoking prevalence in smokefree workplaces than in workplaces with partial restrictions on smoking.[69] Consumption among continuing smokers was also lower at workplaces with more restrictive smoking policies.

The impact of smoking policies on the behavior of smokers depends on several factors, including the

[#] Because we do not have information on when the workplace policy reported in 1990 was actually implemented, we note that reductions in reported ETS exposure may be attributable to some other factor besides the duration of the smoking policy.

length of time the policy has been in operation. Focusing on the longitudinal sample of workers who were interviewed twice, we examined changes in the behavior of smokers who, between 1990 and 1992, experienced new smoking restrictions, continuing restrictions, or no restrictions on smoking in the work area.

Classification of Workers by Smoking Status

All current smokers (daily and occasional) were asked how many cigarettes they smoked on days that they did smoke. Consumption level for daily smokers was the reported quantity of cigarettes smoked per day. For occasional smokers who do not smoke every day, average consumption was computed by multiplying the number of days in the past 30 days on which smoking occurred by the number of cigarettes smoked on those days, and dividing by 30.

We found that some of the adults who called themselves former smokers admitted, upon further probing, that they had smoked a few cigarettes in the past 30 days. These so-called "chippers" were predominantly drawn from the ranks of recently quit smokers and were included in this analysis with the occasional smokers.

Self-Reports of Behavior Change Related to Workplace Policy

All indoor workers surveyed in 1992 who had smoked in the last year and who also reported a smoking policy at their workplace were asked if the policy had led them to change their smoking behavior, and to specify any changes made. Forty-three percent of smokers indicated some behavioral change that they attributed to a workplace smoking policy. The most frequent change reported was a reduction in consumption (48.0%), followed by restriction of smoking to times when not at work (24.4%) and "other change" (26.9%). Only 0.6% of those who had changed their behavior reported having quit smoking as a result of workplace smoking policy. Inferences from these data are limited, as people are well known to underestimate the impact of external influences on their own behavior change. Further, recall of the level of their previous smoking behavior is problematic. Nevertheless, these data indicate that a substantial number of smokers perceived that their behavior changed in conjunction with a workplace smoking policy.

THE LONGITUDINAL SAMPLE

The longitudinal sample for this analysis consisted of 1,844 indoor workers and offers an opportunity to investigate the impact of policies on behavior from a prospectively collected data set. In 1990 this sample included 653 daily smokers, 136 occasional smokers and 586 former smokers. By 1992, the number of daily and occasional smokers had decreased to 608 and 119 respectively and the number

of former smokers had risen to 660.

Data from the longitudinal sample were used to address two issues:

(1) Does the introduction of a new smoking policy affect the smoking behavior of workers?
(2) Are the effects on smoking enhanced if workers appear to have experienced a smokefree policy for at least 2 years compared to workers who were introduced to a smokefree policy more recently?

Given the sample sizes in this study, we have limited our consideration to smokefree work area policies and do not discuss the more restrictive total smokefree workplace.

Workplace Smoking Policies, 1990–1992

Of adult workers interviewed about smoking policies in both 1990 and 1992, just under half (47.9%) worked in a smokefree work area both years (Figure 7-3). Between 1990 and 1992, 28.5% (n = 282) of workers reported a change in workplace policy (a reported change in policy may be due either to the introduction of a new policy or to a change in employment). This change in smoking policy was more commonly in the direction of a more restrictive policy. The majority of these changes involved the implementation of a new smokefree work area policy after 1990.

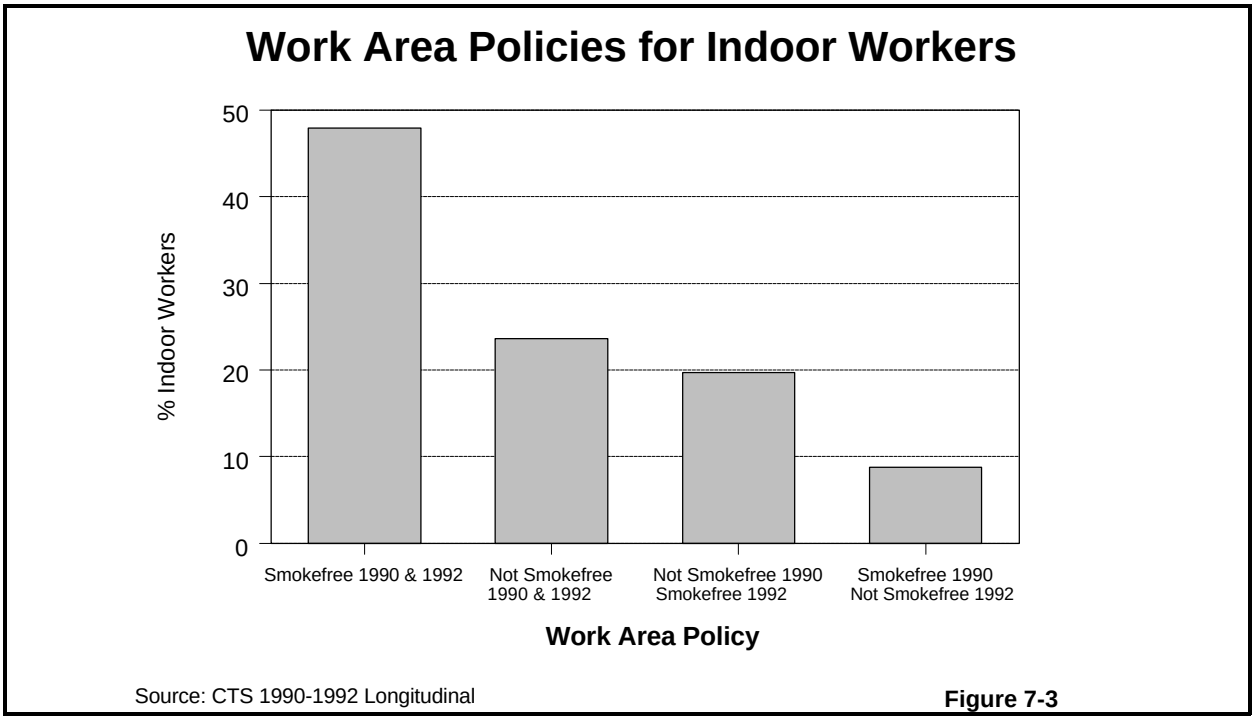


Figure 7-3

However, 8.8% of workers reported a less restrictive smoking policy at their workplace at the second survey. We do not know of any instance in which a workplace is known to have reduced the level of protection it offered to nonsmokers. The most likely explanation is that these workers changed employment between the two surveys and that their new workplace did not have a smokefree work area policy.

Changes in Smoking Prevalence by Workplace Policy

Between 1990 and 1992, smoking prevalence declined among California employees generally (as discussed in detail in Chapter 4). Table 7-3 compares the smoking prevalence for workers with different workplace policy histories.

Among the 435 employees that did not have smokefree work areas in either survey year, smoking

Table 7-3
Smoking Prevalence by Work Area Smoking Policy

Work Area Policy	n	Prevalence			
			1990	1992	Change (%)
Not Smokefree 1990 & 1992	435	Daily Smoker	21.0	20.6	-2
		Occasional Smoker	8.4	7.0	-17
		Overall	29.4	27.5	-6
Smokefree 1990 Not Smokefree 1992	162	Daily Smoker	12.8	15.2	+ 19
		Occasional Smoker	4.5	9.3	+ 107
		Overall	17.3	24.5	+ 29
Not Smokefree 1990 Smokefree 1992	364	Daily Smoker	16.5	14.8	-10
		Occasional Smoker	5.1	6.9	+ 35
		Overall	21.6	21.7	0
Smokefree 1990 & 1992	883	Daily Smoker	15.2	13.8	-9
		Occasional Smoker	5.7	4.0	-30
		Overall	20.8	17.8	-14

Source: CTS 1990–1992 Longitudinal

prevalence declined from 29.4% to 27.5% (a 6% relative change). The smoking prevalence rate among these employees was considerably higher than among employees who reported a smokefree work area in either survey year. This decline appeared to be due largely to a decrease in the proportion of occasional smokers, rather than to any change among daily smokers.

Among employees who appeared to have changed jobs and moved from a smokefree work area to one that allowed smoking, we observed a major increase of 29% in smoking prevalence from 17.3% in 1990 to 24.5% in 1992. This prevalence increase was observed in both daily and occasional smokers.

Among employees who reported a new smokefree work area policy in 1992, there was no significant decline in prevalence (21.6% vs 21.7%). The introduction of a smokefree work area appears to have been associated with a decline in the proportion of daily smokers and an increase in the proportion of occasional smokers.

The highest relative decline in smoking prevalence (14%) was observed for employees who had at least a smokefree work area in both years. Among this group, prevalence declined from 20.8% to 17.8%; the decline was observed among both daily and occasional smokers.

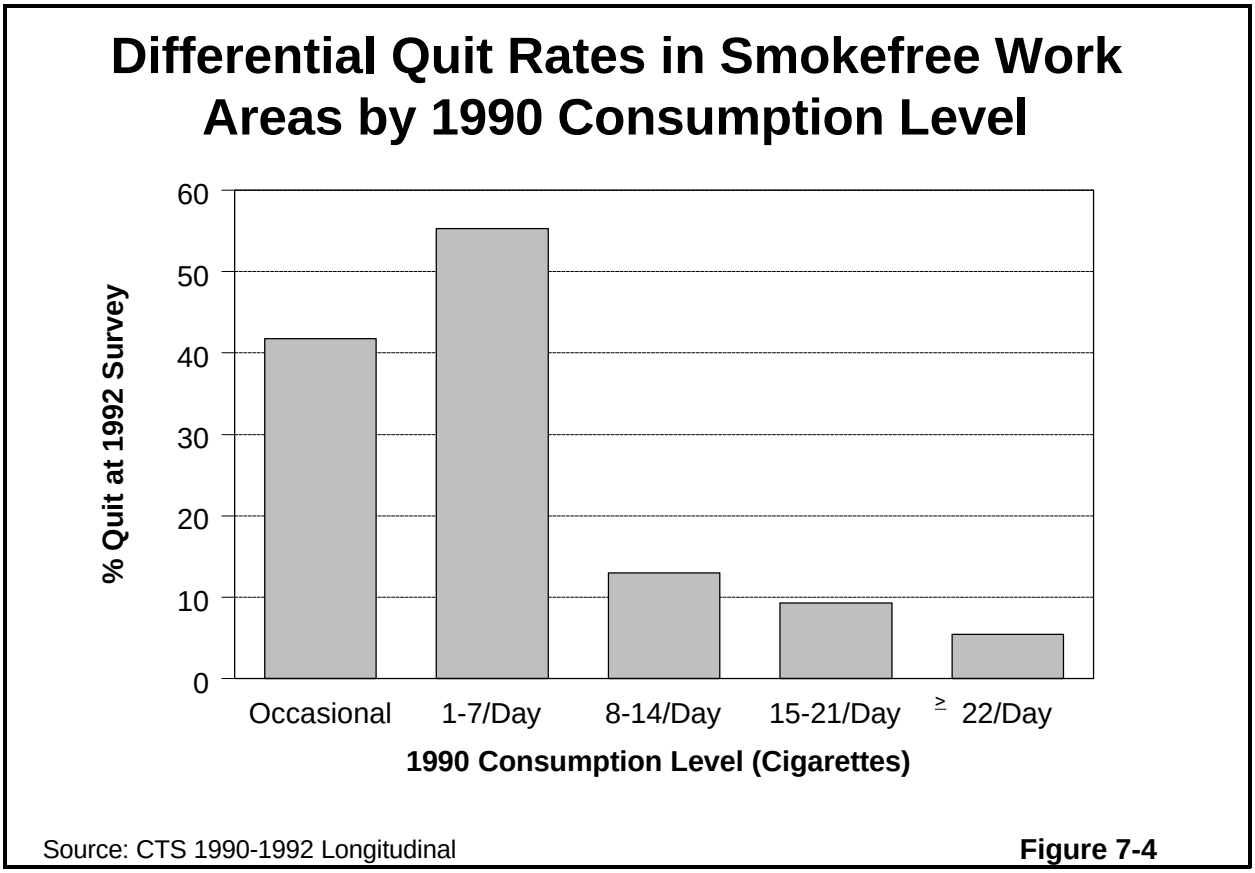
Changes in Cigarette Consumption Per Smoker by Workplace Policy

Table 7-4 examines changes in cigarette consumption among smoking indoor workers in each of our four groups.

Table 7-4
Cigarette Consumption by Work Area Smoking Policy

Work Area Policy	Consumption per Smoker (Mean Cigarettes/Day)		
	1990	1992	Change (%)
Not Smokefree 1990 & 1992	14.7	15.2	+ 3
Smokefree 1990 Not Smokefree 1992	9.7	11.2	+ 15
Not Smokefree 1990 Smokefree 1992	15.5	13.9	-10
Smokefree 1990 & 1992	12.8	13.8	+ 8

Source: CTS 1990–1992 Longitudinal



Source: CTS 1990-1992 Longitudinal

Figure 7-4

Among employees who had a smokefree work area in 1990 but not in 1992, daily consumption increased by 15% over the study period. Thus, both smoking prevalence and consumption increased when workers were no longer employed in a smokefree work area.

Consumption declined by 10% for smokers whose work area became smokefree after 1990. Thus, although new smoking policies that prohibit smoking in at least the work area were not associated with a decline in prevalence, they were associated with a decline in cigarette consumption among those smokers who did not quit.

A somewhat paradoxical finding was that cigarette consumption per smoker increased by 8% for employees in a smokefree work area both years. We must note that the pool of smokers was not identical in both years. This group evidenced the highest proportion of quitting between the two surveys. We hypothesize that the increase in consumption per smoker might result from a much higher quit rate among those who were light smokers in the 1990 survey. A differential quit rate among light compared to heavier smokers would lead to an increase in the mean consumption level per smoker.

To assess the merits of this hypothesis, we analyzed the cessation rate of smokers by consumption level within this group who worked under a smokefree work area in both years. The results presented in Figure 7-4 support the hypothesis. Light smokers (1-7 cigarettes/day) and occasional smokers were more likely to quit smoking when exposed to a continuing smokefree work area than heavier smokers. Thus, we can hypothesize that smokefree work areas have both an immediate and a lagged effect on quitting behavior.

Changes in Consumption Per Capita by Workplace Smoking Policy

To estimate the overall impact of smokefree work areas on smoking behavior, we need to combine the effect of increased quitting with the reduction in consumption among continuing smokers. This can be achieved by considering the mean per capita consumption level for employees (both smokers and nonsmokers) with different workplace policy histories. Daily per capita consumption for each group is computed by summing average daily consumption for each employee and dividing by the total number of employees in the group. These data are presented in Table 7-5.

Among California workers whose work area was not smokefree in either 1990 or in 1992, per capita consumption declined by a total of 3% between the 2 years to an average level of just over four cigarettes per worker per day. This level of smoking was the highest among any of the four policy groups. We observed a dramatic increase of 63% in the per capita consumption level of those who went from having a smokefree work area to lesser restrictions in 1992.

Table 7-5
Change in Per Capita Consumption of Cigarettes by Work Area Smoking Policy

Work Area Policy	n	Per Capita Consumption in 1990	Per Capita Consumption in 1992	% Change in Per Capita Consumption
Not Smokefree 1990 & 1992	435	4.319	4.199	-3
Smokefree 1990 Not Smokefree 1992	162	1.681	2.745	+ 63
Not Smokefree 1990 Smokefree 1992	364	3.337	3.011	-10
Smokefree 1990 & 1992	883	2.658	2.458	-8

The largest decline in per capita consumption (10%) occurred with the introduction of a smokefree work area. However, per capita consumption appears to continue declining in the first few years of the new policy. Smokers in this category (continuing smokefree work area) experienced an 8% reduction in per capita consumption and had the lowest overall level of consumption at a mean of 2.5 cigarettes per day.

These results suggest that total cigarette consumption would decline markedly following the implementation of a policy to make work areas smokefree. Further, significant declines in consumption can continue to be anticipated from comprehensive workplace policies that remain in place. Given the differences in consumption rate between our study groups, we speculate that the introduction and maintenance of a smokefree work area will be associated with a 26% decrease in the cigarette consumption level of employees.

SECTION 4
The Potential Impact of Ordinances to Create Smokefree Restaurants

Restaurant workers are also at risk of exposure to ETS as they perform their work duties. Their entitlement to protection from ETS should equal that of any other group of employees. However, in many California communities, efforts to introduce ordinances to make restaurants smokefree have been hindered by fears that the restaurant business would suffer as a result. The 1992 CTS asked all adult respondents about their restaurant-going habits. Using these data, this section explores the likely impact of a smokefree restaurant ordinance on restaurant business.

In 1992, the majority of adults (65%) in California said that they went out to eat in a restaurant at least twice per month, including 22% who ate out 8 or more times per month. We observed no significant difference between smokers and nonsmokers in the frequency with which they reported eating out (Figure 7-5). For both nonsmokers and smokers, the modal category for frequency of eating out was 2 to 7 times a month (44.1% versus 39.5%). Approximately 21% of nonsmokers and smokers reported eating out at least 8 times a month.

The extent to which smokefree restaurants would deter smokers from eating in restaurants depends in part on whether smokers typically smoke when in restaurants. To investigate this question, smokers were asked how important it was to them to smoke when eating out. Table 7-6 categorizes smokers by how often they visit restaurants and shows how many smokers within each category thought it was important to smoke when eating out.

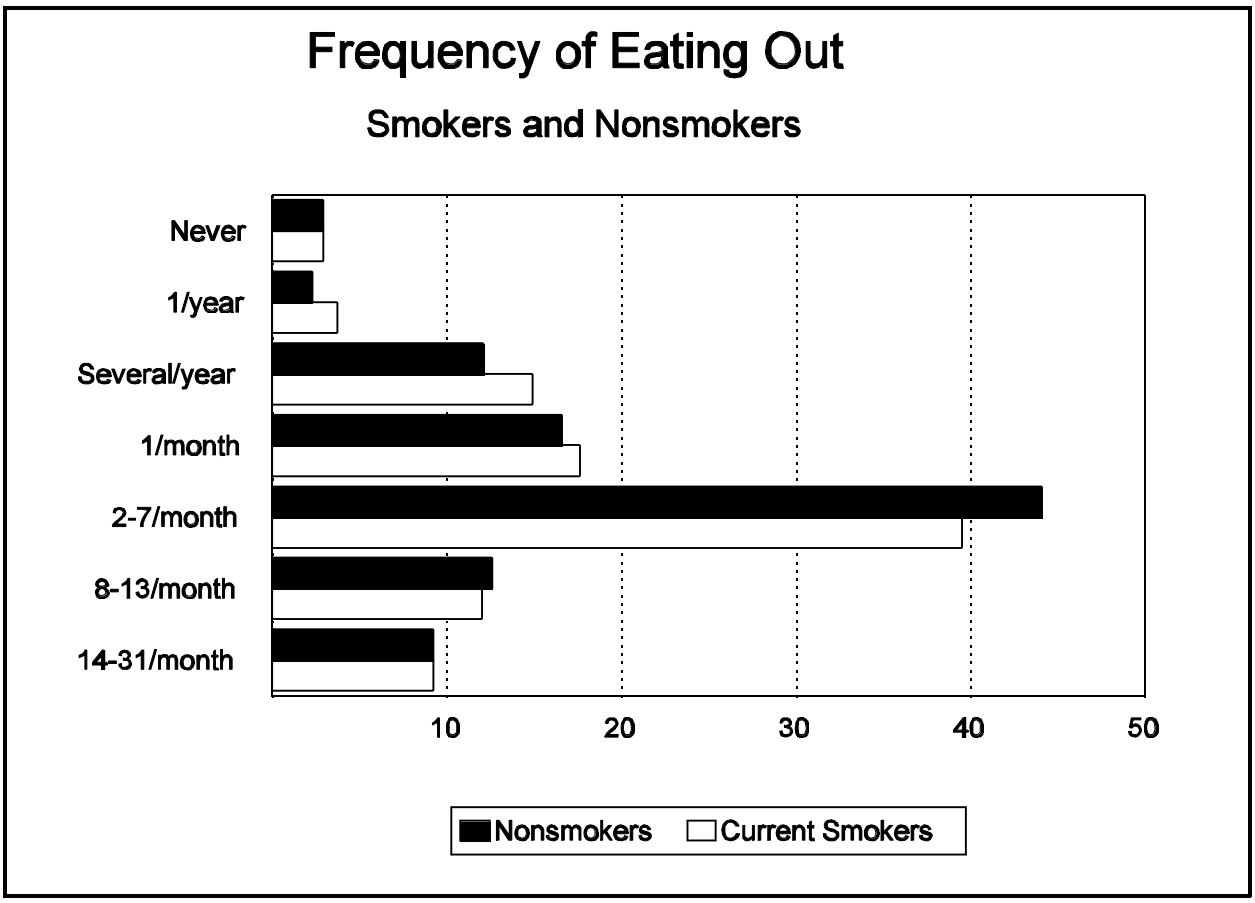


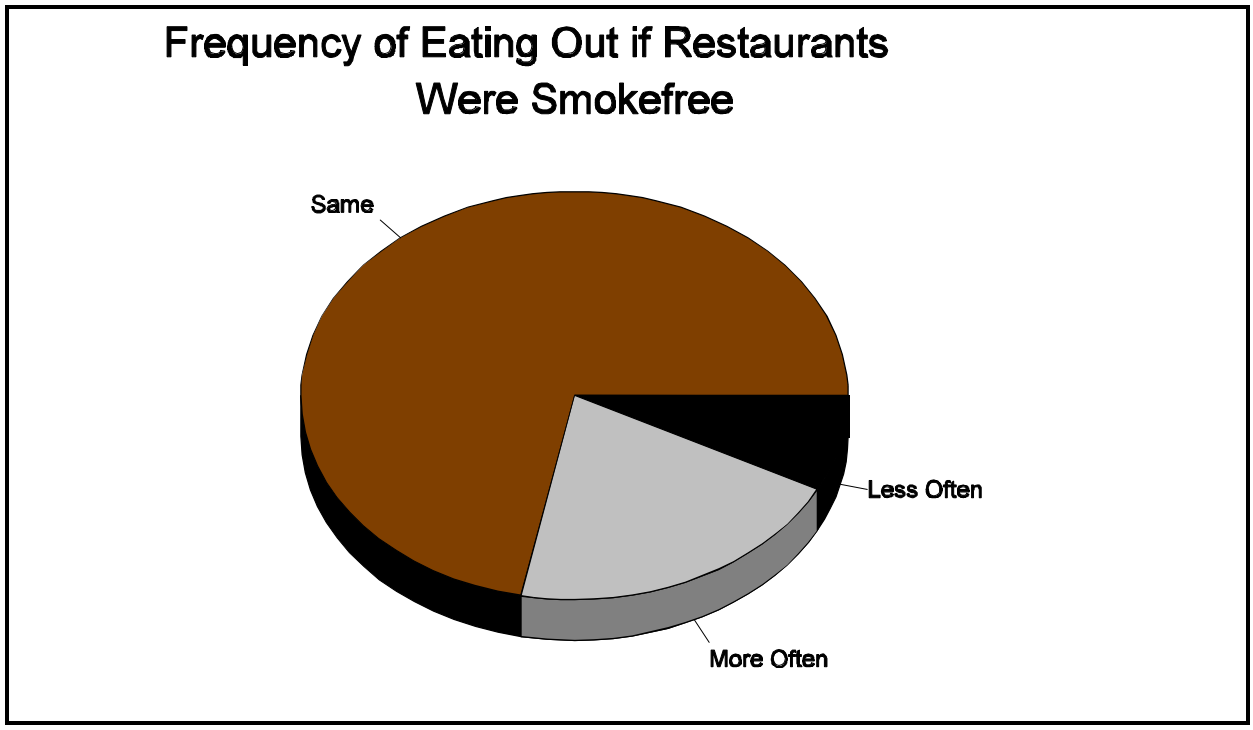
Table 7-6
Importance of Smoking When Eating Out Among California Smokers

Frequency of Eating Out	n	Very Important (%)	Somewhat (%)	Not at All (%)
Never	88	7.0	16.3	70.5
1-2/year	800	8.3	18.9	71.8
1/month	818	11.4	16.3	71.8
2-7/month	1897	10.6	21.2	67.4
8-13/month	584	10.0	22.9	66.5
14-31/month	441	17.2	22.9	58.4

Source: CTS 1992

More than two thirds of smokers (68.1%) said that it was not at all important to them to smoke when eating out, compared to only 10.7% who claimed it was very important. There was a tendency for smokers who ate out more often to stress the importance of smoking when eating out. However, in all categories a majority of smokers reported that it was not at all important that they smoke when eating out. Californians answering that it was very important to smoke in restaurants comprise only 2% of the restaurant-going population.

Indeed, those smokers who decide not to eat out because of a smokefree policy in restaurants may in fact be far outweighed by the number of nonsmokers who are encouraged by that policy to eat out more often. All adults were asked if they would eat out more or less often if restaurants became smokefree. As shown in Figure 7-6, approximately 70% of adults would not modify the frequency of their attendance at restaurants, irrespective of the restaurant smoking ordinance.



We conjecture that a number of these restaurant patrons are already able to eat at their preferred restaurant without being exposed to ETS; others presumably feel that any exposure that they have to ETS is minimal. Almost a quarter of nonsmokers thought they would eat out more often and about the same proportion of smokers thought they would eat out less often if restaurants were made smokefree. Note that there is a much higher proportion of nonsmokers in the population. Thus, our findings suggest that restaurant business would increase as a result of a rise in nonsmoking clientele, if our respondents are accurate about their future behavior. Using our weighted data to project

statewide figures, we estimate that 14.8 million adult Californians would eat out at the same rate if restaurants became smokefree; 1.5 million would eat out less often, and 4.3 million would eat out more often.

Our results indicate that the creation of smokefree restaurants should not adversely affect — and may even help — the restaurant business. Overall, a majority of smokers did not consider it essential to smoke when eating out. Most adults interviewed would not change their restaurant habits if restaurants were made smokefree, and data on those who would alter their behavior suggest that restaurants would experience an upsurge in nonsmoking clientele. These results are consistent with econometric analysis of restaurant revenues from quarterly sales tax data.[70]

SUMMARY OF FINDINGS

Trends in the Prevalence of Workplace Smoking Policies in California

1. The percentage of California workplaces that prohibit smoking in the work area increased dramatically during the period covered by the antismoking campaign. Between 1990 and 1993, the proportion of indoor workers with smokefree workplaces nearly doubled, from 35% to 65%.

2. Large workplaces ($\geq$50 employees) were more likely than small workplaces to have smokefree policies in 1990 and to introduce new policies between 1990 and 1992.

3. By 1993, 87% of Californians employed indoors were covered by a policy that prohibited smoking in their work area.

Trends in the Protection of Nonsmokers in Indoor Workplaces

1. The type of smoking policy implemented by a workplace significantly affects levels of ETS exposure. In 1993, 89% of nonsmokers in smokefree workplaces were not exposed to ETS, compared to 66% of nonsmokers under a smokefree work area. Among the 13% of indoor workers who did not have a smokefree work area, only 24% of nonsmokers were not exposed to ETS.

2. Compliance with smokefree workplace policies was high in all survey years.

Changes in Smoking Behavior Related to Workplace Policies

1. The introduction of a smokefree work area is associated with a change in smoking behavior among employees. An estimated 10% decrease in per capita consumption was associated with the introduction of a new policy.

2. Maintenance of a smokefree policy led to increased quitting over time, particularly among light smokers.

3. Both prevalence and consumption increased among employees who moved from a smokefree work area in 1990 to a work area with lesser restrictions in 1992.

4. The implementation and continuation of a smokefree work area was associated with a 26% reduction in per capita consumption among workers.

Potential Impact of Ordinances for Smokefree Restaurants

1. Adult nonsmokers in California eat out as often as smokers, but there are 4 times as many nonsmokers as smokers.

2. More than two thirds of smokers do not feel the need to smoke when they eat out.

3. The introduction of a smokefree restaurant ordinance is likely to lead to an overall increase in restaurant business.

Chapter 8

THE ROLE OF SMOKING CESSATION PROGRAMS

INTRODUCTION

The health reasons for smokers to quit are compelling and have been extensively documented.[31] Evidence from several surveys suggests that most smokers would like to quit their habit. In 1986, some 70% of smokers nationwide reported that they had made at least one attempt to quit smoking in their lifetime; less than 16% of smokers reported that they had not thought about quitting and would not quit smoking even if there was an easy way to do it.[26] Approximately half of the smokers surveyed in California in 1990 had attempted to quit smoking for at least a day during the year before the survey.[15] However, research on smoking cessation has consistently recorded a high failure rate for smokers attempting to quit smoking.[3,71] In 1990, only 10% of California smokers who quit for at least a day succeeded in maintaining abstention for 1 year.[15]

The Surgeon General's report of 1988 focused public attention on the problem of relapse by classifying cigarettes and other forms of tobacco as addictive substances comparable to heroin and cocaine.[3] By 1990, two thirds of California smokers were convinced that cigarette smoking was an addiction.[18] The 1990 California Tobacco Survey (CTS) asked smokers to respond to the following two statements: "Helping smokers to quit is a very important issue" and "Many smokers are worried about the difficulty of quitting." Over three quarters (76.2%) of smokers agreed with both statements. Smith[72] comments that conditions are now ideal for the provision of smoking cessation services: most smokers wish to change their behavior, most fail in attempts to quit smoking by themselves, and the public appears to recognize the importance of helping smokers to stop smoking.

A considerable literature indicates that heavy smokers are more likely to seek assistance to quit smoking than less addicted smokers.[73,74] The self-selection of heavier smokers into cessation programs significantly limits the success rates that such programs are able to report. Heavy smokers who are highly addicted to nicotine tend to suffer serious withdrawal symptoms that often result in relapse to smoking.[3,31] However, experimental studies that control for the addiction level of participants consistently report higher rates of cessation among subjects who receive cessation assistance compared to smokers in the control group. Two comprehensive reviews concluded that formal cessation assistance offers significant advantages over self-quitting methods in helping heavy smokers to quit their habit permanently.[75,76]

Since prior addiction level is an important predictor of quitting success, the merits of using cessation assistance must be evaluated in the light of the kind of smoker likely to participate in a quit program or to use prescription assistance. In this chapter, we use two kinds of information to evaluate the benefits of using formal assistance to quit smoking: (1) the reported success rates of smokers who quit using formal assistance compared to smokers who quit by themselves, and (2) the addiction levels of assisted smokers and self-quitters.

