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# Changes at the High End of Risk in Cigarette Smoking Among US High School Seniors, 1976–1995

## ABSTRACT

**Objectives.** This study identified high school seniors at low, moderate, and high risk for cigarette use to examine changes in the prevalence of daily smoking within risk groups from 1976 to 1995.

**Methods.** Data were taken from the Monitoring the Future Project's national surveys of high school seniors. Risk classification was based on grade-point average, truancy, nights out per week, and religious commitment. Logistic regression models were used to estimate trends for all seniors and separately for White ( $n = 244\ 221$ ), African American ( $n = 41\ 005$ ), and Hispanic ( $n = 18\ 457$ ) male and female subgroups.

**Results.** Risk group distribution (low = 45%, moderate = 30%, high = 25%) changed little over time. Between 1976 and 1990, greater absolute declines in smoking occurred among high-risk students (17 percentage points) than among low-risk students (6 percentage points). Particularly large declines occurred among high-risk African Americans and Hispanics. Smoking increased in all risk groups in the 1990s.

**Conclusions.** Among high school seniors, a large part of the overall change in smoking occurred among high-risk youth. Policies and programs to reduce smoking among youth must have broad appeal, especially to those at the higher end of the risk spectrum. (*Am J Public Health*. 1999;89:699–705)

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Each year in the United States more than 400 000 people die from tobacco-related illness, making tobacco use the number one cause of preventable death in this country.<sup>1</sup> Each day nearly 3000 young people begin smoking, 1 in 3 of whom may die prematurely.<sup>2,3</sup> Because 89% of adults who smoke daily begin by the age of 18 years, and cigarette use by young people 18 years or younger has been increasing in recent years, reducing smoking among youth has become a cornerstone of our national tobacco control policy.<sup>4–9</sup>

But all young people are not at the same level of risk for cigarette use. Important differences in trends of cigarette use between adolescent males and females and between different ethnic groups have emerged.<sup>4,10–14</sup> In addition, many studies have documented the relationship between cigarette use and other lifestyle and health-related behaviors, so that within groups defined by sex and ethnicity, the risk of cigarette use differs.<sup>15–18</sup> For example, children and adolescents who are more committed to education, religion, and family are, in general, at lower risk for cigarette use.<sup>15–18</sup>

In the face of increasing cigarette use by young people in this country, important questions remain unanswered. Has there been a shift in identifiable risk factors that would predispose more young people to use cigarettes? Has there been an increase in the number of youth at high risk? And how have lower- and higher-risk youth participated in overall changes in cigarette use? A greater understanding of how cigarette use has changed across a broad range of young people can help to better focus efforts to reduce smoking by our nation's next generation. To explore these questions, we analyzed the Monitoring the Future Project's ongoing national surveys of high school seniors.

## Methods

The Monitoring the Future Project, which is conducted at the University of Michigan's Institute for Social Research under grants from the National Institute on Drug Abuse, has surveyed large, nationally representative samples of high school seniors during the spring of each year since 1975. The project has also collected data on 8th and 10th graders since 1991, college students since 1980, and young adult high school graduates over a longer period. We analyzed data on high school seniors from 1976 to 1995. The design and procedures used are summarized briefly below; detailed descriptions are presented elsewhere.<sup>4,19,20</sup>

## Survey Procedures

A 3-stage sample procedure is employed in the survey. Stage 1 involves the selection of particular geographic areas, stage 2 the selection of one or more high schools in each area, and stage 3 the selection of seniors within each high school. The result each year is an area probability sample of the 48 coterminous states. About 130 public and private high schools participate each year (representing an average school response rate of

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This paper was accepted December 7, 1998.

approximately 65%). Within schools, 83% of sampled seniors generally participate (nearly all nonparticipation results from absenteeism), yielding samples of approximately 17 000 high school seniors each year. While both school and student response rates have varied somewhat over time (e.g., school response rate averaged 62% through 1980, 70% between 1981 and 1990, and 59% during the 1990s), adjustments for these differences indicate that any bias in overall prevalence rates is likely to be quite small and that variations in response rates over time are not a significant factor in explaining trends in cigarette use.<sup>4</sup> Data are collected according to standardized procedures via closed-ended questionnaires administered in classrooms by locally-based Institute for Social Research representatives and their assistants.

