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American Legacy Foundation, First Look Report 13. Cigarette Smoking among Youth. Results from the 2002 National Youth Tobacco Survey

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**Legacy**

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**FIRST LOOK REPORT 13**

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# Cigarette Smoking among Youth

Results from the 2002 National Youth Tobacco Survey



## **INTRODUCTION**

The National Youth Tobacco Survey (NYTS) tracks tobacco use behaviors, attitudes, and influences among middle and high school students in the United States. The baseline NYTS, sponsored by the American Legacy Foundation and the Centers for Disease Control and Prevention (CDC) Foundation, was administered in 1999. Legacy has conducted the survey twice since that time, in 2000 and 2002. Results from each of the previous surveys have been reported as part of the First Look Report series.

This report, based on the 2002 NYTS, presents rates of ever, current, and frequent smoking; ever smoking daily; number of cigarettes smoked; cigarette type and brand preferences; and use of menthol cigarettes. This report also shows the change in current smoking from 2000 to 2002. Tobacco use has declined since 2000 among high school students. In 2000, 28 percent of high school students in the United States were current smokers, compared with 23 percent in 2002. Among middle school students, the trend is less encouraging; smoking remained relatively stable, with rates of use at 11 percent in 2000 and 10 percent in 2002.

Some of the factors believed to be associated with the decline in smoking among high school students are state and national media campaigns, such as the national **truth**<sup>®</sup> campaign; increased cigarette prices; restrictions on tobacco advertising; and smoke-free laws and policies. It is unclear why middle school smoking rates remain unchanged (Allen et al., 2003). A recent study from Minnesota illustrates the impact of reduced funding for a state tobacco control program for youth (Sly et al., 2004). Within months of the end of the Minnesota campaign, there was a statistically significant increase in youth susceptibility to smoking. As more and more states make the decision to cut funding for tobacco control, our progress toward reducing tobacco-related morbidity and mortality in the next generation is jeopardized.

## **DATA AND METHODS**

### **2002 NYTS DESIGN AND CONTENT**

The NYTS is a self-administered, anonymous survey conducted in schools throughout the United States. The survey monitors tobacco use, exposure to environmental tobacco smoke, youth's access to tobacco products, the price paid for cigarettes, knowledge and attitudes about tobacco, and familiarity with pro- and antitobacco advertising.

The 2002 NYTS was administered to 26,149 students in 246 schools. It was designed to produce nationally representative estimates for students in grades 6 through 12.

### **METHODS**

All estimates and 95 percent confidence intervals were calculated using sampling weights and controlling for the stratified survey design. Non-overlapping confidence intervals indicate statistically significant estimates. Unless otherwise specified, all differences discussed in the text of this report are statistically significant.

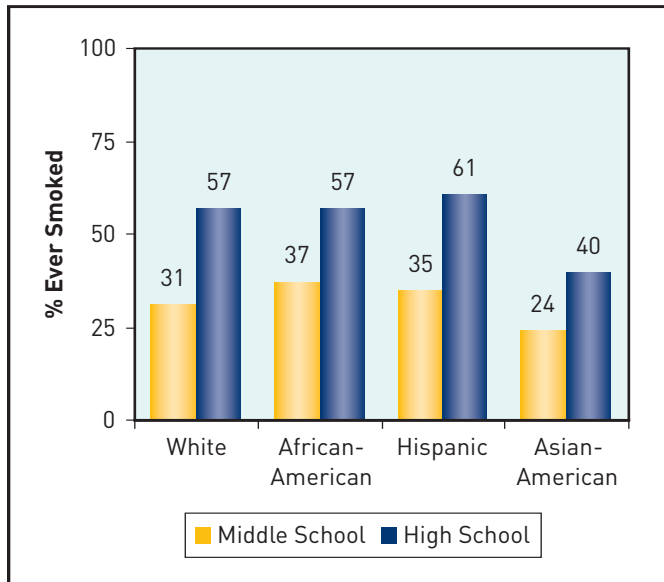
## MAIN FINDINGS

### PREVALENCE OF EVER SMOKING

The prevalence of “ever smoking” (having ever smoked a cigarette, even a puff or two) is higher among high school students than it is among middle school students. More than half of high school students (57 percent) and about one-third (33 percent) of middle school students reported having smoked a cigarette, at least a puff or two, in the past month. The prevalence of ever smoking almost doubles from middle school to high school.

In middle school, African-American students are more likely to report “ever smoking” (37 percent) than White and Asian-American students, whereas Asian-American students (24 percent) are less likely than African-American and Hispanic students to have ever smoked. Like their younger counterparts, Asian-American high school students are less likely to report ever smoking (40 percent) compared with the other groups, among whom there are no significant differences.

