

Cigarette Smoking among Adolescents in California, 1990–1996

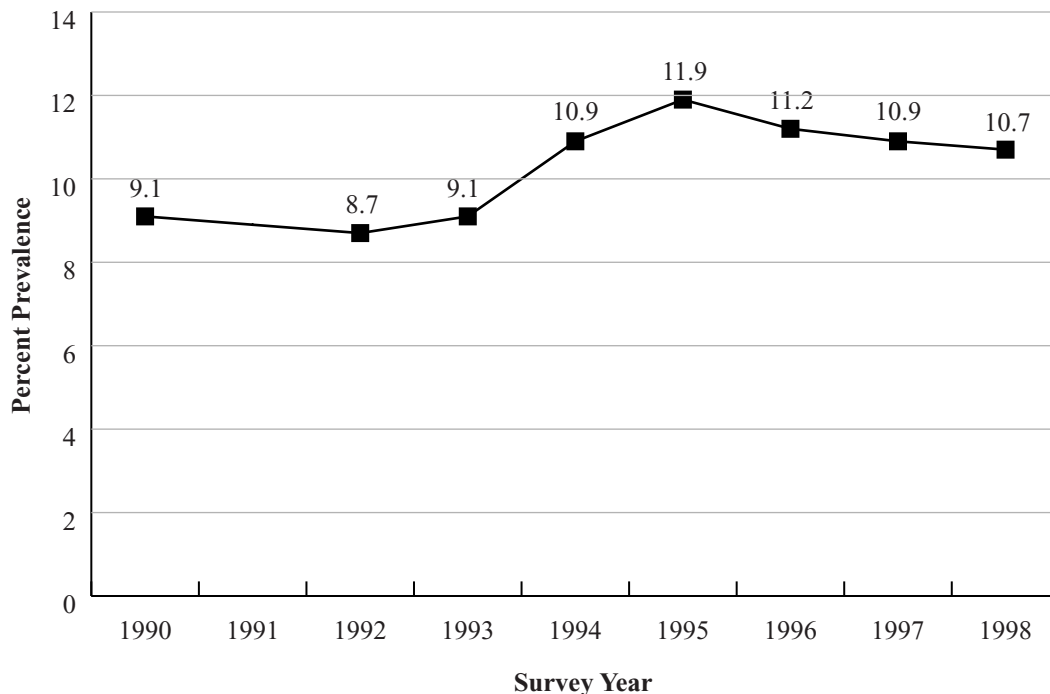
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INTRODUCTION Initiation of cigarette smoking occurs almost exclusively during adolescence (U.S. DHHS, 1994; Lynch and Bonnie, 1994; CDC, 1998a; Burns *et al.*, 1997). Currently, if one becomes an adult without becoming a cigarette smoker, it is unlikely that one will ever smoke cigarettes. California has conducted three large surveys of smoking behavior among adolescents in 1990, 1993, and 1996 (Burns and Pierce, 1992; Pierce *et al.*, 1994 & 1998). During this period, there has been an increase in adolescent smoking behavior nationally (CDC, 1998b) and in California (Pierce *et al.*, 1998). In this chapter, we examine the increase in smoking prevalence over time in California to define its demographic distribution. We also examine several predictors of adolescent cigarette smoking to determine whether the increase in prevalence has been accompanied by an increase in the power of the predictors to identify current smokers or by an increase in the prevalence of these predictors among the current population of adolescents. Tracking changes in adolescent smoking prevalence over time provides important information in aiding current primary prevention efforts and in predicting future adult disease consequences.

The California Tobacco Surveys are telephone surveys conducted periodically by the state of California and the methodology for these surveys is reported elsewhere (Pierce *et al.*, 1998). The absolute values for prevalence of smoking in these telephone surveys differ from those of the school-based surveys reported in other chapters of this monograph, but the trends over time are consistent across the differences in survey methodology.

DEFINITION OF SMOKING FOR ADOLESCENTS Initiation of cigarette smoking among adolescents is a process that includes experimentation with smoking, intermittent use, regular use, and addiction (U.S. DHHS, 1994; Lynch and Bonnie, 1994). Because the issue being examined is the start of smoking behavior among adolescents, the traditional adult definition of a smoker (Have you ever smoked 100 cigarettes in your lifetime?) would exclude many adolescents who are in the early stages of smoking initiation. As a result, the question used to define current smokers among the adolescents sampled in the California Tobacco Surveys was, "Think about the last 30 days. On how many of these days did you smoke?" A current smoker was one who reported any smoking in the last 30 days. The question "Have you ever smoked a cigarette?" was also asked, and those who said yes were defined as ever-smokers.

Figure 5-1
Smoking Prevalence among 12- to 17-Year-Old Adolescents in California: 1990-1998



1990, 1992-1993: California Tobacco Survey* (CTS), UCSD.
1994-1998: California Youth Tobacco Survey* (CYTS), CDHS.
* Telephone interviews.

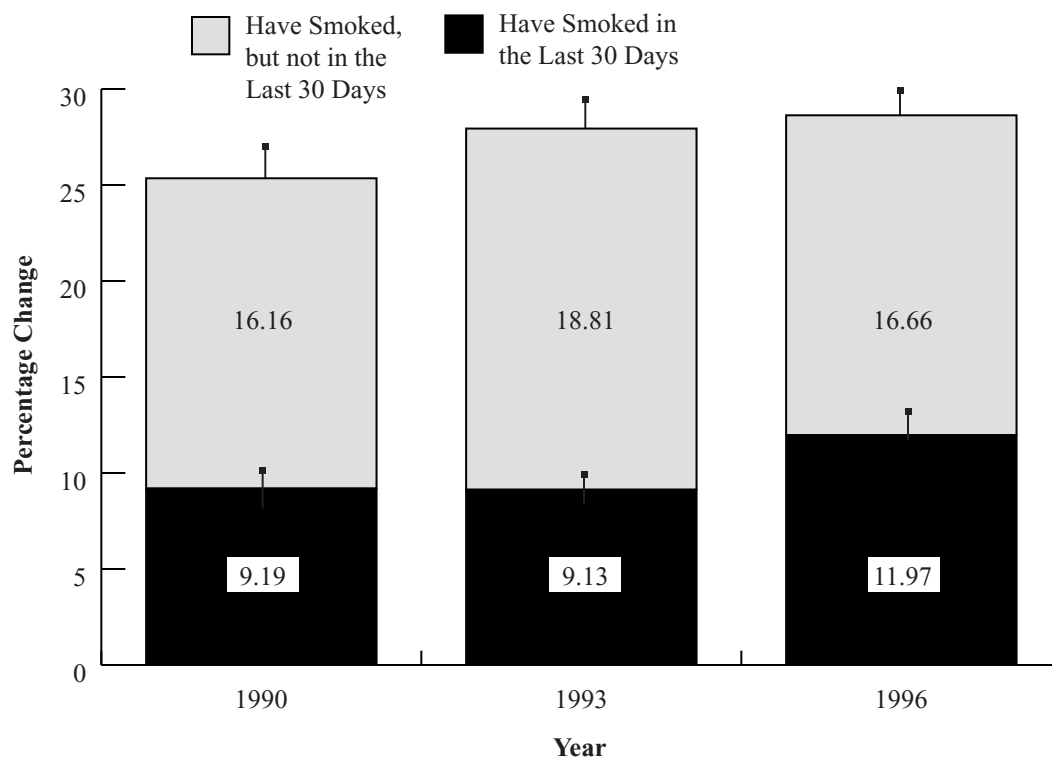
CHANGE IN ADOLESCENT SMOKING BEHAVIORS, 1990-1998

National data on adolescent smoking behavior indicate a substantial recent increase in smoking prevalence among adolescents, with most of the increase occurring after 1993 (CDC, 1998a). Similar changes have occurred in California. Figure 5-1 presents the prevalence of cigarette smoking among adolescents ages 12-17 for the period of 1990 to 1998 in California. These data are consistent with the national data showing a rise in prevalence over that period. This increase may have peaked and begun to decline after 1996.

The prevalence of current and ever smoking among 12- to 17-year-old adolescents is presented in Figure 5-2, with both ever smoking and current smoking estimates presented for 1990, 1993, and 1996 (Table 5-1).

Between 1990 and 1993, there was a significant increase in the proportion of adolescents who had ever smoked cigarettes, but the prevalence of smoking in the last 30 days was unchanged. In contrast, between 1993 and 1996, the prevalence of ever smoking increased only slightly, but there was

Figure 5-2
Change in Adolescent Cigarette Smoking: 1990-1996



1990, 1993, 1996 California Tobacco Survey (CTS), UCSD.
 * Telephone interviews.

a significant increase in the prevalence of current smoking. The magnitude of the increase in smoking prevalence in California is smaller than that reported for school-based surveys nationally (CDC, 1998a), but it clearly reflects a move in the opposite direction from that anticipated by the public health community. This report examines the demographic distribution of this change in adolescent smoking prevalence and describes the relationships between some of the known correlates of smoking initiation and this change in initiation over time.

Gender Figure 5-3 presents the prevalence of smoking among male and female adolescents for the years 1990, 1993, and 1996. Males have a slightly higher prevalence of smoking than females, but both genders have increased by similar amounts over the 6-year interval. The increase over time was largely between the years 1993 and 1996 and was statistically significant for both males and females.

Age Figure 5-4 presents the current-smoking prevalence among adolescents for different age groups. The figure reveals that the increase in prevalence has occurred predominantly among those aged 14–15 and 16–17, with the

Table 5-1
Cigarette Smoking Prevalence and Frequency of Use among Adolescents during the Last 30 Days: 1990, 1993, 1996

<i>Total: Statewide</i>	Have Smoked in Last 30 Days						Have Smoked, but Not in Last 30 Days						Have Never Smoked					
	1990		1993		1996		1990		1993		1996		1990		1993		1996	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	9.19	0.93	9.13	1.04	11.97	1.07	16.16	1.38	18.81	1.65	16.66	1.18	74.61	1.30	71.90	1.45	71.36	1.38
Age (Years)																		
12–13	3.62	1.52	2.98	1.03	3.31	0.86	7.35	1.94	7.87	1.61	7.19	1.37	89.00	2.67	88.93	1.99	89.50	1.61
14–15	7.98	1.47	9.13	1.55	10.86	1.38	16.94	2.62	20.97	2.68	18.52	2.05	75.08	3.12	69.81	2.87	70.58	2.33
16–17	16.61	2.13	16.29	2.62	22.10	2.28	24.98	3.01	29.18	3.87	24.34	1.94	58.33	3.11	54.37	3.85	53.56	2.66
Race/Ethnicity																		
Non-Hispanic White	10.95	1.24	11.33	1.31	13.67	1.28	19.04	1.86	21.22	1.75	18.08	1.58	69.96	1.72	67.38	2.01	68.25	1.80
Hispanic	8.83	1.87	8.24	1.82	11.52	2.04	15.73	2.67	19.60	3.48	16.32	1.75	75.41	2.52	71.79	3.30	72.12	2.23
African-American	5.55	3.12	5.08	3.53	6.17	2.68	9.55	2.60	11.45	4.32	15.01	3.78	84.89	3.96	83.46	5.68	78.82	4.36
Asian/PI	4.70	2.55	5.09	3.44	8.96	2.76	9.16	3.51	10.25	2.85	12.60	2.76	86.14	4.19	84.66	4.25	78.44	3.32
Native American	8.65	5.10	8.73	5.38	18.25	10.48	18.28	8.59	18.17	8.86	19.44	8.09	73.07	9.97	73.10	8.67	62.31	10.44
Other	.	.	.	.	.	.	2.45	5.01	.	.	.	.	.	.	.	.	.	.
Educational Performance																		
Above average	5.86	1.08	5.94	1.20	8.88	1.15	14.10	2.04	16.94	2.26	14.69	1.42	80.04	1.93	77.00	2.36	76.42	1.61
Average	11.33	1.78	10.78	1.58	13.94	1.73	19.01	2.47	20.02	2.34	19.58	1.95	69.60	2.33	68.96	2.50	66.44	2.24
Below average	39.08	11.60	30.51	8.97	36.94	7.73	18.98	7.53	28.88	8.62	20.26	6.93	41.66	9.95	40.61	8.11	42.80	5.79
Unknown	4.28	6.78	.	.	28.90	10.78	2.98	6.09	.	.	18.60	9.35	92.74	9.42	.	.	.	.
Family Income (Dollars)																		
<10k	11.19	4.67	7.46	3.46	12.94	3.89	10.88	4.84	16.86	3.86	12.80	3.20	77.93	5.64	75.43	4.50	74.26	5.07
10k–20k	8.77	2.87	10.18	3.78	13.12	3.21	15.75	3.77	17.57	3.70	14.20	3.15	75.48	3.85	72.25	4.78	72.68	3.64
20k–30k	9.30	2.64	11.22	3.94	11.40	2.44	15.99	4.65	20.25	4.96	16.43	2.45	74.71	5.30	68.46	4.91	72.05	3.56
30k–50k	9.04	2.75	9.53	1.88	12.77	2.51	15.96	2.90	19.62	2.44	19.20	2.66	74.89	3.51	70.71	2.80	68.04	3.52
50k–75k	7.89	2.32	8.85	2.23	11.42	2.16	15.43	3.56	19.56	2.59	18.49	2.70	76.68	3.47	71.38	3.32	70.09	3.04
>75k	10.45	2.95	9.11	2.53	10.79	1.91	22.13	4.48	18.01	4.22	15.74	1.98	67.42	4.35	72.88	4.65	73.48	2.89
Unknown	8.26	3.01	6.69	2.86	12.03	3.01	16.96	5.11	18.53	5.24	15.94	3.61	74.69	5.61	74.23	5.45	72.02	4.43