### *Measure of Smoking*

Smoking is measured by a question asking about cigarette use in the past 30 days, with response categories ranging from none to 2 or more packs per day. Previous analyses of Monitoring the Future data have shown that three quarters of high school seniors who smoke daily continue to smoke daily as adults.<sup>14</sup> Therefore, we focused on high school seniors who smoke 1 or more cigarettes per day.

### *Risk Classification*

In addition to measuring drug use and related attitudes, the Monitoring the Future Project gathers information about important sociodemographic and lifestyle characteristics. Previous work has shown many sociodemographic (geographic region and urbanicity of residence, parental education, number of parents in the home) and, especially, lifestyle (grade point average, truancy, work experience, student's weekly income, religious commitment, peer activities) characteristics to be independent predictors of cigarette use.<sup>4,17,18</sup>

Our goal was to identify a subset of variables capturing some important aspects of lifestyle that are strongly related to cigarette use. Consistent with the social development model,<sup>21</sup> social learning theory,<sup>22</sup> control theory,<sup>23</sup> and numerous previous studies, we selected grade point average, truancy (number of days of school skipped in past 4 weeks), number of nights out per week for fun or recreation, and religious commitment (a combination of 2 questions measuring attendance at religious services and the importance of religion in one's life).<sup>14,17,18,21-29</sup> These 4 variables captured a large part of the predictive power of a much larger set of sociodemographic and lifestyle variables (C statistic

[area under receiver operating characteristic, ROC, curve], full 15-variable sociodemographic/lifestyle model = 0.75; C statistic, 4-variable lifestyle model = 0.71). No other combination of 4 lifestyle variables performed better in distinguishing smokers from nonsmokers (results of all-possible-case logistic regression).

To construct the risk group classification system, we dichotomized each of the 4 selected variables. Risk factors for daily cigarette use were having an average grade of C+ or lower, skipping any days of school in the past 4 weeks, going out 3 or more nights per week, and being less committed to religion (respondents were classified as less committed if they reported rarely or never attending church or that religion was of little or no importance in their life). Respondents reporting 3 or 4 risk factors made up the high-risk group; those with 2 risk factors, the moderate-risk group; those with fewer than 2 risk factors, the low-risk group. More complex classification systems, including a split-sample validated logistic regression model with the full set of sociodemographic and lifestyle variables, did not substantively improve on this simple risk stratification method.

### *Trend Estimation*

Real and important changes in cigarette use do occur from year to year.<sup>4,6</sup> Rather than focus on these changes, which are covered in detail elsewhere, our purpose in this analysis was to provide a picture of the general trends in cigarette use among different risk groups over the past 2 decades.<sup>4,6</sup> To model trends in the prevalence of daily smoking, we used logistic regression employing individual-level data from surveys of high school seniors from the years 1976 to 1995. Daily smoking was the dependent variable and year of survey and risk group status were independent variables. We examined cigarette use by risk group for the total population of high school seniors and for males and females separately within each of the 3 largest ethnic groups of seniors in the United States (White,  $n = 244\ 221$ ; African American,  $n = 41\ 005$ ; and Hispanic [combined Mexican American, Puerto Rican, and other Latin American],  $n = 18\ 457$ ).