Despite evidence that smoking cessation programs can benefit smokers wishing to quit, the majority of smokers who try to quit smoking do not seek formal assistance.[77] Little is known as to why smokers do not use smoking cessation services. One argument refers to psychological barriers that may prevent individuals from seeking assistance. Some smokers are perhaps reluctant to participate in counseling services that may be wrongly perceived as meant for the weak-minded, or smokers may dislike the idea of being psychologically challenged on personal motivations for smoking.[72] Alternatively, the barriers may be pragmatic, such as the difficulty of scheduling regular attendance at a group clinic for smoking cessation, or cultural, such as the lack of programs that accommodate smokers from different ethnic or racial backgrounds. This chapter describes the sociodemographic characteristics of smokers who chose to quit using assistance or to quit by themselves, in order to suggest which groups need to be targeted by future cessation program efforts.

Between 1990 and 1992, the California Tobacco Control Program funded a pilot study of a telephone counseling service that aimed to overcome some of the barriers that inhibit smokers from using cessation programs to quit smoking. The success of the pilot study led to the expansion of this service to provide cessation assistance at the statewide level in late 1992. We report briefly some findings from this study that are relevant to an evaluation of cessation assistance.

Section 1 of this chapter reports on how often smokers in California choose formal assistance to quit and compares the success rates of assisted smokers and self-quitters in light of their prior addiction level. Section 2 describes the sociodemographic characteristics of smokers who use formal assistance and the kinds of assistance most often chosen (*e.g.*, prescription medication, counseling, etc.). The data sources for the first two sections are the cross-sectional California Tobacco Surveys (CTS) conducted in 1992 and 1993. Section 3 presents preliminary data from an evaluation of a telephone counseling program for smoking cessation.

SECTION 1
The Use and Effectiveness of Formal Assistance to Quit Smoking

Classification of Assistance

All current smokers who responded to the CTS in 1992 and 1993 were asked if they had ever quit smoking intentionally for at least a day during the past year. Smokers who had quit for at least a day and former smokers who had quit during the past year were then questioned on the method they used, if any, to quit smoking. The term *assistance* refers to use of self-help materials, cessation counseling services and/or prescription medication. In both survey years, information was elicited on the type and brand of prescription medication used, if any (*e.g.*, Nicorette chewing gum, different brands of

the nicotine patch), and use of counseling or self-help materials. In 1992 only, current smokers who had quit and recent quitters were asked to give details on the type of nonprescription assistance used if any. Respondents selected from "one-to-one counseling" "group counseling" and/or "self-help materials." Respondents who reported that they had quit smoking "cold turkey" or by gradually reducing their consumption were classified as unassisted quit-smokers.

Success Rates of Smokers Who Quit With and Without Assistance

In 1992, 19% of California smokers who had tried to quit smoking reported using some form of cessation assistance in that attempt (Figure 8-1). The proportion of smokers using assistance remained the same in 1993. A successful quit-smoker is defined here as a smoker who at the time of survey reported that he or she had been off cigarettes for 3 months or more. The probability of

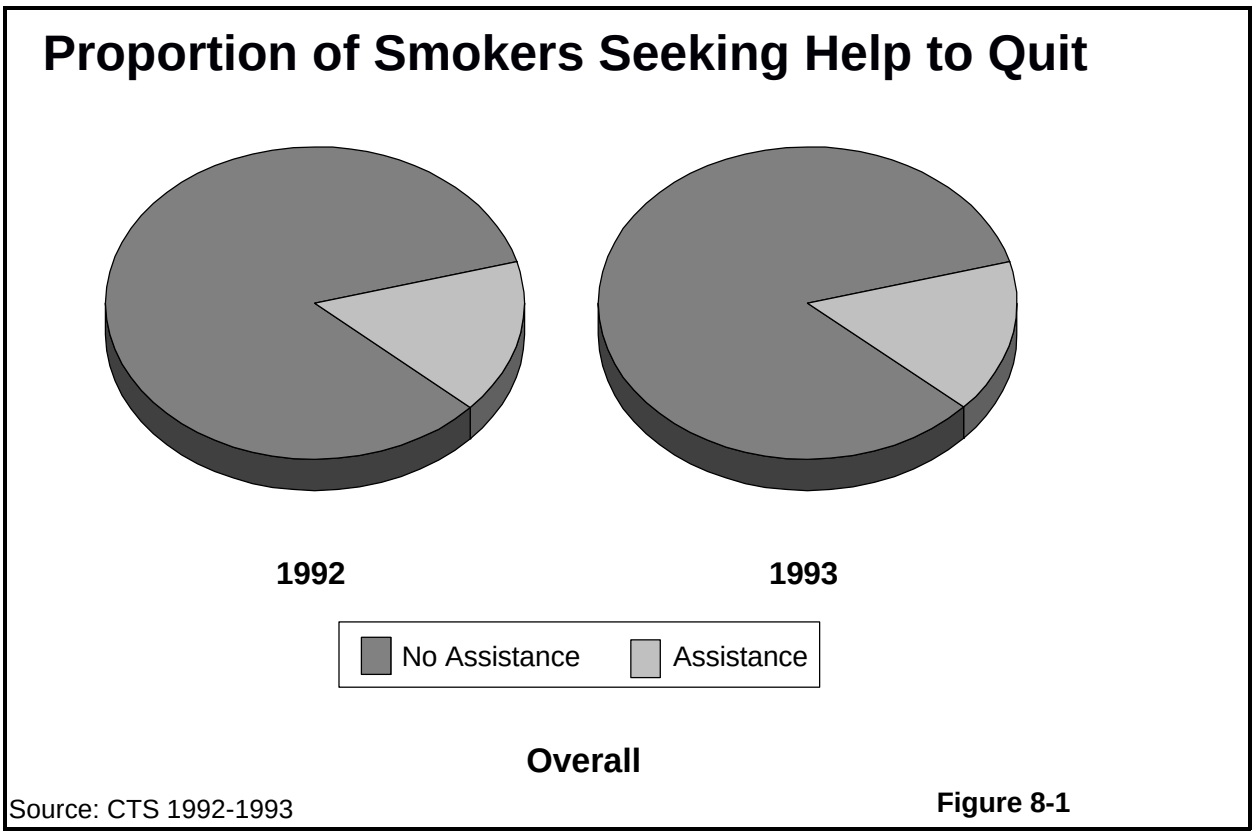
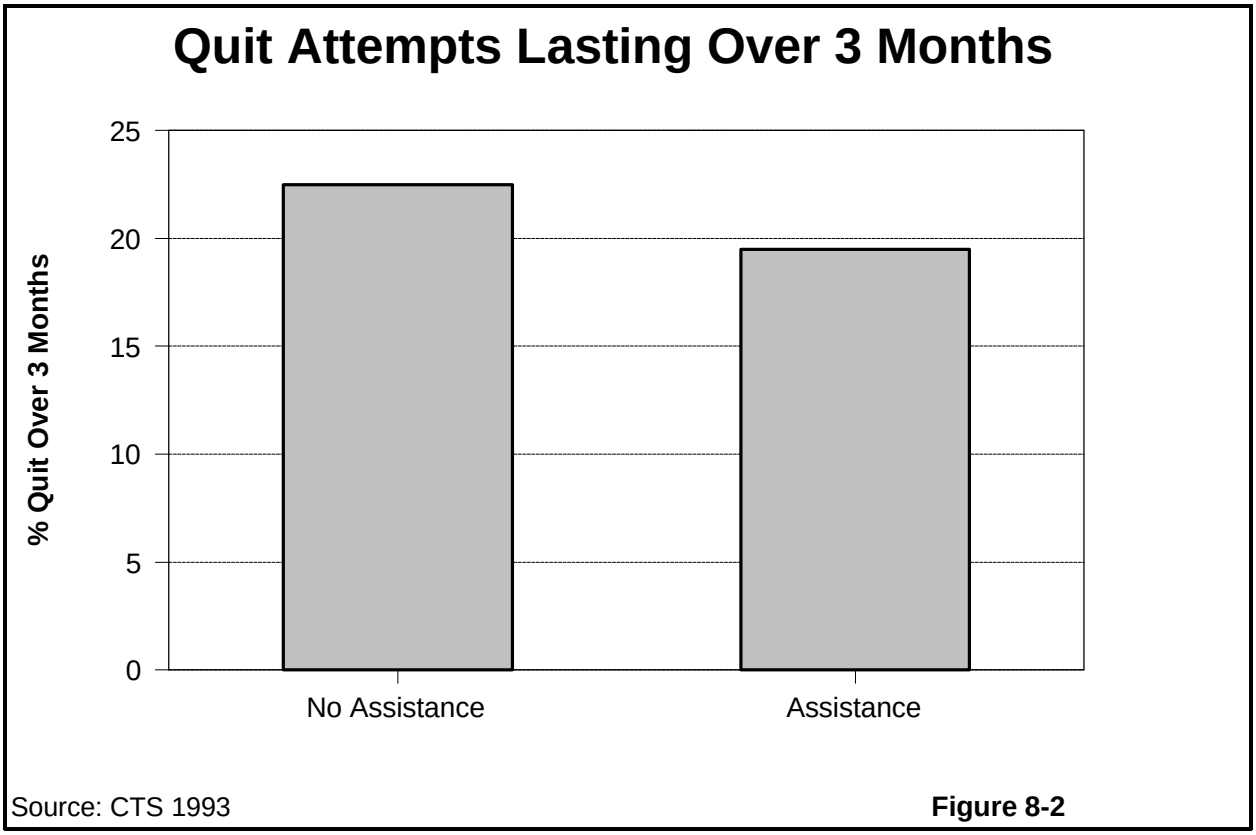


Figure 8-1

relapse is known to be inversely related to duration of quit attempts.[3] We chose a 3-month period of abstinence as a criterion of success based on evidence that most relapses occur during the first few months following the quit attempt.[3]

Figure 8-2 presents the success rates of smokers who quit using some form of cessation assistance (prescription medication, counseling and/or self-help materials) and smokers who quit by themselves. In 1993, slightly more self-quitters remained off cigarettes for at least 3 months than smokers who



Source: CTS 1993

Figure 8-2

quit using assistance. However, the difference between the two groups is not statistically significant. As noted earlier, the success rates of smokers using formal cessation assistance must take into account the addiction level of smokers who choose assistance. If heavier smokers are more likely to participate in cessation programs, this would lower the success rates reported by assisted quit-smokers given the greater difficulty experienced by heavy smokers in quitting long-term.

The Addiction Level of Smokers Who Quit With and Without Assistance

Table 8-1 compares smokers who sought assistance to those who did not on two behavioral measures that have been previously established as good indicators of a smoker's addiction level[78]: (1) the number of cigarettes smoked per day, and (2) how soon the first cigarette of the day is smoked. As

shown, heavier smokers were more likely to report using assistance to quit. The average consumption of smokers using assistance was 20.7 cigarettes per day, compared to a daily average of 13.1 cigarettes among smokers who did not seek assistance (a 58% difference in level of consumption between the two groups). Latency to smoke the first cigarette of the day was also shorter among smokers who used formal assistance to quit: 69.7% of the latter group smoked their first cigarette within 30 minutes of waking, compared to only 42.6% of smokers who did not seek assistance. This difference was statistically significant. These results suggest that smokers who sought assistance to quit their habit in 1993 were more heavily addicted than smokers who quit by themselves. Thus, it is not surprising that assisted smokers reported slightly lower success rates than self-quitters. The fact that almost one fifth of more heavily addicted smokers who used formal assistance were successful in quitting smoking suggests that smoking cessation programs can offer effective help to smokers.

Table 8-1
Addiction Level of Smokers Who Used Assistance to Quit vs. Those Who Did Not

	Cigarettes/Day (Mean)	Smoke 1st Cigarette ≤ 30 Minutes After Waking	n
No Assistance	13.1	42.6	1,754
Assistance	20.7	69.7	555

Source: CTS 1993

SECTION 2
Who Uses Assistance to Quit Smoking?

This section presents sociodemographic information for smokers who reported seeking assistance to quit and smokers who quit by themselves. These findings are reported in order to identify which population subgroups are underrepresented in smoking cessation services. A further issue is the need to make cessation programs sensitive to smokers from different cultural backgrounds, different generations, and so forth. To facilitate further development of research on cessation programs, we describe briefly which individuals reported using cessation assistance to quit smoking between 1990 and 1993.

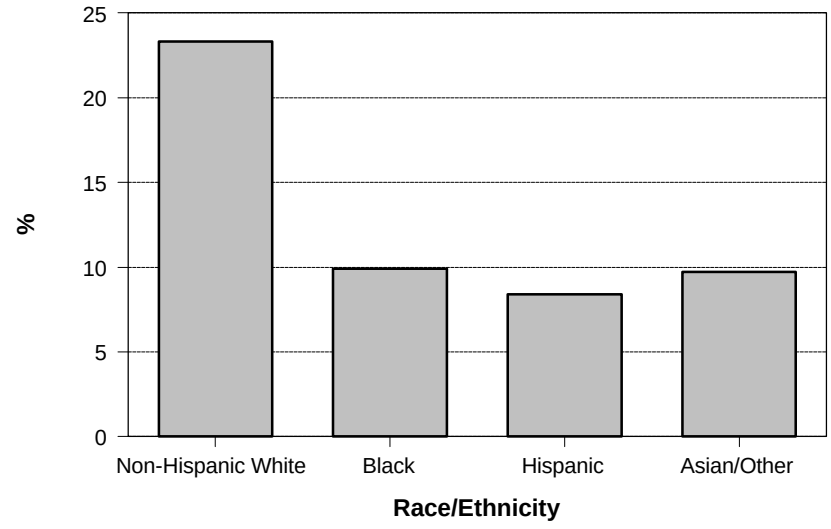
In 1990, less than 4% of smokers who quit reported using prescription medication and less than 2% reported use of counseling advice. Over the course of the Tobacco Control Program, the number of quit-smokers reporting use of cessation assistance appeared to increase. In 1993 more than 8% of

smokers who had made a quit attempt reported using prescription medication and more than 6% reported using counseling assistance (see Appendix Table 12).

The apparent increase in use of assistance may be an artifact of a change in the questions pertaining to assistance in the 1993 survey. In 1990, smokers who had made a quit attempt were asked to identify the method they used in that attempt, if any. In 1993, additional questions probed smokers specifically about use of prescription or counseling services and the addition of these questions may have inflated the estimates of use of cessation assistance.

Use of Assistance by Race-Ethnicity

The proportion of smokers who in 1993 reported using assistance in the previous year to quit smoking is presented in Figure 8-3 for different race-ethnic groups. Non-Hispanic white smokers



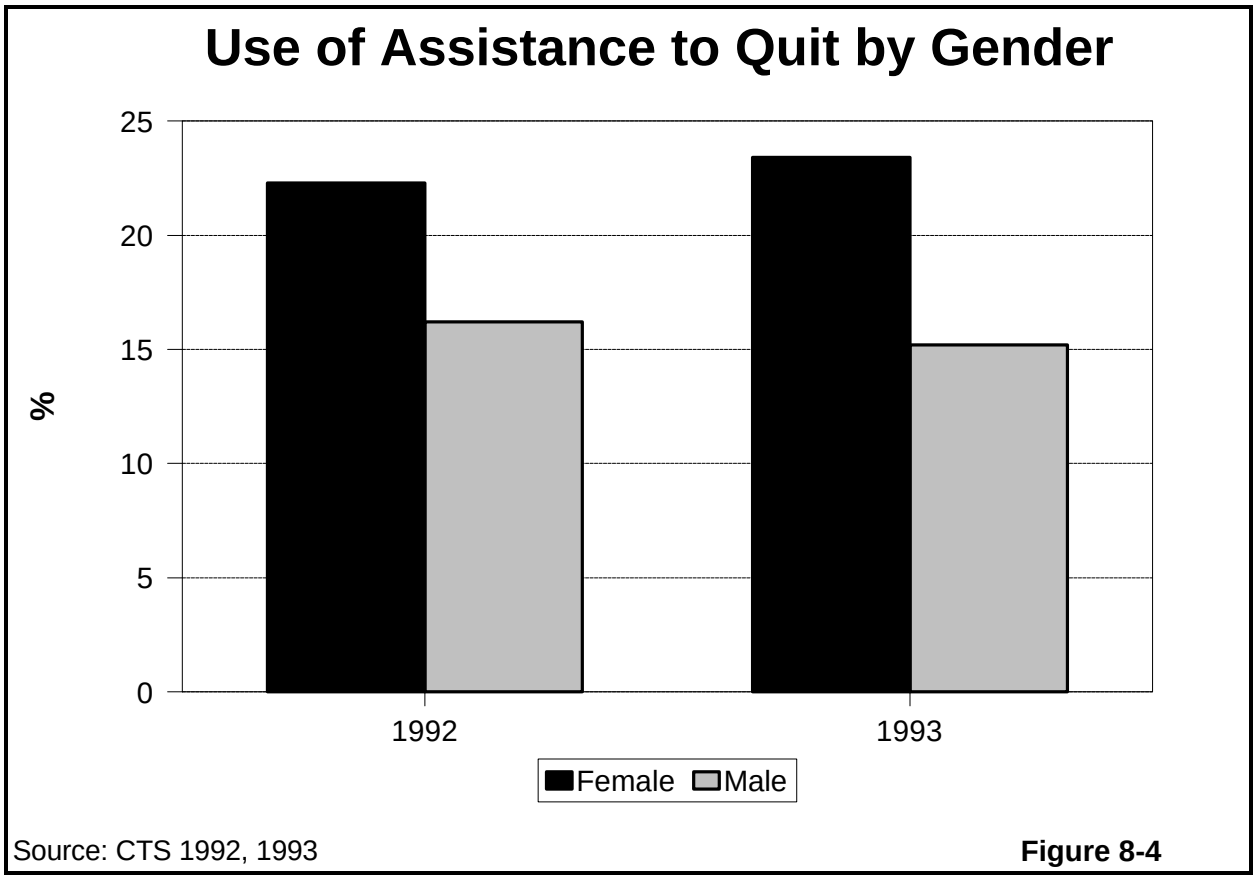
Souce: CTS 1993

Figure 8-3

were significantly more likely to seek assistance to quit than other race-ethnic groups. In a previous report[15] we observed that black smokers reported more quit attempts than other race-ethnic groups, but reported less success than other groups in quitting smoking long term (Appendix Table 5).

Use of Assistance by Gender, Age, and Education

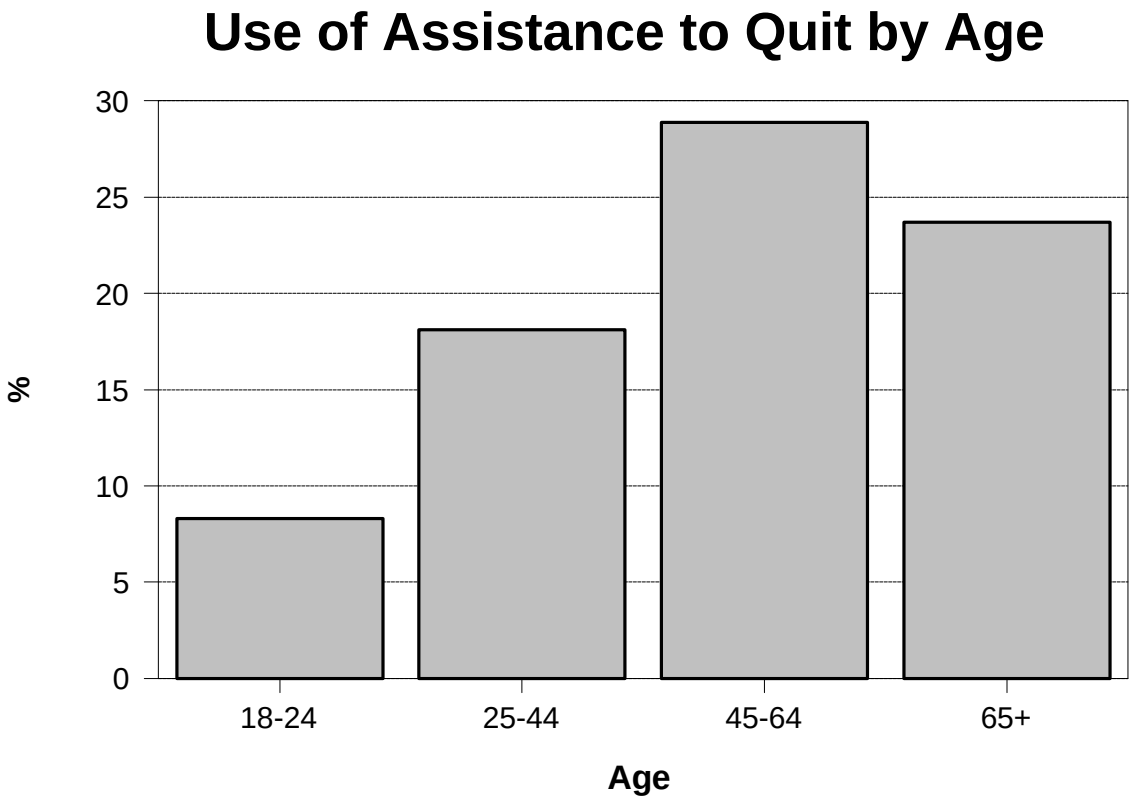
Figure 8-4 shows the proportion of smokers who reported having used assistance to quit smoking by gender from 1992 and 1993 CTS. In both years, female smokers were much more likely to have sought assistance to quit than male smokers. This is consistent with previous research that finds female smokers to be more likely to participate in smoking cessation programs.[1] Use of assistance is



Source: CTS 1992, 1993

Figure 8-4

also positively associated with age (Figure 8-5). Less than 10% of smokers who sought assistance to quit smoking were younger than 25 years, versus 29% of smokers seeking assistance who were aged 45 through 64 years (see Appendix Table 12). Use of assistance also differed by education: smokers with a college education were more likely to seek assistance than smokers who did not complete high school.



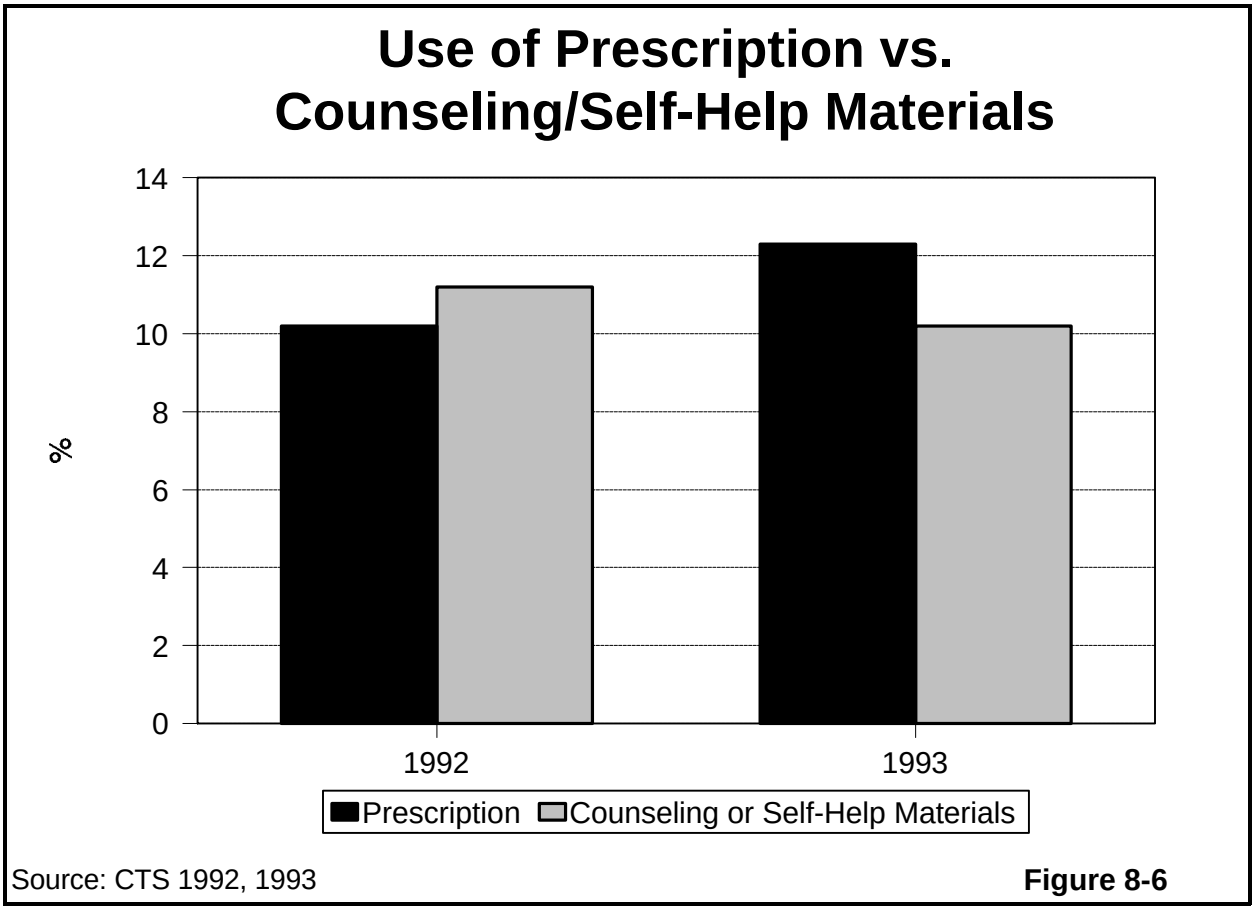
Source: CTS 1993

Figure 8-5

Types of Cessation Assistance Selected

Figure 8-6 shows the type of assistance sought by smokers who reported using some kind of formal cessation help to quit smoking. As shown, in 1992 slightly more smokers reported using counseling and/or self-help materials than prescription medication to quit smoking. The type of nonprescription assistance reported by quit-smokers in 1992 breaks down as follows: 27% of smokers who used nonprescription assistance attended a group counseling program, 25% received help from a one-to-one counseling service and 75% used self-help materials either alone or in conjunction with counseling services.

In 1993, the reported rates of using nonprescription versus prescription assistance appeared to be reversed: more smokers reported using prescription products than self-help and counseling combined. However, the difference in the proportion of quit-smokers who chose prescription or nonprescription help was not statistically significant in either year.

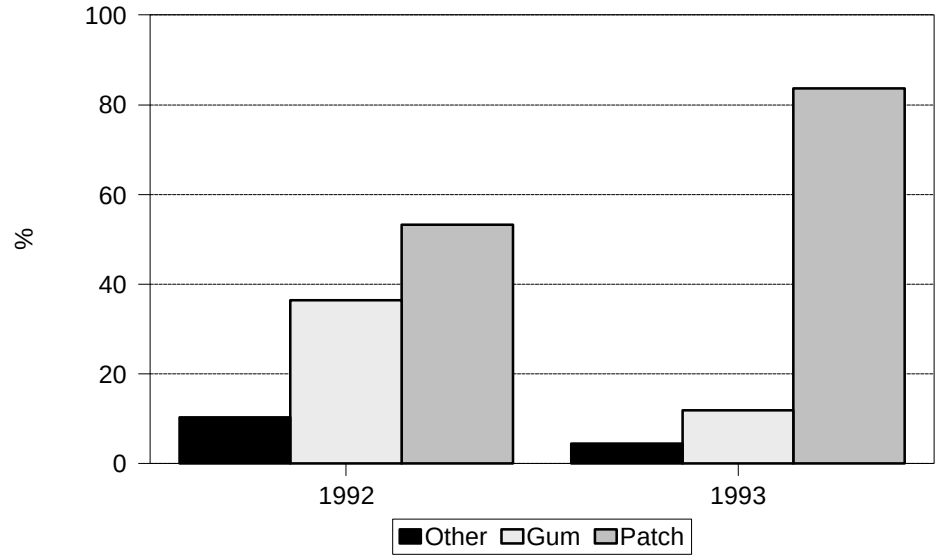


Source: CTS 1992, 1993

Figure 8-6

As shown in Figure 8-7, reported use of various brands of the transdermal nicotine patch increased between 1992 and 1993, following the introduction of the nicotine patch in January 1992. Reported use of nicorette chewing gum declined during the same period. Among those using prescription medication to quit, older smokers appeared to be more likely to choose prescription products than younger smokers (Figure 8-8). The increasing availability of prescription medication for smoking cessation may partly account for the finding reported earlier that smokers older than 45 years are more likely to choose formal assistance to quit smoking than younger smokers.

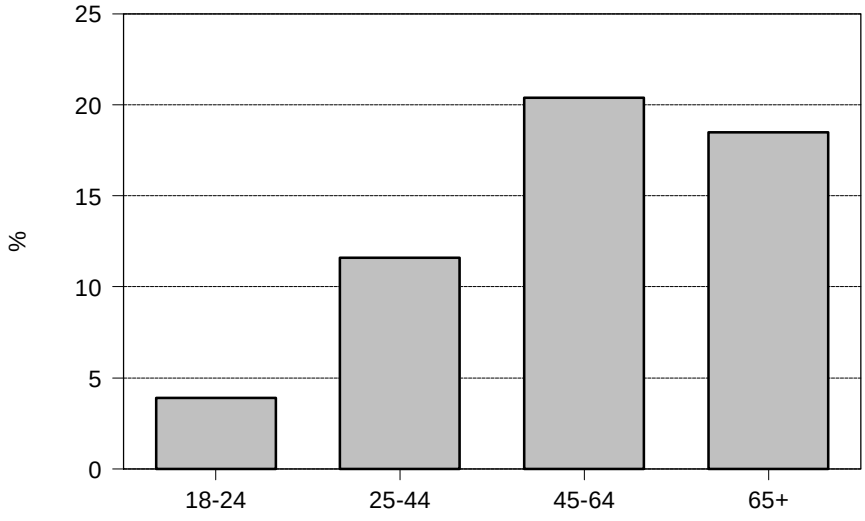
Type of Prescription Medication Used by Smoker to Quit Smoking



Source: CTS 1992, 1993

Figure 8-7

Percentage Receiving Prescription by Age Group



Source: CTS 1993

Figure 8-8

SECTION 3
Evaluation of Telephone Counseling Assistance: Evidence from California

Improving Access to Cessation Assistance: The California Smokers' Helpline

Earlier we observed that few smokers report seeking assistance to quit smoking. Efforts to help smokers to quit are significantly hampered by the limited availability of cessation programs. Access to such programs may be particularly problematic for smokers from minority populations who are typically much less likely to participate in cessation programs than non-Hispanic white smokers. The California Smokers' Helpline was set up with the goals of making cessation assistance widely available to a variety of smokers via a telephone counseling helpline, and of improving participation rates among racial and ethnic minorities.