Table 5-1 (continued)

<i>Males:</i> <i>Statewide</i>	Have Smoked in Last 30 Days						Have Smoked, but Not in Last 30 Days						Have Never Smoked					
	1990		1993		1996		1990		1993		1996		1990		1993		1996	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	9.72	1.53	10.14	1.72	12.64	1.40	17.77	2.01	19.85	2.58	17.32	1.61	72.44	2.39	69.91	2.67	70.00	2.08
Age (Years)																		
12–13	4.30	2.85	3.28	1.37	4.20	1.33	8.21	3.40	8.40	2.30	8.23	2.04	87.44	4.40	88.21	2.58	87.56	2.67
14–15	7.04	1.87	9.34	2.30	9.34	2.29	19.30	4.14	20.11	2.97	19.26	2.69	73.66	4.12	70.55	3.83	71.32	3.39
16–17	18.69	3.49	18.88	4.37	24.75	3.06	26.57	3.35	32.71	5.67	24.36	3.27	54.57	4.82	48.18	5.14	50.89	3.83
Race/Ethnicity																		
Non-Hispanic White	10.23	1.58	12.00	1.98	13.37	1.75	19.54	3.03	20.11	2.70	18.74	2.02	70.11	3.30	67.73	3.43	67.89	2.45
Hispanic	10.92	3.05	9.74	2.74	13.31	2.76	19.37	4.55	23.04	5.67	16.88	2.74	69.65	4.31	67.11	5.43	69.72	3.63
African-American	6.51	5.80	6.65	4.82	5.86	3.20	10.51	4.76	14.31	6.92	16.09	4.91	82.98	9.25	79.03	8.26	78.05	5.20
Asian/PI	5.18	4.42	4.98	3.48	10.50	3.91	9.57	5.97	11.73	4.27	12.42	4.28	85.26	6.74	83.29	5.77	77.07	4.19
Native American	11.12	9.57	11.17	8.44	17.06	13.74	13.68	12.50	16.12	9.35	23.73	11.47	.	.	72.71	9.84	.	.
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Educational Performance																		
Above average	5.32	1.28	6.82	1.93	8.97	1.44	15.84	3.32	18.40	4.08	15.00	1.90	78.84	3.48	74.79	3.94	76.03	2.20
Average	11.29	2.36	11.46	2.47	14.92	2.21	20.86	3.40	19.91	2.96	20.47	2.70	67.72	3.54	68.36	2.96	64.53	3.18
Below average	48.25	14.17	29.02	12.35	33.91	8.41	14.59	8.85	30.01	11.35	20.86	8.94	36.74	10.90	40.97	10.68	45.24	8.34
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Family Income (Dollars)																		
<10k	14.64	8.37	7.95	4.64	14.57	5.10	17.71	10.26	18.18	7.25	14.68	4.54	67.65	11.53	73.87	8.00	70.76	5.65
10k–20k	8.67	3.90	10.52	4.93	16.96	4.90	17.30	6.89	21.11	4.98	12.52	4.50	74.03	7.99	68.37	6.40	70.52	5.68
20k–30k	9.27	3.31	14.33	5.14	11.14	3.27	17.25	6.23	21.11	6.65	15.62	4.14	73.47	6.79	64.56	7.26	73.00	5.32
30k–50k	9.43	4.67	9.50	2.57	13.97	3.78	16.62	4.13	19.59	3.30	19.51	3.32	73.73	4.90	70.73	3.91	66.52	4.96
50k–75k	7.85	2.52	11.02	3.67	12.20	2.67	15.82	4.59	18.38	3.65	19.17	3.78	76.34	4.81	70.19	5.13	68.62	4.47
>75k	11.03	4.67	10.35	3.84	9.10	2.40	26.35	6.69	16.93	4.83	17.73	2.84	62.62	6.61	72.72	5.39	73.16	3.80
Unknown	9.09	5.47	5.94	4.48	12.92	3.89	14.82	6.17	25.12	9.53	18.59	5.67	75.90	8.33	68.94	9.66	68.50	6.55

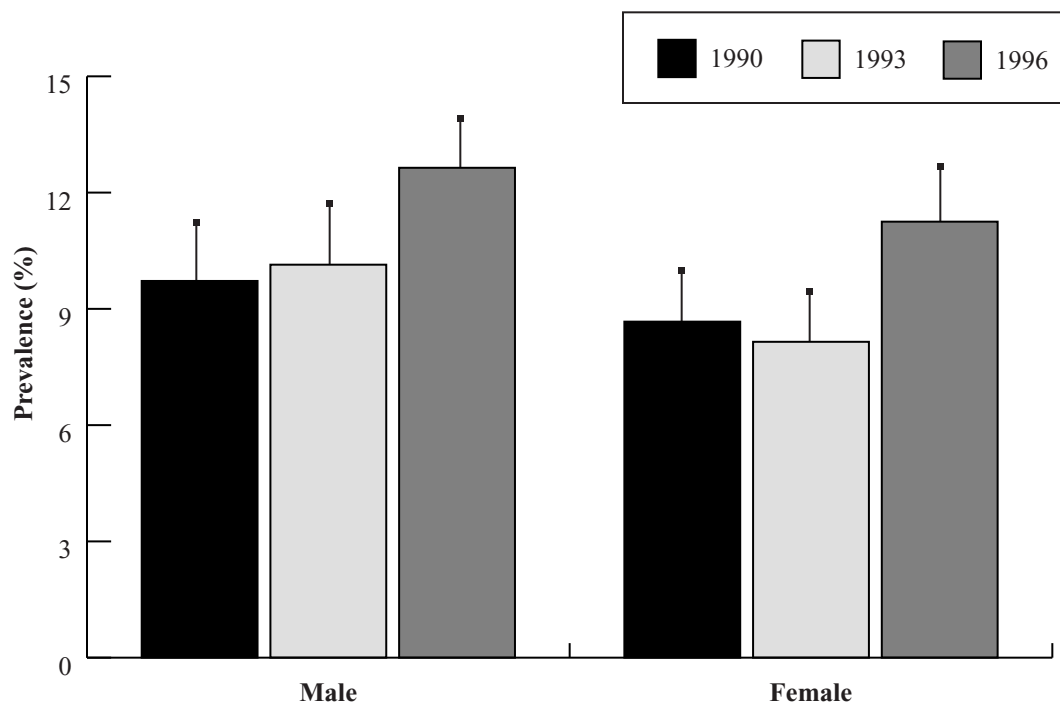
Table 5-1 (continued)

<i>Females:</i> <i>Statewide</i>	Have Smoked in Last 30 Days						Have Smoked, but Not in Last 30 Days						Have Never Smoked					
	1990		1993		1996		1990		1993		1996		1990		1993		1996	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	8.67	1.49	8.15	1.47	11.25	1.42	14.59	1.74	17.80	1.72	15.94	1.32	76.74	2.05	73.85	1.94	72.81	1.62
Age (Years)																		
12–13	2.98	1.66	2.70	1.36	2.37	1.05	6.52	1.93	7.37	1.90	6.10	1.42	90.50	2.80	89.61	2.73	91.53	1.47
14–15	8.93	2.41	8.92	2.48	12.51	2.19	14.57	2.66	21.82	3.78	17.72	2.54	76.50	3.84	69.08	4.48	69.78	3.33
16–17	14.62	2.99	13.74	3.12	19.20	2.64	23.45	4.58	25.71	4.06	24.31	2.56	61.93	4.92	60.46	4.49	56.50	3.09
Race/Ethnicity																		
Non-Hispanic White	11.67	2.15	10.67	2.03	14.02	2.10	18.53	2.61	22.30	2.64	17.33	2.00	69.81	3.08	67.04	2.94	68.66	2.64
Hispanic	6.80	2.27	6.75	2.25	9.71	2.41	12.21	3.24	16.19	3.15	15.75	2.29	80.99	3.76	76.45	4.03	74.54	2.73
African-American	4.78	4.27	3.63	3.89	6.47	4.23	8.77	5.24	8.80	4.43	13.98	4.92	86.46	6.33	87.58	5.87	79.55	6.03
Asian/PI	4.19	3.38	5.20	5.82	7.32	3.42	8.74	4.17	8.86	3.48	12.78	3.85	87.07	4.79	85.94	6.72	79.90	4.82
Native American	5.98	5.86	5.61	6.48	19.77	11.29	.	.	.	.	14.00	7.82	.	.	.	.	.	.
Other	.	.	.	.	.	.	2.76	5.67	.	.	.	.	.	.	.	.	.	.
Educational Performance																		
Above average	6.36	1.87	5.17	1.47	8.80	1.56	12.49	2.03	15.67	2.19	14.39	1.85	81.15	2.38	78.93	2.68	76.81	2.19
Average	11.37	2.53	10.06	2.17	12.78	2.31	17.13	3.35	20.14	3.42	18.52	3.05	71.50	3.20	69.60	3.88	68.70	3.31
Below average	21.48	11.43	32.81	12.28	42.10	15.46	27.41	11.51	27.14	11.78	19.23	10.46	.	.	40.05	12.85	38.66	11.77
Unknown	4.44	9.38	.	.	.	.	4.41	9.31	.	.	.	.	.	.	.	.	.	.
Family Income (Dollars)																		
<10k	8.56	5.29	7.04	5.48	11.30	4.97	5.69	3.10	15.74	6.22	10.90	4.25	85.76	5.60	76.76	7.10	77.80	6.68
10k–20k	8.85	4.61	9.80	5.17	9.17	3.56	14.33	5.07	13.69	5.23	15.93	3.82	76.82	5.93	76.50	6.80	74.90	4.41
20k–30k	9.34	4.29	7.84	3.87	11.65	3.73	14.44	5.81	19.32	5.42	17.19	4.09	76.21	6.99	72.70	5.08	71.16	5.57
30k–50k	8.66	2.92	9.56	3.20	11.53	2.44	15.30	4.51	19.65	3.60	18.87	4.02	76.04	5.89	70.69	4.82	69.60	4.64
50k–75k	7.93	3.20	6.68	2.36	10.51	3.12	15.06	4.96	20.75	4.48	17.70	3.65	77.01	5.27	72.58	4.32	71.78	4.00
>75k	9.89	4.70	7.91	3.45	12.87	2.81	18.07	4.89	19.06	5.60	13.27	2.86	72.04	6.65	73.03	6.20	73.86	3.90
Unknown	7.46	3.73	7.35	3.68	11.07	4.02	19.00	8.45	12.81	4.38	13.05	4.74	73.54	8.56	78.82	4.99	75.88	5.67

Note: The column Unknown has been eliminated from this table; CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Figure 5-3
Prevalence of Smoking at Least One Cigarette in the Last 30 Days among Male and Female Adolescents: 1990, 1993, 1996



1990, 1993, 1996 California Tobacco Survey* (CTS), UCSD.