Previous Monitoring the Future studies have demonstrated complex relationships between sex, ethnicity, and lifestyle factors in their influence on cigarette use; therefore we were not surprised to find significant high-level interactions between these variables.<sup>30</sup> To simplify analyses, we stratified data by ethnic group and reduced initial models containing all possible interactions (between sex,

risk group, and time) to final models following a hierarchical method (retention of an interaction effect of a given order in a model resulted in the retention of all lower-order terms involving the component variables of that effect).<sup>31</sup>

The multistage sampling design with respondents clustered in schools results in unequal probability of selection for survey participants and produces larger sampling errors than would a simple random sample of the same size.<sup>32</sup> We took these issues into account in deriving point estimates, determining confidence intervals, and estimating the model, using the Stata 4.0 statistical software package (sampling weights were used and variance estimation was performed with a first-order Taylor series expansion method).<sup>33</sup> The confidence intervals (CIs) for differences between model predictions of the prevalence of daily smoking (for risk groups over time) were determined by a bootstrap method (100 replications with sampling and replacement done at the school level to account for cluster effects).<sup>34</sup>

## **Results**

### *Risk Group Distribution*

In 1995, 45% of all high school seniors surveyed belonged to the low-risk group (as defined above), 32% to the moderate-risk group, and 23% to the high-risk group. A higher proportion of males than females were classified as moderate- or high-risk. Among females, a higher proportion of African Americans than Whites or Hispanics belonged to the low-risk group (Table 1). These patterns are quite stable and consistent over the period studied. Small changes in risk-group distribution did occur, but they were too small to account for a meaningful proportion of changes in cigarette use. Although lifestyle characteristics are clearly associated with cigarette use at any given point in time, shifts in the prevalence of these lifestyle factors are not major forces driving change in the prevalence of daily smoking.

### *Smoking Within Risk Groups*

The estimated prevalence of daily cigarette use among all high school seniors declined from 28.9% (95% CI = 27.6%, 30.1%) in 1976 to 18.5% (95% CI = 17.9%, 19.1%) in 1985 (Figure 1). This decline of approximately 10 percentage points translates nationwide into 250 000 fewer seniors smoking daily in 1985 than if the proportion of daily smokers had remained unchanged from 1976. This decrease in the annual

**TABLE 1—Risk Group Distribution of US High School Seniors Surveyed in the Monitoring the Future Project, 1976, 1985, and 1995**

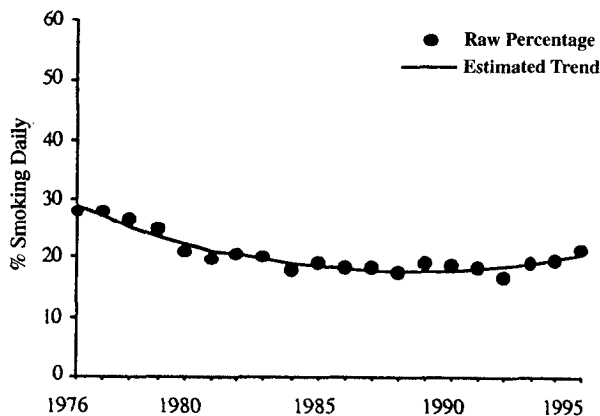
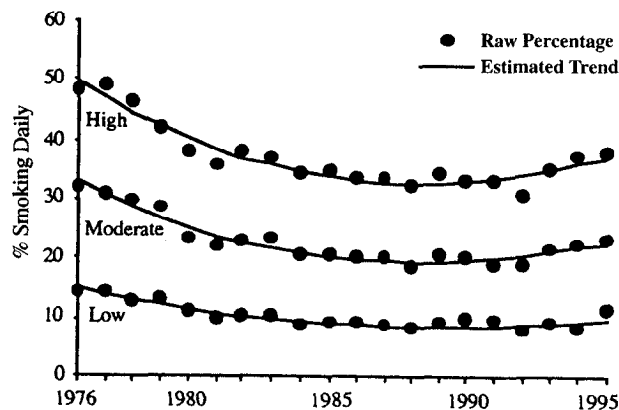
Demographic Subgroup and Risk Group	1976	1985	1995	95% Confidence Interval for 1995 Percentage
<b>Total sample</b>				
No. <sup>a</sup>	13 755	14 198	13 829	
Low, %	46	45	44.7	(43.2, 46.2)
Moderate, %	29	31	32.2	(31.2, 33.2)
High, %	25	24	23.1	(21.7, 24.5)
<b>African American males</b>				
No.	494	757	618	
Low, %	37	40	40.1	(35.4, 44.8)
Moderate, %	36	32	32.5	(28.5, 36.4)
High, %	27	28	27.4	(23.0, 31.8)
<b>African American females</b>				
No.	773	964	796	
Low, %	67	59	60.0	(55.0, 65.2)
Moderate, %	23	28	25.1	(22.3, 27.9)
High, %	11	13	14.9	(11.4, 18.3)
<b>White males</b>				
No.	5 565	5 121	4 574	
Low, %	40	39	38.6	(36.4, 40.8)
Moderate, %	30	32	34.4	(32.7, 36.0)
High, %	30	29	27.1	(24.8, 29.3)
<b>White females</b>				
No.	5 428	5 674	5 059	
Low, %	52	51	48.8	(46.6, 51.0)
Moderate, %	29	30	32.2	(30.6, 33.7)
High, %	20	19	19.1	(17.3, 20.8)
<b>Hispanic males</b>				
No.	242	234	523	
Low, %	40	39	35.6	(31.3, 39.9)
Moderate, %	25	30	34.2	(29.8, 38.6)
High, %	35	30	30.2	(24.9, 35.4)
<b>Hispanic females</b>				
No.	247	322	574	
Low, %	57	51	50.3	(44.4, 56.2)
Moderate, %	24	28	29.2	(23.8, 34.5)
High, %	19	21	20.5	(16.7, 24.3)