Between 1990 and 1992, the Tobacco Control Program funded an experimental study of a telephone counseling service in San Diego designed for smokers who wished to quit. This study was undertaken in conjunction with the California mass media campaign so that the availability of this service would be advertised as widely as possibly. An expanded version of this service, the California Smokers' Helpline, was funded in late 1992. The California Smokers' Helpline offered telephone counseling at the statewide level to any smoker wishing to quit smoking.

The California media campaign proved to be highly effective in stimulating smokers to call the Smokers' Helpline. From August 1992 through December 1993, more than 18,000 smokers called the Helpline for assistance to quit smoking. Table 8-2 demonstrates that the Helpline was successful in reaching Hispanic and black communities.

Table 8-2
Ethnicity of Helpline Participants and California Smokers

Ethnicity	California Smokers' Helpline Participants	State of California
White	56.8	67.4
Black	16.1	7.0
Hispanic	20.6	18.6
Asian	2.4	5.0
Other	4.1	2.0

Souce: California Smokers' Helpline

The proportion of Hispanic callers approximated Hispanic representation among California smokers, and black smokers were actually overrepresented among participants relative to the proportion of blacks among California smokers. The Helpline's success in reaching Hispanic smokers reflects the availability of telephone counseling in Spanish and the provision of a toll-free number that was clearly identified in media advertisements as intended for Spanish speakers. Asian smokers were serviced by an independent Asian Language Helpline. However, the many languages that are spoken within the relatively small population of Asians in California may have contributed to the slight underrepresentation of Asian smokers in the Helpline sample. Further analysis also demonstrated that the level of addiction of smokers calling the Helpline was much lower than levels typically characterizing smokers who use cessation services.[79]

Success Rates for Smokers Who Use Telephone Assistance: Evidence from the San Diego Smokers' Helpline

To assess the effectiveness of telephone counseling assistance to smokers, data are available on the quitting success rates of smokers who participated in a randomized controlled trial of telephone assistance conducted in San Diego. In this study, smokers who contacted the toll-free helpline number in San Diego and who were ready to attempt to quit smoking in the following week were randomly assigned to one of two groups: (1) a pro-active telephone counseling program with the provision of self-help materials, and (2) a control group that received only the self-help materials. The proactive counseling included a total of 2 hours of counselor contact spread out over a month. Counselors scheduled calls with the participants and the timing of these calls was chosen to coincide with periods in which difficulties were anticipated for the smoker. The identification of difficult periods was based on analysis of the relapse curve for smoking cessation and on the participant's own expectations. The smoking status of all smokers who tried to quit was assessed for a period of 13 months from the time of first contact.

A fairly strict criterion of "success" was used to categorize callers to the San Diego Helpline into successful and unsuccessful quit-smokers. Smokers who participated in this study were considered successful quitters if they remained off cigarettes for at least one year. Using this criterion of successful quitting, smokers who were randomly assigned to receive multiple counseling sessions from the telephone cessation service had twice the success rate in quitting smoking compared to smokers in the control group (self-help materials only).[79]

The finding from the California Smokers' Helpline and from an experimental study of telephone counseling suggest the feasibility of increasing access to cessation services, particularly among

minority populations. Evidence from the San Diego study also indicates that services that become more widely available to smokers may be effective in increasing the number of smokers who quit their habit permanently.

SUMMARY OF FINDINGS

1. The majority of smokers are worried about the difficulties associated with quitting smoking. However, few smokers use formal assistance despite evidence that cessation programs are helpful.

2. Between 1990 and 1993, the proportion of smokers who used formal assistance to quit smoking appeared to increase from 5% to 19%. This increase may be inflated by a change in the questionnaire and requires further validation.

3. Prescription medication, particularly the nicotine patch, was chosen more often than counseling by smokers in 1993.

4. The success rates of smokers who used assistance (based on 3 months or more abstention) were slightly but not significantly lower than the success rates of self-quitters. However, smokers who used assistance were significantly more addicted to smoking than smokers who did not.

5. White non-Hispanic smokers were more likely to seek assistance to quit than minority smokers in the first 2 years of the Tobacco Control Program (1990–1992). However, a telephone counseling service funded by the Program obtained substantial numbers of minority participants by tailoring its service to the language needs of different race or ethnic groups.

6. The quitting success rate of smokers who received the in-depth telephone counseling intervention were double the success rates of smokers in the control group. This type of cessation service merits further investigation.

Chapter 9

THE ROLE OF MEDICAL CARE IN PROMOTING SMOKING CESSATION

INTRODUCTION

The provision of cessation assistance to smokers (*i.e.* self-help materials, counseling, or prescription medications) is an important part of any tobacco control program. Current research suggests that smokers should receive clear, repeated messages to quit, reinforced by continuous support for their cessation efforts.[35] Physicians and dentists may serve as a channel of communication for the delivery of cessation support to smokers. A considerable body of research indicates that physicians are potentially important sources of cessation assistance to patients who smoke.[80-83] Recently, the National Cancer Institute funded a series of studies to examine the role of health professionals in promoting smoking cessation.[80] Based on the results of these studies, the senior editor of the national report on physicians and smoking cessation concluded that:

> "Rather than perceiving the clinician as the provider of a clinically proven 'magic bullet' that will cure a patient forever, it may be more realistic to see the physician's or dentist's function as that of focusing and magnifying the forces promoting cessation. This change in perspective may help to reduce the frustration and futility many practitioners have when working with their smoking patients."[84]

As many experts have commented, effective involvement of the physician in smoking cessation would call for a reorganization of office-based patient flow and information delivery such that the physician receives reminders and structural support to dispense cessation advice and assistance to patients who smoke.[85] There is a general consensus that this kind of reorganization can only be achieved through large-scale recruitment and training of physicians.[86]

In 1990, the experience of California with physician-promoted cessation was similar to much of the rest of the country.[87] More than two thirds of California smokers reported visiting a physician in the previous 12 months.[15] However, in that year only 40% of smokers reported being advised to quit on their most recent visit; one third of smokers reported that their physician had never advised them to quit smoking. One of the competitive grants awarded early in the establishment of the California Tobacco Program sought to remedy this situation by funding a training program for California physicians.

The largest proportion of tobacco control monies was budgeted for programs that improve access to health screenings for low income California adolescents. The use of tobacco control funds for this purpose was justified by the perception that physicians would discourage adolescents from starting to smoke. However, the national report on the role of medical care providers in smoking interventions found no evidence that physicians can be effective in preventing smoking uptake.[80] Moreover, the allocation of funds to the screening program made no provision either for training of physicians and development of antismoking materials, or for an evaluation of the efficiency of an intervention that has not been tested before. It would appear that current funding decisions with

respect to tobacco control monies are failing to maximize training of physicians in the area of smoking cessation, where evidence shows they can provide effective help to California smokers.

This chapter will investigate the role of physicians in advancing smokers toward successful cessation. Since smokers must be able to visit a doctor to receive such help, Section 1 begins by examining access to medical care, focusing on factors that prevent adults from acquiring care when needed. In Section 2, we report how many smokers are advised by their doctors to quit smoking and how many are offered or seek other kinds of cessation assistance. Section 3 assesses the value of physician interventions. We report the rates of successful cessation among smokers who received help or advice from their doctors and among those smokers who did not.

SECTION 1
Access to Medical Care

The California Tobacco Surveys (CTS) asked all respondents how often they had seen a doctor in the previous year, and when their most recent visit took place. As shown in Figure 9-1, physician utilization was not strongly associated with smoking status.

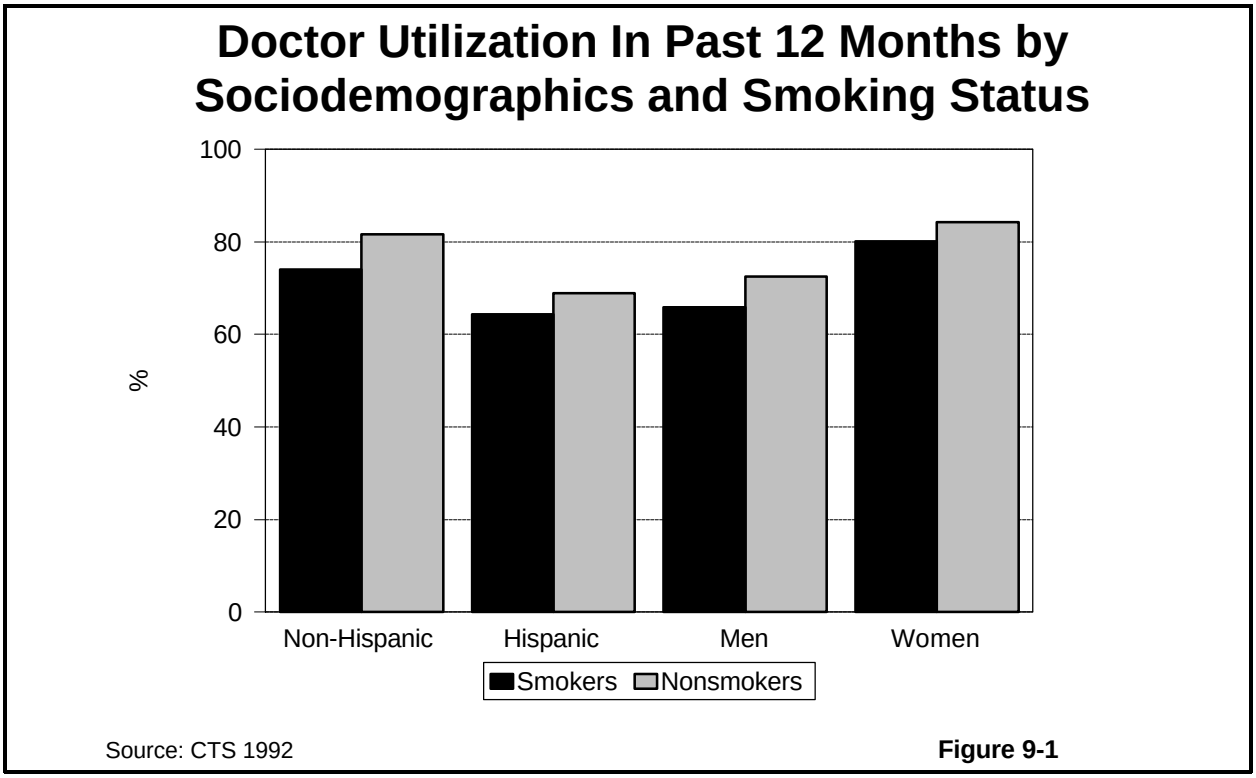


Figure 9-1

Smokers reported visits to the doctor only slightly less often than nonsmokers. However, frequency of visits to the doctor varied by race/ethnicity and gender. Hispanics visited the doctor much less often than non-Hispanics. Women were more likely than men to report a visit the previous year, and were also more likely to have seen the doctor 8 or more times in the previous year.

The probability of reporting a visit to the doctor in the previous year increased consistently with age, with those older than 65 years reporting the most visits. Physician utilization also increased with the educational level of the respondent. College-educated adults were more likely to report doctor visits than adults with fewer years of formal education.

Similar demographic differences emerged with respect to the time of the last doctor visit. Hispanics were more likely than other race and ethnic groups to report that their last visit occurred more than 2 years ago. Fourteen percent of males had not visited the doctor for 2 years, compared to 7% of females.

Reasons Californians Give for not Receiving Needed Medical Care

Overall, 11.8% of adults surveyed indicated that they had needed and failed to obtain health care in the previous year. The reasons most often given for not obtaining care were lack of money or health insurance (Table 9-1). Among adults who had not received needed health care, 44.2% of adults cited money or insurance as the reason. Hispanics and blacks were disproportionately represented in this

Table 9-1
Reasons for not Obtaining Medical Care When Needed

Reason	Men (%)	Women (%)	Overall (%)
Money or Insurance	41.6	46.6	44.2
Not Serious	36.5	27.2	31.2
Access	11.2	16.7	14.6
Dislike Doctors	3.3	4.3	3.9
Other	6.4	5.0	5.7

Source: CTS 1992

group. Other reasons given included the perception that the illness was not serious (31.2%) and access problems (14.6%), such as not being able to get time off work, inability to arrange transportation to the doctor's office, or to obtain care during desired hours. A further 3.9% of this

group reported a general dislike for doctors or a lack of faith in their health care provider. Women were more likely than men to cite money, insurance, or access difficulties in obtaining medical care.

The Impact of Health Insurance Status

The frequent mention of financial difficulties in obtaining health care is consistent with our findings for the impact of health insurance status on physician utilization. In 1992, 16% of adults surveyed in California had no form of health insurance. The probability of having insurance did not differ significantly among smokers and nonsmokers. However, as might be expected, insurance status was strongly associated with access to medical care (Figure 9-2). Individuals with health insurance were

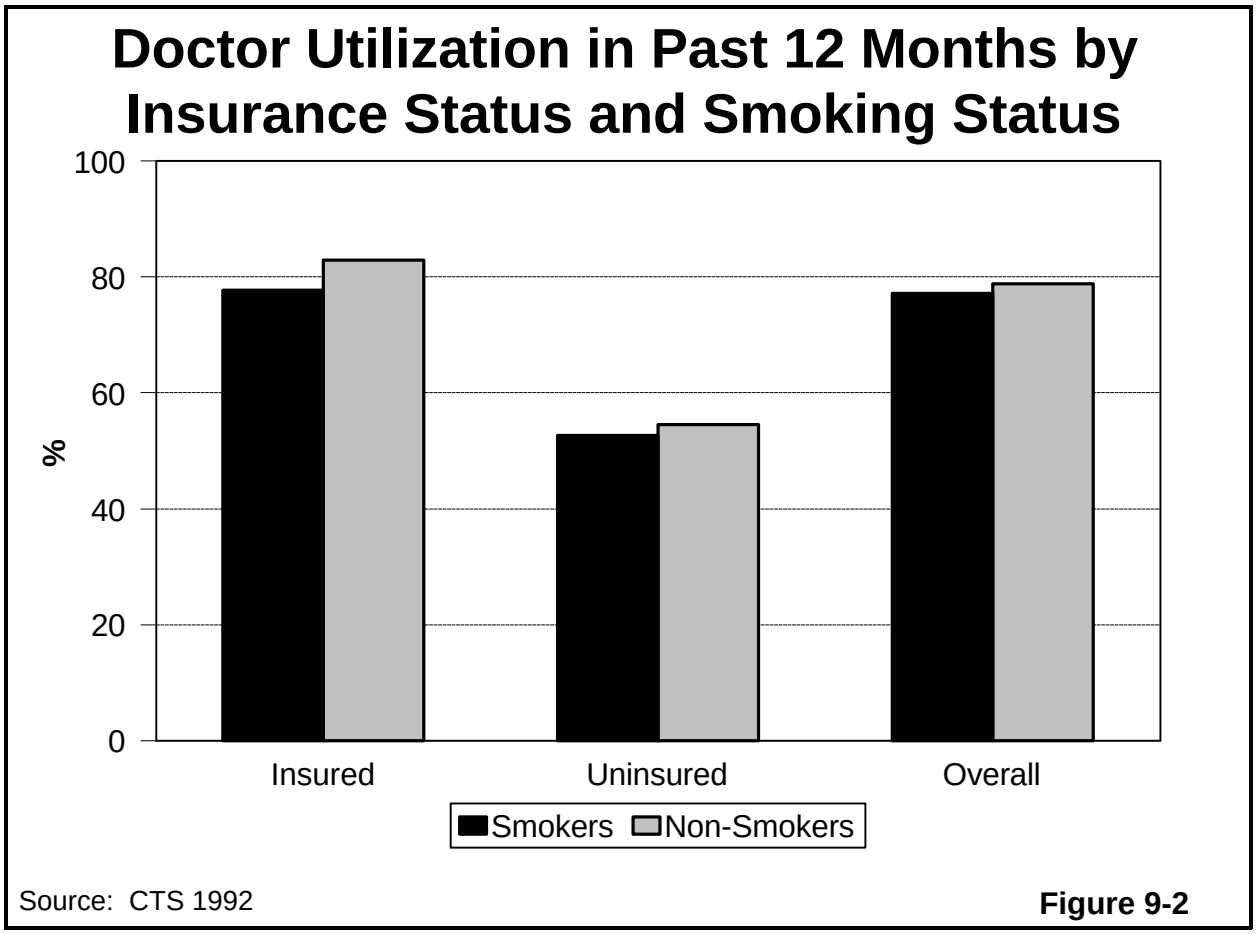


Figure 9-2

much more likely to report a doctor visit (82%) compared to the uninsured (54%). Those without insurance were three times more likely to have let 2 or more years elapse since their last visit to a doctor (25% of the uninsured versus 8% of the insured). We also observed that respondents who were insured by the government were more likely than other groups of respondents to have visited a doctor within the previous month.

SECTION 2
What Kinds of Help and Advice Do Smokers Receive from Doctors?

Respondents to the 1992 CTS who had smoked in the previous year were asked a series of questions about their interactions with physicians. Current smokers and smokers who had recently quit (in the last year) were asked:

In the last 12 months [before you quit], did your doctor

(i) advise you to stop smoking?
(ii) suggest that you set a specific date to quit smoking?
(iii) prescribe anything to help you quit smoking?

Respondents who had made a quit attempt in the past year were also asked independently if they had used medication and/or a counseling service to stop smoking. By this means, we identified those smokers who obtained prescriptions or referrals without being specifically advised to quit by their doctor. In 1993, the question about a quit date was eliminated, but respondents were still asked questions on physician advice to quit and their use of prescriptions and counseling.

Table 9-2 describes how often smokers reported receiving advice or help to quit smoking from doctors and from other sources, based on the 1992 data. Use of prescriptions and/or counseling services are combined into a single category of "assistance."

Table 9-2
What Proportion of Smokers* Receive Doctor's Help to Quit Smoking?

Type of Quitting Help Received	%	n
Nothing	69.6	3544
Advice Only	17.3	967
Advice + Quit Date	2.5	144
Advice + Assistance	6.0	383
Assistance Only	4.6	288

Source: CTS 1992
* All adults who smoked in the last year

Smokers who were advised by their doctors to quit were most likely to report receiving only the advice (17.3%), with a much smaller percentage reporting that further help was forthcoming in the form of a quit date (2.5%), or other assistance (6.0%). Approximately 4.6% of smokers sought counseling or obtained medication for cessation on their own initiative.

The vast majority of smokers (69.6%) did not receive advice to quit from their doctors or any other form of cessation assistance in the previous 12 months. We note that this group includes individuals who had not visited their doctor in the past year. Therefore, it does not represent the actual rate at which doctors advise their smoking patients to quit.

The actual rate at which doctors advise their smoking patients to quit and the type of advice received are presented in Table 9-3 for smoking patients who visited their doctors in the previous year.

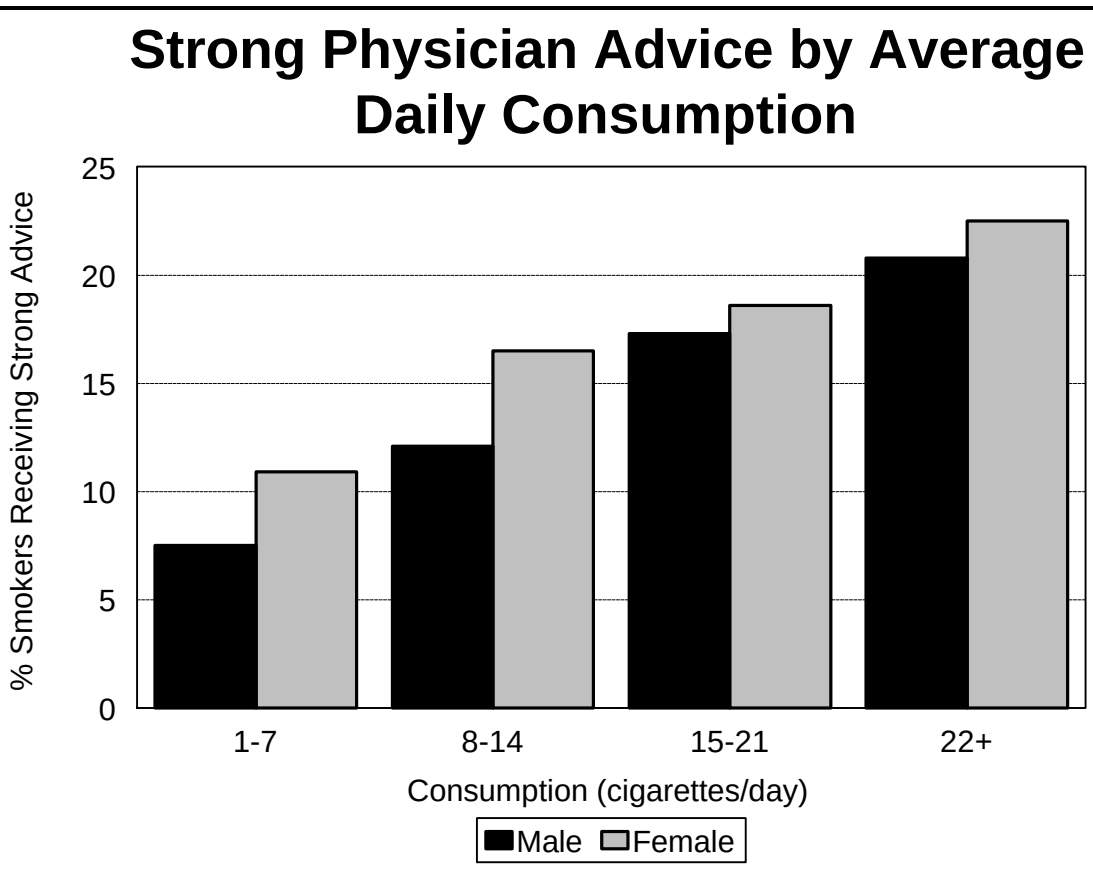
Table 9-3
Type of Advice to Quit for Smokers who Visited a Doctor in the Last 12 months

Demographic		Advice		
		Strong (%)	Weak (%)	None (%)
Overall		15.8	32.8	51.4
Sex	Male	14.6	30.4	54.9
	Female	17.1	35.1	47.9
Race/Ethnicity	White	17.8	34.4	47.8
	Black	19.3	24.8	56.0
	Hispanic	8.2	31.0	60.9
	Asian/Other	12.1	29.9	58.0
Age	18–24	7.6	26.0	66.4
	25–44	14.4	30.7	54.9
	45–64	23.0	36.6	40.4
	65 +	20.4	45.2	34.5
Education	< 12 years	12.6	37.4	50.0
	12 years	15.4	31.8	52.8
	13–15 years	18.7	30.4	50.8
	16 + years	15.9	31.4	52.7

Source: CTS 1992

Physician advice was classified as either strong (meaning that the physician suggested setting a specific quit date for the patient or prescribed medication for the patient) or weak (the physician encouraged the patient to quit smoking but did not provide medication or suggest setting a quit date for the patient). Overall, 51% of smokers visiting a physician received no quit advice. Reports of receiving advice from doctors increased with age, for both categories of strong and weak advice.

Although reports of weak advice showed little correlation with the smoker's level of cigarette consumption, reports of receiving strong advice increased substantially among heavier daily smokers (Figure 9-3). Irrespective of the smoker's level of consumption, women were more likely to have



Source: CTS 1992

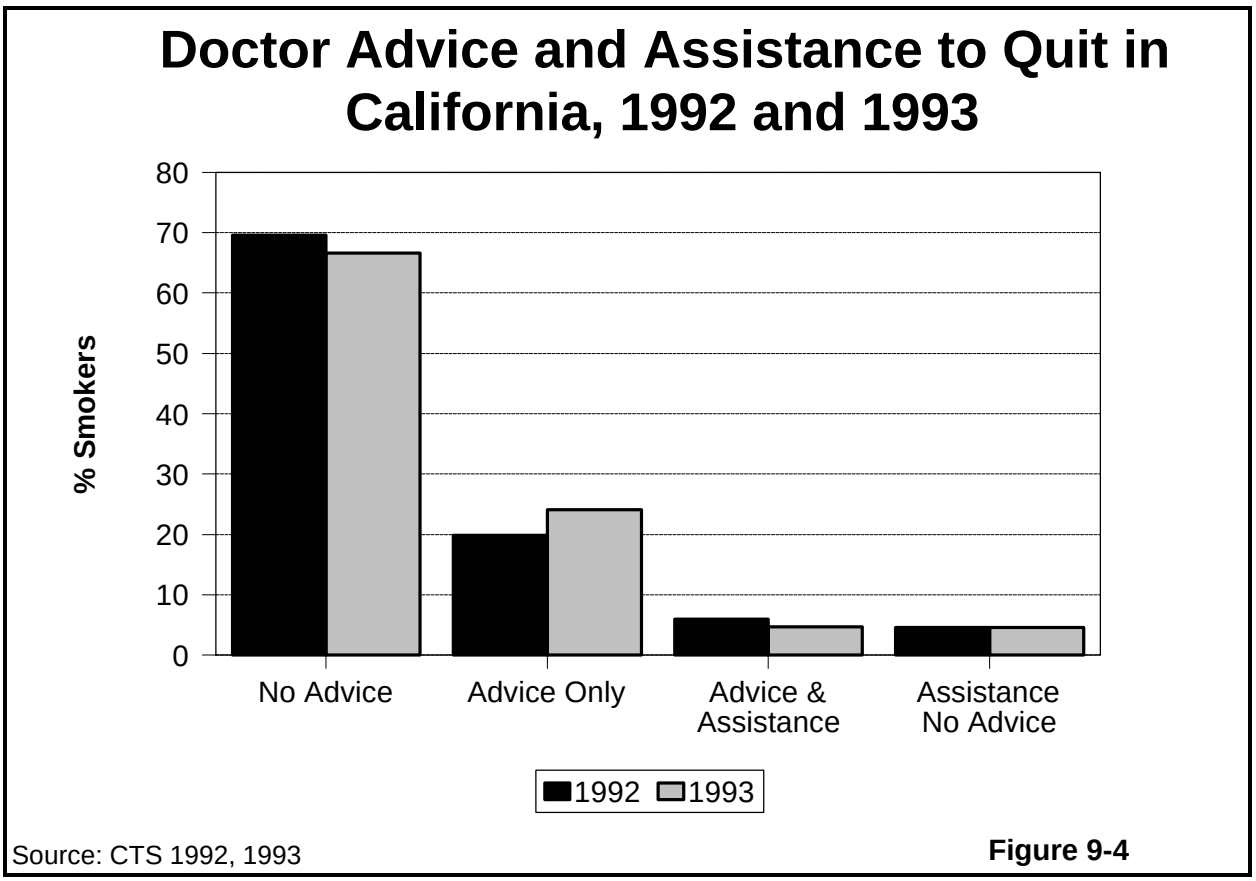
Figure 9-3

received strong advice than men. This result corroborates evidence presented in the previous chapter showing that prescription medication and counseling are more likely to be used by heavier smokers and by women.

We note that the analysis of the relationship between consumption and advice may be confounded by the fact that consumption refers to the level of consumption reported at the time of the survey, rather than at the time of the smoker's visit to the doctor when he or she could have been advised to quit smoking.

Frequency of Reported Advice and Assistance, 1992 and 1993

Figure 9-4 shows how often smokers reported receiving advice or seeking assistance to quit smoking in 1992 and 1993. In 1993, we observed a small increase of 4.3% in the proportion of smokers



Source: CTS 1992, 1993

Figure 9-4

reporting that they had been advised by their doctors to quit smoking. With this exception, the rate at which smokers received or sought help to quit smoking did not change over this time period.

Physician Advice and Type of Health Care Facility

All individuals who reported obtaining medical care in the past year were asked what type of health care facility they had visited. In Figure 9-5 we present information on the kind of facility most likely

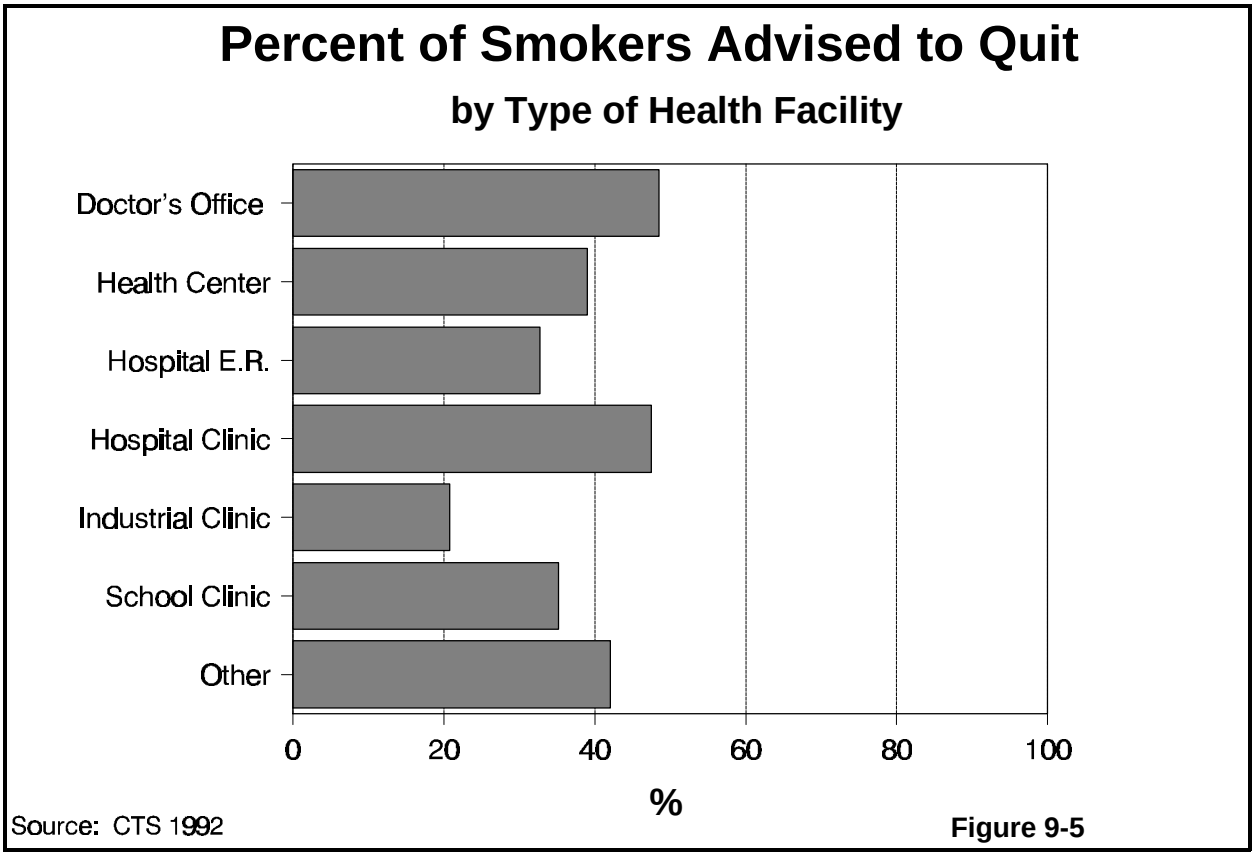


Figure 9-5

to dispense quitting advice, using results from the 1992 CTS. In California, private doctor's offices and hospital clinics led other facilities in frequency of quit advice. Industrial clinics and hospital emergency rooms were least likely to advise smokers to quit smoking.