* Telephone interviews.

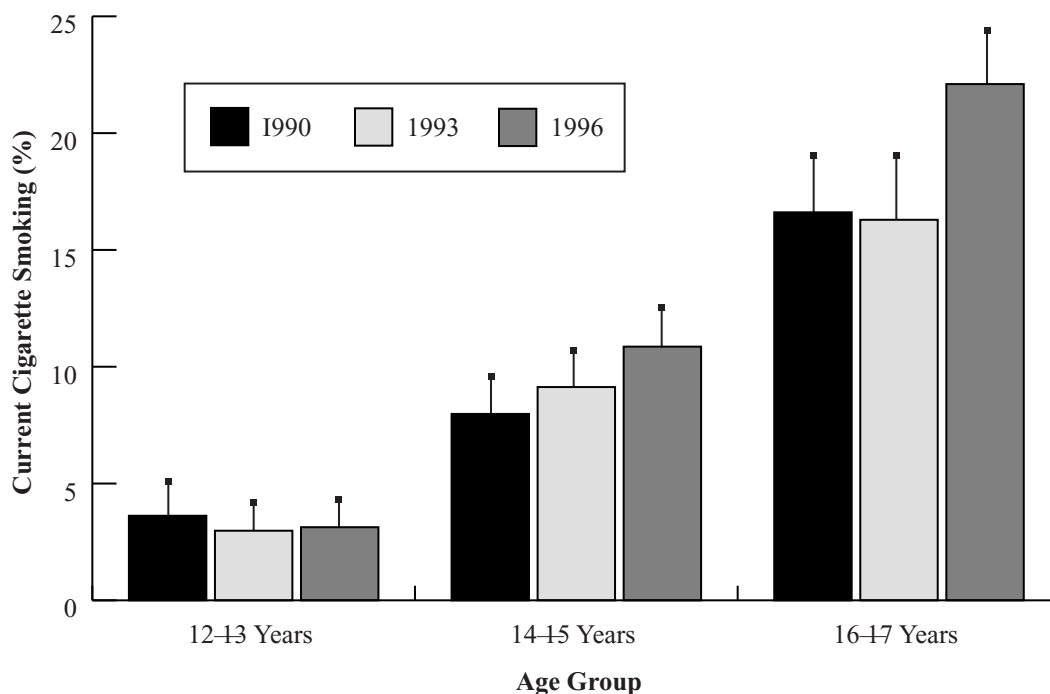
prevalence for the 12- to 13-year-old group remaining unchanged. This pattern of increasing prevalence for the two older age groups with no change for the youngest age group is present for both males and females.

Number of the Last 30 Days that Cigarettes Were Used

Use of cigarettes among adolescents is commonly episodic and progresses to a greater prevalence of daily smoking as the adolescent increases in age and adopts more adult—and addictive—patterns of smoking. This change in frequency of smoking with increasing age is presented in Figure 5-5 and Tables 5-2a and 5-2b, which show that an increasing percentage of adolescents report smoking in the last 30 days as they age. With each age group, smoking on 1–19 days out of the last 30 is the most common frequency of smoking reported, but the change in prevalence of daily smoking with advancing age is particularly dramatic.

It is useful to know how each category of number of days smoked has contributed to the observed increase in smoking prevalence among adolescents between 1990 and 1996. Figure 5-6 shows the increase (or decrease) in prevalence of each frequency of smoking between 1990 and 1996 for each age group. The increase in smoking prevalence between 1990 and 1996 is confined to the two older age groups, as noted earlier. The largest contribu-

Figure 5-4
Prevalence of Current Cigarette Smoking among Adolescent Californians of Different Ages: 1990, 1993, 1996

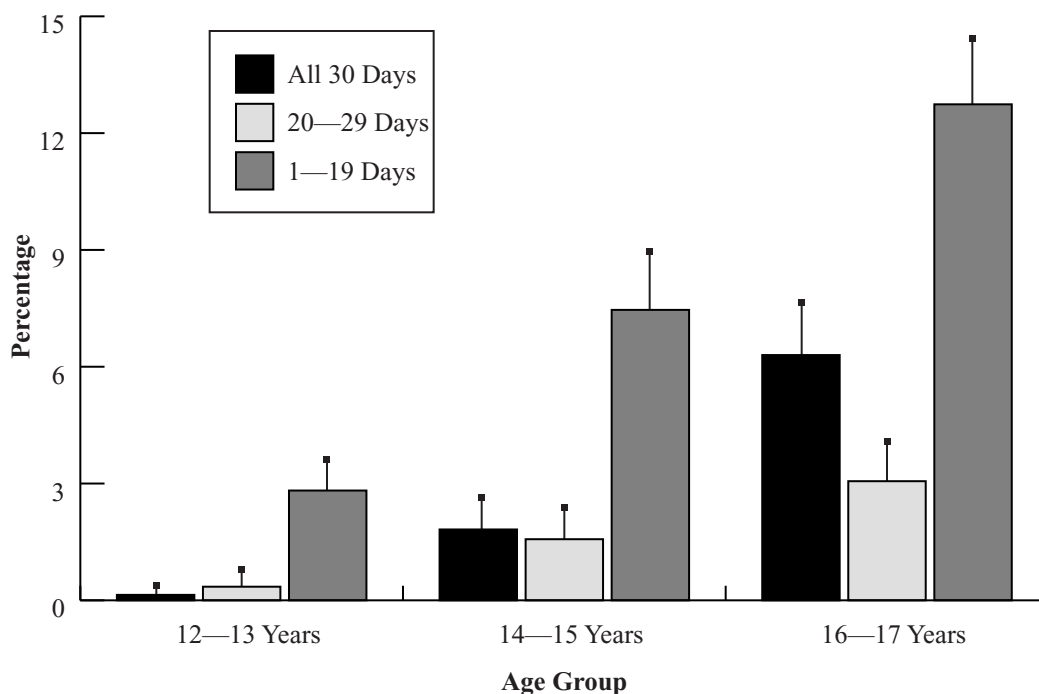


1990, 1993, 1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

tion to the increased prevalence is made by the change in the prevalence of adolescents smoking 1–19 days out of the last 30. This category is the largest category of smokers among all adolescents, but it also increases by more than 40 percent between 1990 and 1996, in contrast to the increase of less than 20 percent in daily smoking. These data suggest that a large fraction of the increase in smoking prevalence among California adolescents is composed of less-frequent smokers who may not yet be addicted and who may, therefore, still be able to easily stop smoking if they can be reached and appropriately motivated.

Race and Ethnicity White adolescents have a higher smoking prevalence than adolescents in other racial and ethnic populations, with the possible exception of Native Americans, for whom the small sample size in the survey leads to a wide confidence interval. The increase in smoking prevalence between 1990 and 1996 among all adolescents is replicated for each of the racial and ethnic groups, with the exception of African Americans (Figure 5-7). The pattern of increasing prevalence in all racial and ethnic groups, except African Americans, is present for both males and females.

Figure 5-5
Percentage of Adolescents who Have Smoked Different Numbers of Days Out of the Last 30 in 1996



1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

Income No change in smoking prevalence over time is evident among adolescents whose families earn incomes over \$75,000. Adolescents whose families earn less than \$10,000 may have an increase in smoking prevalence between 1993 and 1996, but are unchanged from 1990. The bulk of the increase in smoking prevalence seems to occur among adolescents from families in the middle range of incomes of \$10,000-\$75,000.

In contrast to adults, who show marked declines in smoking prevalence with increasing family income, adolescent smoking does not appear to be strongly influenced by family income. Moreover, there is no clear trend over time by family income. Figure 5-8 presents adolescent smoking prevalence by levels of family income for 1990, 1993, and 1996.

PREDICTORS OF ADOLESCENT INITIATION A number of factors, including family smoking behaviors and peer influence, are recognized as predictors of adolescent smoking initiation. In examining the increase in smoking prevalence among adolescents in California, it is useful to explore whether the impact of some of these predictors has changed over time. Three pat-

Table 5-2a
Cigarette Smoking Prevalence and Frequency of Use among Adolescents in the Last 30 Days: 1990

Total: Statewide	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.30	0.60	0.87	0.43	6.02	0.83	16.16	1.38	74.61	1.30
Age (Years)										
12–13	0.16	0.20	0.05	0.07	3.42	1.52	7.35	1.94	89.00	2.67
14–15	1.64	0.73	0.50	0.48	5.84	1.40	16.94	2.62	75.08	3.12
16–17	5.37	1.55	2.17	1.02	9.07	1.83	24.98	3.01	58.33	3.11
Race/Ethnicity										
Non-Hispanic White	3.82	1.18	1.21	0.49	5.92	1.05	19.04	1.86	69.96	1.72
Hispanic	0.99	0.53	0.36	0.38	7.48	1.91	15.73	2.67	75.41	2.52
African-American	.	.	1.08	2.21	4.48	2.73	9.55	2.60	84.89	3.96
Asian/PI	1.54	1.73	0.77	1.05	2.39	1.86	9.16	3.51	86.14	4.19
Native American	2.55	3.03	1.32	1.84	4.78	3.55	18.28	8.59	73.07	9.97
Other	.	.	.	.	.	.	2.45	5.01	.	.
Educational Performance										
Above average	1.26	0.56	0.59	0.31	4.01	0.94	14.10	2.04	80.04	1.93
Average	3.20	1.07	0.82	0.45	7.31	1.45	19.01	2.47	69.60	2.33
Below average	8.51	4.32	6.02	6.83	24.55	12.15	18.98	7.53	41.66	9.95
Unknown	3.00	6.14	.	.	1.28	2.59	2.98	6.09	92.74	9.42
Family Income (Dollars)										
<10k	1.91	1.38	0.89	1.84	8.39	4.14	10.88	4.84	77.93	5.64
10k–20k	2.07	1.72	0.34	0.34	6.36	2.59	15.75	3.77	75.48	3.85
20k–30k	2.52	1.28	0.94	0.87	5.85	2.07	15.99	4.65	74.71	5.30
30k–50k	2.14	1.15	1.00	0.64	5.90	2.18	15.96	2.90	74.89	3.51
50k–75k	2.34	1.44	0.88	0.74	4.68	1.37	15.43	3.56	76.68	3.47
>75k	2.94	2.09	1.26	1.04	6.24	1.89	22.13	4.48	67.42	4.35
Unknown	2.22	1.46	0.58	0.91	5.45	2.53	16.96	5.11	74.69	5.61

Table 5-2a (continued)