<sup>a</sup>Includes students not categorized as African American, White, or Hispanic.

number of seniors smoking daily persisted until cigarette use began to rise in the early 1990s. Large and important differences exist in cigarette use among the risk groups. In 1995, 10% (95% CI = 9.0%, 10.9%) of low-risk students, 23% (95% CI = 21.4%, 24.5%) of moderate-risk students, and 37% (95% CI = 35.3%, 39.6%) of high-risk students smoked daily.

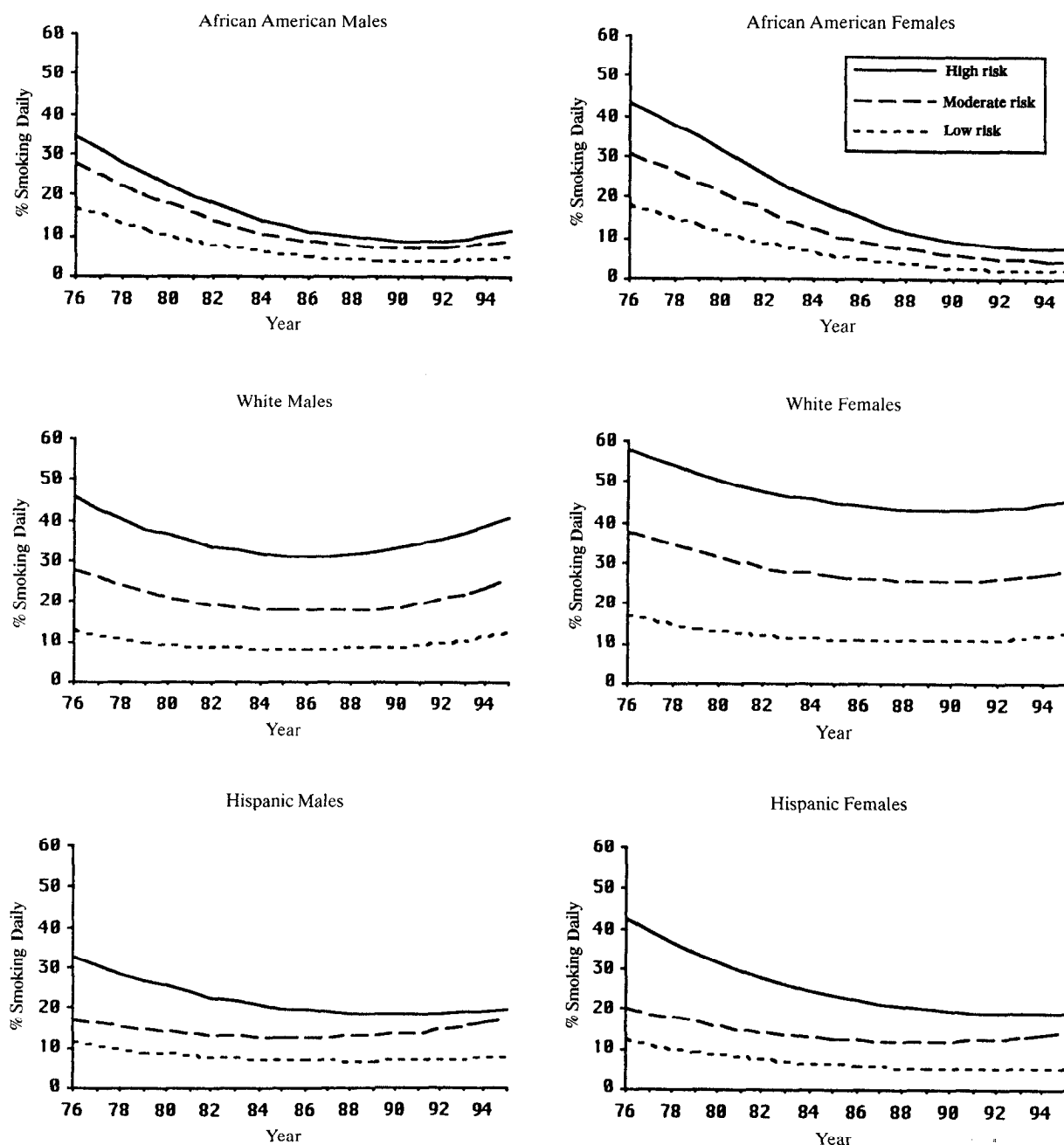
Since 1976 the prevalence of smoking among high-risk students has been subject to considerably greater change than that of low-risk students. The greatest absolute declines occurred in the group of students at high risk (Figure 1). From 1976 to 1990, high-risk seniors experienced a 17 percentage point (95% CI = 14.7, 19.3) decline, compared with a 6 percentage point (95% CI = 4.8, 7.2) decline among low-risk seniors during the same period (Table 2). This general pattern is true regardless of sex or ethnicity. Indeed, among both male and female African Americans and Hispanics, dramatic declines in cigarette use among the high-risk students resulted in a substantial narrowing of the absolute differences between the 3 risk groups during the 1970s and 1980s (Figure 2). Among all seniors, the proportionate declines were similar for low-risk (-41%), moderate-risk (-42%), and high-risk groups (-34%), with the result that the absolute percentage point decline is by far the largest for the high-risk group.