SECTION 3
The Impact of Physician Advice and Assistance on Cessation

The Significance of Quit Dates

In the interests of data reduction, we investigated first whether the suggestion by a doctor to set a quit date should be considered separately from the provision of advice to quit. Do quit dates offer more effective help to smokers in terms of actual cessation than simple advice to quit? The percentage of smokers who had sustained a quit attempt for 30 days or more was computed for both smokers who received advice only and smokers who received advice and a quit date. The results suggested that smokers in both groups were equally likely to quit successfully: 10.2% of smokers in

the "advice only" category compared to 10.7% of smokers who received advice and quit dates reported being off cigarettes for at least a month at the time of survey. Therefore, the "advice only" and "advice + quit date" categories were combined in subsequent analyses.

The Influence of Physician Advice and Assistance on Long-Term Cessation

The relationship of various forms of quitting help to quitting success, defined here as a quit attempt lasting at least a month, are compared in Table 9-4. In both 1992 and 1993, smokers who had not received advice from their doctors or any other assistance were least likely to be off cigarettes for one month or more at the time of survey. The strongest impact on 30-day cessation rates was observed for smokers who had obtained assistance without prompting from their doctors. Twenty percent of the successful quitters indicated that they had sought help on their own initiative in 1992. Doctors

Table 9-4
The Impact of Advice and Assistance to Quit Smoking in California

Advice	Assistance	Quit 30 + Days, 1992 (% ± C.I.)	Quit 30 + Days, 1993 (% ± C.I.)
No	No	7.3 ± 2.0	7.3 ± 1.1
Yes	No	10.2 ± 2.1	5.5 ± 1.9
Yes	Yes	13.3 ± 4.9	15.8 ± 4.6
No	Yes	20.4 ± 6.5	17.7 ± 5.3

Source: CTS 1992, 1993
C.I. = 95% Confidence Interval

who advised patients to quit smoking without giving other assistance did not significantly improve the chances of cessation. However, advice combined with assistance did increase the likelihood that the patient would quit smoking for one month or more. This effect was significant in 1993, but not in 1992, probably due to the smaller sample sizes in the earlier survey.

We note that the higher quit rate evidenced among patients receiving both advice and assistance, as compared to advice alone, may well result from differences in motivation among the two groups of patients. A physician is unlikely to prescribe counseling and/or drugs for a patient who refuses to quit. Therefore, some tacit assent to the idea of quitting may be necessary before the patient will move out of the "advice only" group and into the assistance group.

The results for 1-month cessation suggests that physician advice has a moderate impact on the chances of quitting successfully. When doctors combine advice with offers of assistance in the form of prescriptions or counseling, the patient's chances of cessation are increased. Patients who were self-motivated to seek out cessation assistance were more likely to succeed in quitting smoking for 1 month**.**

SUMMARY OF FINDINGS

1. Access to medical care is high among both smokers and nonsmokers. In 1992, 11.8% of respondents were unable to obtain needed health care. Lack of insurance was the chief reason cited and appears to impose major limitations on health care access.

2. More than half (51%) of California smokers who visited the doctor received no advice to quit smoking.

3. Most smokers who are advised to quit by their doctor do not receive further assistance in the form of counseling referrals or prescription medication.

4. Smokers who received assistance *in addition to* advice from their doctors were significantly more likely to be successful in their attempts to quit smoking.

5. These data suggest that California physicians are not following the national guidelines, which suggest that doctors can effectively promote smoking cessation if they both advise and assist patients to quit smoking.

Chapter 10

PREDICTORS OF SUCCESSFUL SMOKING CESSATION: THE RELATIVE IMPORTANCE OF DIFFERENT INTERVENTIONS

INTRODUCTION

Seminal work by Horn[88] and by Prochaska and DiClemente[89] demonstrated that the process of quitting smoking is an extended one, involving considerable preparation before the actual quit attempt is made and frequent failures in initial attempts to quit smoking. Moreover, smokers who quit smoking remain at risk to relapse for long periods of time. Current research estimates that approximately one third of smokers who have abstained from smoking for more than a year will return to smoking in the future.[31]

The evaluation of an intervention designed to increase successful quitting depends on measures that allow us to identify whether smokers have moved closer to the point of long-term cessation. Hence, smokers who have recently quit are also a population of concern to smoking cessation interventions, given the high relapse rate of smokers even after long periods of abstention.

In this chapter, we present a new measure of progress toward successful cessation. This measure was developed to classify smokers according to their probability of quitting smoking in the future and maintaining that quit attempt. Using this measure, we assessed the relative efficiency of several interventions included in the Tobacco Control Program in terms of progress made by smokers toward successfully quitting smoking.

All analyses included in this chapter use the longitudinal sample of California adults interviewed in 1990 and in 1992. Section 1 of this chapter presents the data used to classify smokers into six categories of progress toward successful cessation. We examine the proportion of smokers in each category who made progress between 1990 and 1992. Our aim was to ascertain whether the Tobacco Control Program interventions impacted smokers in all categories equally. If a similar proportion of smokers in each category made progress, subsequent evaluations of program effects could then focus on all smokers who made progress between 1990 and 1992, irrespective of the category to which they were assigned. In Section 2, we conduct a multivariate analysis of predictors of progress toward successful cessation. The purpose of this analysis is to identify the importance of different program interventions, relative to other known predictors of cessation success.

SECTION 1
A New Measure of Progress Toward Successful Cessation

Classifying Smokers According to the Probability of Successful Quitting

The longitudinal panel of the California Tobacco Surveys included follow-up data on 3,489 current and former smokers who were first interviewed between June 1990 and February 1991, and were reinterviewed between March and July of 1992. The mean time to follow-up was 18 months, with the range varying from 14 to 24 months. Using these data, we undertook an in-depth analysis to develop categories of progress toward long-term cessation.

Current and former smokers were categorized according to their probability of being quit 18 months after the initial survey. The goal was to classify current smokers and former smokers into sequential categories of progress, such that each category would represent a significant increase in the probability that the individual would quit successfully in the future. We used abstinence for at least 3 months at the time of follow-up as our measure of successful cessation.

In developing a measure of progress toward cessation, we considered variables found to predict future quitting behavior in previous research. Broadly classified, these variables are as follows:

(1) Cognitive	**!** Quitting Cognitions	Beliefs and intentions relevant to a person's desire to quit smoking
(2) Behavioral	**!** Addiction Level	Factors suggesting the strength of the smoker's nicotine addiction
	! Past Behavior	Previous experience with attempts to stop smoking

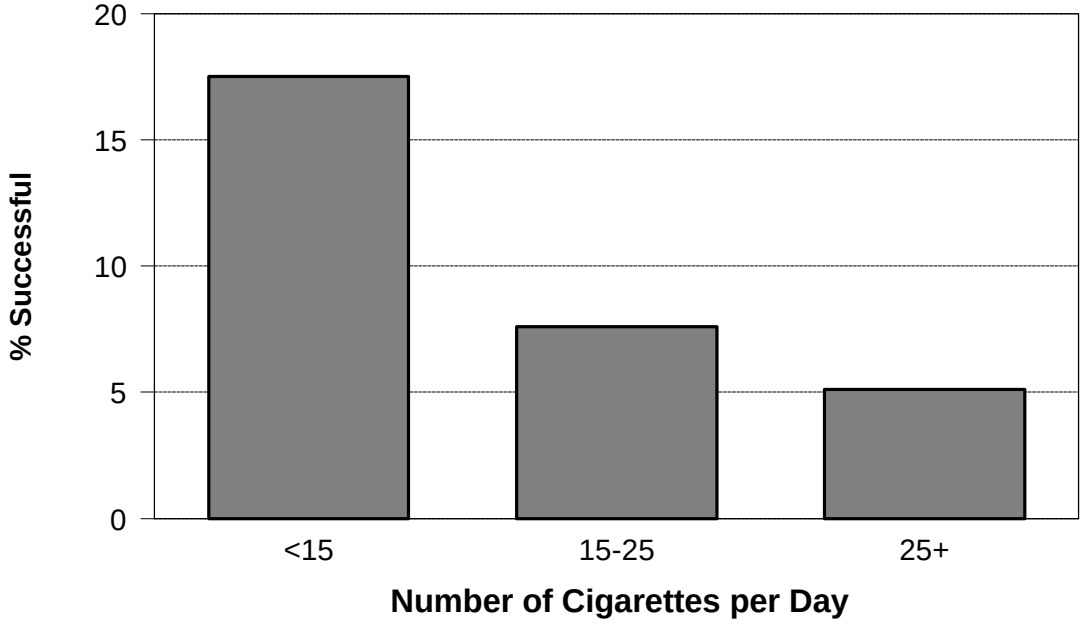
The classification system included only variables that were significant predictors of cessation. Preliminary analysis found no evidence that quitting cognitions predicted future quitting behavior.[20] Thus, the measure of progress toward successful cessation presented here is confined to behavioral items reflecting the smokers' addiction level and past experience with attempts to quit smoking. These behavioral items are described in more detail below.

Addiction Level and Successful Quitting

The strength of a smoker's nicotine addiction may be ascertained by the smoker's daily consumption level and time to first cigarette after waking (latency to smoke). Both measures were selected from a series of questions shown by Fagerstrom[78] to correlate highly with physical dependency, as

measured by the intensity of withdrawal symptoms. Smokers who are more physically dependent on cigarettes frequently have greater difficulty in successfully quitting their habit than less addicted smokers.[31]

Daily Consumption Level. Figure 10-1 shows which current smokers in 1990 were successfully quit in 1992, according to the number of cigarettes that they reported smoking daily in 1990. Approximately 19% of the 2,058 smokers surveyed in 1990 reported smoking more than 25

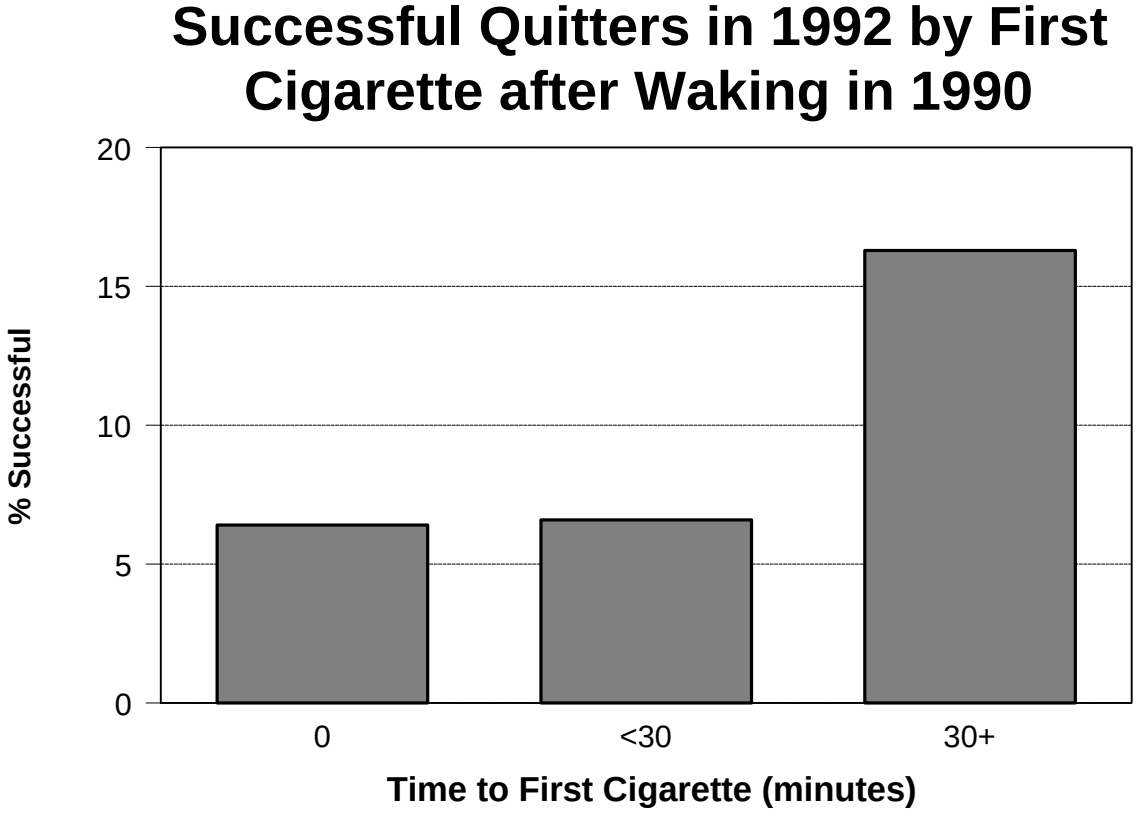


Source: CTS 1990-1992 Longitudinal

Figure 10-1

cigarettes per day; only 5% of these heavy smokers were successfully quit at follow-up. Almost half of the smokers reported consuming between 15 and 25 cigarettes per day in 1990; 7.6% of these moderate smokers were successfully quit in 1992, a percentage that was not significantly different from that of the heavy smokers. Thirty-six percent of the smokers consumed less than 15 cigarettes per day in 1990; these light smokers were the only group with a significantly better success rate than the other two groups, with 17.5% being successfully quit at the 18-month follow-up. Accordingly, we consider only two daily consumption levels in further analyses: less than 15 cigarettes per day and 15 or more cigarettes per day.

Latency: Time to First Cigarette. The data on time to first cigarette in the morning for the longitudinal CTS are presented in Figure 10-2. Twelve percent of smokers surveyed in 1990 reported smoking their first cigarette of the day immediately after waking; only 6.4% of these smokers were successfully quit at follow-up. Latency times of up to 30 minutes were reported by 41% of the smokers; the success rate of this group was 6.6%, virtually the same as for those who



Source: CTS 1990-1992 Longitudinal

Figure 10-2

smoked immediately upon waking. Forty-eight percent of the sample reported that they smoked their first cigarette more than 30 minutes after waking; the success rate among this group was 16.3% in 1992, a rate significantly different from both the other groups. These data support the treatment of this latency variable as a binary variable with a cut-point of 30 minutes after waking. Using both measures of addiction (latency to smoke and daily consumption) we developed an index of addiction level to show the likelihood of quitting for smokers at each level. As each addiction variable is binary, this index has three possible levels. The proportion of smokers at each level who were successfully quit at follow-up is presented in Table 10-1. Twenty-eight percent of the 1990 smokers were in the

Table 10-1
Successful Quitting in 1992 by a Combination of Addiction Variables

Addiction Variables 1990			Success Rate 1992	
Cigarettes/Day	Latency to Smoke	n	%	C.I.*
low	long	584	19.6	12.7–26.3
high	long	399	9.9	4.6–15.2
low	short	153	10.0	4.3–15.7
high	short	922	5.8	4.0–7.6

Source: CTS 1990–1992 Longitudinal
*C.I. = 95% Confidence Interval

least addicted category (smoking less than 15 cigarettes per day and delaying 30 minutes or more before smoking their first cigarette). At follow-up, 19.6% of these smokers had quit successfully. Of smokers surveyed in 1990, 27% scored highly on one, but not both of the addiction variables: 10% of these smokers were successfully quit at follow-up, regardless of which indicator of addiction they reported. Forty-five percent of smokers in the sample were classified as highly addicted on both measures and these smokers had the lowest success rate, with only 5.8% being quit successfully at follow-up.

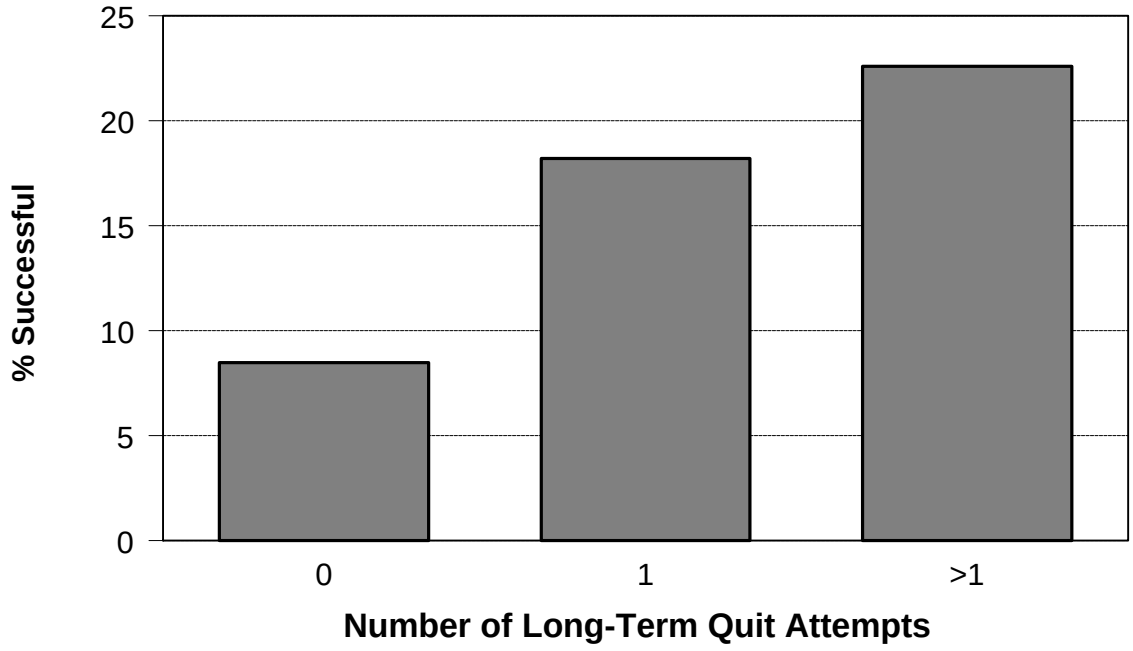
Given these success rates, we decided to treat addiction as a binary variable in further analyses, comparing those who were least addicted on both of these measures (low consumption level, long latency to smoke) with all other smokers.

Previous Quitting Behavior and Successful Quitting

An individual's behavioral experience is often a strong predictor of future behavioral choices.[90] Evidence suggests that many smokers make several attempts to quit smoking before becoming permanent abstainers.[91] The 1990 CTS questioned respondents about their experience with both long- and short-term quit attempts. The first set of questions asked all ever smokers whether they had ever quit smoking for more than 1 year, and followed with questions on the duration of each

reported long-term quit. The second set of questions were addressed to all adults who reported having smoked in the previous 12 months. Respondents were asked if they had quit smoking intentionally for one day or longer and they were also asked about the timing and duration of this attempt. For smokers who reported short-term quits, we used the duration of the last reported quit attempt as the measure of quitting history.

Long-Term Quitting History. Among the 2,058 smokers interviewed in 1990, 69% reported that they had never made a quit attempt that lasted 1 year or longer; the success rate at follow-up for these smokers was 8.5% (Figure 10-3). Approximately 23% of smokers reported having made one quit



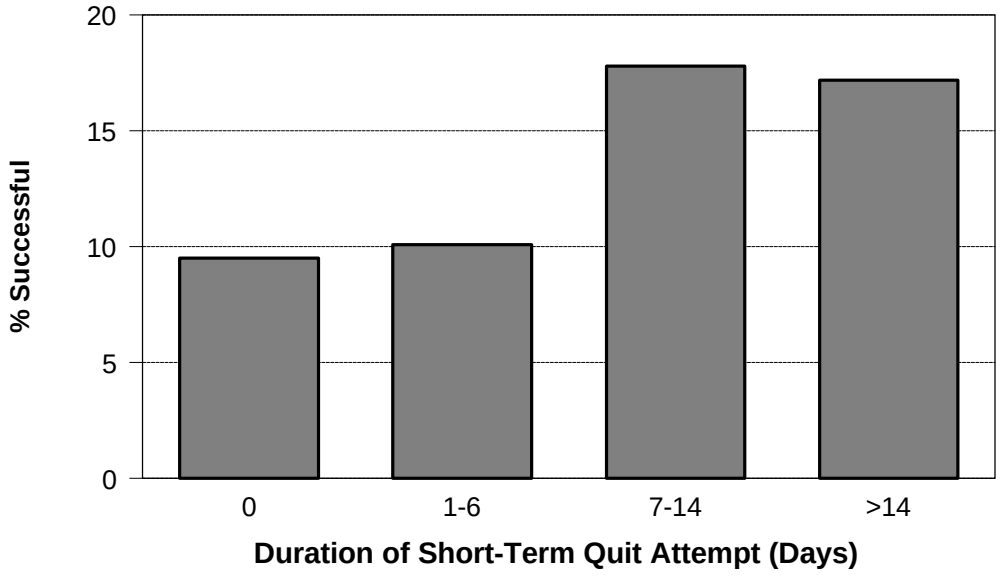
Source: CTS 1990-1992 Longitudinal

Figure 10-3

attempt that lasted more than a year; 18.2% of this group were successfully quit at follow-up. A further 8% of smokers reported more than one long-term quit, and their success rate was 22.6% at follow-up. No significant differences were found between the success rates of either group that had made a long-term quit attempt. However, both groups with a long-term quitting history had success rates that were double those of smokers who had never made a long-term quit attempt. This

difference was statistically significant. In further analyses, we treat this long-term quit variable as either present (one or more long-term quit attempt) or absent (no long-term quit attempt).

Short-Term Quitting History. Figure 10-4 presents information on the short-term quitting history of smokers interviewed in 1990. Sixty-one percent reported that they had not made a quit attempt that lasted at least a day in the previous year. At the 18-month follow-up, 9.5% of this group were successfully quit. Twenty-two percent of the smokers in 1990 reported having made a quit attempt that lasted between 1 and 6 days in the year before the 1990 survey. The success rate for this group at the 1992 follow-up was 10.1%, or essentially the same as for those who reported no quit attempt. Nine percent of the 1990 smokers reported a quit attempt in the previous year that lasted between 7 and 14 days, and 17.8% of this group were successfully quit at follow-up. A further 8% of smokers surveyed in 1990 reported a quit attempt in the previous year that lasted longer than 14 days; the success rate of this group was 17.2% at follow-up. When we collapsed the data on short-term quit attempts, those whose last reported quit attempt in the previous year was maintained for at least 7 days had a success rate of 17.6% (95% confidence interval = 10.0–25.1) and those whose last reported quit attempt in the previous year lasted less than 7 days had a follow-up success rate of 9.6% (95% confidence interval = 7.21–12.07). We were therefore able to treat short-term quitting history as a binary variable, distinguishing between smokers who had a history of short-term quits lasting more than 7 days and smokers who did not.



Source: CTS 1990-1992 Longitudinal

Figure 10-4

Using both binary measures of short- and long-term quitting history, we constructed an index of quitting history with four levels which is presented in Table 10-2. Fifty-seven percent of 1990 smokers had no short- or long-term quitting history and their success rate was 6.5% at follow-up. Twelve percent of the 1990 sample had a positive short-term quitting history only, and a further 25% had a previous history of long-term quits only. Successful quitting in these two groups at follow-up was 15% and 18% respectively. Thus, both groups with short- or long-term quits experienced more than twice the success rate of smokers with no quitting history. Eight percent of the 1990 smokers had both a short- and a long-term history and their success rate was 24.7%. The only group that was significantly different from any other was the group with no quitting history. Thus, we decided to treat quitting history as a binary variable, comparing smokers with evidence of either a short- and/or a long-term history to smokers with no quitting history.

Table 10-2
Successful Quitting in 1992 by a Combination Previous Quitting History Variables

Quitting History Variables 1990		n	Success Rate 1992	
Any Long-Term Quit Attempt (Duration)	Last Short-Term Quit Attempt (Duration)		%	C.I.*
< 1 Year	< 7 Days	1176	6.5	3.9–9.1
< 1 Year	≥ 7 Days	253	15.4	6.4–24.4
≥ 1 Year	< 7 Days	521	18.1	12.8–23.5
≥ 1 Year	≥ 7 Days	108	24.7	13.6–35.8

Classifying Former Smokers According to their Probability of Relapse

As indicated earlier, the fact that an individual is quit at the time of a survey does not guarantee that the individual will be able to maintain their quit status. Relapse to smoking appears to be almost normative among smokers who have quit. The chance of remaining off cigarettes is thought to increase with the duration of the quit attempt.[3,71] An association between the duration of the quit attempt and the probability of relapse has been consistently documented in research on quitting behavior.[31] Some research suggests that a former smoker is at risk of returning to smoking for at

least 2 years after quitting and perhaps as long as 5 years after the quit attempt.[31] Accordingly, in analyzing the probability of relapse, we restricted the sample to former smokers who reported that they had quit smoking within 5 years of the survey.

The probability of remaining abstinent from cigarettes at any time point may also be predicted by the individual's relapse cognitions. Expectations of failure are often self-fulfilling with respect to future behavior.[92] Self-efficacy, or the confidence of smokers that they can maintain their quit attempt, has been identified in preliminary research as a potential predictor of cessation behavior.[93,94] We measured relapse self-efficacy in 1990 with the following four questions:

(1) *Do you ever think about smoking and whether you might go back?*
(2) *Do you think that it is likely or unlikely that you will return to smoking in the next 12 months?*
(For those who indicated unlikely) *Would you say that it is unlikely or extremely unlikely?*
(3) *Do you think that it is likely or unlikely that you will return to smoking during your life?*
(4) *Do you think that there is any possible situation in which you might start smoking again?*

We employed a very strict criterion to indicate relapse self-efficacy. The individual had to be absolutely sure on all four questions that they would not start smoking again in order to be classified as having high self-efficacy (*i.e.*, not at risk of relapse). Using this criterion, approximately half of former smokers in 1990 who had quit in the past 5 years were categorized as at risk to return to smoking.

The data on duration of the current quit status and relapse self-efficacy are presented in Table 10-3. The duration of the quit status strongly affected the probability of relapse. Former smokers who had been quit between 3 and 18 months were twice as likely to remain quit compared to those who had been quit for less than 3 months. Former smokers who had been off cigarettes for more than 18 months were 30 times more likely to stay quit than those who had quit less than 3 months ago, and were 15 times more likely to remain quit than former smokers who had been quit for between 3 and 18 months. Former smokers who were classified into the low self-efficacy group were 48% more likely to relapse than those who were in the high self-efficacy group. Because the duration of quit attempts outweighs relapse self-efficacy in predicting relapse, we decided to use only the duration of the quit attempt as an indicator of the probability of maintaining quit status among former smokers.

Table 10-3
Relapse Self-Efficacy and Quit Duration as Determinants of Relapse at Follow-up

Variable	n	Cessation Without Relapse (%)	C.I.*
Relapse Self-Efficacy			
Weak	572	77.0	70.1–83.9
Strong	859	95.2	93.3–97.1
Quit Duration			
1 to 90 Days	142	27.2	16.7–37.7
91 to 550 Days	227	71.0	60.3–81.7
551 + Days	1062	97.1	95.9–98.3

Source: CTS 1990–1992 Longitudinal
*C.I. = 95% Confidence Interval

Categories of Progress Toward Successful Quitting and Maintenance

We used the binary indices of baseline quitting history and addiction level of current smokers, and duration of current quit status of former smokers to develop a classification system measuring progress toward successful cessation. Our goal was to develop categories of progress that reflected a successively increasing probability that an individual would successfully quit or retain quit status in the future. We define six categories of progress toward successful cessation and present the evidence supporting this classification system in Table 10-4. The first three categories classify people who were currently smoking at the time of the first survey by their probability of being successfully quit 18 months later. The last three categories classify people who are off cigarettes at the time the survey by their probability of being still quit at the time of follow-up.

Category 1 smokers have the lowest probability of successful quitting. A person in this category is a current smoker with no quitting history and high addiction scores. Smokers in this group have never abstained from cigarettes for a year, nor did they quit smoking for at least 7 days on their last quit attempt in the year before the survey. They also smoke more than 15 cigarettes per day or they smoke their first cigarette in the first half hour after waking. Less than 5% of this group had been off cigarettes for more than 3 months at the 18-month follow-up.

Table 10-4
Successful Quitting in 1992 by Stage of Quitting in 1990

1990					1992	
STAGE	**Smoking Status**	**Quit History**	**Addiction**	**n**	**% Quit for 3 Months**	**C.I.***
1	Current	No	Yes	923	4.3	2.7–5.8
2	Current	Yes No	No Yes	804	13.2	9.0–17.4
3	Current	Yes	No	331	24.4	14.7–34.0
		Abstinence Duration				
4	Former	< 90 days		142	49.2	31.9–66.5
5	Former	3–18 months		227	75.6	65.5–85.6
6	Former	> 18 months		1062	97.7	96.6–98.9

Source: CTS 1990–1992 Longitudinal
*C.I. = 95% Confidence Interval

Category 2 smokers have a significantly higher probability of quitting successfully in the next 18 months than smokers in Category 1; 13% of smokers in Category 2 were quit at the 18-month follow-up. People in this category are current smokers who have either a low addiction score *OR* a positive quitting history.