<i>Males: Statewide</i>	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.41	0.87	1.04	0.74	6.27	1.35	17.77	2.01	72.44	2.39
Age (Years)										
12–13	0.08	0.16	0.06	0.12	4.15	2.85	8.21	3.40	87.44	4.40
14–15	1.20	0.74	0.73	0.75	5.12	1.52	19.30	4.14	73.66	4.12
16–17	6.33	2.57	2.48	1.78	9.88	2.68	26.57	3.35	54.57	4.82
Race/Ethnicity										
Non-Hispanic White	3.79	1.53	1.22	0.78	5.23	1.27	19.54	3.03	70.11	3.30
Hispanic	1.22	0.83	0.56	0.75	9.14	2.96	19.37	4.55	69.65	4.31
African-American	.	.	2.40	4.90	4.11	3.87	10.51	4.76	82.98	9.25
Asian/PI	1.76	2.53	0.52	0.66	2.90	3.48	9.57	5.97	85.26	6.74
Native American	3.41	5.47	2.55	3.77	5.17	5.61	13.68	12.50	.	.
Other	.	.	.	.	.	.	.	.	.	.
Educational Performance										
Above average	0.88	0.56	0.57	0.53	3.88	1.28	15.84	3.32	78.84	3.48
Average	3.67	1.59	0.84	0.69	6.78	2.07	20.86	3.40	67.72	3.54
Below average	9.54	7.35	8.55	10.53	30.16	17.24	14.59	8.85	36.74	10.90
Unknown	.	.	.	.	.	.	.	.	.	.
Family Income (Dollars)										
<10k	3.13	2.60	2.06	4.26	9.45	6.21	17.71	10.26	67.65	11.53
10k–20k	1.41	1.35	0.15	0.30	7.11	3.86	17.30	6.89	74.03	7.99
20k–30k	2.41	1.56	1.49	1.59	5.37	2.50	17.25	6.23	73.47	6.79
30k–50k	3.14	2.07	0.94	1.10	5.35	4.13	16.62	4.13	73.73	4.90
50k–75k	1.13	1.00	0.93	1.08	5.78	2.09	15.82	4.59	76.34	4.81
>75k	3.36	2.94	1.51	1.97	6.16	3.00	26.35	6.69	62.62	6.61
Unknown	2.01	1.56	0.24	0.36	6.84	4.98	14.82	6.17	75.90	8.33

Table 5-2a (continued)

<i>Females: Statewide</i>	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.19	0.76	0.70	0.32	5.78	1.25	14.59	1.74	76.74	2.05
Age (Years)										
12–13	0.23	0.36	0.03	0.06	2.72	1.58	6.52	1.93	90.50	2.80
14–15	2.09	1.18	0.27	0.28	6.57	2.48	14.57	2.66	76.50	3.84
16–17	4.45	2.00	1.87	0.97	8.29	2.34	23.45	4.58	61.93	4.92
Race/Ethnicity										
Non-Hispanic White	3.85	1.47	1.20	0.61	6.62	1.81	18.53	2.61	69.81	3.08
Hispanic	0.77	0.72	0.17	0.23	5.87	2.23	12.21	3.24	80.99	3.76
African-American	.	.	.	.	4.78	4.27	8.77	5.24	86.46	6.33
Asian/PI	1.31	2.38	1.04	2.08	1.84	1.64	8.74	4.17	87.07	4.79
Native American	1.63	3.28	.	.	4.35	6.03	.	.	.	.
Other	.	.	.	.	.	.	2.76	5.67	.	.
Educational Performance										
Above average	1.61	1.01	0.61	0.42	4.14	1.18	12.49	2.03	81.15	2.38
Average	2.73	1.22	0.80	0.57	7.84	2.21	17.13	3.35	71.50	3.20
Below average	6.53	5.40	1.18	2.42	13.76	10.23	27.41	11.51	.	.
Unknown	4.44	9.38	.	.	.	.	4.41	9.31	.	.
Family Income (Dollars)										
<10k	0.98	1.09	.	.	7.58	5.04	5.69	3.10	85.76	5.60
10k–20k	2.67	2.46	0.51	0.63	5.66	4.40	14.33	5.07	76.82	5.93
20k–30k	2.65	2.27	0.27	0.37	6.43	4.17	14.44	5.81	76.21	6.99
30k–50k	1.16	0.86	1.05	0.77	6.45	2.91	15.30	4.51	76.04	5.89
50k–75k	3.50	2.26	0.82	1.10	3.61	2.19	15.06	4.96	77.01	5.27
>75k	2.54	3.13	1.03	1.11	6.32	2.99	18.07	4.89	72.04	6.65
Unknown	2.43	2.53	0.91	1.79	4.12	2.14	19.00	8.45	73.54	8.56

Note: The column "Unknown" has been eliminated from this table.
 CI = 95% confidence interval.
 Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Table 5-2b
**Cigarette Smoking Prevalence and Frequency of Use among Adolescents in the
 Last 30 Days: 1996**

<i>Total: Statewide</i>	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.70	0.48	1.65	0.43	7.62	0.76	16.66	1.18	71.36	1.38
Age (Years)										
12–13	0.14	0.16	0.35	0.43	2.82	0.73	7.19	1.37	89.50	1.61
14–15	1.82	0.67	1.57	0.63	7.47	1.16	18.52	2.05	70.58	2.33
16–17	6.30	1.19	3.06	0.97	12.74	1.71	24.34	1.94	53.56	2.66
Race/Ethnicity										
Non-Hispanic White	3.74	0.63	1.73	0.53	8.20	0.99	18.08	1.58	68.25	1.80
Hispanic	1.82	0.81	1.40	0.72	8.30	1.55	16.32	1.75	72.12	2.23
African-American	1.00	0.87	0.99	0.91	4.18	1.94	15.01	3.78	78.82	4.36
Asian/PI	1.79	1.14	2.09	1.32	5.08	1.93	12.60	2.76	78.44	3.32
Native American	6.01	5.16	3.82	4.34	8.43	4.90	19.44	8.09	62.31	10.44
Other	.	.	.	.	.	.	.	.	.	.
Educational Performance										
Above average	1.94	0.47	1.09	0.43	5.85	0.87	14.69	1.42	76.42	1.61
Average	2.94	0.68	1.51	0.66	9.49	1.56	19.58	1.95	66.44	2.24
Below average	9.26	4.53	10.04	4.83	17.65	5.58	20.26	6.93	42.80	5.79
Unknown	12.85	8.39	6.17	6.39	9.88	7.68	18.60	9.35	.	.
Family Income (Dollars)										
<10k	4.55	2.18	1.73	1.69	6.67	2.74	12.80	3.20	74.26	5.07
10k–20k	3.37	1.44	1.12	0.87	8.63	2.45	14.20	3.15	72.68	3.64
20k–30k	2.96	1.48	1.58	1.19	6.87	2.23	16.43	2.45	72.05	3.56
30k–50k	2.44	0.91	1.69	0.88	8.63	1.91	19.20	2.66	68.04	3.52
50k–75k	2.38	1.02	1.51	0.95	7.53	1.88	18.49	2.70	70.09	3.04
>75k	2.09	0.91	1.90	0.86	6.80	1.42	15.74	1.98	73.48	2.89
Unknown	2.22	1.26	2.03	1.40	7.79	2.53	15.94	3.61	72.02	4.43

Table 5-2b (continued)

<i>Males: Statewide</i>	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.66	0.69	1.73	0.56	8.25	1.09	17.32	1.61	70.00	2.08
Age (Years)										
12–13	0.11	0.21	0.48	0.58	3.62	1.22	8.23	2.04	87.56	2.67
14–15	1.86	0.88	1.09	0.74	6.39	1.74	19.26	2.69	71.32	3.39
16–17	6.11	1.76	3.69	1.46	14.95	2.55	24.36	3.27	50.89	3.83
Race/Ethnicity										
Non-Hispanic White	3.10	0.83	1.98	0.80	8.29	1.42	18.74	2.02	67.89	2.45
Hispanic	2.29	1.15	1.19	0.81	9.83	2.14	16.88	2.74	69.72	3.63
African-American	0.44	0.63	0.31	0.62	5.11	3.03	16.09	4.91	78.05	5.20
Asian/PI	2.36	2.01	2.56	2.05	5.59	2.94	12.42	4.28	77.07	4.19
Native American	7.29	6.05	4.81	6.66	4.96	4.87	23.73	11.47	.	.
Other	.	.	.	.	.	.	.	.	.	.
Educational Performance										
Above average	1.89	0.72	1.13	0.58	5.95	1.13	15.00	1.90	76.03	2.20
Average	2.72	0.97	1.70	0.99	10.51	1.89	20.47	2.70	64.53	3.18
Below average	8.28	5.13	7.45	4.34	18.18	7.17	20.86	8.94	45.24	8.34
Unknown	.	.	9.30	12.04	11.13	12.52	.	.	.	.
Family Income (Dollars)										
<10k	5.25	3.22	1.52	2.08	7.80	3.88	14.68	4.54	70.76	5.65
10k–20k	4.41	2.46	1.56	1.46	10.98	3.48	12.52	4.50	70.52	5.68
20k–30k	2.92	1.90	1.53	1.53	6.69	2.98	15.62	4.14	73.00	5.32
30k–50k	2.35	1.48	1.61	0.94	10.01	2.86	19.51	3.32	66.52	4.96
50k–75k	1.94	1.45	2.31	1.65	7.95	2.32	19.17	3.78	68.62	4.47
>75k	1.65	1.07	1.76	1.10	5.69	2.06	17.73	2.84	73.16	3.80
Unknown	2.03	1.57	1.44	1.83	9.45	3.52	18.59	5.67	68.50	6.55

Table 5-2b (continued)