Unfortunately, the declines in smoking seen in the 1970s and 1980s are being followed by an increase in the 1990s. Absolute changes have again been greater among high-risk students. For example, among high-risk White males the absolute

**Overall****By Risk Group**

Note. Estimates are based on predicted probability from logistic regression models of daily cigarette use. Models include first- and second-order polynomials of time. Higher-order powers of time were not statistically significant ( $P > .05$ ). All possible risk group-time polynomial interactions were significant ( $P < .05$ ).

**FIGURE 1—Trends in daily cigarette use among US high school seniors, 1976–1995.**



Note. Separate models were constructed for each ethnic group. Main effects (sex, risk group status, and time polynomials) were significant ( $P < .05$ ) for all models. Significant ( $P < .05$ ) interactions included in final models (see text) were as follows:

	Time polynomial	Interactions		
		Sex $\times$ Risk	Sex $\times$ Time	Risk $\times$ Time
African American	t1, t2, t3	Yes	Sex $\times$ (t1, t2)	
White	t1, t2	Yes	Sex $\times$ (t1, t2)	Risk $\times$ (t1)
Hispanic	t1, t2	Yes	Sex $\times$ (t1)	Risk $\times$ (t1)

FIGURE 2—Risk group trends in daily cigarette use among US high school seniors, 1976–1995, by demographic subgroup.

prevalence of cigarette use rose by 8 percentage points (95% CI = 6.6, 10.1) from 1990 to 1995, compared with an increase of 4 percentage points (95% CI = 2.7, 5.0) for White males in the low-risk group (Table 2).