Category 3 requires that the current smoker scored low on the addiction index *AND* have a positive quitting history. The 18-month quitting success rate of this group was 24.4%.

Category 4 is the lowest category for former smokers, *i.e.*, already quit at time of survey. The duration of the reported abstinence at baseline is less than 3 months. The success rate at the 18-month follow-up for this group was 49.2%.

Category 5 requires the former smoker to be abstinent for more than 3 months and less than 18 months at baseline. At the 18-month follow-up, 75.6% of these former smokers reported having quit for at least 3 months.

Category 6 requires the former smoker to be abstinent for at least 18 months at baseline. At follow-up, 97.7% of these former smokers reported being quit for at least 3 months.

Progress Toward Successful Cessation in the Longitudinal Sample

The classification system presented above is based on the probability that a person who has smoked in the past will be successfully quit at the follow-up survey. Each category is significantly different from the previous category with respect to probability of successful cessation. Progress toward cessation can thus be defined as a move to at least the next category on the index at the time of the follow-up survey. Using a similar logic, individuals who move down a category are considered to have regressed toward a lower probability of successful cessation in the future. This measure allows us to identify progress that occurs incrementally over time.

We analyzed the proportion of smokers in each category who made progress or regressed between the first survey and the follow-up interview. Our aim was to ascertain whether a similar proportion of smokers in each of the first three categories made progress toward successful cessation. If this proved to be the case, subsequent evaluations of program effects could then focus on all smokers who made progress between 1990 and 1992, irrespective of the category to which they were assigned.

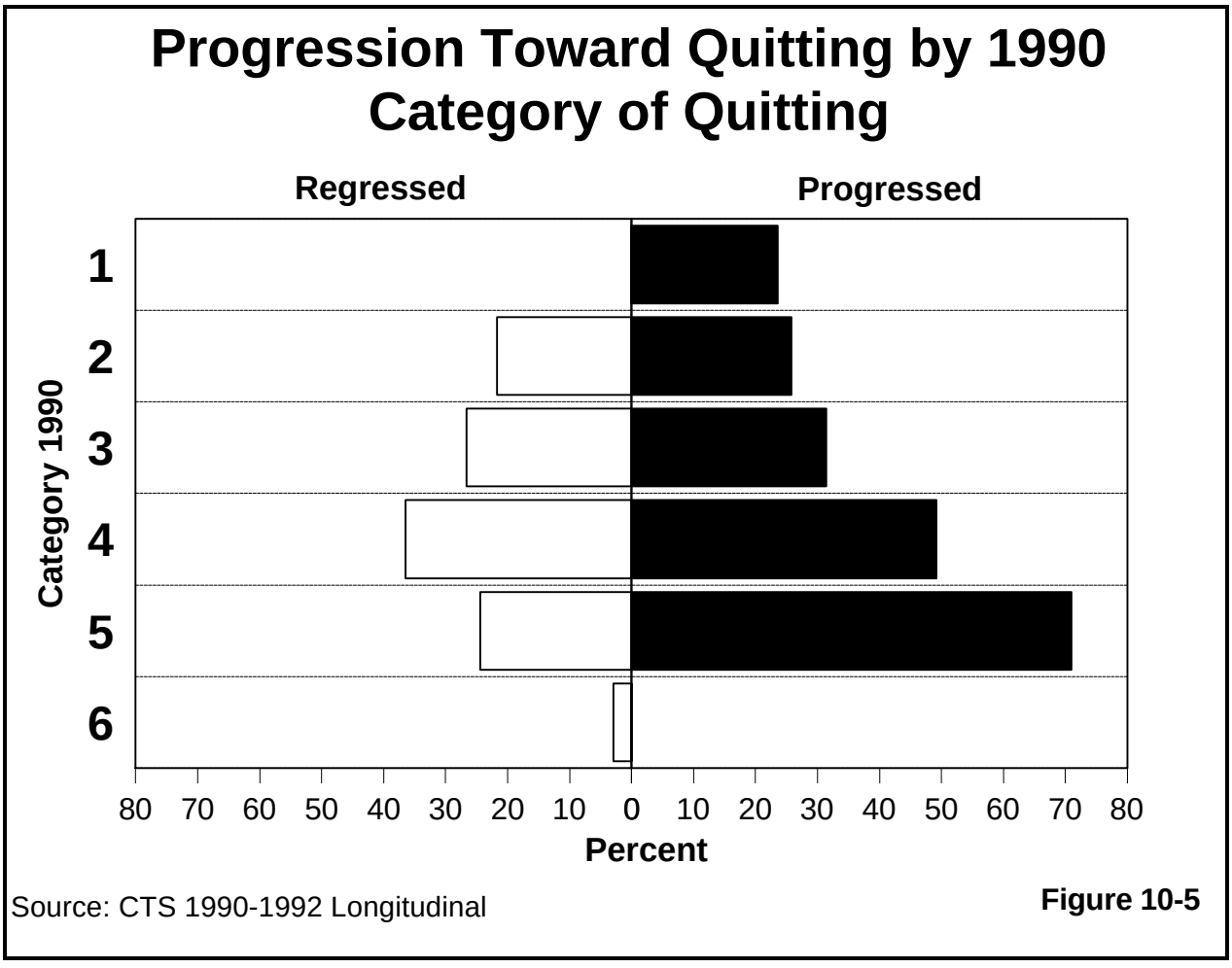
Information on progression and regression of smokers between categories is presented in Figure 10-5. Category 1 is the worst group; hence smokers who were classified in this category in 1990 could not regress. Three quarters of these smokers were still in Category 1 when surveyed in 1992. A total of 23.6% made progress in the 18 months to follow-up, with 7.4% of them reporting that they were not smoking at the second survey.

More than 20% of those who were in Category 2 in 1990 regressed to Category 1 by the second survey. Just over half remained in Category 2; 7.3% had progressed to Category 3, and 18.5% reported that they were nonsmokers at the second survey. A total of 25.8% of smokers in Category 2 made progress toward successful cessation.

Among smokers classified into Category 3 in 1990, 26.6% regressed, with most (22.5%) moving back to Category 2. A total of 31.4% of smokers in Category 3 made progress and were not smoking at follow-up. The proportion of smokers who made progress ranged from 23.6% to 31.4%. We considered these proportions close enough to use progress as a single outcome measure in further analyses.

Of former smokers who were in Category 4 in 1990 (quit for less than 3 months), 49.2% progressed and were quit for more than 3 months at the time of the follow-up survey; 14.3% relapsed between the two surveys but reported having been off cigarettes for less than 3 months at follow-up. Regression involving relapse occurred in 36.5% of this category, with 14% being classified in Category 3 at the follow-up, 13.4% in Category 2, and 9.1% in Category 1.

Of former smokers who were in Category 5 at baseline (quit between 3 and 18 months), 71% progressed through to Category 6 at follow-up. Less than 5% were classified as remaining in Category 5; 7.4% regressed to Category 3 and 14% regressed to Category 2.



Source: CTS 1990-1992 Longitudinal

Figure 10-5

Of former smokers who were in Category 6 at baseline (*i.e.*, with the highest probability of maintaining quit status) 97.1% remained in this category through the follow-up period, with less than 1% being distributed into each of Categories 2, 3, 4, and 5.

SECTION 2
Predictors of Progress Toward Successful Cessation

Sociodemographic Factors

The results of a multivariate analysis of sociodemographic factors and their relationship to cessation progress are presented in Table 10-5. In this table, the adjusted odds ratio indicates the proportionate increase in progress made by smokers in each demographic group after adjusting for all the other variables in the model.

Table 10-5
Sociodemographic Predictors of Progress Toward Quitting

		n	% Progressed	Adjusted Odds Ratio	C.I.*
Sex	Male	1000	25.9	1.00	
	Female	1058	25.8	0.90	0.62–1.3
Age	18–24	150	32.0	1.0	
	25–44	978	25.1	0.76	0.38–1.53
	45–64	698	23.4	0.82	0.39–1.70
	65 +	232	26.3	1.15	0.45–2.86
Race/ Ethnicity	Non-Hispanic White	1622	21.5	1.0	
	Hispanic	194	41.9	2.72	1.50–4.95
	Black	130	28.7	1.50	0.72–3.13
	Asian/Other	112	26.5	1.49	0.71–3.11
Education	< 12 years	248	27.9	1.0	
	12 years	648	23.5	1.12	0.70–1.79
	13–15 years	971	25.0	1.22	0.77–1.95
	16 + years	191	32.1	1.70	0.92–3.17

Source: CTS 1990–1992 Longitudinal

Overall, more than 25.9% of California smokers made progress toward quitting in the 18-month period between surveys.

There was no difference in the proportion of men or women who made progress. Although 32% of the 18- to 24-year age group progressed between the two surveys — a higher proportion than among 45- to 64-year-olds (23.4%) — age differences in progress were not statistically significant. Those with the highest level of education appear to have made more progress than other groups; however, this difference also did not attain statistical significance when controlled for other variables.

Hispanics were 2.7 times more likely to make progress than non-Hispanic whites, which was statistically significant. This was the only significant difference observed between race or ethnic groups in their likelihood of making progress toward successful cessation.

Other Predictors of Progress Toward Successful Cessation

The adjusted odds ratios for Program interventions and other predictors of progress toward successful cessation are presented in Table 10-6.

Workplace Smoking Policies. In the longitudinal sample, approximately one third of the respondents did not work indoors one or both years, or were self-employed; another third of the sample did work indoors both years, but were not employed in a smokefree work area in 1992; the remaining third worked indoors both survey years and reported a smokefree work area policy in 1992. Workers employed in a mandated smokefree work area were 82% more likely to make progress toward successful cessation than indoor workers without a smokefree work area.

Home Smoking Policy. Smokers who had a voluntary (or negotiated) rule in which smoking was at least generally forbidden in their own home (572 people) were more than twice as likely to progress toward quitting compared to smokers who accepted lesser or no restrictions on smoking in their home. This difference was statistically significant.

Beliefs about Environmental Tobacco Smoke. Only 375 smokers in this sample did not believe that environmental tobacco smoke (ETS) could harm the nonsmoker. Among this group, 15% made progress. Smokers who were convinced of the harmful effects of ETS were 65% more likely to make progress toward quitting.

Personal Motivation to Quit Smoking. We include in this table a measure of the extent to which the smoker was motivated to quit smoking. Preliminary analysis showed that personal motivation played a role in inciting the smoker to begin preparations for cessation (*e.g.*, by attempting a short-term quit), although personal motivation was not significantly associated with eventual cessation success, as mentioned earlier.

Table 10-6
Other Predictors of Progress Toward Successful Cessation

		n	% Progressed	Adjusted Odds Ratio	C.I.*
Workplace Restrictions	Indoor Worker No Ban in 1992	666	20.5	1.0	
	Indoor worker Ban in 1992	665	30.0	1.82	1.05–3.17
	Not Working# Indoors 1 or Both years	727	27.5	1.61	0.99–2.60
Home Restrictions	Not Generally Banned	486	20.3	1.0	
	Generally Banned	572	38.0	2.03	1.39–2.96
Belief in Harm of ETS	No ETS Concern	375	14.9	1.0	
	ETS Concern	1683	27.9	1.65	1.03–2.63
Personal Motivation to Quit	Not Motivated	696	17.7	1.0	
	Motivated	1362	30.3	1.81	1.22–2.69
Perceived Nonsmoker Annoyance	Not an Issue	1665	24.6	1.0	
	Smoke + Annoys	393	30.3	1.46	0.89–2.39
Assistance and Doctors Advice	No Assistance or Advice	1364	25.9	1.0	
	Physician Advice	423	20.8	0.75	0.44–1.30
	Doctors Advice with Assistance	115	33.0	1.50	0.81–2.76

Personal motivation was assessed among smokers interviewed in 1990 by asking them:

"How sure are you that you could refrain from smoking for at least 1 year?"

Smokers were also asked to agree or disagree with the following statement:

"I prefer to smoke even if it means I won't live as long"

In 1990, approximately one third of smokers were not motivated to quit by this definition. Of this group, 17.7% made progress toward successful cessation during the 18 months to follow-up. Smokers who were motivated to quit were 80% more likely to make progress, which was statistically significant.

Perceived Social Pressure not to Smoke from Nonsmokers. We defined a variable that was a marker for social pressure not to smoke from nonsmokers using two items. Current smokers interviewed in 1990 were asked to agree or disagree with the following statements:

(1) *"My smoking does not annoy people around me who don't smoke"*
(2) *"I rarely smoke when I am the only smoker in a group"*

Of smokers surveyed, 1,665 indicated either that they did not smoke in the company of nonsmokers and therefore nonsmoker annoyance was not an issue, or that they did smoke when nonsmokers were present and did not perceive their smoking to annoy nonsmokers. Of these smokers, 25% made progress toward successful cessation. Among the 393 smokers who indicated that they both smoked in front of nonsmokers and that it annoyed the nonsmokers, 30% moved closer to successfully quitting by the second survey. However, this difference was not statistically significant.

Assistance to Quit Smoking and Physician Advice. We assessed the progress toward long-term cessation of four groups of smokers who reported different levels of quitting assistance received from medical practitioners and from formal cessation programs. The majority of smokers (1,364) reported no advice or formal assistance and of these approximately one quarter made progress toward a successful quit. One fifth of smokers who were advised to quit by their doctor made progress and one third of smokers who received both advice to quit and referrals to formal assistance programs made progress. The most progress toward quitting occurred among smokers who sought formal assistance independently without being advised to quit by their doctor. Of these, 38% made progress. The differences in the proportion of smokers in each of the four groups who made progress were not statistically significant. The small number of smokers reporting advice and/or assistance may be a factor in the failure to detect a significant effect of assistance and physician advice on progress toward long-term cessation.

CONCLUSION

What Does This Mean for the Tobacco Control Program?

Given that successful cessation is a long-term process that is composed of many incremental changes in behavior and attitudes, it is important that interventions conducted by a Tobacco Control Program

result in a general shift in the population of smokers toward quitting. This shift occurred in California between 1990 and 1992. Approximately one quarter of all smokers made progress toward successful cessation. Although some smokers regressed, the overall picture suggests that California smokers moved closer to effecting further reductions in smoking prevalence in the near future.

A number of the interventions implemented by the Tobacco Control Program appear to be instrumental in moving California smokers along the path to successful cessation. Several predictors of progress toward cessation related to beliefs about the deleterious health effects of ETS on nonsmokers. For example, smokers and former smokers who voluntarily accepted restrictions on their smoking at home made significant progress toward cessation. In Chapter 5, we observed that belief in the harmful effects of ETS was associated with exposure to the California antismoking mass media campaign, which heavily targeted the issue of ETS. Clearly, concern for the health of others is a powerful incentive for smokers to attempt to quit smoking.

The local lead agencies funded by the Tobacco Control Program have focused on ordinances and on the provision of technical assistance to companies to implement workplace smoking policies to protect nonsmoking workers. Smokers and former smokers who worked in a smokefree work area made significant progress toward long-term abstinence.

The competitive grants program has emphasized the provision of formal cessation assistance to smokers. It has also supported the training of physicians to give appropriate advice and assistance to their smoking patients to quit. Our data suggest that while physicians have a role in motivating smokers to prepare for cessation, physician advice is probably not the cornerstone of an effective Tobacco Control Program. Any advice should be supplemented with offers of specific cessation assistance. Smokers appear to benefit significantly from concrete help in making and sustaining a quit attempt. Such help could include either a prescription to help them overcome withdrawal symptoms, or self-help materials or referrals to cessation counseling programs. Unfortunately, not enough smokers were receiving any assistance for us to determine the best combination of assistance strategies to help a smoker progress toward successful cessation. The evidence does support however, the continuation of programs to provide cessation assistance to smokers as a major goal of the Tobacco Control Program.

SUMMARY OF FINDINGS

1. Smokers and former smokers were classified based on their probability of quitting and maintaining a quit attempt in the future. This classification was termed a measure of progress toward successful cessation.

2. Between 1990 and 1992, a quarter of California smokers made progress toward successful cessation.

3. For current smokers, a history of previous quit attempts is an important indicator of progress if the last quit attempt was maintained for 7 days or more.

4. Daily cigarette consumption and latency to smoke the first cigarette of the day are important indicators of progress toward successful cessation. Evidence supports advising smokers who wish to quit to reduce daily consumption to less than 15 cigarettes and to delay their first cigarette for at least 30 minutes after they awake.

5. Smokers and former smokers who had a smokefree work area made significant progress toward long-term abstinence. Other predictors of progress included beliefs that personal smoking can harm others, and having a smokefree home.

6. The provision to smokers of formal cessation assistance appears to predict long-term cessation.

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Appendix

Background Sociodemographic Data on Major Topics in Report

Note: PI=Pacific Islander

Table 1 - 1990
SMOKING PREVALENCE FROM SCREENER SURVEY

OVERALL		Current Smoker (%)	Former Smoker in last 5 yrs (%)	Quit Ratio in Last 5 Years (%)	Population Size (N)	Sample Size (n)
Total		22.2	9.9	30.9	21,562,588	118,448
Sex	Male	25.5	10.8	29.7	10,465,195	57,524
	Female	19.1	9.1	32.3	11,097,393	60,924
Age	18-24	21.5	6.9	24.4	3,271,952	20,406
	25-44	24.5	10.1	29.3	10,168,495	55,491
	45-64	23.7	11.6	32.8	5,105,892	28,190
	65+	12.9	9.7	42.9	3,016,249	14,361
Race	Hispanic	19.4	9.2	32.3	4,831,543	27,785
	Non-hispanic White	23.3	10.6	31.4	13,318,072	71,000
	Black	27.5	9.0	24.5	1,356,812	8,343
	Asian/PI	15.9	7.2	31.3	1,732,772	9,669
	Other	32.8	8.6	20.7	323,389	1,651
Education Level	<12 years	27.0	9.5	26.0	5,084,426	16,774
	12 years	26.5	10.7	28.7	6,938,291	37,117
	13-15 years	19.9	10.2	33.8	5,018,626	34,834
	16+ years	12.8	8.9	41.1	4,521,245	29,723
MALE						
Age	18-24	24.8	6.8	21.4	1,682,466	10,282
	25-44	28.4	10.8	27.6	5,024,716	27,289
	45-64	26.3	12.8	32.9	2,465,009	13,761
	65+	14.1	12.0	46.0	1,293,004	6,192
Race	Hispanic	26.2	11.2	30.0	2,431,341	13,798
	Non-hispanic White	24.9	10.9	30.5	6,431,336	34,519
	Black	30.6	9.0	22.8	609,295	3,683
	Asian/PI	23.5	10.3	30.6	831,840	4,693
	Other	34.2	10.0	22.6	161,383	831
Education Level	<12 years	34.4	11.2	24.7	2,455,119	8,156
	12 years	30.2	11.6	27.6	3,147,342	16,762
	13-15 years	22.0	10.8	32.9	2,412,333	16,591
	16+ years	14.2	9.4	39.8	2,450,401	16,015
FEMALE						
Age	18-24	18.0	7.1	28.3	1,589,486	10,124
	25-44	20.7	9.4	31.4	5,143,779	28,202
	45-64	21.3	10.4	32.7	2,640,883	14,429
	65+	12.0	7.9	39.9	1,723,245	8,169
Race	Hispanic	12.5	7.2	36.8	2,400,202	13,987
	Non-hispanic White	21.8	10.4	32.3	6,886,736	36,481
	Black	25.0	8.9	26.2	747,517	4,660
	Asian/PI	8.9	4.4	33.0	900,932	4,976
	Other	31.5	7.2	18.7	162,006	820
Education Level	<12 years	20.2	7.8	28.0	2,629,307	8,618
	12 years	23.5	10.0	29.8	3,790,949	20,355
	13-15 years	18.0	9.6	34.8	2,606,293	18,243
	16+ years	11.2	8.4	43.0	2,070,844	13,708

Table 1 - 1992
SMOKING PREVALENCE FROM SCREENER SURVEY

OVERALL		Current Smoker (%)	Former Smoker in Last 5 yrs (%)	Quit Ratio in Last 5 Years (%)	Population Size (N)	Sample Size (n)
Total		20.0	9.5	32.1	21,586,615	21,871
Sex	Male	22.8	10.8	32.1	10,514,898	10,585
	Female	17.4	8.2	32.1	11,071,717	11,286
Age	18-24	18.8	5.6	23.1	3,283,006	3,441
	25-44	22.8	9.7	29.8	10,184,971	10,088
	45-64	21.2	11.4	34.9	4,920,478	5,350
	65+	10.7	9.7	47.4	3,198,160	2,992
Race	Hispanic	17.0	8.1	32.3	4,816,823	4,403
	Non-hispanic White	21.7	10.2	31.9	13,339,026	14,306
	Black	21.3	9.3	30.5	1,359,140	1,297
	Asian/PI	13.9	6.8	32.7	1,763,859	1,591
	Other	23.1	15.8	40.6	307,767	274
Education Level	<12 years	22.4	9.3	29.5	5,020,727	2,755
	12 years	25.7	10.3	28.6	7,015,324	7,118
	13-15 years	18.2	9.6	34.5	4,877,230	6,377
	16+ years	10.8	8.1	42.8	4,673,334	5,621

MALE

Age	18-24	21.8	5.7	20.6	1,692,511	1,707
	25-44	26.4	10.6	28.7	5,056,835	4,972
	45-64	22.7	14.2	38.6	2,375,184	2,598
	65+	11.3	11.5	50.4	1,390,368	1,308
Race	Hispanic	22.4	10.6	32.2	2,350,858	2,144
	Non-hispanic White	23.0	10.8	31.9	6,535,288	6,974
	Black	24.2	10.7	30.6	629,431	572
	Asian/PI	21.3	10.2	32.2	864,385	781
	Other	25.4	16.8	39.8	134,936	114
Education Level	<12 years	27.3	12.2	31.0	2,406,927	1,330
	12 years	29.3	11.2	27.6	3,180,336	3,181
	13-15 years	21.3	10.4	32.8	2,356,243	3,043
	16+ years	12.1	9.2	43.3	2,571,392	3,031

FEMALE

Age	18-24	15.5	5.6	26.4	1,590,495	1,734
	25-44	19.3	8.8	31.3	5,128,136	5,116
	45-64	19.9	8.7	30.5	2,545,294	2,752
	65+	10.3	8.3	44.6	1,807,792	1,684
Race	Hispanic	11.8	5.7	32.4	2,465,965	2,259
	Non-hispanic White	20.6	9.6	31.8	6,803,738	7,332
	Black	18.7	8.1	30.3	729,709	725
	Asian/PI	6.8	3.5	34.2	899,474	810
	Other	21.3	15.0	41.4	172,831	160
Education Level	<12 years	17.9	6.7	27.2	2,613,800	1,425
	12 years	22.8	9.6	29.6	3,834,988	3,937
	13-15 years	15.3	8.9	36.6	2,520,987	3,334
	16+ years	9.3	6.8	42.2	2,101,942	2,590

Table 1 - 1993
SMOKING PREVALENCE FROM SCREENER SURVEY

OVERALL		Current Smoker (%)	Former Smoker in Last 5 yrs (%)	Quit Ratio in last 5 Years (%)	Population Size (N)	Sample Size (n)
Total		20.3	11.1	35.4	21,573,095	63,269
Sex	Male	23.5	12.1	34.0	10,519,506	30,874
	Female	17.2	10.2	37.1	11,053,589	32,395
Age	18-24	19.0	9.2	32.6	3,260,988	9,423
	25-44	22.3	11.4	33.8	10,190,923	28,635
	45-64	22.2	12.2	35.5	5,037,754	16,574
	65+	11.8	10.6	47.4	3,083,430	8,637
Race	Hispanic	16.7	12.2	42.3	4,849,214	11,633
	Non-hispanic White	22.1	11.2	33.6	13,334,711	42,463
	Black	22.7	10.6	31.8	1,355,281	3,285
	Asian/PI	12.7	7.8	38.1	1,732,707	4,965
	Other	29.1	11.2	27.9	301,182	923
Education Level	<12 years	22.2	12.0	35.0	5,074,759	7,696
	12 years	25.2	11.6	31.5	6,947,049	19,615
	13-15 years	19.3	11.4	37.2	4,951,855	19,207
	16+ years	11.6	9.1	43.9	4,599,432	16,751
MALE						
Age	18-24	21.2	9.8	31.6	1,706,926	4,840
	25-44	26.4	11.5	30.4	5,070,308	14,157
	45-64	24.6	14.6	37.2	2,402,854	8,041
	65+	13.0	12.7	49.4	1,339,418	3,836
Race	Hispanic	23.3	15.1	39.4	2,442,787	5,880
	Non-hispanic White	23.5	11.1	32.1	6,492,599	20,669
	Black	26.1	10.6	28.9	611,928	1,516
	Asian/PI	19.8	11.5	36.7	828,534	2,361
	Other	31.8	14.1	30.8	143,658	448
Education Level	<12 years	28.1	14.8	34.5	2,433,328	3,742
	12 years	29.0	11.8	29.0	3,196,489	8,926
	13-15 years	21.8	11.8	35.1	2,393,926	9,225
	16+ years	13.4	10.2	43.1	2,495,763	8,981
FEMALE						
Age	18-24	16.5	8.5	33.9	1,554,062	4,583
	25-44	18.2	11.2	38.1	5,120,615	14,478
	45-64	19.9	10.0	33.4	2,634,900	8,533
	65+	10.8	9.0	45.3	1,744,012	4,801
Race	Hispanic	10.0	9.3	48.1	2,406,427	5,753
	Non-hispanic White	20.7	11.2	35.2	6,842,112	21,794
	Black	20.0	10.5	34.5	743,353	1,769
	Asian/PI	6.2	4.5	42.1	904,173	2,604
	Other	26.6	8.6	24.4	157,524	475
Education Level	<12 years	16.8	9.4	35.9	2,641,431	3,954
	12 years	22.0	11.4	34.1	3,750,560	10,689
	13-15 years	17.0	11.1	39.5	2,557,929	9,982
	16+ years	9.5	7.8	45.1	2,103,669	7,770

Table 2 - 1990
CURRENT TOBACCO USE STATUS

OVERALL		Any Tobacco Product Use (%)	Cigar-ettes (%)	Pipes/ Cigars (%)	Chewing Tobacco /Snuff (%)	Population Size (N)	Sample Size (n)
Total		24.2	21.6	3.2	1.8	21,560,639	26,815
Sex	Male	29.6	24.5	6.2	3.5	10,658,559	12,755
	Female	18.9	18.7	0.3	0.1	10,902,080	14,060

MALES ONLY

Age	18-24	31.7	25.5	4.9	6.8	1,758,830	2,120
	25-44	32.0	26.8	6.5	3.8	5,161,525	6,326
	45-64	28.5	24.0	6.7	1.7	2,543,334	3,152
	65+	18.7	13.9	5.4	1.4	1,194,870	1,157
Race	Hispanic	26.6	24.4	3.5	1.5	2,420,233	1,785
	Non-hispanic White	30.9	24.0	7.6	4.8	6,548,398	8,335
	Black	34.3	31.6	4.0	1.5	649,780	559
	Asian/PI	22.0	19.7	2.8	1.0	901,496	1,894
	Other	49.1	44.4	17.0	4.3	138,652	182
Education Level	<12 years	35.9	32.6	6.0	3.5	2,397,222	1,504
	12 years	33.0	27.5	5.7	4.9	3,180,478	3,642
	13-15 years	29.4	23.9	6.8	3.4	2,480,618	3,987
	16+ years	19.8	13.9	6.3	2.0	2,600,241	3,622

Table 2 - 1992
CURRENT TOBACCO USE STATUS

OVERALL		Any Tobacco Product Use (%)	Cigar-ettes (%)	Pipes/ Cigars (%)	Chewing Tobacco /Snuff (%)	Population Size (N)	Sample Size (n)
Total		22.6	20.1	3.0	1.3	21,588,796	11,905
Sex	Male	27.6	23.0	5.4	2.6	10,673,057	5,684
	Female	17.6	17.3	0.6	0.0	10,915,739	6,221

MALES ONLY

Age	18-24	30.9	25.5	4.5	6.1	1,758,732	761
	25-44	30.3	24.9	6.4	2.5	5,435,923	2,823
	45-64	24.9	21.8	4.4	1.0	2,268,835	1,520
	65+	16.2	12.8	4.3	0.9	1,209,567	580
Race	Hispanic	22.8	20.5	3.8	1.0	2,398,107	900
	Non-hispanic White	30.4	24.2	6.5	3.6	6,531,614	4,065
	Black	24.7	22.2	3.8	1.0	715,323	321
	Asian/PI	19.6	19.1	1.2	0.2	756,678	304
	Other	35.1	28.0	9.1	3.3	271,335	94
Education Level	<12 years	29.7	28.0	4.4	1.4	2,454,405	642
	12 years	33.3	27.8	5.3	3.9	3,191,429	1,648
	13-15 years	26.9	22.1	5.4	2.8	2,478,330	1,902
	16+ years	19.3	12.8	6.6	2.0	2,548,893	1,492

Table 3 - 1990
AVERAGE DAILY CONSUMPTION FOR ALL SMOKERS

OVERALL		CIGARETTES PER DAY 0-4 (%)	5-14 (%)	15-24 (%)	25+ (%)	Population Size (N)	Sample Size (n)
Total		16.5	27.1	39.8	16.6	4,467,583	9,629
Sex	Male	15.8	24.1	40.3	19.8	2,493,797	4,853
	Female	17.3	30.9	39.1	12.6	1,973,786	4,776
Age	18-24	25.4	36.1	33.8	4.7	690,951	1,444
	25-44	17.4	26.7	40.4	15.5	2,339,043	4,960
	45-64	10.7	22.3	41.6	25.4	1,104,617	2,489
	65+	10.4	27.2	42.0	20.4	332,972	736
Race	Hispanic	37.1	36.7	21.7	4.6	807,294	1,032
	Non-hispanic White	10.0	21.5	47.0	21.6	2,930,827	7,131
	Black	21.4	44.4	26.6	7.6	371,010	538
	Asian/PI	21.7	37.7	32.6	8.0	246,199	713
	Other	9.8	25.4	41.3	23.5	112,253	215
Education Level	<12 years	17.5	29.9	37.2	15.4	1,230,150	1,323
	12 years	14.7	26.9	42.2	16.2	1,662,571	3,586
	13-15 years	15.7	25.8	41.4	17.1	1,015,242	3,122
	16+ years	20.8	24.0	35.4	19.8	559,620	1,598