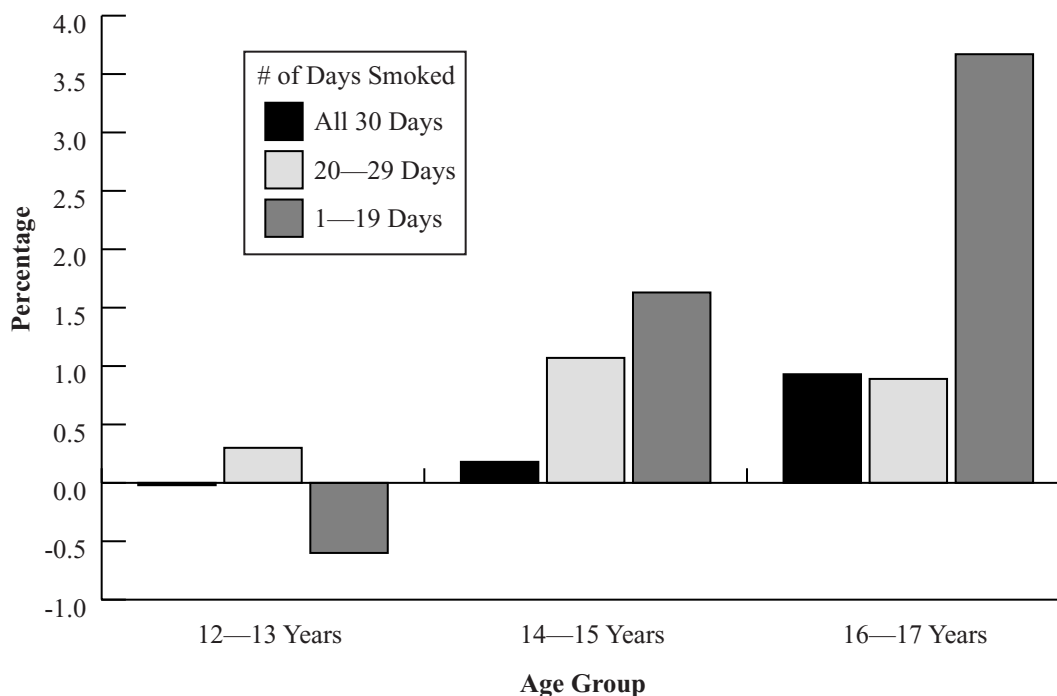
<i>Females: Statewide</i>	Number of Days Smoked Cigarette(s) in Past 30 Days									
	All 30 Days		20–29 Days		1–19 Days		None in Past 30 Days		Never Smoked	
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Total	2.75	0.61	1.55	0.54	6.95	1.09	15.94	1.32	72.81	1.62
Age (Years)										
12–13	0.18	0.26	0.21	0.34	1.99	0.92	6.10	1.42	91.53	1.47
14–15	1.79	0.83	2.09	1.00	8.63	1.92	17.72	2.54	69.78	3.33
16–17	6.52	1.59	2.38	1.07	10.30	1.99	24.31	2.56	56.50	3.09
Race/Ethnicity										
Non-Hispanic White	4.48	1.11	1.44	0.59	8.10	1.55	17.33	2.00	68.66	2.64
Hispanic	1.35	0.82	1.61	1.09	6.75	1.86	15.75	2.29	74.54	2.73
African-American	1.53	1.63	1.64	1.62	3.29	2.57	13.98	4.92	79.55	6.03
Asian/PI	1.19	1.19	1.59	1.63	4.54	2.54	12.78	3.85	79.90	4.82
Native American	4.38	6.00	2.56	3.76	12.83	9.59	14.00	7.82	.	.
Other	.	.	.	.	.	.	.	.	.	.
Educational Performance										
Above average	1.99	0.66	1.06	0.55	5.75	1.23	14.39	1.85	76.81	2.19
Average	3.21	0.99	1.28	0.84	8.28	2.22	18.52	3.05	68.70	3.31
Below average	10.92	7.16	14.44	9.50	16.75	8.41	19.23	10.46	38.66	11.77
Unknown	9.57	10.92	2.77	3.87	8.51	9.40	.	.	.	.
Family Income (Dollars)										
<10k	3.84	2.30	1.93	2.04	5.52	3.29	10.90	4.25	77.80	6.68
10k–20k	2.30	1.46	0.67	0.79	6.20	2.95	15.93	3.82	74.90	4.41
20k–30k	2.99	1.84	1.62	1.40	7.04	3.28	17.19	4.09	71.16	5.57
30k–50k	2.53	1.15	1.78	1.13	7.22	1.85	18.87	4.02	69.60	4.64
50k–75k	2.87	1.48	0.60	0.52	7.04	2.65	17.70	3.65	71.78	4.00
>75k	2.63	1.47	2.08	1.26	8.16	2.35	13.27	2.86	73.86	3.90
Unknown	2.42	1.70	2.67	2.20	5.98	3.19	13.05	4.74	75.88	5.67

Note: The column "Unknown" has been eliminated from this table.

CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Figure 5-6
Change Between 1990 and 1996 in the Percentage of Adolescents who Smoked Different Numbers of Days Out of the Last 30

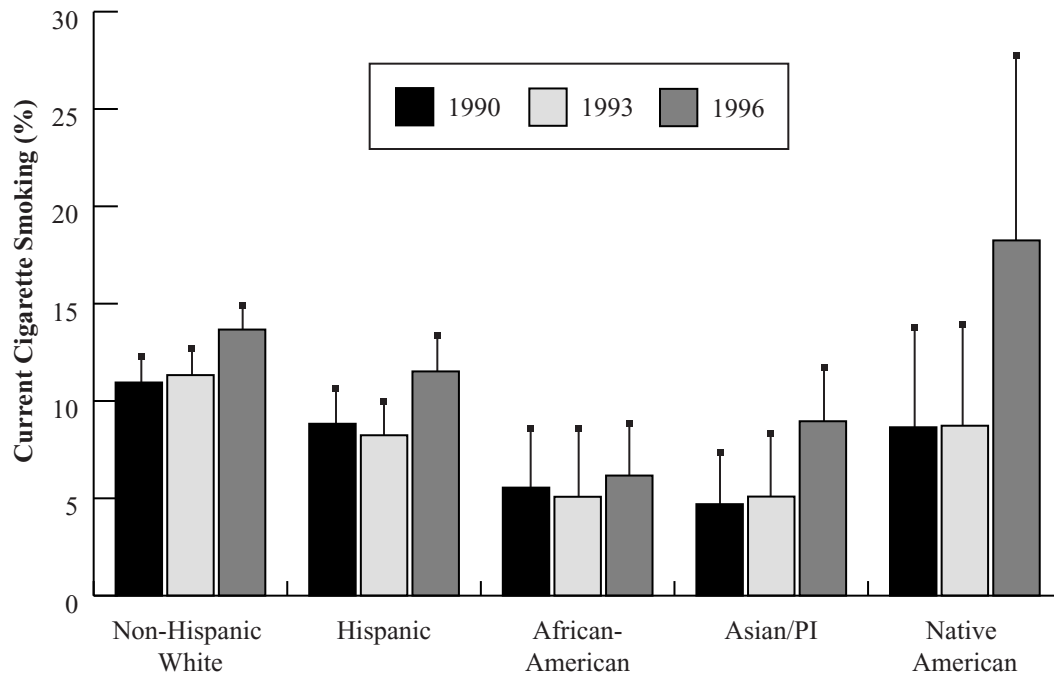


1990 and 1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

terns defining the increase in adolescent prevalence may emerge. First, the predictor of smoking initiation may have increased in frequency in the population (for example, the number of adolescents who report that their friends smoke may have increased), but the impact of the predictor on initiation may not have changed. This pattern would show no change between 1990 and 1996 in adolescent smoking prevalence at each level of the predictor, but more adolescents would be in the category that predicts higher initiation. A second pattern would result if the impact of the predictor on initiation has become more powerful over time. This pattern would show an increase in adolescent smoking prevalence between 1990 and 1996 in those levels of the predictor associated with high smoking initiation. A final pattern could occur in which the increase in smoking prevalence between 1990 and 1996 would be uniformly spread across the levels of the predictor, indicating that the predictor had not changed in the intensity of its effect on cessation. This last pattern would suggest that the predictor did not contribute to the observed increase in adolescent smoking between 1990 and 1996.

Figure 5-7

Current Cigarette Smoking Prevalence among Adolescent Californians of Different Race and Ethnic Groups: 1990, 1993, and 1996

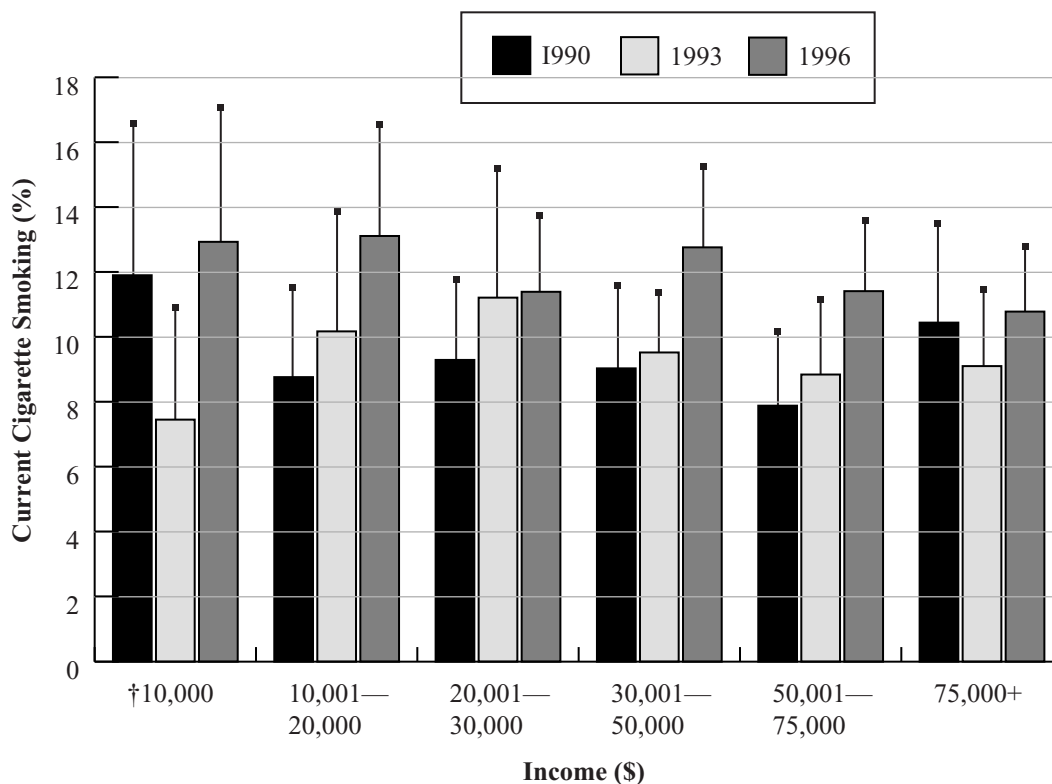


1990, 1993, and 1996 California Tobacco Survey* (CTS), UCSD.
* Telephone interviews.

School Performance One of the most powerful predictors of adolescent smoking behavior is self-described school performance. Figure 5-9, as well as Tables 5-1, 5-2a, and 5-2b, present adolescent smoking prevalence in 1990, 1993, and 1996 for each of the school performance groups. For male and female adolescents combined, there are statistically significant increases in smoking prevalence for both the above-average and average school performance groups; the largest part of the increase appears to have occurred between 1993 and 1996. There was no increase in prevalence with adolescents who described their school performance as being below average, with 3 to 5 percent of adolescents describing their school performances as being in this category. This suggests that a substantial part of the recent increase in adolescent smoking prevalence occurred among those school performance groups in which prevention efforts have traditionally been most successful rather than among adolescents in the group that is at greatest risk (those with below-average performance).

When males and females are combined, there is an absence of change between 1990 and 1996 in the smoking prevalence of adolescents who report that they have below-average school performance. This masks an

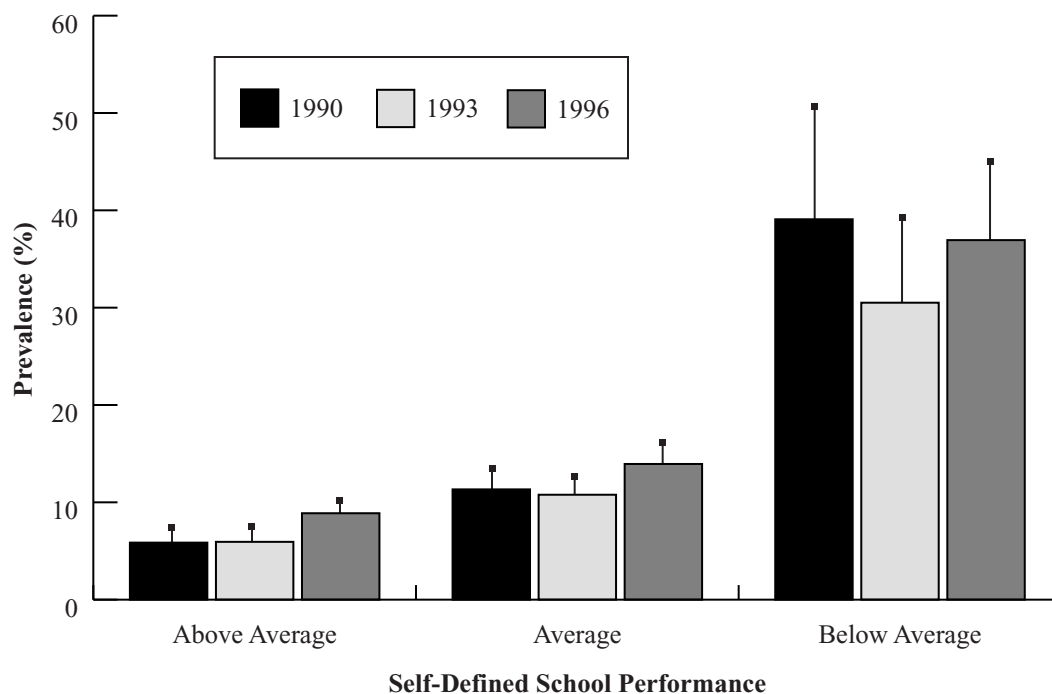
Figure 5-8
Prevalence of Current Cigarette Smoking among Adolescent Californians of Different Family Incomes: 1990, 1993, and 1996



1990, 1993, and 1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

important gender-related difference between 1990 and 1996 for this school performance category. When smoking prevalence trends are examined separately for male and female adolescents, both males and females show similar increases in smoking prevalence between 1990 and 1996 for the above-average and average school performance categories. However, males and females with below-average school performance change in opposite directions during the 1990–1996 period. Male adolescents with below-average school performance had a statistically significant decline in smoking prevalence between 1990 and 1993, and this decline was maintained in the 1993–1996 period. In contrast, adolescent females who reported below-average school performance almost doubled their smoking prevalence between 1990 and 1996, and the increase in prevalence seems to occur evenly across both the 1990–1993 and 1993–1996 time periods. These data suggest that there may be a strong gender-based change in the environmental influences and messages that are influencing smoking behavior in this high-risk target population of adolescents.