This increase has affected all risk groups and is clearest for Whites. Our ability to draw definite conclusions regarding change in smoking within risk groups between 1990 and 1995 for African American and Hispanic

seniors is more limited, because of their smaller sample sizes. Model estimates do suggest that smoking increased among all risk groups of African American and Hispanic males, with more modest increases

**TABLE 2—Changes in the Estimated Prevalence of Cigarette Use Among US High School Seniors, by Risk Group, 1976–1990 vs 1990–1995**

Demographic Subgroup and Risk Group	Est. Prevalence (%)			1976–1990		1990–1995	
	1976	1990	1995	Change (95% CI)		Change (95% CI)	
Total sample	28.9	17.9	20.5	–11.0	(–12.6, –9.3)	+2.6	(1.5, 3.7)
Low	14.8	8.8	9.9	–6.0	(–7.2, –4.8)	+1.1	(0.4, 1.8)
Moderate	33.0	19.7	22.9	–13.3	(–15.0, –11.6)	+3.2	(2.0, 4.5)
High	49.9	32.9	37.4	–17.0	(–19.3, –14.7)	+4.5	(2.2, 6.5)
African American males	25.1	6.0	8.0	–19.1	(–23.1, –15.0)	+2.0	(–0.3, 4.1)
Low	16.7	3.7	4.9	–13.0	(–15.7, –10.4)	+1.2	(–0.3, 2.7)
Moderate	27.5	6.7	8.8	–20.8	(–25.0, –16.6)	+2.1	(–0.4, 4.7)
High	33.9	8.9	11.6	–25.0	(–29.6, –20.4)	+2.7	(–0.5, 5.9)
African American females	23.7	4.3	3.2	–19.4	(–23.4, –15.3)	–1.1	(–2.3, 0.1)
Low	17.4	2.7	2.1	–14.7	(–18.0, –11.5)	–0.6	(–1.5, 0.3)
Moderate	30.5	5.5	4.2	–25.0	(–29.4, –20.5)	–1.3	(–3.1, 0.5)
High	43.0	9.1	7.0	–33.9	(–39.2, –28.6)	–2.1	(–5.1, 0.9)
White males	27.0	18.9	25.0	–8.1	(–10.0, –6.2)	+6.1	(4.8, 7.3)
Low	12.7	8.8	12.6	–3.9	(–5.3, –2.5)	+3.8	(2.9, 4.7)
Moderate	27.9	18.8	25.1	–9.1	(–11.2, –6.9)	+6.3	(4.9, 7.6)
High	45.3	32.8	41.2	–12.5	(–15.5, –9.6)	+8.4	(6.6, 10.1)
White females	30.8	21.6	23.5	–9.2	(–11.0, –7.4)	+1.9	(0.6, 3.1)
Low	16.4	10.8	12.2	–5.6	(–7.1, –4.2)	+1.4	(0.5, 2.4)
Moderate	37.9	25.4	27.4	–12.5	(–14.7, –10.3)	+2.0	(0.4, 3.6)
High	58.0	42.8	45.2	–15.2	(–17.4, –12.6)	+2.4	(0.3, 4.5)
Hispanic males	21.8	11.9	13.3	–9.9	(–13.4, –6.3)	+1.4	(–0.9, 3.6)
Low	11.3	6.5	7.5	–4.8	(–8.9, –0.7)	+1.0	(–0.6, 2.5)
Moderate	16.8	13.3	16.8	–3.5	(–9.4, 2.3)	+3.5	(0.5, 6.5)
High	32.8	18.4	19.9	–14.4	(–22.6, –6.3)	+1.5	(–1.8, 4.8)
Hispanic females	18.8	10.1	11.3	–8.7	(–11.9, –5.5)	+1.2	(–0.8, 3.2)
Low	12.3	5.2	5.4	–7.1	(–10.6, –3.5)	+0.2	(–1.1, 1.4)
Moderate	20.1	12.1	13.9	–8.0	(–13.2, –2.8)	+1.8	(–1.0, 4.6)
High	42.3	19.7	19.3	–22.6	(–30.1, –15.3)	–0.4	(–3.9, 3.2)