MALE

Age	18-24	25.4	32.8	35.4	6.4	420,057	795
	25-44	16.3	23.2	42.2	18.3	1,333,247	2,581
	45-64	9.3	19.1	39.6	32.0	582,252	1,183
	65+	9.9	27.1	39.4	23.6	158,241	294
Race	Hispanic	33.2	35.3	25.6	5.9	535,333	608
	Non-hispanic White	8.9	17.0	47.5	26.6	1,533,886	3,385
	Black	21.8	39.9	27.7	10.6	191,945	264
	Asian/PI	19.9	37.7	33.3	9.1	172,261	493
	Other	5.7	17.5	46.8	29.9	60,372	103
Education Level	<12 years	17.6	26.7	37.3	18.4	720,047	698
	12 years	12.8	24.3	44.0	18.9	850,752	1,649
	13-15 years	15.4	23.0	40.5	21.0	572,658	1,564
	16+ years	19.9	20.2	36.8	23.1	350,340	942

FEMALE

Age	18-24	25.4	41.1	31.4	2.1	270,894	649
	25-44	18.9	31.4	38.0	11.8	1,005,796	2,379
	45-64	12.3	26.0	43.7	18.0	522,365	1,306
	65+	10.9	27.3	44.3	17.5	174,731	442
Race	Hispanic	44.8	39.3	13.8	2.1	271,961	424
	Non-hispanic White	11.2	26.4	46.4	16.0	1,396,941	3,746
	Black	21.0	49.2	25.5	4.4	179,065	274
	Asian/PI	26.0	37.6	31.2	5.3	73,938	220
	Other	14.6	34.6	34.8	16.0	51,881	112
Education Level	<12 years	17.4	34.5	36.9	11.2	510,103	625
	12 years	16.7	29.6	40.3	13.4	811,819	1,937
	13-15 years	16.0	29.4	42.6	12.0	442,584	1,558
	16+ years	22.3	30.4	33.0	14.3	209,280	656

Table 3 - 1992
AVERAGE DAILY CONSUMPTION FOR ALL SMOKERS

OVERALL		CIGARETTES PER DAY 0-4 (%)	5-14 (%)	15-24 (%)	25+ (%)	Population Size (N)	Sample Size (n)
Total		16.5	26.5	41.5	15.5	4,210,987	4,560
Sex	Male	17.5	24.1	40.9	17.5	2,396,650	2,269
	Female	15.2	29.7	42.4	12.7	1,814,337	2,291
Age	18-24	25.9	34.0	33.7	6.4	688,905	533
	25-44	17.9	25.7	41.3	15.1	2,243,927	2,273
	45-64	8.2	21.8	47.8	22.1	960,483	1,346
	65+	11.4	30.2	40.8	17.6	317,672	408
Race	Hispanic	36.1	33.4	23.8	6.8	718,454	528
	Non-hispanic White	11.4	21.7	48.1	18.8	2,859,500	3,525
	Black	14.1	51.7	25.4	8.8	290,880	267
	Asian/PI	22.8	37.0	34.4	5.9	191,882	143
	Other	17.9	21.9	40.9	19.3	150,271	97
Education Level	<12 years	17.7	26.0	39.9	16.5	1,131,045	589
	12 years	13.5	28.0	43.3	15.1	1,641,768	1,716
	13-15 years	16.6	25.8	41.9	15.7	936,372	1,491
	16+ years	23.6	23.9	38.7	13.8	501,802	764
MALE							
Age	18-24	28.3	31.5	32.4	7.8	440,607	306
	25-44	18.0	23.3	41.8	17.0	1,322,054	1,203
	45-64	8.8	17.9	45.0	28.3	481,771	600
	65+	9.8	29.0	44.7	16.4	152,218	160
Race	Hispanic	36.7	31.6	24.7	7.0	462,350	310
	Non-hispanic White	12.5	18.3	47.6	21.5	1,567,768	1,689
	Black	12.1	46.9	29.1	11.9	157,313	126
	Asian/PI	22.0	40.1	29.6	8.4	134,202	96
	Other	7.1	21.0	44.5	27.4	75,017	48
Education Level	<12 years	22.0	24.8	36.7	16.6	658,026	287
	12 years	13.2	24.9	44.1	17.8	873,380	777
	13-15 years	15.9	23.9	41.5	18.7	546,512	773
	16+ years	22.8	20.5	39.8	16.9	318,732	432
FEMALE							
Age	18-24	21.8	38.2	35.9	4.1	248,298	227
	25-44	17.9	29.1	40.7	12.3	921,873	1,070
	45-64	7.7	25.7	50.7	15.9	478,712	746
	65+	12.7	31.2	37.3	18.8	165,454	248
Race	Hispanic	34.9	36.6	22.2	6.3	256,104	218
	Non-hispanic White	10.0	25.8	48.7	15.5	1,291,732	1,836
	Black	16.4	57.3	21.2	5.1	133,567	141
	Asian/PI	24.6	29.7	45.7	.	57,680	47
	Other	28.6	22.8	37.3	11.3	75,254	49
Education Level	<12 years	11.7	27.6	44.3	16.4	473,019	302
	12 years	14.0	31.5	42.5	12.1	768,388	939
	13-15 years	17.5	28.5	42.5	11.6	389,860	718
	16+ years	25.1	29.7	36.7	8.5	183,070	332

Table 3 - 1993
AVERAGE DAILY CONSUMPTION FOR ALL SMOKERS

OVERALL		CIGARETTES PER DAY 0-4 (%)	5-14 (%)	15-24 (%)	25+ (%)	Population Size (N)	Sample Size (n)
Total		10.9	32.3	39.5	17.3	4,078,306	5,472
Sex	Male	10.8	29.7	39.2	20.2	2,303,966	2,491
	Female	11.0	35.7	39.9	13.4	1,774,340	2,981
Age	18-24	19.1	45.8	29.9	5.2	588,945	642
	25-44	11.5	32.1	40.5	15.9	2,132,818	2,708
	45-64	5.4	24.4	43.4	26.8	1,013,164	1,575
	65+	9.1	34.5	38.0	18.4	343,379	547
Race	Hispanic	27.2	43.4	24.2	5.1	648,226	639
	Non-hispanic White	6.8	27.5	43.7	22.0	2,820,625	4,174
	Black	11.7	48.6	34.3	5.4	280,579	293
	Asian/PI	16.2	47.2	32.6	4.0	199,164	225
	Other	9.1	24.2	46.5	20.2	129,712	141
Education Level	<12 years	12.8	32.3	36.6	18.2	995,648	682
	12 years	8.6	32.1	41.4	18.0	1,607,641	2,002
	13-15 years	11.4	32.2	39.6	16.8	982,308	1,879
	16+ years	13.4	33.5	39.1	13.9	492,709	909

MALE

Age	18-24	18.8	43.7	30.7	6.9	368,195	325
	25-44	10.8	29.3	41.0	19.0	1,269,131	1,323
	45-64	5.3	20.1	41.7	32.9	513,085	661
	65+	10.7	32.4	36.8	20.0	153,555	182
Race	Hispanic	22.2	42.9	29.0	5.9	446,873	365
	Non-hispanic White	6.9	22.5	42.4	28.2	1,447,959	1,765
	Black	8.5	47.9	38.2	5.4	160,455	136
	Asian/PI	16.8	46.0	34.1	3.2	165,150	155
	Other	10.4	18.4	51.0	20.2	83,529	70
Education Level	<12 years	12.4	29.5	37.0	21.1	600,336	316
	12 years	7.4	31.6	40.3	20.7	818,134	819
	13-15 years	12.1	28.3	38.8	20.9	555,006	839
	16+ years	14.1	28.1	41.4	16.4	330,490	517

FEMALE

Age	18-24	19.7	49.3	28.6	2.4	220,750	317
	25-44	12.7	36.1	39.8	11.3	863,687	1,385
	45-64	5.6	28.7	45.3	20.4	500,079	914
	65+	7.7	36.2	38.9	17.2	189,824	365
Race	Hispanic	38.4	44.6	13.7	3.3	201,353	274
	Non-hispanic White	6.6	32.8	45.0	15.5	1,372,666	2,409
	Black	16.0	49.5	29.2	5.3	120,124	157
	Asian/PI	13.7	53.3	25.4	7.6	34,014	70
	Other	6.8	34.7	38.3	20.2	46,183	71
Education Level	<12 years	13.5	36.6	36.1	13.8	395,312	366
	12 years	9.9	32.5	42.5	15.2	789,507	1,183
	13-15 years	10.5	37.4	40.6	11.5	427,302	1,040
	16+ years	12.0	44.4	34.6	9.0	162,219	392

Table 4 - 1990
DETAILED CURRENT SMOKING STATUS: ADULT SURVEY

OVERALL		DETAIL								Population Size (N)	Sample Size (n)
		Daily (%)	Occas-ional (%)	<1 yr (%)	1-4 (%)	5+ (%)	Unkn-own (%)	1-100 (%)	0 cigs. (%)		
Total		17.6	4.0	3.1	5.4	16.6	2.2	23.2	28.0	21,560,639	26,815
Sex	Male	19.6	4.8	3.5	6.0	19.6	2.6	24.3	19.6	10,658,559	12,755
	Female	15.6	3.2	2.8	4.8	13.7	1.8	22.1	36.2	10,902,080	14,060
Age	18-24	16.0	6.4	4.3	5.6	1.5	0.9	29.8	35.4	3,272,647	4,201
	25-44	19.3	4.5	3.3	5.2	12.1	2.0	25.8	27.8	10,169,556	13,076
	45-64	18.8	3.0	2.9	5.6	26.4	2.7	17.5	23.1	5,272,304	6,700
	65+	11.1	1.2	1.5	5.4	31.8	3.2	16.5	29.3	2,846,132	2,838
Race	Hispanic	11.6	6.6	4.4	4.6	9.5	2.7	24.3	36.2	4,843,051	3,482
	Non-hspn White	19.8	2.8	2.8	5.8	20.1	2.1	23.6	23.0	13,316,562	18,021
	Black	21.5	7.7	2.9	5.3	15.1	1.5	19.3	26.6	1,357,671	1,251
	Asian/PI	11.5	3.0	2.2	4.2	11.1	1.9	21.0	45.0	1,753,049	3,669
	Other	35.1	4.8	1.7	8.0	11.7	1.0	14.3	23.4	290,306	392
Education Level	<12 years	20.9	5.1	4.6	5.4	15.2	2.4	16.8	29.7	5,081,709	3,108
	12 years	20.6	4.0	2.9	5.7	15.8	2.1	21.4	27.6	6,940,794	8,451
	13-15 years	17.1	3.9	3.0	5.7	16.1	1.9	26.5	25.9	4,995,097	8,536
	16+ years	9.8	2.9	2.0	4.6	19.9	2.4	29.4	29.0	4,543,039	6,720

MALE

Age	18-24	17.8	7.8	4.3	5.7	1.0	1.1	31.7	30.6	1,758,830	2,120
	25-44	21.5	5.2	3.7	5.7	13.7	2.3	27.6	20.2	5,161,525	6,326
	45-64	20.2	3.8	3.1	6.3	32.0	3.3	17.2	14.1	2,543,334	3,152
	65+	12.8	1.1	1.8	7.4	45.8	4.2	14.0	13.0	1,194,870	1,157
Race	Hispanic	15.1	9.2	5.5	6.2	12.2	3.4	27.8	20.5	2,420,233	1,785
	Non-hspn White	21.0	3.0	2.8	6.2	22.8	2.4	24.1	17.8	6,548,398	8,335
	Black	23.2	8.4	3.0	4.3	18.7	1.4	19.1	21.9	649,780	559
	Asian/PI	15.6	4.1	3.3	5.4	16.7	2.8	22.7	29.4	901,496	1,894
	Other	41.4	3.0	1.7	10.0	19.9	1.7	7.6	14.6	138,652	182
Education Level	<12 years	25.1	7.5	5.9	6.9	19.6	3.2	16.9	15.0	2,397,222	1,504
	12 years	23.2	4.3	3.1	6.1	17.9	2.1	22.9	20.5	3,180,478	3,642
	13-15 years	19.2	4.7	3.0	6.1	19.1	2.0	27.3	18.6	2,480,618	3,987
	16+ years	10.7	3.1	2.2	5.2	22.1	3.1	29.9	23.8	2,600,241	3,622

FEMALE

Age	18-24	14.0	4.8	4.3	5.5	2.1	0.7	27.6	41.1	1,513,817	2,081
	25-44	16.9	3.7	2.9	4.7	10.5	1.7	24.1	35.6	5,008,031	6,750
	45-64	17.5	2.3	2.6	4.9	21.2	2.2	17.8	31.4	2,728,970	3,548
	65+	9.8	1.3	1.3	4.0	21.6	2.5	18.3	41.2	1,651,262	1,681
Race	Hispanic	8.1	3.9	3.4	3.1	6.9	2.0	20.8	51.8	2,422,818	1,697
	Non-hspn White	18.6	2.6	2.8	5.4	17.6	1.8	23.2	28.0	6,768,164	9,686
	Black	20.0	7.1	2.9	6.2	11.8	1.7	19.5	30.9	707,891	692
	Asian/PI	7.1	1.8	1.1	2.9	5.1	1.0	19.3	61.6	851,553	1,775
	Other	29.2	6.4	1.8	6.2	4.1	0.3	20.5	31.3	151,654	210
Education Level	<12 years	17.1	2.9	3.3	4.1	11.3	1.6	16.8	42.9	2,684,487	1,604
	12 years	18.4	3.7	2.7	5.5	14.0	2.1	20.1	33.6	3,760,316	4,809
	13-15 years	15.1	3.1	3.0	5.2	13.2	1.8	25.7	33.0	2,514,479	4,549
	16+ years	8.7	2.5	1.9	3.9	17.0	1.4	28.7	35.9	1,942,798	3,098

Table 4 - 1992
DETAILED CURRENT SMOKING STATUS: ADULT SURVEY

OVERALL		DETAIL								Population Size (N)	Sample Size (n)
		Daily (%)	Occas-ional (%)	<1 yr (%)	1-4 (%)	5+ (%)	Unkn-own (%)	1-100 (%)	0 cigs. (%)		
Total		16.4	3.7	3.0	5.4	16.8	2.6	24.1	28.0	21,588,796	11,905
Sex	Male	18.6	4.4	3.5	6.5	19.5	3.2	26.0	18.3	10,673,057	5,684
	Female	14.3	3.0	2.4	4.4	14.1	2.1	22.2	37.4	10,915,739	6,221
Age	18-24	15.8	5.9	4.5	3.5	1.1	1.5	31.3	36.4	3,277,155	1,514
	25-44	18.1	4.4	3.1	6.3	11.2	2.4	26.5	28.0	10,187,108	5,689
	45-64	17.6	2.1	2.5	6.1	26.1	2.8	19.4	23.4	5,032,967	3,282
	65+	9.4	1.6	1.7	3.6	36.8	4.2	16.3	26.5	3,091,566	1,420
Race	Hispanic	10.3	5.3	3.5	5.7	9.8	2.3	25.7	37.3	4,872,984	1,817
	Non-hspn White	18.9	3.0	2.8	5.2	20.6	2.9	24.5	22.1	13,312,956	8,662
	Black	18.7	3.9	2.3	5.9	14.1	1.7	18.2	35.2	1,357,672	680
	Asian/PI	10.1	3.2	3.4	4.6	10.4	1.8	21.4	45.2	1,540,666	556
	Other	23.7	6.6	3.7	10.2	11.5	2.8	21.9	19.6	504,518	190
Education Level	<12 years	19.0	4.3	3.5	6.6	15.5	1.8	17.7	31.6	5,091,113	1,384
	12 years	20.3	4.0	3.2	5.5	15.9	2.7	22.6	25.9	6,947,028	3,825
	13-15 years	15.4	3.4	3.0	5.2	17.4	2.5	26.6	26.6	5,063,990	3,949
	16+ years	8.6	2.9	2.1	4.3	19.2	3.6	30.8	28.5	4,486,665	2,747

MALE

Age	18-24	17.8	7.7	5.7	3.3	1.6	2.1	34.6	27.1	1,758,732	761
	25-44	20.2	4.7	3.3	6.9	12.5	3.1	28.1	21.2	5,435,923	2,823
	45-64	19.1	2.7	3.3	8.7	33.0	2.9	19.6	10.7	2,268,835	1,520
	65+	11.6	1.1	1.7	5.2	52.1	5.5	15.8	7.0	1,209,567	580
Race	Hispanic	13.1	7.3	4.9	6.6	13.7	2.6	30.3	21.5	2,398,107	900
	Non-hspn White	20.7	3.5	2.9	6.1	22.6	3.6	25.3	15.2	6,531,614	4,065
	Black	19.7	2.4	2.6	5.9	18.8	2.5	18.4	29.6	715,323	321
	Asian/PI	15.0	4.2	5.1	5.9	14.7	2.9	26.6	25.8	756,678	304
	Other	22.6	5.5	3.2	17.8	12.3	0.7	24.1	13.9	271,335	94
Education Level	<12 years	22.1	6.0	4.7	8.8	20.5	2.4	20.1	15.5	2,454,405	642
	12 years	23.1	4.8	3.7	6.2	17.6	3.4	25.2	16.2	3,191,429	1,648
	13-15 years	18.5	3.7	3.2	6.6	19.6	3.0	26.5	19.0	2,478,330	1,902
	16+ years	9.7	3.2	2.5	4.4	21.0	3.9	32.3	23.0	2,548,893	1,492

FEMALE

Age	18-24	13.4	3.8	3.1	3.6	0.5	0.9	27.5	47.1	1,518,423	753
	25-44	15.8	4.0	2.9	5.7	9.7	1.6	24.5	35.7	4,751,185	2,866
	45-64	16.4	1.5	1.9	4.0	20.5	2.8	19.2	33.8	2,764,132	1,762
	65+	8.0	1.9	1.6	2.5	27.0	3.3	16.5	39.0	1,881,999	840
Race	Hispanic	7.6	3.4	2.1	4.9	6.0	2.1	21.3	52.7	2,474,877	917
	Non-hspn White	17.1	2.6	2.6	4.3	18.7	2.3	23.7	28.8	6,781,342	4,597
	Black	17.6	5.4	2.0	6.0	8.9	0.9	17.8	41.4	642,349	359
	Asian/PI	5.4	2.2	1.7	3.4	6.3	0.7	16.4	63.8	783,988	252
	Other	24.9	7.9	4.4	1.4	10.5	5.2	19.5	26.3	233,183	96
Education Level	<12 years	16.2	2.8	2.4	4.6	10.8	1.2	15.6	46.6	2,636,708	742
	12 years	17.9	3.3	2.8	4.9	14.4	2.2	20.4	34.1	3,755,599	2,177
	13-15 years	12.4	3.1	2.8	3.9	15.2	2.1	26.6	33.9	2,585,660	2,047
	16+ years	7.1	2.6	1.5	4.1	16.8	3.3	28.8	35.8	1,937,772	1,255

Table 5 - 1990
QUITTING STATUS AMONG PEOPLE WHO SMOKED IN THE LAST YEAR

OVERALL		QUITTING STATUS					Population Size (N)	Sample Size (n)
		3+ months (%)	0-3 months (%)	7+ days off (%)	1-6 days off (%)	No attem-pts (%)		
Total		7.3	4.0	18.0	18.5	52.2	5,241,220	11,109
Sex	Male	6.2	4.1	19.7	18.6	51.4	2,906,402	5,558
	Female	8.8	3.8	16.0	18.3	53.2	2,334,818	5,551
Age	18-24	9.1	5.2	24.2	20.0	41.5	855,117	1,744
	25-44	6.6	4.0	18.0	20.0	51.3	2,703,250	5,650
	45-64	7.7	3.2	14.9	15.5	58.8	1,291,697	2,843
	65+	7.1	3.6	15.0	14.5	59.7	391,156	872
Race	Hispanic	9.7	5.5	21.3	16.5	47.0	1,038,694	1,284
	Non-hispanic White	6.7	4.0	16.0	18.1	55.2	3,359,018	8,133
	Black	6.4	1.5	25.8	23.9	42.3	431,205	615
	Asian/PI	9.3	3.2	18.2	21.7	47.6	290,045	841
	Other	3.9	1.5	17.6	17.6	59.4	122,258	236
Education Level	<12 years	7.0	4.2	18.8	17.1	52.8	1,485,035	1,530
	12 years	7.0	3.3	17.6	19.0	53.1	1,899,767	4,074
	13-15 years	8.0	4.0	18.9	19.6	49.4	1,192,451	3,628
	16+ years	7.7	5.3	16.2	17.8	53.1	663,967	1,877

MALE

Age	18-24	5.9	5.3	26.8	21.6	40.3	505,937	937
	25-44	5.9	4.2	19.1	20.1	50.7	1,535,766	2,914
	45-64	7.0	3.0	16.3	14.3	59.4	679,181	1,354
	65+	6.2	4.3	18.0	13.3	58.3	185,518	353
Race	Hispanic	7.4	4.6	23.1	17.9	47.1	670,722	748
	Non-hispanic White	5.8	4.2	17.6	17.6	54.8	1,746,542	3,824
	Black	3.5	2.6	27.1	26.8	40.0	218,564	294
	Asian/PI	9.2	4.2	18.4	21.7	46.5	205,302	581
	Other	4.1	1.5	19.5	15.6	59.3	65,272	111
Education Level	<12 years	5.8	4.5	21.9	17.4	50.4	870,438	812
	12 years	6.0	3.4	19.9	19.3	51.4	964,142	1,858
	13-15 years	6.2	4.2	19.0	20.1	50.5	660,934	1,790
	16+ years	7.4	4.9	15.4	17.1	55.2	410,888	1,098

FEMALE

Age	18-24	13.7	4.9	20.4	17.6	43.4	349,180	807
	25-44	7.6	3.8	16.7	19.7	52.1	1,167,484	2,736
	45-64	8.4	3.3	13.3	17.0	58.0	612,516	1,489
	65+	8.0	3.0	12.4	15.6	60.9	205,638	519
Race	Hispanic	14.0	7.2	18.1	14.1	46.8	367,972	536
	Non-hispanic White	7.6	3.7	14.3	18.7	55.6	1,612,476	4,309
	Black	9.3	0.4	24.5	21.0	44.8	212,641	321
	Asian/PI	9.5	0.8	17.6	21.7	50.4	84,743	260
	Other	3.7	1.4	15.4	19.9	59.6	56,986	125
Education Level	<12 years	8.8	3.8	14.3	16.8	56.3	614,597	718
	12 years	8.0	3.2	15.2	18.8	54.9	935,625	2,216
	13-15 years	10.4	3.8	18.7	19.0	48.1	531,517	1,838
	16+ years	8.1	6.0	17.3	18.9	49.7	253,079	779

Table 5 - 1992
QUITTING STATUS AMONG PEOPLE WHO SMOKED IN THE LAST YEAR

OVERALL		QUITTING STATUS					Population Size (N)	Sample Size (n)
		3+ months (%)	0-3 months (%)	7+ days off (%)	1-6 days off (%)	No attem-pts (%)		
Total		7.0	4.6	13.5	12.6	62.3	4,911,049	5,263
Sex	Male	7.3	4.3	13.6	13.3	61.6	2,772,466	2,597
	Female	6.7	5.0	13.5	11.7	63.2	2,138,583	2,666
Age	18-24	11.7	4.1	15.9	12.8	55.5	843,123	645
	25-44	6.2	4.5	13.5	12.8	63.0	2,575,530	2,593
	45-64	5.2	5.0	12.6	13.4	63.7	1,103,433	1,542
	65+	7.0	5.3	11.4	8.4	68.0	388,963	483
Race	Hispanic	10.3	4.1	14.5	9.4	61.6	889,790	633
	Non-hispanic White	6.3	4.4	12.3	13.0	64.0	3,264,243	4,029
	Black	4.8	3.0	18.5	18.7	55.0	332,906	308
	Asian/PI	10.5	9.0	13.0	12.3	55.3	254,001	185
	Other	2.7	7.6	23.5	10.4	55.9	170,109	108
Education Level	<12 years	6.4	4.2	10.9	13.5	64.9	1,329,049	680
	12 years	6.0	4.8	14.4	11.6	63.2	1,890,928	1,979
	13-15 years	8.2	4.5	14.4	14.3	58.6	1,087,520	1,705
	16+ years	9.5	4.9	15.2	10.4	59.9	603,552	899

MALE

Age	18-24	11.0	4.3	16.4	13.6	54.7	529,610	353
	25-44	6.8	3.4	13.0	13.3	63.4	1,509,283	1,365
	45-64	5.8	6.0	12.9	14.9	60.5	561,016	694
	65+	4.9	5.7	12.4	7.0	69.9	172,557	185
Race	Hispanic	11.0	3.1	15.0	7.6	63.3	571,011	367
	Non-hispanic White	6.2	3.9	12.4	14.1	63.3	1,761,545	1,911
	Black	5.5	4.3	16.0	23.5	50.7	175,937	145
	Asian/PI	10.8	8.8	15.2	15.0	50.2	180,097	122
	Other	0.3	9.0	20.4	10.6	59.8	83,876	52
Education Level	<12 years	6.8	4.1	10.2	13.7	65.1	771,911	327
	12 years	6.0	4.3	15.4	12.9	61.3	990,763	884
	13-15 years	7.7	3.8	14.2	14.9	59.4	620,052	865
	16+ years	10.8	5.1	14.6	10.8	58.6	389,740	521

FEMALE

Age	18-24	12.8	3.8	15.0	11.5	57.0	313,513	292
	25-44	5.4	5.9	14.2	12.0	62.4	1,066,247	1,228
	45-64	4.7	4.1	12.3	12.0	66.9	542,417	848
	65+	8.8	4.9	10.5	9.4	66.4	216,406	298
Race	Hispanic	9.0	6.0	13.6	12.6	58.7	318,779	266
	Non-hispanic White	6.4	4.9	12.2	11.7	64.9	1,502,698	2,118
	Black	4.0	1.6	21.2	13.3	59.9	156,969	163
	Asian/PI	9.7	9.3	7.5	5.7	67.8	73,904	63
	Other	5.0	6.2	26.5	10.2	52.1	86,233	56
Education Level	<12 years	5.9	4.4	11.8	13.2	64.7	557,138	353
	12 years	5.9	5.4	13.2	10.1	65.3	900,165	1,095
	13-15 years	8.8	5.3	14.6	13.6	57.7	467,468	840
	16+ years	7.0	4.6	16.3	9.8	62.3	213,812	378

Table 5 - 1993
QUITTING STATUS AMONG PEOPLE WHO SMOKED IN THE LAST YEAR

OVERALL		QUITTING STATUS					Population Size (N)	Sample Size (n)
		3+ months (%)	0-3 months (%)	7+ days off (%)	1-6 days off (%)	No attem-pts (%)		
Total		10.3	4.2	21.9	14.5	49.0	4,991,735	6,761
Sex	Male	9.9	4.5	22.6	14.9	48.0	2,824,526	3,067
	Female	10.9	3.9	21.0	13.9	50.3	2,167,209	3,694
Age	18-24	12.9	6.1	28.6	15.1	37.4	789,667	843
	25-44	10.9	4.1	21.9	16.1	47.1	2,604,374	3,406
	45-64	8.0	3.6	18.7	12.7	57.0	1,190,940	1,856
	65+	8.8	3.1	19.0	8.5	60.6	406,754	656
Race	Hispanic	12.9	5.5	27.8	15.2	38.6	867,268	846
	Non-hispanic White	10.1	4.1	19.3	14.1	52.4	3,388,364	5,103
	Black	9.5	1.8	30.2	22.1	36.4	325,170	350
	Asian/PI	10.1	4.2	26.6	10.6	48.6	250,853	295
	Other	3.3	4.4	23.0	8.9	60.4	160,080	167
Education Level	<12 years	7.7	3.5	21.4	17.2	50.2	1,198,198	812
	12 years	10.0	3.9	21.8	14.7	49.6	1,929,810	2,390
	13-15 years	11.4	5.0	21.3	13.6	48.8	1,223,683	2,338
	16+ years	14.0	4.9	24.7	10.8	45.6	640,044	1,221

MALE

Age	18-24	11.9	6.5	31.4	14.5	35.7	495,813	432
	25-44	9.9	3.7	22.0	16.1	48.4	1,527,837	1,631
	45-64	8.3	4.9	18.2	14.2	54.4	616,304	782
	65+	9.8	4.4	19.3	9.3	57.1	184,572	222
Race	Hispanic	11.8	5.5	25.6	17.6	39.6	592,029	472
	Non-hispanic White	9.6	4.6	20.0	14.6	51.2	1,737,625	2,148
	Black	9.1	1.1	32.6	20.6	36.6	182,580	162
	Asian/PI	10.3	3.1	26.9	9.7	50.0	206,581	199
	Other	4.3	5.0	24.3	7.1	59.4	105,711	86
Education Level	<12 years	7.8	4.8	21.2	19.0	47.2	734,657	377
	12 years	9.8	3.9	22.1	14.3	49.9	984,840	978
	13-15 years	10.5	4.7	22.8	13.6	48.4	685,429	1,044
	16+ years	12.9	5.0	26.0	11.5	44.5	419,600	668

FEMALE

Age	18-24	14.5	5.3	23.8	16.2	40.2	293,854	411
	25-44	12.2	4.7	21.7	16.1	45.3	1,076,537	1,775
	45-64	7.7	2.2	19.3	11.0	59.8	574,636	1,074
	65+	7.9	2.1	18.7	7.9	63.5	222,182	434
Race	Hispanic	15.3	5.5	32.6	10.2	36.4	275,239	374
	Non-hispanic White	10.6	3.6	18.5	13.7	53.7	1,650,739	2,955
	Black	10.0	2.7	27.1	24.0	36.2	142,590	188
	Asian/PI	8.9	9.2	25.2	14.4	42.3	44,272	96
	Other	1.4	3.2	20.5	12.3	62.6	54,369	81
Education Level	<12 years	7.6	1.6	21.7	14.2	55.0	463,541	435
	12 years	10.3	4.0	21.4	15.0	49.3	944,970	1,412
	13-15 years	12.6	5.3	19.4	13.6	49.2	538,254	1,294
	16+ years	15.9	4.8	22.2	9.5	47.6	220,444	553