Figure 5-9
Cigarette Smoking Prevalence among Adolescents with Different Self-Defined School Performance: 1990, 1993, and 1996



1990, 1993, and 1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

Parental and Sibling Smoking Smoking behavior of parents or siblings has a profound effect on the prevalence of smoking among adolescents. This effect is clearly demonstrated in Table 5-3 for each of the survey years. The questions asked about parental and sibling smoking status differed among the survey years. The answers were collapsed to “at least one parent smokes” and “at least one older sibling smokes” for this analysis.

There is a doubling of adolescent smoking prevalence among children of smoking parents, and having an older sibling who smokes triples the likelihood of adolescent smoking. However, across the three surveys, changes in the fraction of adolescents who are cigarette smokers within each category of parental or sibling smoking are less dramatic. Among adolescents aged 12–13, there is no significant change across the three survey years in the effect of parental or sibling smoking on adolescent smoking. That is, there is no significant change in the prevalence of smoking over time within each category of parental or sibling smoking. This age group also had no significant increase in smoking prevalence across the three surveys.

Table 5-3
Prevalence of Adolescents Who Have Smoked in the Last 30 Days: 1990, 1993, and 1996

	Years of Age																		
	12 - 13						14 - 15						16 - 17						
	1990		1993		1996		1990		1993		1996		1990		1993		1996		
	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	
Total	3.62	1.52	2.98	1.03	3.31	0.86	7.98	1.47	9.13	1.55	10.86	1.38	16.61	2.13	16.29	2.62	22.10	2.28	
Male	4.30	2.85	3.28	1.37	4.20	1.33	7.04	1.87	9.34	2.30	9.34	2.29	18.69	3.49	18.88	4.37	24.75	3.06	
Female	2.98	1.66	2.70	1.36	2.37	1.05	8.93	2.41	8.92	2.48	12.51	2.19	14.62	2.99	13.74	3.12	19.20	2.64	
Parents Only																			
Parent(s) Smoke	5.42	2.40	5.00	2.25	5.28	1.53	11.27	3.38	12.19	3.27	16.25	2.36	22.50	4.68	23.18	4.26	27.39	3.71	
Don't Smoke	2.68	2.02	1.98	1.22	2.34	0.99	6.02	1.95	7.28	1.83	8.04	1.62	13.06	2.66	12.53	2.92	19.23	2.16	
Unknown
Older Siblings Only																			
Sibling(s) Smoke	7.86	5.50	11.17	5.71	12.20	4.02	21.22	8.47	26.52	7.61	25.15	4.46	29.06	8.28	31.86	7.43	37.88	5.34	
Nonsmoking/ No Siblings	3.31	1.64	1.96	0.98	2.27	0.79	6.28	1.49	6.52	1.47	8.48	1.33	14.73	1.95	12.24	2.73	18.34	2.20	
Unknown	.	.	.	.	3.17	6.38	.	.	.	.	5.12	10.43	.	.	.	.	.	.
Parents and Older Siblings																			
Neither Smoke	2.51	2.13	1.75	1.28	1.88	0.91	5.45	1.92	6.30	1.94	6.85	1.67	12.04	2.64	10.54	3.25	16.59	2.29	
Parent(s) Only	4.86	2.51	2.67	1.81	3.20	1.65	7.83	2.95	7.02	2.60	11.80	2.20	19.74	4.71	16.49	4.39	22.94	4.19	
Siblings Only	5.67	5.60	4.62	4.25	7.99	5.84	13.21	9.61	17.68	8.14	17.35	5.44	22.69	9.87	23.52	8.44	36.21	6.82	
Both Smoke	9.47	8.99	16.87	9.37	15.81	6.05	26.56	13.49	32.72	11.78	32.95	8.02	34.77	12.85	41.55	10.42	39.64	7.37	

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

For 15- to 16-year-old adolescents, there is a statistically significant increase in the prevalence of smoking among those adolescents who have a smoking parent (from 7.83 percent \pm 2.95 percent to 11.80 percent \pm 2.20 percent), but the increase in prevalence among those with a smoking sibling is not statistically significant (from 13.21 percent \pm 9.61 percent to 17.35 percent \pm 5.44 percent). The opposite pattern is evident for 16- to 17-year-old adolescents, for whom the increase in smoking prevalence with older sibling smoking is statistically significant (from 22.69 percent \pm 9.87 percent to 36.21 percent \pm 6.82 percent), but the increase with parental smoking is not (from 19.74 percent \pm 4.71 percent to 22.94 percent \pm 4.19 percent).

As might be expected from the increased prevalence of smoking among adolescents, there was also an increase in the fraction of adolescents who reported having an older sibling who smokes—from 10.5 percent in 1990 to 14.4 percent in 1996. There was no change, or a slight decline, in the frequency with which adolescents reported having a parent who smoked over this same time interval. It would appear that the changes in smoking prevalence that occurred between 1990 and 1996 from the effect of having a parent or sibling who smokes have been modest. These modest changes may be due to a combination of a small increase in the effect of parental or sibling smoking on the likelihood of adolescent smoking and a small increased prevalence of having a sibling who smokes.

Friends' Smoking The association between prevalence of adolescent smoking and self-reported number of friends who smoke is dramatic, is evident in each age group and present for both male and female friends, and is consistent across all three surveys (Table 5-4a). There is approximately a 10-fold increase in adolescent smoking prevalence among adolescents who report having three or more friends who smoke compared to adolescents who report having no friends who smoke.

However, there does not appear to be any increase across the survey years in the likelihood of smoking within each category of number of friends who smoke. For example, the prevalence of smoking goes from 4.4 percent in 1990 to 3.8 percent in 1996 among 16- to 17-year-old adolescents who have no male friends who smoke and from 41.0 percent in 1990 to 36.4 percent in 1996 among those who have three or more male friends who smoke. This would suggest that the power of perceived adolescent peer smoking in predicting—and possibly influencing—adolescent smoking prevalence has not increased between 1990 and 1996. What has changed is the fraction of adolescents who report having multiple friends who smoke (Table 5-4b). For example, the percentage of 14- to 15-year-old adolescents who report that none of their male friends smoked declined from 61.7 percent in 1990 to 38.1 percent in 1996, while the percentage who reported that three or more of their male friends smoked increased from 13.1 percent in 1990 to 38.0 percent in 1996. This shift in reporting friends who smoke was evident for all age groups and for both male and female friends.

A similar pattern emerges when peer influence is examined with a question that measures qualitatively how many of the adolescent's age group peers smoke (none, a few, some, or most). The prevalence of

Table 5-4a
Prevalence of Smoking among Adolescents of Different Ages by Reported Number of Friends who Smoke: 1990, 1993, and 1996

		Years of Age																		
		12 - 13						14 - 15						16 - 17						
		1990		1993		1996		1990		1993		1996		1990		1993		1996		
		(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)			
Total		3.62	1.52	2.98	1.03	3.31	0.86	7.98	1.47	9.13	1.55	10.86	1.38	16.61	2.13	16.29	2.62	22.10	2.28	
# Male	0	2.36	1.90	0.81	0.53	1.00	0.59	3.35	1.38	3.91	1.63	1.37	0.74	4.41	1.42	2.61	1.20	3.79	1.84	
	Friends	1	7.43	5.58	5.80	4.44	1.35	2.11	10.90	7.03	10.57	5.12	5.54	3.65	24.20	8.88	17.26	8.19	15.17	6.19
	Who	2	9.62	6.12	13.26	9.95	3.66	3.62	17.47	8.80	10.55	4.56	11.38	3.61	26.67	9.50	23.15	7.51	20.93	6.38
	Smoke	3+	24.81	16.01	15.68	8.15	16.37	4.49	26.13	7.59	25.48	6.74	21.80	3.33	41.05	6.51	35.52	5.76	36.42	4.17
# Female	0	1.80	0.98	1.30	0.85	1.39	0.58	4.11	1.33	3.36	1.13	1.82	0.69	8.30	2.06	6.10	2.41	7.34	2.06	
	Friends	1	4.43	3.42	5.65	4.78	2.44	2.07	15.13	5.85	13.11	4.74	9.58	3.60	19.78	7.41	19.55	5.63	16.87	5.73
	Who	2	.	.	9.63	9.97	12.20	6.80	17.94	9.74	22.02	10.03	13.23	5.78	33.15	10.68	29.41	10.03	26.95	7.65
	Smoke	3+	12.61	8.87	19.28	10.36	16.88	6.82	29.54	11.51	26.29	8.59	28.17	4.11	38.63	8.24	39.96	7.21	42.58	4.41
Male Subjects		4.30	2.85	3.28	1.37	4.20	1.33	7.04	1.87	9.34	2.30	9.34	2.29	18.69	3.49	18.88	4.37	24.75	3.06	
# Male	0	3.28	3.43	1.11	0.91	1.37	0.98	3.02	1.48	3.62	2.60	1.43	1.20	3.94	1.84	2.69	1.91	3.97	3.11	
	Friends	1	2.93	4.41	4.00	4.86	1.71	3.42	6.04	4.85	8.93	7.08	6.69	4.27	26.58	11.10	19.23	12.00	12.93	7.70
	Who	2	.	.	13.51	11.00	4.68	5.85	16.88	14.81	11.70	7.61	6.34	4.12	31.58	14.02	18.68	9.34	22.55	9.65
	Smoke	3+	.	.	13.34	10.08	21.84	6.00	22.95	10.40	29.60	7.80	21.45	5.77	42.23	9.05	39.83	8.88	41.38	5.57
# Female	0	2.44	1.66	1.54	1.30	2.12	1.06	4.49	1.81	4.17	1.91	2.30	1.14	11.00	3.09	9.51	4.35	9.80	3.05	
	Friends	1	2.82	4.31	11.60	11.44	4.68	4.35	14.35	7.59	11.47	5.89	4.75	3.96	22.29	10.61	25.43	10.06	22.69	8.73
	Who	2	.	.	.	.	.	.	.	.	.	15.04	9.68	.	.	31.04	16.63	34.43	12.05	
	Smoke	3+	.	.	13.89	14.10	22.68	11.84	18.81	18.26	34.60	13.65	28.33	7.37	41.31	12.35	39.29	11.24	49.23	6.67

Table 5-4a (continued)