Note. Changes are expressed in percentage points. CI = confidence interval.

among low- and moderate-risk Hispanic females and a leveling out of smoking among African American females (Table 2). In the total population of high school seniors, increases have been approximately proportionate to the prevalence of smoking within risk groups. As a result, in 1995, low-, moderate-, and high-risk youth were all smoking at rates not seen since the early 1980s.

## Discussion

More than half of all high school seniors and 80% of all daily smokers in the population studied reported 2 or more important risk factors for daily cigarette use. This means that most young people have multiple risk factors, each of which increases the likelihood of smoking. In realizing this we move beyond the simple, though true, statement that all young people are at risk for smoking and the plausible, but probably false, notion that the practice of smoking has become concentrated in a small refractory group of adolescents.<sup>13,35</sup> Indeed, other work from the Monitoring the Future Project has shown a narrowing of socioeconomic status-related differences in youth smoking during the

period under discussion here.<sup>4</sup> The present findings are also consistent with previous work demonstrating that lifestyle factors do not account for trends in marijuana or cocaine use among high school seniors.<sup>36,37</sup>

When we look across risk groups over time, it is clear that both the need for change and change itself are concentrated at the higher end of the risk spectrum. While high-risk students have continued to smoke at unacceptably high rates, they also have contributed to much of the overall change in cigarette use in the past 20 years. As a group and over time, high-risk youth have not proven especially resistant to change. An appreciation of the relationship between the distribution of lifestyle risk factors and the recent rise in cigarette use is essential as we design and implement smoking prevention programs for our nation's next generation. Anti-smoking efforts must have a broad appeal to reach all young people, especially those with multiple lifestyle risk factors at the middle and higher end of the risk spectrum.

The larger declines in cigarette use during the late 1970s and 1980s among Hispanic and African American young people have become the focus of increasing attention. Possible behavioral, sociodemographic, and

attitudinal explanations for ethnic group differences in cigarette use have recently been extensively reviewed.<sup>38</sup> Consistent with the decreased prevalence of smoking, African American high school seniors have become increasingly likely to hold negative views about smoking and smokers (e.g., to acknowledge the health risks of smoking, to prefer to date nonsmokers, to view smoking as a dirty habit).<sup>14,38</sup> Some studies suggest that ethnic group differences in the predictors of cigarette use (e.g., peer smoking) and/or the perceived benefits of smoking (e.g., weight control)<sup>30,39–43</sup> may underlie these changes. More recent findings also suggest that, in comparison with White families, African American and Hispanic parents may be more likely to express clear anti-smoking messages and that adolescent smoking may be perceived as less consistent with family values.<sup>44</sup>

Previous analyses of data from the Monitoring the Future Project and other surveys have demonstrated that sociodemographic and lifestyle variables do not account for differences between ethnic groups in cigarette use.<sup>18,45,46</sup> The present study lends further support to that position. While ethnic differences in the distribution of risk factors do

exist, these differences have remained stable during the time in which large differences developed in the prevalence of smoking. The lack of change in the underlying risk group distribution among minority youth raises the possibility that the impressive declines of the 1970s and 1980s may be followed by a period of equally dramatic increases. Evidence of a recent sharp rise in smoking among African American youth raises serious concerns that such a period may now be occurring.<sup>47,48</sup>