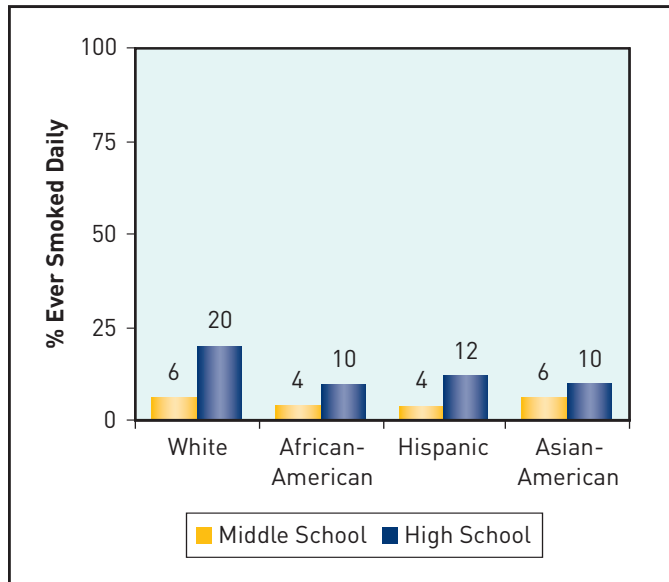
**Figure 1. Percentage of Students in Middle School and High School Who Have Ever Smoked Cigarettes by Race/Ethnicity**



## PREVALENCE OF EVER SMOKING DAILY

As illustrated in Figure 2, the prevalence of “ever smoking daily” (smoking every day for 30 days) is highest among high school students. It almost triples from middle school (6 percent) to high school (17 percent). Although there are no racial/ethnic differences in middle school, variations in prevalence of “ever smoking daily” are apparent in high school. Minority students (10 to 12 percent) are approximately half as likely to report smoking every day for 30 days as are White students (20 percent).

**Figure 2. Percentage of Students in Middle School and High School Who Have Ever Smoked Cigarettes Daily by Race/Ethnicity**



## PREVALENCE OF CURRENT SMOKING

The prevalence of current smoking (having smoked on 1 or more of the past 30 days) is higher among high school students than it is among middle school students. Current smoking doubles from middle school (10 percent) to high school (23 percent), as shown in Table 1. Compared with the prevalence estimates from the 2000 NYTS, current prevalence estimates show a significant decrease in current smoking among high school students (from 28 percent to 23 percent) while remaining constant among middle school students. This drop in current smoking behavior may be attributed to various tobacco control efforts aimed at preventing smoking among youth. See Appendix Tables A-1 and A-2 for further detail.

Current smoking among racial/ethnic groups does not differ in middle school. In high school, White students are more likely to smoke (25 percent) than minority students. Among minority students, Hispanics (21 percent) are more likely than African-American (14 percent) and Asian-American (13 percent) students to be current smokers.

Current smoking among males and females rises steadily from 6th to 12th grade. However, smoking prevalence rates for males and females do not differ significantly in middle school or high school.

**Table 1. Percentage of Students in Middle School and High School Who Were Current Smokers by Gender and Race/Ethnicity**

Characteristic	Middle School		High School	
	%	(95% CI)	%	(95% CI)
Gender				
Male	10.2	(±1.3)	24.6	(±2.1)
Female	10.0	(±1.4)	21.2	(±1.8)
Race/Ethnicity				
White	10.4	(±1.6)	25.5	(±1.8)
African-American	9.4	(±2.4)	14.3	(±2.8)
Hispanic	9.1	(±1.6)	20.5	(±2.4)
Asian-American	7.4	(±3.3)	12.8	(±3.5)
Total	10.1	(±1.2)	22.9	(±1.6)

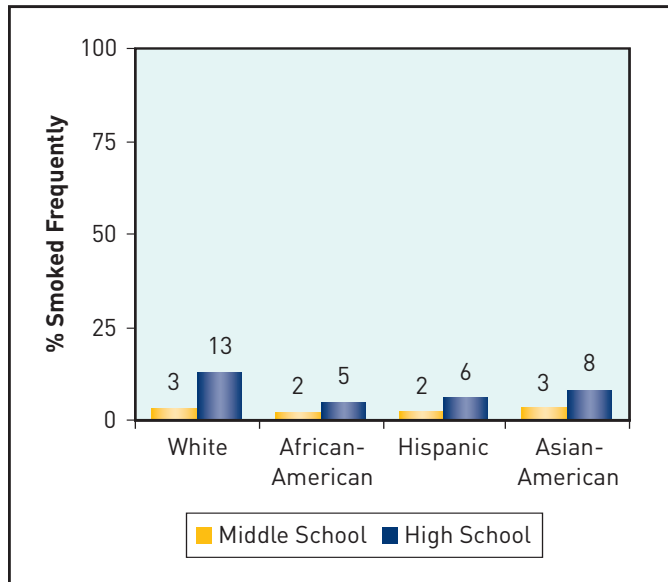
### PREVALENCE OF FREQUENT SMOKING

Current smokers who report smoking on 20 days or more in the past 30 days are defined as frequent smokers. Similar to current smoking, the prevalence of frequent smoking is higher among high school students (11 percent) than among middle school students (3 percent). The percentages of frequent smokers in middle school are similar among White, African-American, Hispanic, and Asian-American students (~3 percent). In high school, White students (13 percent) are more than two times more likely to be frequent smokers than African-American (5 percent) and Hispanic (6 percent) students, and they are one and a half times more likely to be frequent smokers than Asian-American students (8 percent).