		Years of Age																	
		12 - 13						14 - 15						16 - 17					
		1990		1993		1996		1990		1993		1996		1990		1993		1996	
		(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)	(%)	(CI)
Female Subjects		2.98	1.66	2.70	1.36	2.37	1.05	8.93	2.41	8.92	2.48	12.51	2.19	14.62	2.99	13.74	3.12	19.20	2.64
# Male	0	1.25	1.27	0.45	0.56	0.61	0.73	3.76	2.00	4.25	2.31	1.30	0.98	4.84	2.29	2.53	1.31	3.62	2.29
Friends	1	.	.	7.89	8.01	0.79	1.57	15.17	12.94	12.37	7.56	3.03	3.52	22.39	12.14	15.56	9.50	18.49	10.09
Who	2	9.47	7.84	12.92	20.41	2.41	3.55	17.88	9.03	9.53	6.89	17.84	7.73	22.49	14.74	26.72	12.40	18.68	7.88
Smoke	3+	.	.	19.57	14.85	11.20	6.18	30.63	13.18	22.05	9.59	22.07	4.01	39.28	10.96	29.26	8.38	31.09	4.60
# Female	0	1.23	1.15	1.11	1.22	0.57	0.63	3.72	2.23	2.45	1.46	1.14	0.86	5.53	2.71	2.80	1.81	3.59	2.33
Friends	1	5.22	4.65	1.46	2.11	0.58	1.14	15.52	7.81	14.53	7.19	12.99	6.14	18.18	8.95	15.41	8.58	12.54	6.02
Who	2	.	.	4.42	7.20	7.99	7.29	14.48	10.54	16.69	10.84	11.54	7.11	33.00	15.99	27.99	10.69	20.07	8.30
Smoke	3+	.	.	24.04	14.74	13.27	7.23	37.88	13.74	21.77	9.78	28.06	5.61	36.24	11.39	40.66	10.10	36.90	5.42

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Table 5-4b

Percentage of Adolescents who Are in Each Category of Reported Number of Friends who Smoke: 1990, 1993, and 1996

	Years of Age								
	12 - 13			14 - 15			16 - 17		
	1990	1993	1996	1990	1993	1996	1990	1993	1996
Overall-Groups-etc.									
No Male Friends Smoke	75.1%	65.8%	67.8%	61.7%	54.6%	38.1%	52.8%	43.4%	30.1%
1 Male Friend Smokes	4.3%	5.7%	7.3%	9.7%	11.2%	9.6%	15.2%	16.8%	9.2%
2 Male Friends Smoke	3.5%	4.9%	6.4%	5.6%	8.6%	10.7%	11.0%	9.4%	12.6%
3+ Male Friends Smoke	4.2%	8.3%	13.5%	13.1%	17.7%	38.0%	17.1%	25.8%	45.3%
No Female Friends Smoke	78.0%	73.6%	74.7%	69.6%	62.1%	51.2%	59.2%	54.6%	43.8%
1 Female Friend Smokes	6.3%	6.5%	8.9%	9.9%	13.4%	9.9%	13.6%	14.1%	11.8%
2 Female Friends Smoke	3.7%	3.3%	4.2%	6.4%	7.1%	10.2%	8.3%	9.4%	9.8%
3+ Female Friends Smoke	2.5%	5.9%	8.8%	7.4%	12.8%	26.7%	14.5%	17.2%	33.3%

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

smoking increases in each age group with increasing proportion of peers who are reported to be smokers (Table 5-5). For example, the 1996 prevalence of smoking among 16- to 17-year-old adolescents is only 4.4 percent for those who reported that none of their peers smoke and 12.6 percent for those who reported that a few of their peers smoke, but the prevalence of smoking among those who reported most of their peers smoke is 42.8 percent. However, the prevalence of smoking within each category of reported peer smoking (none, a few, some, or most) did not change substantially between 1990 and 1996. What changed is the likelihood that an adolescent reported that most of his friends smoke. Figure 5-10 presents the percentage of adolescents in each age group who reported that most of their age group peers smoked in the 1990, 1993, and 1996 California Tobacco Survey (CTS). There was approximately a doubling between 1990 and 1996 in the fraction of adolescents who reported that most of their age group peers smoked, with almost 30 percent of 16- to 17-year-old adolescents reporting that most of their age group peers smoked (up from 16.7 percent in 1990).

Both of these questions about smoking behavior among friends and peers demonstrate a dramatic rise in adolescents' perception of the number of their peers and friends who smoke. Part of this change in perception is likely to be based on an accurate assessment of the increase in adolescent smoking prevalence that has occurred in California between 1993 and 1996, but the magnitude of the increases in perception of adolescent smoking (a tripling of friends and doubling of peers) is vastly out of proportion with the real change in prevalence (from 9.2 percent in 1990 to 12 percent in 1996). This suggests that a change may have occurred over this interval in adolescents' perception about how common smoking is among their peers. Tobacco industry advertising and promotional efforts may have been successful in convincing adolescents that smoking is the norm for their peer group. Certainly, the public health efforts to de-normalize tobacco use among adolescents have not been successful in altering the perceptions of these adolescents.

Table 5-5

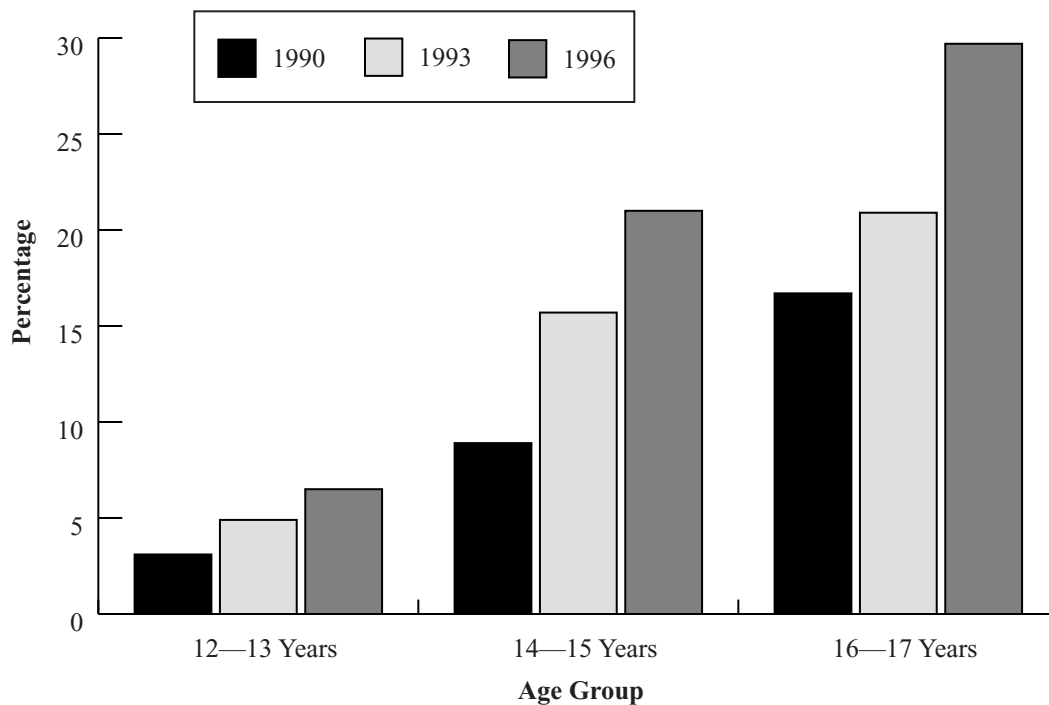
Smoking Prevalence among Adolescents of Different Ages by Self-Reported Number of Age-Group Peers who Smoke: 1990, 1993, 1996

		Year	Has Smoked in Last 30 Days		Has Smoked, but Not in Last 30 Days		Never Smoked	
			(%)	CI	(%)	CI	(%)	CI
Number of Peers Who Smoke: Ages 12-13	Total	1990	3.62	1.52	7.35	1.94	89.00	2.67
		1993	2.98	1.03	7.87	1.61	88.93	1.99
		1996	3.31	0.86	7.19	1.37	89.50	1.61
	None	1990	0.64	0.64	5.40	2.52	93.96	2.50
		1993	0.45	0.55	2.12	1.04	97.43	1.23
		1996	0.64	0.53	2.76	1.19	96.61	1.23
	A Few	1990	5.56	3.03	10.44	3.40	83.89	4.81
		1993	2.66	1.43	13.30	4.16	83.47	4.56
		1996	2.37	1.44	10.31	3.20	87.32	3.29
	Some	1990	7.55	5.20	10.32	5.53	82.13	7.58
		1993	8.60	4.78	12.98	4.84	78.42	6.42
		1996	7.19	3.19	16.78	4.83	76.04	5.45
Most	1990	.	.	10.44	10.25	.	.	
	1993	15.52	9.97	21.47	11.50	61.87	14.58	
	1996	22.07	7.59	14.33	6.18	63.59	9.26	
Number of Peers Who Smoke: Ages 14-15	Total	1990	7.98	1.47	16.94	2.62	75.08	3.12
		1993	9.13	1.55	20.97	2.68	69.81	2.87
		1996	10.86	1.38	18.52	2.05	70.58	2.33
	None	1990	2.45	2.10	8.92	4.10	88.64	4.44
		1993	0.25	0.36	6.23	3.23	93.53	3.27
		1996	2.28	1.59	6.52	2.78	91.20	3.15
	A Few	1990	5.26	2.26	17.21	3.57	77.54	4.07
		1993	4.37	2.36	23.22	3.69	72.23	4.12
		1996	4.98	2.26	20.51	3.95	74.52	4.58
	Some	1990	10.58	3.34	23.77	7.51	65.65	8.04
		1993	7.61	2.34	25.83	5.98	66.57	6.11
		1996	9.53	3.02	20.55	3.49	69.75	3.88
Most	1990	32.03	9.57	25.11	8.70	42.86	10.74	
	1993	33.86	6.14	23.89	6.11	42.13	6.67	
	1996	29.78	4.42	23.90	4.10	46.32	5.23	
Number of Peers Who Smoke: Ages 16-17	Total	1990	16.61	2.13	24.98	3.01	58.33	3.11
		1993	16.29	2.62	29.18	3.87	54.37	3.85
		1996	22.10	2.28	24.34	1.94	53.56	2.66
	None	1990	2.11	2.87	13.04	5.47	84.85	5.83
		1993	.	.	6.89	5.65	93.11	5.65
		1996	4.41	4.08	12.32	5.59	83.27	6.98
	A Few	1990	9.51	2.75	28.36	5.12	62.13	5.81
		1993	8.91	3.10	28.93	5.79	62.15	6.39
		1996	12.58	2.75	25.18	3.29	62.24	4.34
	Some	1990	21.34	5.36	27.70	6.80	50.63	7.01
		1993	15.12	4.76	33.48	6.33	51.34	6.01
		1996	17.20	4.36	26.19	4.21	56.61	4.23
Most	1990	40.21	7.46	22.12	6.27	37.67	8.32	
	1993	38.47	6.90	31.93	6.63	28.93	5.91	
	1996	42.77	4.41	25.32	4.66	31.91	4.43	

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Survey (CTS), UCSD. Telephone interviews.

Figure 5-10
Percentage of Adolescents of Different Ages who Report that Most of Their Friends Smoke Cigarettes: 1990, 1993, and 1996



1990, 1993, and 1996 California Tobacco Survey* (CTS), UCSD.
 * Telephone interviews.