Unfortunately, in the first half of the 1990s, substantial increases in smoking among high school seniors occurred in all risk groups, especially among Whites. The particular vulnerability of White students (especially high-risk White females, who have consistently had the highest rates of smoking of any group) to the lure of cigarettes has yet to be fully explained. The fact that the recent increase in cigarette smoking occurred in nearly all demographic subgroups suggests that there are broad cultural forces at work.<sup>6</sup>

One such force is price. In 1993, many tobacco companies reduced the price of their major cigarette brands.<sup>49</sup> Previous studies, especially those showing a strong relationship between increased cigarette taxation and reductions in youth smoking in Canada, have demonstrated that cigarette use by young people is especially responsive to price fluctuations.<sup>14,50-53</sup> Therefore, these 1993 price reductions may have stimulated an increase in smoking among children and adolescents. Similarly, substantial price increases (through taxation or other means) will likely prove to be a powerful tool in discouraging cigarette use among young people.<sup>53</sup>

Another factor predisposing young people to smoke may be the increased portrayal of cigarette smoking in a favorable light in television and movies.<sup>54,55</sup> In addition, substantial evidence suggests that the advertising and promotional efforts of the tobacco industry reach into the lives of children and adolescents.<sup>5,9,56-59</sup> An association between awareness of and involvement with tobacco promotions and increased susceptibility to tobacco use has recently been documented.<sup>56</sup> The ways in which price, media portrayals, and tobacco advertising and promotion interact with sex, ethnicity, and lifestyle characteristics to influence smoking by young people require further study.

There are several possible limitations to the present study. First, we relied on self-reports of smoking. The differences we observed, particularly among demographic subgroups, could reflect differences in reporting. However, previous analyses of Monitoring the Future data have demon-

strated a great deal of consistency between self-reported drug use and many related variables (such as respondent's perceived risk and attitudes toward, access to, and peers' attitudes toward the use of drugs), indicating strong construct validity.<sup>4,10,60</sup> The validity of self-reports of cigarette use, particularly with respect to ethnic-group differences in smoking, recently received strong support in a well-designed study comparing self-reports with the results of exhaled carbon monoxide testing.<sup>61</sup> In addition, other national studies have resulted in findings similar to ours with regard to trends in youth smoking overall and by subgroup.<sup>7,8,12-14</sup>

Because our sample was limited to high school seniors, this study does not address smoking in a particularly high-risk group, youth who drop out before finishing high school. The prevalence of smoking would surely be somewhat higher if these young people were included in the survey.<sup>4,14,62</sup> However, it is important to point out that because the dropout rate has remained very stable over the life of the Monitoring the Future Study, selection bias resulting from exclusion of dropouts is not likely to have had a major impact on the trends in cigarette use among high school seniors.<sup>4</sup>

Finally, the present analysis focused on the who, what, and when of smoking, rather than the why. Further analyses of Monitoring the Future data are being conducted to examine how beliefs about the dangers of cigarette use, perceptions of the social image of smokers, and family and personal factors such as degree of parental supervision, life satisfaction, risk-taking tendencies, and plans for the future may underlie changes in cigarette use across risk groups over time.

This study provides important information for use in the effort to reduce smoking among this nation's young people. Those at the high end of the risk spectrum have not proven resistant to the forces of change; indeed, they have in the past exhibited the greatest change. Furthermore, this has been true in all 3 of the largest ethnic groups in the country. These encouraging findings show that change is possible, even among young people at the highest risk for smoking. □

## Contributors

L. C. An planned and performed the analysis and wrote the final paper with the assistance of P. M. O'Malley and J. E. Schulenberg. Both J. G. Bachman and L. D. Johnston reviewed the analysis plan and contributed to interpretation and presentation of the findings. J. G. Bachman, L. D. Johnston, P. M. O'Malley, and J. E. Schulenberg continue to oversee the Monitoring the Future Project. All 5 authors are guarantors for the integrity of the research.

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