Table 6 - 1990
THE QUITTING CONTINUUM

OVERALL		CURRENT SMOKER			FORMER SMOKER			Population Size (N)	Sample Size (n)
		Current, 0 behavio-rs (%)	Current, 1 behavior (%)	Current, 2 behavio-rs (%)	Former, <3 mo (%)	Former, 3-18 mo (%)	Former, 18+ mo. (%)		
Total		24.4	16.2	4.4	5.3	5.6	44.1	10,299,571	17,478
Sex	Male	24.5	15.4	4.6	5.5	5.1	45.0	5,842,998	8,968
	Female	24.3	17.2	4.3	5.1	6.3	42.9	4,456,573	8,510
Age	18-24	24.1	31.0	10.4	7.0	10.8	16.7	1,111,877	2,138
	25-44	28.2	18.8	5.4	5.3	6.2	36.1	4,594,576	8,397
	45-64	23.7	11.2	2.3	5.0	4.3	53.4	3,089,694	5,019
	65+	14.3	7.5	1.3	4.7	2.8	69.4	1,503,424	1,924
Race	Hispanic	13.7	25.3	8.4	9.7	8.6	34.2	1,847,579	2,025
	Non-hspn White	27.4	12.8	2.8	4.3	4.7	47.9	6,962,963	12,876
	Black	22.6	22.7	9.4	3.6	5.8	35.9	725,979	861
	Asian/PI	19.7	18.6	5.0	6.7	6.6	43.3	583,854	1,413
	Other	39.3	21.6	3.3	1.9	4.7	29.2	179,196	303
Education Level	<12 years	25.2	18.9	5.0	7.4	6.2	37.2	2,679,731	2,234
	12 years	27.7	16.7	4.7	4.4	5.6	40.9	3,457,788	5,989
	13-15 years	24.8	15.3	4.7	4.9	6.0	44.4	2,336,574	5,594
	16+ years	16.3	12.4	2.8	4.6	4.3	59.6	1,825,478	3,661
MALE									
Age	18-24	25.5	32.5	10.9	7.4	8.7	14.9	645,773	1,127
	25-44	29.3	17.7	5.5	5.7	5.9	35.9	2,619,726	4,349
	45-64	23.0	9.8	2.5	5.0	3.9	55.7	1,726,012	2,558
	65+	11.8	6.6	0.9	4.6	2.3	73.8	851,487	934
Race	Hispanic	14.9	24.4	8.9	10.1	7.8	33.8	1,215,891	1,195
	Non-hspn White	27.7	11.8	2.5	4.2	4.2	49.5	3,718,522	6,228
	Black	24.5	19.1	10.8	2.8	4.0	38.8	377,170	421
	Asian/PI	19.3	17.6	4.8	7.3	6.4	44.5	425,257	971
	Other	39.0	15.8	2.5	2.1	4.1	36.5	106,158	153
Education Level	<12 years	24.0	18.7	5.7	8.2	5.9	37.5	1,613,296	1,216
	12 years	28.4	15.8	5.1	4.1	5.1	41.5	1,756,924	2,769
	13-15 years	26.1	14.1	4.4	4.8	4.9	45.6	1,319,670	2,803
	16+ years	17.0	11.8	2.2	4.7	4.2	60.0	1,153,108	2,180
FEMALE									
Age	18-24	22.1	28.9	9.7	6.5	13.6	19.2	466,104	1,011
	25-44	26.8	20.3	5.3	4.9	6.5	36.3	1,974,850	4,048
	45-64	24.6	12.9	2.1	5.0	4.8	50.5	1,363,682	2,461
	65+	17.5	8.6	1.8	5.0	3.5	63.6	651,937	990
Race	Hispanic	11.4	27.0	7.4	8.8	10.3	35.0	631,688	830
	Non-hspn White	27.0	13.8	3.2	4.5	5.3	46.1	3,244,441	6,648
	Black	20.5	26.6	7.9	4.4	7.9	32.7	348,809	440
	Asian/PI	20.7	21.2	5.6	5.1	7.2	40.2	158,597	442
	Other	39.7	30.0	4.4	1.7	5.7	18.5	73,038	150
Education Level	<12 years	27.0	19.4	3.8	6.2	6.7	36.9	1,066,435	1,018
	12 years	26.9	17.6	4.3	4.7	6.2	40.4	1,700,864	3,220
	13-15 years	23.1	16.8	5.0	5.1	7.4	42.7	1,016,904	2,791
	16+ years	15.0	13.5	3.8	4.5	4.5	58.8	672,370	1,481

Table 6 - 1992
THE QUITTING CONTINUUM

OVERALL		CURRENT SMOKER			FORMER SMOKER			Population Size (N)	Sample Size (n)
		Current, 0 behavio-rs (%)	Current, 1 behavior (%)	Current, 2 behavio-rs (%)	Former, <3 mo (%)	Former, 3-18 mo (%)	Former, 18+ mo. (%)		
Total		24.6	15.5	3.2	5.0	5.9	45.	10,011,092	8,436
Sex	Male	24.2	15.6	3.0	4.8	6.2	46.2	5,719,970	4,258
	Female	25.2	15.4	3.4	5.4	5.4	45.2	4,291,122	4,178
Age	18-24	28.9	34.0	7.2	5.6	12.6	11.7	1,011,985	773
	25-44	28.8	18.7	4.0	4.8	6.9	36.9	4,465,655	3,926
	45-64	24.1	9.6	1.7	4.5	3.8	56.4	2,800,614	2,660
	65+	12.2	6.2	1.3	6.3	2.8	71.3	1,732,838	1,077
Race	Hispanic	14.0	25.4	4.6	6.7	9.9	39.4	1,730,744	1,043
	Non-hspn White	27.6	12.3	2.5	4.5	5.0	48.1	6,874,936	6,468
	Black	24.7	19.8	5.3	3.0	4.7	42.5	616,739	477
	Asian/PI	17.8	18.8	3.7	9.2	7.8	42.7	507,960	308
	Other	29.2	18.0	7.1	4.7	2.0	39.0	280,713	140
Education Level	<12 years	27.1	16.5	3.2	5.0	6.2	42.0	2,536,245	1,034
	12 years	27.6	17.6	3.3	5.5	5.5	40.6	3,481,156	2,920
	13-15 years	24.0	14.3	3.4	4.5	6.6	47.3	2,285,541	2,762
	16+ years	15.7	11.6	2.9	4.8	5.1	59.8	1,708,150	1,720
MALE									
Age	18-24	28.0	34.1	8.3	5.5	13.0	11.1	636,808	420
	25-44	29.3	19.0	3.4	4.2	7.2	36.9	2,619,282	2,042
	45-64	22.0	8.6	1.5	4.3	4.1	59.5	1,541,027	1,300
	65+	10.8	5.0	1.0	6.7	2.1	74.5	922,853	496
Race	Hispanic	13.7	25.9	4.7	5.4	10.8	39.4	1,107,795	584
	Non-hspn White	28.1	11.9	2.4	4.2	5.2	48.3	3,732,266	3,155
	Black	22.5	19.0	2.8	3.0	4.7	47.9	357,681	242
	Asian/PI	15.8	20.5	4.4	10.7	6.9	41.7	355,991	204
	Other	29.3	13.1	3.5	4.7	0.5	49.1	166,237	73
Education Level	<12 years	23.9	17.6	3.1	4.7	6.6	44.2	1,545,330	521
	12 years	28.4	17.3	3.4	5.3	5.8	39.8	1,810,290	1,310
	13-15 years	24.9	14.1	3.0	4.4	6.5	47.0	1,305,151	1,437
	16+ years	16.6	11.8	2.5	4.3	5.9	58.9	1,059,199	990
FEMALE									
Age	18-24	30.6	33.8	5.3	5.8	11.9	12.6	375,177	353
	25-44	28.0	18.3	4.9	5.6	6.3	36.9	1,846,373	1,884
	45-64	26.7	10.7	1.8	4.7	3.3	52.7	1,259,587	1,360
	65+	13.9	7.6	1.6	5.9	3.5	67.5	809,985	581
Race	Hispanic	14.5	24.6	4.4	9.0	8.2	39.3	622,949	459
	Non-hspn White	27.1	12.8	2.5	4.9	4.8	47.9	3,142,670	3,313
	Black	27.6	20.9	8.7	3.1	4.8	35.0	259,058	235
	Asian/PI	22.4	14.9	2.0	5.7	10.0	44.9	151,969	104
	Other	29.2	25.3	12.5	4.7	4.2	24.3	114,476	67
Education Level	<12 years	32.1	14.9	3.4	5.5	5.6	38.4	990,915	513
	12 years	26.7	17.9	3.2	5.7	5.2	41.4	1,670,866	1,610
	13-15 years	22.7	14.4	3.9	4.7	6.7	47.6	980,390	1,325
	16+ years	14.3	11.3	3.5	5.6	3.9	61.4	648,951	730

Table 7 - 1990
SMOKING STATUS OF TEENS

OVERALL		SMOKING STATUS: Not Susceptible Not Current (%)	SMOKING STATUS: Susceptible Not Current (%)	SMOKING STATUS: Susceptible Current (%)	Population Size (N)	Sample Size (n)
Total		68.8	22.1	9.1	2,341,433	7,767
Sex	Male	67.2	23.3	9.4	1,157,465	3,912
	Female	70.4	20.9	8.7	1,183,968	3,855
Age	12-13	70.5	26.3	3.2	825,457	2,619
	14-15	67.6	24.7	7.7	781,391	2,636
	16+	68.3	14.6	17.1	734,585	2,512
Race	White	70.0	19.4	10.6	1,094,845	2,972
	Black	78.1	17.5	4.5	208,260	689
	Hispanic	64.2	26.6	9.3	795,116	3,239
	Asian or PI	70.8	23.6	5.6	243,212	867
School Performance	Much Better Than Average	77.9	18.0	4.1	435,745	1,411
	Better Than Average	72.5	20.6	6.9	853,876	2,692
	Average and Below	62.1	25.0	12.9	1,051,812	3,664
MALE						
Age	12-13	71.3	25.9	2.8	385,965	1,282
	14-15	65.3	27.6	7.0	398,954	1,341
	16+	65.0	16.1	18.9	372,546	1,289
Race	White	70.0	20.1	9.9	550,159	1,513
	Black	80.9	14.8	4.3	97,761	338
	Hispanic	60.3	28.5	11.2	394,908	1,631
	Asian or PI	66.1	28.5	5.4	114,637	430
School Performance	Much Better Than Average	74.7	20.3	5.0	201,711	669
	Better Than Average	72.7	21.6	5.7	405,883	1,325
	Average and Below	60.5	25.7	13.8	549,871	1,918
FEMALE						
Age	12-13	69.8	26.6	3.6	439,492	1,337
	14-15	69.9	21.7	8.4	382,437	1,295
	16+	71.7	13.0	15.3	362,039	1,223
Race	White	70.1	18.6	11.3	544,686	1,459
	Black	75.6	19.8	4.7	110,499	351
	Hispanic	67.9	24.7	7.4	400,208	1,608
	Asian or PI	74.9	19.4	5.7	128,575	437
School Performance	Much Better Than Average	80.6	16.0	3.4	234,034	742
	Better Than Average	72.4	19.7	7.9	447,993	1,367
	Average and Below	63.8	24.2	12.0	501,941	1,746

Table 7 - 1992
SMOKING STATUS OF TEENS

OVERALL		SMOKING STATUS: Not Susceptible (%)	Susceptible Not Current (%)	Susceptible Current (%)	Population Size (N)	Sample Size (n)
Total		61.6	29.7	8.7	2,344,490	1,789
Sex	Male	58.5	33.5	8.0	1,159,917	883
	Female	64.6	26.0	9.4	1,184,573	906
Age	12-13	68.5	30.0	1.5	807,464	625
	14-15	56.8	33.4	9.8	797,854	611
	16+	59.2	25.4	15.4	739,172	553
Race	White	62.9	26.8	10.3	1,095,598	932
	Black	69.8	24.2	6.0	208,540	117
	Hispanic	55.8	36.4	7.8	792,627	550
	Asian or PI	67.4	25.7	6.9	247,725	190
School Performance	Much Better Than Average	71.6	25.5	2.9	425,204	332
	Better Than Average	66.5	27.3	6.2	838,664	638
	Average and Below	53.9	33.2	12.9	1,080,622	819
MALE						
Age	12-13	64.5	34.1	1.4	400,260	313
	14-15	54.8	35.7	9.5	400,089	298
	16+	56.1	30.3	13.6	359,568	272
Race	White	60.7	29.7	9.6	519,926	440
	Black	72.7	20.6	6.7	107,096	61
	Hispanic	50.6	41.1	8.3	411,818	287
	Asian or PI	64.0	35.1	0.9	121,077	95
School Performance	Much Better Than Average	65.8	31.1	3.2	194,395	151
	Better Than Average	63.9	29.2	6.9	406,602	303
	Average and Below	52.1	37.4	10.5	558,920	429
FEMALE						
Age	12-13	72.5	25.9	1.6	407,204	312
	14-15	58.9	31.0	10.1	397,765	313
	16+	62.1	20.8	17.1	379,604	281
Race	White	64.9	24.3	10.8	575,672	492
	Black	66.8	27.9	5.3	101,444	56
	Hispanic	61.5	31.2	7.3	380,809	263
	Asian or PI	70.7	16.7	12.7	126,648	95
School Performance	Much Better Than Average	76.5	20.9	2.6	230,809	181
	Better Than Average	68.9	25.5	5.6	432,062	335
	Average and Below	55.8	28.6	15.6	521,702	390

Table 7 - 1993
SMOKING STATUS OF TEENS

OVERALL		SMOKING STATUS: Not Susceptible Not Current (%)	Susceptible Not Current (%)	Susceptible Current (%)	Population Size (N)	Sample Size (n)
Total		61.2	29.7	9.1	2,344,485	5,531
Sex	Male	58.0	31.9	10.1	1,159,011	2,814
	Female	64.3	27.6	8.1	1,185,474	2,717
Age	12-13	67.7	29.4	3.0	832,632	1,896
	14-15	59.1	31.8	9.1	784,134	1,895
	16+	56.0	27.9	16.1	727,719	1,740
Race	White	61.7	27.0	11.4	1,094,389	3,064
	Black	74.3	20.8	4.9	208,531	318
	Hispanic	55.9	36.1	8.0	796,211	1,522
	Asian or PI	65.2	28.8	6.1	245,354	627
School Performance	Much Better That Average	73.2	22.9	3.9	430,306	1,065
	Better Than Average	64.7	28.4	6.9	861,056	2,068
	Average and Below	53.4	33.6	13.0	1,053,123	2,398

MALE

Age	12-13	63.7	33.0	3.3	407,296	952
	14-15	57.9	32.8	9.3	389,513	976
	16+	51.8	29.6	18.6	362,202	886
Race	White	60.9	27.0	12.2	539,126	1,562
	Black	73.5	20.0	6.5	101,625	167
	Hispanic	49.8	40.9	9.3	395,607	763
	Asian or PI	59.4	34.2	6.4	122,653	322
School Performance	Much Better Than Average	68.3	26.8	4.9	195,648	495
	Better Than Average	63.6	28.7	7.7	407,590	1,015
	Average and Below	50.3	36.0	13.7	555,773	1,304

FEMALE

Age	12-13	71.5	25.8	2.7	425,336	944
	14-15	60.3	30.8	8.9	394,621	919
	16+	60.2	26.2	13.6	365,517	854
Race	White	62.4	27.0	10.6	555,263	1,502
	Black	75.0	21.6	3.4	106,906	151
	Hispanic	61.9	31.4	6.7	400,604	759
	Asian or PI	70.9	23.3	5.8	122,701	305
School Performance	Much Better Than Average	77.3	19.6	3.1	234,658	570
	Better Than Average	65.7	28.1	6.2	453,466	1,053
	Average and Below	56.8	30.9	12.3	497,350	1,094

Table 8 - 1990
SMOKING DURING LAST PREGNANCY IN LAST 5 YEARS

		Smoked Prior To Pregn-ancy (%)	Population Estimate (N)	Total Sample Size (n)	Quit After Preg-nancy (%)	Did Not Quit After Preg-nancy (%)	Population Estimate (N)	Smoked Prior Sample Size (n)	Total Rela-psed (%)	Total Not Rela-psed (%)
Total		16.1	2,267,591	5,342	32.8	67.2	364,189	812	50.4	46.8
Age at Last Birth	<20	20.9	173,450	333	44.8	55.2	36,208	74	35.0	55.3
	20-29	18.6	1,233,389	2,851	34.3	65.7	229,347	515	51.6	46.5
	30+	11.5	860,752	2,158	25.1	74.9	98,634	223	56.8	41.9
Race	Hispanic	7.0	797,546	1,336	41.8	58.2	55,856	101	47.1	52.9
	Non-hspn White	24.5	1,089,915	3,095	29.4	70.6	267,503	630	52.7	45.2
	Black	15.2	185,277	315	43.8	56.2	28,190	45	44.6	41.6
	Asian/PI	3.1	170,103	525	46.6	53.4	5,338	16	66.7	33.3
	Other	29.5	24,750	71	37.6	62.4	7,302	20	26.2	73.8
Education Level	<12 years	17.7	624,357	822	26.7	73.3	110,320	165	51.3	43.9
	12 years	19.2	794,591	1,754	35.7	64.3	152,763	352	52.4	46.0
	13-15 years	15.8	484,841	1,580	35.8	64.2	76,733	229	44.7	51.4
	16+ years	6.7	363,802	1,186	33.1	66.9	24,373	66	53.5	46.5

Table 8 - 1992
SMOKING DURING LAST PREGNANCY IN LAST 5 YEARS

		Smoked Prior To Pregnancy (%)	Population Estimate (N)	Total Sample Size (n)	Quit After Pregnancy (%)	Did Not Quit After Pregnancy (%)	Population Estimate (N)	Smoked Prior Sample Size (n)	Total Relapsed (%)	Total Not Relapsed (%)
Total		15.1	2,276,860	2,047	37.5	62.5	343,442	345	55.9	44.0
Age at Last Birth	<20	12.8	89,743	57	30.2	69.8	11,463	9	100.0	.
	20-29	15.3	1,096,369	1,001	46.7	53.3	167,857	174	59.5	40.5
	30+	15.0	1,090,748	989	28.6	71.4	164,122	162	46.6	52.9
Race	Hispanic	8.7	889,040	641	61.5	38.5	76,909	57	52.3	47.7
	Non-hspn White	22.9	1,012,735	1,125	30.4	69.6	232,003	265	59.4	40.4
	Black	12.9	168,701	136	13.2	86.8	21,823	16	42.8	57.2
	Asian/PI	3.1	177,873	123	14.2	85.8	5,494	4	.	100.0
	Other	25.3	28,511	22	100.0	.	7,213	3	56.3	43.7
Education Level	<12 years	20.7	644,964	314	33.4	66.6	133,315	74	59.8	40.2
	12 years	18.6	799,069	697	35.4	64.6	148,264	151	51.3	48.7
	13-15 years	11.5	473,525	628	47.5	52.5	54,470	98	62.0	38.0
	16+ years	2.1	359,302	408	80.6	19.4	7,393	22	40.4	56.2

Table 9 - 1990
WORKPLACE SMOKING POLICY

OVERALL		SIZE OF WORKPLACE: <50 — SMOKING POLICY: Total Ban (%)	Work area ban (%)	Lesser/No restrictions (%)	Population Size (N)	Sample Size (n)	SIZE OF WORKPLACE: 50+ — SMOKING POLICY: Total Ban (%)	Work area ban (%)	Lesser/No restrictions (%)	Population Size (N)	Sample Size (n)
Total		30.3	12.7	56.9	5,630,877	7,612	37.8	24.6	37.6	5,634,652	7,258
Sex	Male	25.9	11.2	62.9	2,998,273	3,742	35.4	22.3	42.3	3,021,113	3,590
	Female	35.4	14.5	50.2	2,632,604	3,870	40.7	27.1	32.2	2,613,539	3,668
Age	18-24	24.7	14.8	60.6	1,012,125	1,349	29.5	25.5	45.0	823,696	995
	25-44	31.2	12.2	56.6	3,139,911	4,224	39.4	23.7	36.9	3,283,774	4,337
	45-64	32.1	13.2	54.7	1,329,238	1,888	39.8	26.3	34.0	1,445,723	1,865
	65+	34.5	7.1	58.4	149,603	151	24.1	20.4	55.5	81,459	61
Race	Hispanic	25.7	13.7	60.6	1,173,873	900	27.2	27.2	45.6	1,152,647	911
	Non-hspn White	32.3	11.8	55.9	3,619,278	5,236	41.1	24.3	34.6	3,338,987	4,530
	Black	31.4	17.3	51.3	261,856	255	43.4	19.7	36.9	511,680	480
	Asian/PI	29.0	15.3	55.6	473,993	1,099	36.0	26.0	38.0	578,582	1,249
	Other	18.4	9.3	72.3	101,877	122	29.6	16.6	53.8	52,756	88
Education Level	<12 years	21.0	8.9	70.1	918,705	563	21.8	29.5	48.7	742,908	393
	12 years	25.1	14.3	60.6	1,797,029	2,265	34.5	24.7	40.8	1,627,677	1,884
	13-15 years	31.3	13.3	55.5	1,547,638	2,667	39.4	24.2	36.4	1,480,610	2,416
	16+ years	42.4	12.7	44.9	1,367,505	2,117	46.3	22.7	31.1	1,783,457	2,565
MALE											
Age	18-24	21.7	14.7	63.6	548,481	659	28.3	22.7	49.0	461,647	489
	25-44	25.5	10.7	63.8	1,704,573	2,079	36.6	22.1	41.3	1,722,091	2,122
	45-64	30.4	10.2	59.4	663,974	916	38.1	23.6	38.3	790,318	948
	65+	26.9	7.9	65.1	81,245	88	14.1	8.2	77.8	47,057	31
Race	Hispanic	22.4	13.1	64.5	653,535	475	25.2	22.5	52.3	629,511	475
	Non-hspn White	27.3	10.2	62.6	1,905,701	2,503	37.9	23.3	38.8	1,798,484	2,211
	Black	31.2	17.8	51.0	125,153	108	43.5	17.1	39.4	259,875	215
	Asian/PI	24.5	12.5	63.0	260,526	595	34.8	22.2	42.9	302,542	648
	Other	16.3	4.1	79.6	53,358	61	34.1	7.2	58.7	30,701	41
Education Level	<12 years	21.3	7.1	71.5	547,816	309	24.8	21.4	53.8	395,364	206
	12 years	17.6	12.9	69.5	858,940	1,006	29.4	21.0	49.6	779,936	816
	13-15 years	24.7	12.3	63.0	780,622	1,230	34.4	24.3	41.3	776,528	1,151
	16+ years	39.0	11.1	49.9	810,895	1,197	44.3	22.2	33.5	1,069,285	1,417
FEMALE											
Age	18-24	28.3	14.8	56.9	463,644	690	31.1	29.1	39.8	362,049	506
	25-44	38.0	13.9	48.1	1,435,338	2,145	42.5	25.5	32.0	1,561,683	2,215
	45-64	33.7	16.3	49.9	665,264	972	41.8	29.5	28.7	655,405	917
	65+	43.5	6.2	50.4	68,358	63	37.9	37.2	25.0	34,402	30
Race	Hispanic	29.8	14.5	55.6	520,338	425	29.7	32.8	37.5	523,136	436
	Non-hspn White	37.9	13.7	48.4	1,713,577	2,733	44.8	25.4	29.7	1,540,503	2,319
	Black	31.5	16.9	51.6	136,703	147	43.3	22.2	34.4	251,805	265
	Asian/PI	34.6	18.8	46.6	213,467	504	37.3	30.2	32.5	276,040	601
	Other	20.7	15.0	64.3	48,519	61	23.4	29.6	47.1	22,055	47
Education Level	<12 years	20.6	11.5	68.0	370,889	254	18.4	38.8	42.7	347,544	187
	12 years	31.9	15.7	52.4	938,089	1,259	39.1	28.1	32.8	847,741	1,068
	13-15 years	37.9	14.2	47.9	767,016	1,437	44.9	24.0	31.1	704,082	1,265
	16+ years	47.4	14.9	37.7	556,610	920	49.2	23.3	27.5	714,172	1,148

Table 9 - 1992
WORKPLACE SMOKING POLICY

OVERALL		SIZE OF WORKPLACE: <50 — SMOKING POLICY: Total Ban (%)	Work area ban (%)	Lesser/No restrictions (%)	Population Size (N)	Sample Size (n)	SIZE OF WORKPLACE: 50+ — SMOKING POLICY: Total Ban (%)	Work area ban (%)	Lesser/No restrictions (%)	Population Size (N)	Sample Size (n)
Total		35.0	10.7	54.3	6,202,939	3,438	53.0	19.6	27.4	5,384,684	3,249
	Male	27.6	10.0	62.4	3,352,255	1,769	49.2	18.9	31.9	2,945,435	1,673
	Female	43.7	11.5	44.8	2,850,684	1,669	57.6	20.3	22.1	2,439,249	1,576
Age	18-24	32.8	11.4	55.8	1,094,255	529	34.0	19.9	46.1	701,102	376
	25-44	34.7	10.6	54.7	3,512,613	1,882	53.4	20.4	26.2	3,289,883	1,884
	45-64	38.7	10.8	50.5	1,403,083	938	61.7	17.4	20.9	1,328,623	950
	65+	25.9	6.4	67.8	192,988	89	59.5	18.2	22.3	65,076	39
Race	Hispanic	19.6	13.0	67.3	1,287,143	473	40.0	19.7	40.3	1,140,050	510
	Non-hspn White	41.1	9.0	50.0	3,937,409	2,588	57.6	18.8	23.6	3,227,913	2,249
	Black	22.3	11.9	65.8	311,594	137	54.9	19.2	25.9	460,008	263
	Asian/PI	36.1	17.1	46.8	562,809	185	53.3	24.2	22.5	438,570	180
	Other	26.9	7.6	65.5	103,984	55	43.7	22.7	33.6	118,143	47
Education Level	<12 years	17.9	11.4	70.7	1,232,477	289	35.1	23.0	41.9	621,729	186
	12 years	32.7	10.8	56.5	1,988,912	1,086	45.4	21.9	32.7	1,594,462	864
	13-15 years	39.3	10.7	50.0	1,522,073	1,211	54.7	19.8	25.5	1,429,666	1,142
	16+ years	48.1	9.8	42.1	1,459,477	852	64.9	16.1	19.1	1,738,827	1,057
MALE											
Age	18-24	27.1	11.9	61.0	588,667	254	28.6	16.6	54.7	382,836	191
	25-44	26.8	9.8	63.4	1,991,358	1,008	50.2	20.6	29.3	1,828,387	955
	45-64	32.0	10.1	57.9	677,128	463	56.9	15.9	27.2	691,687	504
	65+	15.3	1.9	82.8	95,102	44	65.6	19.9	14.5	42,525	23
Race	Hispanic	17.7	14.9	67.4	755,816	266	34.0	20.2	45.8	600,693	256
	Non-hspn White	30.5	7.5	62.0	2,067,172	1,301	53.0	19.0	28.1	1,769,204	1,151
	Black	14.7	16.4	68.9	189,250	73	52.0	20.9	27.1	262,078	133
	Asian/PI	41.2	11.8	47.0	288,605	103	56.9	15.8	27.3	238,614	108
	Other	26.3	3.6	70.1	51,412	26	46.9	11.3	41.9	74,846	25
Education Level	<12 years	15.6	9.1	75.3	720,240	161	33.7	23.6	42.7	420,982	111
	12 years	22.1	11.3	66.5	1,004,781	522	35.6	20.8	43.6	705,308	365
	13-15 years	27.5	12.2	60.3	777,777	614	47.9	18.6	33.5	726,685	571
	16+ years	44.2	7.2	48.6	849,457	472	64.8	16.2	19.0	1,092,460	626
FEMALE											
Age	18-24	39.5	10.8	49.8	505,588	275	40.3	23.9	35.7	318,266	185
	25-44	45.0	11.7	43.2	1,521,255	874	57.4	20.3	22.4	1,461,496	929
	45-64	45.0	11.5	43.6	725,955	475	67.0	18.9	14.1	636,936	446
	65+	36.2	10.7	53.1	97,886	45	48.1	15.0	36.9	22,551	16
Race	Hispanic	22.4	10.3	67.3	531,327	207	46.6	19.2	34.3	539,357	254
	Non-hspn White	52.8	10.6	36.7	1,870,237	1,287	63.2	18.7	18.1	1,458,709	1,098
	Black	34.1	4.9	61.0	122,344	64	58.8	16.9	24.3	197,930	130
	Asian/PI	30.7	22.6	46.6	274,204	82	49.0	34.3	16.7	199,956	72
	Other	27.5	11.6	60.9	52,572	29	38.3	42.5	19.2	43,297	22
Education Level	<12 years	21.0	14.8	64.2	512,237	128	38.1	21.7	40.3	200,747	75
	12 years	43.5	10.3	46.2	984,131	564	53.2	22.8	24.0	889,154	499
	13-15 years	51.5	9.1	39.3	744,296	597	61.7	21.0	17.2	702,981	571
	16+ years	53.6	13.4	33.0	610,020	380	65.1	15.7	19.2	646,367	431