Response of a Nonsmoking Adolescent to a Best Friend's Offer of a Cigarette

The response of a non-smoking adolescent to the question, "If one of your best friends were to offer you a cigarette, would you smoke it?" has been suggested as a measure of the strength of an adolescent's resolve not to smoke, and any response except "definitely no" is felt to suggest that the adolescent is at risk for subsequent initiation. The response to this question is also likely to reflect adolescent norms about smoking and the social acceptability of smoking among adolescent non-smokers. Table 5-6 presents the responses of adolescent non-smokers in the 1990, 1993, and 1996 CTS to this question. The frequency with which adolescent non-smokers report that they definitely would not smoke if offered a cigarette by their best friend remained constant between 1990 and 1993, but declined precipitously in 1996 (from 87.9 percent in 1993 to 78.6 percent in 1996). This decline is evident for each of the three age groups, including 16- to 17-year-old adolescents, whose resistance to friends' offers of cigarettes had been high (over 90 percent). This trend again suggests that the effort to de-normalize cigarette smoking has lost ground between 1993 and 1996, and this change may have contributed to the rise in adolescent smoking in California.

Intention to Quit Table 5-7 presents the responses of adolescents who have smoked in the last 30 days to the question, "Have you ever thought seriously about quitting?" Approximately 70 percent of adolescents who smoke have thought about quitting, but there have not been significant changes in this response across the three surveys. There were no significant differences across age groups or between male and female adolescents.

Access to Cigarettes Non-smoking adolescents were asked whether they thought it would be easy or hard to get cigarettes if they wanted to, and the results for the 1990, 1993, and 1996 surveys are presented in Table 5-8. The percentage of adolescents who thought that it would be easy to obtain cigarettes increased substantially with age, but there was no significant change in the perceived difficulty of obtaining cigarettes over the period 1990–1996 among non-smoking adolescents. The absence of a change in perceived difficulty of obtaining cigarettes between 1990 and 1996—a period during which a substantial improvement occurred in the refusal of adolescent attempts to purchase cigarettes—suggests two possible explanations. One possibility is that the restrictions on the availability of cigarettes to adolescents have not yet become extensive enough to actually reduce access of adolescents to cigarettes. The second possibility is that the perceived availability of cigarettes among non-smoking adolescents may be influenced by factors other than the actual availability of cigarettes.

COMPARISON OF CALIFORNIA WITH OTHER STATES USING CURRENT POPULATION SURVEY DATA

The Current Population Survey (CPS) for 1992/1993 and 1995/1996 asked all individuals over the age of 15 years about their smoking behavior (those 15 years of age and older were not included in the January 1996 survey). These surveys can be used to compare the prevalence of smoking among 15- to 17-year-old adolescents in California to the rest of the nation. Table 5-9 presents the prevalence of smoking in California and the rest of the nation using the adult definition of smoking (has smoked at least 100 lifetime cigarettes and reports smoking all of the last 30 days or only some days). An additional category of those who have smoked at least 100 cigarettes, but who have not smoked in the last 30 days, is included to improve comparability with the adolescent definition tables. Adolescent current smoking prevalence was significantly lower in California than in the remaining states in both the 1992/1993 and 1995/1996 CPS. There are increases in adolescent smoking prevalence between 1992/1993 and 1995/1996 for both California adolescents and adolescents in the rest of the nation. The difference in the smoking prevalence of California and the rest of the nation is not statistically significant, since California's prevalence is proportionately similar to the prevalence of the rest of the nation. These data suggest that California remains below the rest of the nation in adolescent initiation, but that California has seen an increase in smoking initiation between 1992/1993 and 1995/1996 that is similar to that of the rest of the nation.

Table 5-6

Response of Adolescents who Have Never Smoked to the Question, "Would You Smoke if Your Best Friend Offered You a Cigarette?": 1990, 1993, 1996

		<u>Definitely Yes</u>		<u>Probably Yes</u>		<u>Probably No</u>		<u>Definitely No</u>		<u>Unknown</u>		
		(%)	CI	(%)	CI	(%)	CI	(%)	CI	(%)	CI	
Total												
	1990	0.18	0.16	0.86	0.36	12.05	1.81	86.87	1.86	0.04	0.05	
	1993	0.06	0.12	1.39	0.52	10.57	1.34	87.90	1.43	0.09	0.13	
	1996	0.20	0.16	2.16	0.50	18.74	1.06	78.65	1.18	0.25	0.15	
Males												
	1990	0.09	0.10	0.88	0.52	12.09	2.89	86.89	3.00	0.05	0.08	
	1993	.	.	1.62	0.96	11.76	1.92	86.44	1.98	0.19	0.27	
	1996	0.08	0.13	2.55	0.73	19.43	1.91	77.53	1.99	0.42	0.29	
Females												
	1990	0.26	0.30	0.85	0.56	12.00	2.62	86.86	2.64	0.04	0.07	
	1993	0.12	0.23	1.17	0.62	9.47	1.94	89.25	1.99	.	.	
	1996	0.32	0.29	1.76	0.64	18.02	1.49	79.82	1.71	0.08	0.11	
Age in Years	12-13											
		1990	0.02	0.04	0.60	0.54	11.58	2.44	87.76	2.53	0.05	0.09
		1993	0.14	0.27	1.31	1.00	11.32	1.74	87.17	1.93	0.06	0.10
		1996	0.11	0.16	1.62	0.62	17.03	1.46	80.98	1.54	0.26	0.25
	14-15											
		1990	0.42	0.45	1.40	0.84	15.36	3.26	82.75	3.47	0.07	0.10
		1993	.	.	1.54	0.85	11.80	2.42	86.46	2.33	0.19	0.38
		1996	0.28	0.28	3.32	1.08	22.62	2.28	73.57	2.48	0.22	0.22
	16-17											
	1990	0.09	0.18	0.55	0.66	8.17	3.06	91.18	3.14	.	.	
	1993	.	.	1.30	1.15	7.39	2.37	91.31	2.90	.	.	
	1996	0.23	0.37	1.41	0.93	16.03	2.45	82.04	2.66	0.29	0.42	

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Table 5-7

Self-Reported Interest in Quitting among Adolescents who Have Smoked in the Last 30 Days: 1990, 1993, 1996

Year	Quitting Considered		Quitting Not Considered		Never Smoked Regularly		Unknown	
	(%)	CI	(%)	CI	(%)	CI	(%)	CI
Overall								
1990	68.56	5.62	13.13	4.06	18.00	4.41	0.31	0.39
1993	72.66	4.83	13.53	3.25	13.50	3.99	0.31	0.61
1996	70.47	3.10	12.99	2.76	16.32	2.72	0.21	0.29
Age in Years:								
12-13								
1990	.	.	14.82	17.16	.	.	.	.
1993	.	.	7.90	10.50	17.61	12.63	.	.
1996	.	.	12.78	9.94	26.39	12.30	.	.
14-15								
1990	64.14	10.04	12.30	6.27	22.69	8.51	0.87	1.30
1993	71.85	9.38	11.02	5.36	17.12	8.03	.	.
1996	67.09	5.84	16.36	6.08	16.55	5.12	.	.
16-17								
1990	74.97	5.82	13.17	5.71	11.78	4.00	0.09	0.17
1993	72.77	5.87	16.27	4.57	10.40	5.34	0.56	1.12
1996	73.79	4.15	11.21	3.70	14.65	3.69	0.36	0.49

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Table 5-8

Self-Reported Ease of Obtaining Cigarettes among Adolescents of Different Ages: 1990, 1993, 1996

Age Group	Easy		Hard		Unknown	
	(%)	CI	(%)	CI	(%)	CI
Do You Think it would be Easy or Hard for You to Get Cigarettes if You Wanted Some?						
12-13 Years						
1990	38.86	3.82	58.02	3.39	3.12	0.99
1993	37.08	3.25	58.93	3.15	3.99	1.27
1996	37.00	2.61	59.41	2.55	3.59	0.91
14-15 Years						
1990	65.28	3.80	32.87	3.76	1.85	0.90
1993	67.89	2.79	29.61	2.89	2.50	1.14
1996	67.11	2.69	30.53	2.70	2.36	0.84
16-17 Years						
1990	85.64	2.71	13.75	2.86	0.61	0.60
1993	84.96	3.29	12.55	2.77	2.49	1.93
1996	82.72	2.96	16.53	2.93	0.76	0.49

Note: CI = 95% confidence interval.

Source: 1990, 1993, 1996 California Tobacco Surveys, UCSD. Telephone interviews.

Table 5-9
Current Smoking Status among Respondents Ages 15 to 17 Years: 1992/1993 and 1995/1996
CPS: California Compared to the Rest of the Nation

Current Smoking Status	Years of Age	Smoked at Least 100 Lifetime Cigarettes						Smoked <100 Cigarettes	
		Number of Days Smoked in the Last 30 Days				None in the Last 30 Days			
		All (%)	CI	Some (%)	CI	(%)	CI	(%)	CI
California									
1992/1993									
Total	15-17	4.43	1.60	1.40	0.91	1.85	1.04	92.32	2.07
Male	15-17	4.40	2.21	0.90	1.02	1.98	1.50	92.72	2.80
Female	15-17	4.47	2.31	1.94	1.54	1.71	1.45	91.88	3.05
Overall	15	2.65	2.17	0.71	1.13	0.59	1.03	96.06	2.63
Overall	16-17	5.31	2.12	1.74	1.24	2.47	1.47	90.49	2.78
1995/1996*									
Total	15-17	6.76	1.82	2.31	1.09	2.26	1.08	88.66	2.3
Male	15-17	8.9	2.88	1.75	1.32	1.87	1.37	87.48	3.35
Female	15-17	4.51	2.15	2.9	1.74	2.68	1.67	89.91	3.12
Overall	15	3.27	2.28	2.61	2.05	2.42	1.97	91.69	3.54
Overall	16-17	8.39	2.43	2.17	1.28	2.19	1.28	87.25	2.93
Nation Minus California									
1992/1993									
Total	15-17	7.07	0.60	2.33	0.35	1.89	0.32	88.70	0.74
Male	15-17	7.19	0.84	2.74	0.53	2.07	0.46	88.00	1.05
Female	15-17	6.95	0.85	1.91	0.46	1.70	0.43	89.44	1.02
Overall	15	4.03	0.79	1.60	0.50	1.49	0.48	92.88	1.03
Overall	16-17	8.62	0.80	2.70	0.46	2.09	0.41	86.58	0.97
1995/1996									
Total	15-17	8.23	0.62	3.46	0.41	1.99	0.31	86.33	0.77
Male	15-17	9.25	0.90	4.06	0.61	1.79	0.41	84.91	1.11
Female	15-17	7.12	0.83	2.80	0.53	2.20	0.47	87.88	1.06
Overall	15	4.63	0.81	2.78	0.63	1.28	0.43	91.30	1.08
Overall	16-17	10.08	0.83	3.81	0.53	2.35	0.42	83.76	1.02

Note: CI = 95% confidence interval.

*January, 1996 CPS did not include 15-year-olds.

SUMMARY Cigarette smoking prevalence among adolescents in California is lower than that among the adolescents in the rest of the United States. However, it has increased between 1993 and 1996 and the extent of this increase in California is similar to that for the rest of the nation. The increase between 1993 and 1996 in California is largely among older adolescents and has occurred among each of the racial and ethnic groups, with the exception of African American adolescents. When examined by family income and level of school performance, the increase in adolescent smoking prevalence is predominantly among those groups with moderate to high family incomes and school performance—groups in which prior prevention efforts had been most successful. Analyses of the predictors of adolescent smoking initiation suggest that two of the principal changes were occurring between 1993 and 1996. One change was in adolescents' perception of the number of their friends and peers who smoke and the other was in the willingness of non-smoking adolescents to smoke if offered a cigarette by a close friend. These observations suggest that the effort to de-normalize smoking behavior among adolescents in California has not successfully altered their perceptions of the prevalence of smoking by adolescents or of the social acceptability of smoking among their peer group.

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