Table 10 - 1990
EXPOSURE OF INDOOR WORKERS TO ETS

OVERALL		SMOKING POLICY								
		Total Ban			Work area ban			Lesser/No restrictions		
		Exposed (%)	Population Size (N)	Sample Size (n)	Exposed (%)	Population Size (N)	Sample Size (n)	Exposed (%)	Population Size (N)	Sample Size (n)
Total		9.2	2,881,379	3,311	22.4	1,490,774	1,637	49.5	3,289,667	3,364
Sex	Male	12.5	1,327,319	1,317	28.3	663,538	716	55.7	1,773,230	1,686
	Female	6.5	1,554,060	1,994	17.6	827,236	921	42.2	1,516,437	1,678
Age	18-24	12.8	388,262	434	41.4	269,140	299	59.0	695,937	684
	25-44	9.4	1,695,974	1,954	20.7	817,349	933	49.2	1,782,088	1,840
	45-64	7.5	741,202	877	13.8	383,006	384	44.1	720,925	786
	65+	2.4	55,941	46	1.4	21,279	21	24.5	90,717	54
Race	Hispanic	15.9	461,709	353	33.4	353,240	213	57.0	866,535	514
	Non-hspn White	7.4	1,902,941	2,136	18.9	856,469	967	48.2	1,868,641	1,970
	Black	10.0	214,875	157	15.9	88,054	80	42.9	171,868	129
	Asian/PI	10.3	290,965	643	20.1	183,801	365	42.4	337,166	711
	Other	12.7	10,889	22	30.6	9210	12	35.1	45,457	40
Education Level	<12 years	16.6	249,247	106	43.7	190,473	75	55.6	566,871	238
	12 years	11.2	715,186	653	22.0	444,022	403	55.1	1,049,367	887
	13-15 years	8.5	769,583	1,106	25.0	398,401	528	51.1	839,893	1,117
	16+ years	6.9	1,147,363	1,446	11.5	457,878	631	36.7	833,536	1,122
MALE										
Age	18-24	13.8	189,376	162	50.8	131,719	144	63.4	371,118	320
	25-44	13.6	758,961	764	27.9	362,962	401	56.1	975,426	924
	45-64	9.8	358,216	374	11.9	162,782	163	51.1	367,067	410
	65+	5.6	20,766	17	4.8	6,075	8	30.7	59,619	32
Race	Hispanic	23.3	211,986	128	35.8	150,572	93	61.4	477,616	267
	Non-hspn White	9.8	873,329	846	26.6	399,747	428	54.7	1,010,757	987
	Black	15.7	103,091	54	25.1	32,377	30	62.7	73,166	49
	Asian/PI	10.4	133,544	280	23.4	78,637	162	44.6	193,506	365
	Other	12.9	5,369	9	53.5	2,205	3	54.1	18,185	18
Education Level	<12 years	17.1	140,055	47	52.0	68,883	29	63.7	309,889	118
	12 years	18.4	265,850	189	36.2	158,447	143	66.4	530,235	401
	13-15 years	13.6	297,136	372	33.6	189,901	233	55.5	423,268	512
	16+ years	8.4	624,278	709	12.6	246,307	311	40.1	509,838	655
FEMALE										
Age	18-24	11.8	198,886	272	32.3	137,421	155	54.0	324,819	364
	25-44	6.1	937,013	1,190	14.9	454,387	532	40.9	806,662	916
	45-64	5.3	382,986	503	15.2	220,224	221	36.8	353,858	376
	65+	0.5	35,175	29	.	15,204	13	12.7	31,098	22
Race	Hispanic	9.6	249,723	225	31.5	202,668	120	51.7	388,919	247
	Non-hspn White	5.3	1,029,612	1,290	12.2	456,722	539	40.6	857,884	983
	Black	4.8	111,784	103	10.5	55,677	50	28.3	98,702	80
	Asian/PI	10.2	157,421	363	17.6	105,164	203	39.4	143,660	346
	Other	12.6	5,520	13	23.4	7,005	9	22.5	27,272	22
Education Level	<12 years	15.9	109,192	59	38.9	121,590	46	45.9	256,982	120
	12 years	7.0	449,336	464	14.2	285,575	260	43.6	519,132	486
	13-15 years	5.3	472,447	734	17.3	208,500	295	46.6	416,625	605
	16+ years	5.1	523,085	737	10.3	211,571	320	31.2	323,698	467

Table 10 - 1993
EXPOSURE OF INDOOR WORKERS TO ETS

OVERALL		SMOKING POLICY								
		Total Ban			Work area ban			Lesser/No restrictions		
		Exposed (%)	Population Size (N)	Sample Size (n)	Exposed (%)	Population Size (N)	Sample Size (n)	Exposed (%)	Population Size (N)	Sample Size (n)
Total		11.3	5,571,736	9,109	34.4	1,771,623	2,531	75.6	782,124	972
Sex	Male	14.7	2,672,187	3,588	39.4	937,438	1,165	73.8	517,314	542
	Female	8.1	2,899,549	5,521	28.8	834,185	1,366	79.1	264,810	430
Age	18-24	17.6	834,839	1,079	41.0	347,747	394	82.2	162,697	193
	25-44	11.2	3,167,819	5,202	36.0	1,009,047	1,483	75.4	444,454	522
	45-64	8.3	1,460,786	2,593	25.8	386,146	599	74.0	138,262	212
	65+	5.0	108,292	235	5.5	28,683	55	55.1	36,711	45
Race	Hispanic	19.8	1,003,982	1,289	41.2	454,760	517	77.2	188,409	197
	Non-hspn White	8.7	3,645,179	6,447	31.1	968,102	1,568	74.6	469,793	649
	Black	10.5	357,646	525	25.3	144,901	180	72.6	48,019	47
	Asian/PI	13.6	506,916	739	42.4	186,785	235	83.1	67,630	64
	Other	11.3	58,013	109	29.7	17,075	31	56.0	8,273	15
Education Level	<12 years	22.2	588,369	331	42.3	233,021	155	75.0	153,103	78
	12 years	13.6	1,402,247	1,812	38.2	580,050	648	84.2	270,523	298
	13-15 years	10.9	1,520,038	3,001	37.9	469,254	848	70.6	186,627	332
	16+ years	6.9	2,061,082	3,965	22.7	489,298	880	68.2	171,871	264
MALE										
Age	18-24	23.3	408,748	432	43.6	197,380	186	79.2	111,849	109
	25-44	14.0	1,505,672	2,066	42.0	537,646	705	75.3	293,251	286
	45-64	11.7	701,129	990	30.1	186,060	246	68.6	84,324	122
	65+	8.5	56,638	100	8.3	16,352	28	52.7	27,890	25
Race	Hispanic	28.4	483,148	499	47.5	253,779	236	75.5	129,892	115
	Non-hspn White	10.6	1,735,223	2,530	35.3	497,058	717	73.2	309,706	362
	Black	13.7	162,502	196	23.4	74,621	77	57.7	27,543	29
	Asian/PI	17.3	263,143	326	50.8	103,750	120	83.0	48,179	32
	Other	17.0	28,171	37	38.8	8,230	15	66.6	1,994	4
Education Level	<12 years	28.2	301,420	133	53.5	111,132	61	70.4	101,658	42
	12 years	20.5	566,193	550	44.8	280,640	248	82.9	166,559	150
	13-15 years	16.1	658,882	1,035	42.7	257,278	398	69.4	119,072	178
	16+ years	7.5	1,145,692	1,870	25.7	288,388	458	68.9	130,025	172
FEMALE										
Age	18-24	12.2	426,091	647	37.5	150,367	208	88.8	50,848	84
	25-44	8.7	1,662,147	3,136	29.2	471,401	778	75.7	151,203	236
	45-64	5.1	759,657	1,603	21.7	200,086	353	82.4	53,938	90
	65+	1.1	51,654	135	25.0	12,331	27	62.6	8,821	20
Race	Hispanic	11.8	520,834	790	33.2	200,981	281	80.9	58,517	82
	Non-hspn White	7.0	1,909,956	3,917	26.8	471,044	851	77.3	160,087	287
	Black	7.7	195,144	329	27.4	70,280	103	92.6	20,476	18
	Asian/PI	9.6	243,773	413	31.9	83,035	115	83.6	19,451	32
	Other	5.9	29,842	72	21.3	8,845	16	52.6	6,279	11
Education Level	<12 years	16.0	286,949	198	32.1	121,889	94	84.0	51,445	36
	12 years	8.9	836,054	1,262	32.1	299,410	400	86.2	103,964	148
	13-15 years	6.9	861,156	1,966	32.2	211,976	450	72.7	67,555	154
	16+ years	6.1	915,390	2,095	18.4	200,910	422	65.9	41,846	92

Table 11 - 1992
HOME SMOKING RESTRICTIONS

OVERALL		HOME RESTRICTIONS: Total Household Ban (%)	Partial Ban (%)	No Restrictions (%)	Population Size (N)	Sample Size (n)
Total		48.1	20.3	31.6	21,588,796	11,905
Sex	Male	49.4	18.1	32.6	10,673,057	5,684
	Female	46.9	22.5	30.6	10,915,739	6,221
Age	18-24	45.0	20.4	34.6	3,277,155	1,514
	25-44	49.6	22.6	27.8	10,187,108	5,689
	45-64	48.9	19.4	31.8	5,032,967	3,282
	65+	45.2	14.3	40.5	3,091,566	1,420
Race	Hispanic	53.1	17.9	29.0	4,872,984	1,817
	Non-hispanic White	46.3	21.4	32.3	13,312,956	8,662
	Black	46.4	23.3	30.4	1,357,672	680
	Asian/PI	49.2	18.3	32.5	1,540,666	556
	Other	49.6	12.2	38.3	504,518	190
Education Level	<12 years	47.0	15.9	37.1	5,091,113	1,384
	12 years	43.7	21.5	34.8	6,947,028	3,825
	13-15 years	50.7	22.2	27.1	5,063,990	3,949
	16+ years	53.3	21.3	25.4	4,486,665	2,747

MALE

Age	18-24	47.0	18.5	34.5	1,758,732	761
	25-44	50.2	20.2	29.6	5,435,923	2,823
	45-64	49.0	16.1	34.9	2,268,835	1,520
	65+	49.6	11.8	38.6	1,209,567	580
Race	Hispanic	54.7	15.8	29.4	2,398,107	900
	Non-hispanic White	47.5	19.2	33.3	6,531,614	4,065
	Black	53.2	20.4	26.4	715,323	321
	Asian/PI	45.0	15.2	39.8	756,678	304
	Other	48.4	12.6	39.1	271,335	94
Education Level	<12 years	50.9	12.5	36.6	2,454,405	642
	12 years	44.9	18.7	36.3	3,191,429	1,648
	13-15 years	49.8	21.1	29.1	2,478,330	1,902
	16+ years	53.0	19.7	27.3	2,548,893	1,492

FEMALE

Age	18-24	42.8	22.5	34.8	1,518,423	753
	25-44	49.0	25.3	25.7	4,751,185	2,866
	45-64	48.7	22.1	29.2	2,764,132	1,762
	65+	42.4	15.9	41.7	1,881,999	840
Race	Hispanic	51.6	19.9	28.5	2,474,877	917
	Non-hispanic White	45.1	23.5	31.4	6,781,342	4,597
	Black	38.8	26.4	34.8	642,349	359
	Asian/PI	53.3	21.3	25.4	783,988	252
	Other	51.0	11.7	37.4	233,183	96
Education Level	<12 years	43.3	19.1	37.5	2,636,708	742
	12 years	42.7	23.8	33.5	3,755,599	2,177
	13-15 years	51.5	23.2	25.3	2,585,660	2,047
	16+ years	53.8	23.4	22.8	1,937,772	1,255

Table 11 - 1993
HOME SMOKING RESTRICTIONS

OVERALL		HOME RESTRICTIONS: Total Household Ban (%)	HOME RESTRICTIONS: Partial Ban (%)	HOME RESTRICTIONS: No Restrictions (%)	Population Size (N)	Sample Size (n)
Total		50.9	20.0	29.1	21,588,814	30,716
Sex	Male	49.8	19.0	31.2	10,672,556	12,478
	Female	52.0	20.9	27.1	10,916,258	18,238
Age	18-24	52.6	20.7	26.6	3,276,887	3,703
	25-44	52.4	22.2	25.4	10,191,131	14,189
	45-64	48.7	18.2	33.2	5,120,292	7,898
	65+	48.0	14.4	37.6	3,000,504	4,926
Race	Hispanic	57.1	17.0	25.8	4,859,668	4,875
	Non-hispanic White	48.2	21.1	30.8	13,337,523	21,649
	Black	47.1	21.4	31.4	1,358,411	1,686
	Asian/PI	60.1	18.4	21.5	1,622,912	2,011
	Other	43.4	18.6	38.1	410,300	495
Education Level	<12 years	51.2	17.1	31.8	5,091,137	3,360
	12 years	46.1	20.7	33.2	6,947,051	8,857
	13-15 years	50.5	22.3	27.3	4,999,968	9,802
	16+ years	58.5	19.5	22.0	4,550,658	8,697

MALE

Age	18-24	50.1	20.3	29.6	1,829,140	1,694
	25-44	50.4	21.1	28.5	5,124,982	6,014
	45-64	49.0	16.7	34.3	2,395,854	3,088
	65+	48.7	13.1	38.2	1,322,580	1,682
Race	Hispanic	54.9	17.1	28.0	2,457,143	2,032
	Non-hispanic White	47.8	19.4	32.8	6,457,456	8,625
	Black	47.4	22.4	30.2	644,756	666
	Asian/PI	56.6	18.6	24.8	921,836	952
	Other	29.3	19.3	51.4	191,365	203
Education Level	<12 years	49.8	18.2	32.0	2,434,104	1,223
	12 years	45.8	18.6	35.6	3,196,795	3,189
	13-15 years	47.8	21.2	31.0	2,465,579	3,888
	16+ years	56.7	18.1	25.2	2,576,078	4,178

FEMALE

Age	18-24	55.8	21.2	23.0	1,447,747	2,009
	25-44	54.4	23.4	22.2	5,066,149	8,175
	45-64	48.4	19.4	32.2	2,724,438	4,810
	65+	47.4	15.5	37.2	1,677,924	3,244
Race	Hispanic	59.4	17.0	23.6	2,402,525	2,843
	Non-hispanic White	48.5	22.7	28.8	6,880,067	13,024
	Black	46.9	20.6	32.6	713,655	1,020
	Asian/PI	64.6	18.2	17.1	701,076	1,059
	Other	55.7	17.9	26.4	218,935	292
Education Level	<12 years	52.4	16.0	31.6	2,657,033	2,137
	12 years	46.4	22.5	31.2	3,750,256	5,668
	13-15 years	53.1	23.3	23.7	2,534,389	5,914
	16+ years	60.8	21.4	17.8	1,974,580	4,519

Table 12 - 1990
ASSISTANCE IN QUITTING SMOKING

OVERALL		ASSISTANCE None (%)	Prescription (%)	Counseling (%)	Both (%)	Population Size (N)	Sample Size (n)
Total		95.0	3.3	1.6	0.2	2,344,299	5,014
Sex	Male	95.5	2.9	1.5	0.1	1,319,642	2,575
	Female	94.3	3.8	1.7	0.2	1,024,657	2,439
Age	18-24	98.1	1.4	0.5	0.1	474,214	1,007
	25-44	95.0	3.2	1.6	0.2	1,231,655	2,641
	45-64	92.0	5.2	2.6	0.2	491,043	1,046
	65+	94.3	3.9	1.7	0.1	147,387	320
Race	Hispanic	97.5	1.5	0.7	0.2	504,106	645
	Non-hispanic White	93.4	4.2	2.3	0.2	1,413,659	3,489
	Black	97.8	1.9	0.1	0.2	237,850	339
	Asian/PI	97.8	1.8	0.4	.	140,401	436
	Other	92.9	5.2	1.9	.	48,283	105
Education Level	<12 years	97.5	2.4	0.1	.	646,725	682
	12 years	95.2	2.9	1.7	0.2	834,573	1,805
	13-15 years	93.7	3.6	2.4	0.4	569,486	1,676
	16+ years	91.2	5.7	3.1	.	293,515	851

MALE

Age	18-24	97.8	1.3	0.8	0.1	289,494	577
	25-44	95.2	3.3	1.4	0.1	705,238	1,374
	45-64	93.0	4.0	2.8	0.1	252,650	485
	65+	98.2	1.1	0.7	.	72,260	139
Race	Hispanic	98.1	1.1	0.7	.	331,616	393
	Non-hispanic White	93.6	4.0	2.2	0.2	734,679	1,656
	Black	98.2	1.8	.	.	127,040	169
	Asian/PI	97.1	2.3	0.5	.	100,684	304
	Other	96.4	.	3.6	.	25,623	53
Education Level	<12 years	98.1	1.9	.	.	395,429	392
	12 years	95.7	2.2	1.8	0.2	444,428	871
	13-15 years	94.2	3.3	2.4	0.1	308,116	826
	16+ years	91.5	6.0	2.5	.	171,669	486

FEMALE

Age	18-24	98.6	1.4	.	.	184,720	430
	25-44	94.8	3.1	1.8	0.3	526,417	1,267
	45-64	91.0	6.4	2.4	0.3	238,393	561
	65+	90.5	6.6	2.6	0.3	75,127	181
Race	Hispanic	96.4	2.3	0.7	0.6	172,490	252
	Non-hispanic White	93.1	4.5	2.3	0.1	678,980	1,833
	Black	97.4	1.9	0.3	0.4	110,810	170
	Asian/PI	99.5	0.5	.	.	39,717	132
	Other	88.9	11.1	.	.	22,660	52
Education Level	<12 years	96.5	3.2	0.3	.	251,296	290
	12 years	94.7	3.6	1.5	0.2	390,145	934
	13-15 years	93.1	4.0	2.2	0.6	261,370	850
	16+ years	90.8	5.3	3.8	.	121,846	365

Table 12 - 1992
ASSISTANCE IN QUITTING SMOKING

OVERALL		ASSISTANCE				Population Size (N)	Sample Size (n)
		None (%)	Prescription (%)	Counseling (%)	Both (%)		
Total		81.2	7.7	8.6	2.5	1,758,050	1,894
Sex	Male	83.8	6.7	7.2	2.3	1,008,854	949
	Female	77.7	9.1	10.4	2.8	749,196	945
Age	18-24	93.6	0.7	5.5	0.2	365,935	280
	25-44	80.2	7.7	9.4	2.7	903,893	950
	45-64	74.0	11.5	10.0	4.4	373,289	518
	65+	73.1	18.2	6.8	2.0	114,933	146
Race	Hispanic	89.1	1.9	7.6	1.3	322,759	241
	Non-hispanic White	78.3	9.9	8.5	3.3	1,113,839	1,390
	Black	87.2	5.4	6.4	1.0	149,772	146
	Asian/PI	91.9	2.6	4.4	1.1	107,889	74
	Other	59.3	13.6	27.0	.	63,791	43
Education Level	<12 years	89.7	6.1	3.1	1.1	439,507	233
	12 years	80.4	8.1	9.0	2.5	654,138	679
	13-15 years	79.1	7.0	10.7	3.2	431,534	660
	16+ years	71.2	11.4	13.5	3.9	232,871	322

MALE

Age	18-24	93.8	0.9	4.9	0.4	234,671	151
	25-44	81.2	7.5	8.9	2.5	524,511	500
	45-64	79.9	9.9	6.1	4.0	201,625	237
	65+	80.0	13.4	3.8	2.9	48,047	61
Race	Hispanic	87.1	2.7	9.1	1.1	196,308	135
	Non-hispanic White	81.5	8.6	6.6	3.3	613,225	672
	Black	86.9	5.3	6.8	1.1	86,801	70
	Asian/PI	91.9	2.6	5.5	.	86,318	51
	Other	75.4	12.0	12.6	.	26,202	21
Education Level	<12 years	94.4	2.3	3.0	0.3	250,385	108
	12 years	82.6	8.3	7.1	2.0	364,327	322
	13-15 years	79.8	7.3	9.3	3.6	241,341	331
	16+ years	75.9	9.3	10.8	4.1	152,801	188

FEMALE

Age	18-24	93.2	0.2	6.6	.	131,264	129
	25-44	78.8	8.0	10.2	3.0	379,382	450
	45-64	67.0	13.4	14.6	4.9	171,664	281
	65+	68.1	21.6	9.0	1.3	66,886	85
Race	Hispanic	92.2	0.7	5.4	1.6	126,451	106
	Non-hispanic White	74.3	11.5	10.7	3.4	500,614	718
	Black	87.6	5.6	5.8	0.9	62,971	76
	Asian/PI	91.6	2.6	.	5.7	21,571	23
	Other	48.1	14.8	37.1	.	37,589	22
Education Level	<12 years	83.5	11.1	3.3	2.1	189,122	125
	12 years	77.8	7.7	11.4	3.1	289,811	357
	13-15 years	78.1	6.7	12.6	2.6	190,193	329
	16+ years	62.3	15.3	18.8	3.7	80,070	134

Table 12 - 1993
ASSISTANCE IN QUITTING SMOKING

OVERALL		ASSISTANCE				Population Size (N)	Sample Size (n)
		None (%)	Prescription (%)	Counseling (%)	Both (%)		
Total		81.3	8.5	6.4	3.8	2,546,454	3,425
Sex	Male	84.8	7.1	5.3	2.8	1,467,887	1,555
	Female	76.6	10.4	7.8	5.2	1,078,567	1,870
Age	18-24	91.8	2.6	4.4	1.3	494,277	520
	25-44	81.9	7.9	6.5	3.7	1,379,558	1,811
	45-64	71.1	14.2	8.5	6.2	512,272	829
	65+	76.3	13.8	5.1	4.7	160,347	265
Race	Hispanic	91.6	3.4	3.6	1.4	532,738	497
	Non-hispanic White	76.7	10.8	7.7	4.8	1,614,706	2,471
	Black	90.1	1.2	4.8	3.9	206,755	207
	Asian/PI	90.3	4.9	3.2	1.5	128,924	164
	Other	63.8	24.6	9.0	2.6	63,331	86
Education Level	<12 years	86.8	5.9	5.3	2.0	596,989	403
	12 years	81.5	9.6	4.9	4.0	973,316	1,157
	13-15 years	78.7	8.0	8.8	4.5	627,868	1,208
	16+ years	76.1	10.8	7.9	5.2	348,281	657

MALE

Age	18-24	91.7	2.9	3.8	1.6	318,678	273
	25-44	83.9	7.4	6.2	2.6	789,093	834
	45-64	80.1	10.4	5.3	4.2	281,006	356
	65+	82.5	9.1	3.5	4.9	79,110	92
Race	Hispanic	93.6	2.0	3.9	0.5	357,726	263
	Non-hispanic White	80.4	9.1	6.3	4.2	848,051	1,046
	Black	93.6	0.9	4.5	1.1	115,767	92
	Asian/PI	88.9	6.2	3.2	1.8	103,372	111
	Other	64.5	28.4	5.2	1.8	42,971	43
Education Level	<12 years	91.1	4.9	3.9	.	388,252	198
	12 years	84.3	7.4	4.2	4.1	493,437	465
	13-15 years	82.9	6.6	6.9	3.6	353,503	533
	16+ years	78.1	10.6	7.8	3.5	232,695	359

FEMALE

Age	18-24	91.9	2.0	5.4	0.7	175,599	247
	25-44	79.3	8.6	6.9	5.2	590,465	977
	45-64	60.2	18.8	12.4	8.7	231,266	473
	65+	70.3	18.4	6.7	4.5	81,237	173
Race	Hispanic	87.6	6.4	2.9	3.1	175,012	234
	Non-hispanic White	72.7	12.6	9.2	5.5	766,655	1,425
	Black	85.8	1.6	5.1	7.5	90,988	115
	Asian/PI	96.3	.	3.1	0.5	25,552	53
	Other	62.3	16.5	17.0	4.2	20,360	43
Education Level	<12 years	78.7	7.8	7.9	5.6	208,737	205
	12 years	78.7	11.7	5.7	3.9	479,879	692
	13-15 years	73.3	9.8	11.3	5.6	274,365	675
	16+ years	71.9	11.3	8.2	8.6	115,586	298

Table 13 - 1992
HEALTH BELIEFS ON ETS

OVERALL		ETS IS HARMFUL			Population Size (N)	Sample Size (n)
		Agree (%)	No opinion (%)	Disagree (%)		
Total		93.7	3.4	3.0	21,588,796	11,905
Sex	Male	93.2	3.3	3.5	10,673,057	5,684
	Female	94.1	3.4	2.5	10,915,739	6,221
Age	18-24	98.0	0.7	1.3	3,277,155	1,514
	25-44	94.8	2.3	2.9	10,187,108	5,689
	45-64	91.9	4.6	3.5	5,032,967	3,282
	65+	88.2	7.7	4.2	3,091,566	1,420
Race	Hispanic	96.8	1.4	1.8	4,872,984	1,817
	Non-hispanic White	92.7	4.0	3.2	13,314,695	8,664
	Black	93.4	4.4	2.2	1,357,672	680
	Asian/PI	94.7	0.9	4.4	1,535,367	555
	Other	86.0	8.6	5.5	508,078	189
Education Level	<12 years	92.9	3.8	3.2	5,091,113	1,384
	12 years	93.5	3.5	3.0	6,947,028	3,825
	13-15 years	94.2	3.1	2.6	5,063,990	3,949
	16+ years	94.1	2.9	3.0	4,486,665	2,747

MALE

Age	18-24	97.8	0.5	1.7	1,758,732	761
	25-44	93.8	2.8	3.3	5,435,923	2,823
	45-64	91.0	4.9	4.1	2,268,835	1,520
	65+	87.7	6.5	5.8	1,209,567	580
Race	Hispanic	95.1	2.3	2.6	2,398,107	900
	Non-hispanic White	92.5	3.5	3.9	6,533,353	4,067
	Black	93.3	4.8	1.9	715,323	321
	Asian/PI	94.6	1.7	3.7	751,379	303
	Other	88.0	7.3	4.7	274,895	93
Education Level	<12 years	92.7	3.8	3.5	2,454,405	642
	12 years	93.4	3.2	3.4	3,191,429	1,648
	13-15 years	93.4	3.2	3.5	2,478,330	1,902
	16+ years	93.2	3.0	3.7	2,548,893	1,492

FEMALE

Age	18-24	98.2	0.9	0.9	1,518,423	753
	25-44	95.9	1.7	2.4	4,751,185	2,866
	45-64	92.7	4.3	3.0	2,764,132	1,762
	65+	88.4	8.4	3.1	1,881,999	840
Race	Hispanic	98.5	0.6	1.0	2,474,877	917
	Non-hispanic White	92.9	4.5	2.6	6,781,342	4,597
	Black	93.6	4.0	2.5	642,349	359
	Asian/PI	94.7	0.2	5.1	783,988	252
	Other	83.5	10.1	6.4	233,183	96
Education Level	<12 years	93.1	3.9	3.0	2,636,708	742
	12 years	93.6	3.7	2.7	3,755,599	2,177
	13-15 years	95.1	3.0	1.9	2,585,660	2,047
	16+ years	95.2	2.8	2.0	1,937,772	1,255

Table 14 - 1993
PROMOTIONAL ITEMS GIVEN TO TEENS

OVERALL		Clothing, Sun Glasses, Scarf Beach Towel (%)	Cigarette Lighter (%)	Mug or Can Cooler (%)	Playing Cards Poker Chips Poker Dice (%)	Cass Tape, Cmra/ Film, Flash light Watch Radio (%)	Poster (%)	Sprt Bag, Inflatable Raft (%)	Other (%)	Population Size (N)	Sample Size (n)
Total		4.6	2.2	1.4	0.4	0.3	0.2	0.3	2.8	2,344,485	5,531
Sex	Male	5.8	2.5	1.5	0.5	0.5	0.3	0.4	3.7	1,159,011	2,814
	Female	3.4	1.9	1.2	0.3	0.2	0.1	0.3	1.8	1,185,474	2,717
Age	12-13	1.9	0.6	0.6	0.2	0.1	0.1	0.1	1.8	832,632	1,896
	14-15	4.3	2.3	0.9	0.6	0.4	0.5	0.2	2.3	784,134	1,895
	16+	7.9	3.8	2.7	0.3	0.4	0.1	0.7	4.3	727,719	1,740
Race	White	5.4	3.0	1.4	0.4	0.3	0.4	0.6	3.6	1,094,389	3,064
	Black	5.1	1.1	0.8		0.8		0.2	1.6	208,531	318
	Hispanic	3.9	1.6	1.7	0.4	0.2	0.1	0.1	2.1	796,211	1,522
	Asian or PI	2.4	1.2	0.4	0.5	0.2		0.1	2.1	245,354	627
School Performance	Much Better Than Average	3.5	1.8	0.7	0.6	0.1	0.1	0.9	3.3	430,306	1,065
	Better Than Average	5.2	2.1	1.8	0.3	0.4	0.3	0.1	2.2	861,056	2,068
	Average and Below	4.5	2.4	1.3	0.4	0.4	0.2	0.3	3.0	1,053,123	2,398

MALE

Age	12-13	2.2	0.8	0.6	0.3	0.2	0.1	0.1	2.0	407,296	952
	14-15	5.1	2.4	0.6	0.6	0.5	0.7	0.4	3.3	389,513	976
	16+	10.5	4.4	3.4	0.5	0.8	0.2	0.7	6.2	362,202	886
Race	White	7.0	3.2	1.3	0.5	0.6	0.6	0.7	4.9	539,126	1,562
	Black	8.0	1.5	0.6		0.5			1.7	101,625	167
	Hispanic	4.5	2.1	2.4	0.4	0.5	0.3	0.1	3.1	395,607	763
	Asian or PI	2.8	1.2	0.2	1.0	0.1			2.5	122,653	322
School Performance	Much Better Than Average	5.6	2.2	0.7	1.2	0.1	0.1	1.1	4.5	195,648	495
	Better Than Average	7.0	2.2	2.1	0.3	0.5	0.4	0.2	3.0	407,590	1,015
	Average and Below	5.0	2.7	1.3	0.3	0.6	0.4	0.2	4.0	555,773	1,304

FEMALE

Age	12-13	1.6	0.5	0.6	0.1	0.1	0.1	0.2	1.7	425,336	944
	14-15	3.5	2.2	1.1	0.6	0.4	0.2		1.3	394,621	919
	16+	5.3	3.2	2.0	0.2	0.1	0.0	0.7	2.4	365,517	854
Race	White	3.9	2.8	1.5	0.3	0.1	0.2	0.4	2.4	555,263	1,502
	Black	2.4	0.7	1.0		1.2		0.4	1.4	106,906	151
	Hispanic	3.3	1.2	1.0	0.3			0.1	1.0	400,604	759
	Asian or PI	2.1	1.2	0.7		0.2		0.2	1.8	122,701	305
School Performance	Much Better Than Average	1.8	1.5	0.7				0.6	2.3	234,658	570
	Better Than Average	3.7	2.1	1.5	0.3	0.3	0.2	0.1	1.4	453,466	1,053
	Average and Below	3.9	2.0	1.2	0.4	0.1	0.0	0.4	1.9	497,350	1,094