**Figure 3. Percentage of Students in Middle School and High School Who Had Smoked Frequently ( $\geq 20$  Days) in the Past 30 Days by Race/Ethnicity**

#### NUMBER OF CIGARETTES SMOKED DAILY

Daily cigarette consumption may be used as an indicator of smoking intensity. To measure smoking intensity in this sample, we asked for the average number of cigarettes smoked per day among current smokers and frequent smokers.



Frequent smokers smoke more intensely than current smokers. They smoke an average of 10 cigarettes per day in middle school and 9 cigarettes per day in high school, whereas current smokers smoke an average of 4 cigarettes per day in middle school and 6 cigarettes per day in high school. In middle school, Asian-American students smoke more intensely than the other groups. Asian-American students who are current smokers usually smoke close to half a pack of cigarettes per day (11 cigarettes), and those who are frequent smokers report smoking a little over a pack per day (22 cigarettes). On the other hand, White, African-American, and Hispanic students who are current or frequent smokers smoke less than a pack of cigarettes per day. It is interesting to note that African-American students who are frequent smokers in middle school smoke almost two times more cigarettes per day (15 cigarettes) than African-American frequent smokers in high school. This pattern is similar among Asian-American students — frequent smokers in middle school smoke over two times more cigarettes per day (22 cigarettes) than those in high school (8 cigarettes).

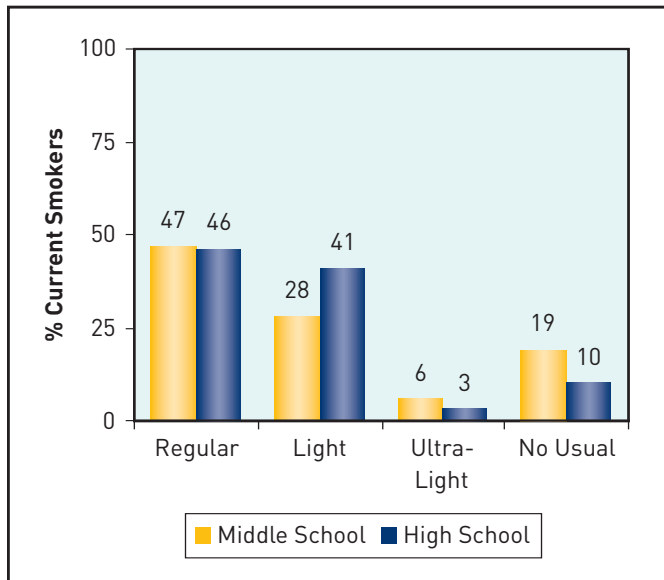
## CIGARETTE TYPE PREFERENCES

In the 2002 NYTS, we asked youth what type of cigarette they usually smoke (i.e., regular/full flavor, light, ultra-light). Because we asked about the type “usually” smoked, analyses of cigarette preference are therefore among current smokers with a usual brand. As illustrated in Figure 4, the prevalence of smoking regular/full flavor cigarettes is higher than that of light and ultra-light cigarettes. Smokers are least likely to smoke ultra-light cigarettes. Interestingly, smokers in middle school and high school are equally likely to smoke regular/full flavor cigarettes. Light cigarette use is significantly higher among high school smokers (41 percent) than among middle school smokers (28 percent). This is contrary to what we might expect because light cigarettes are said to be a gateway cigarette. About 19 percent of the sample said they did not have a usual brand.

There are some gender and racial/ethnic differences in cigarette type preference. Male students (51 percent) are more likely than female students (42 percent) to smoke regular/full flavor cigarettes, especially in middle school; conversely, female students (31 percent) are more likely than male students (25 percent) to smoke light cigarettes. These differences persist in high school.

Among racial/ethnic groups, there is a striking difference in the use of regular/full flavor cigarettes among African-American students compared with the other groups in high school. The prevalence of regular/full flavor cigarette use is 66 percent for African-Americans, 50 percent for Asian-Americans, 44 percent for Whites, and 43 percent for Hispanics. The use of regular cigarettes drops across all racial/ethnic groups from middle school to high school, but it increases dramatically in African-American students (from 43 percent to 66 percent). Light cigarette use is high among White, Hispanic, and Asian-American students in high school.

**Figure 4. Cigarette Type Preference among Middle School and High School Current Smokers**

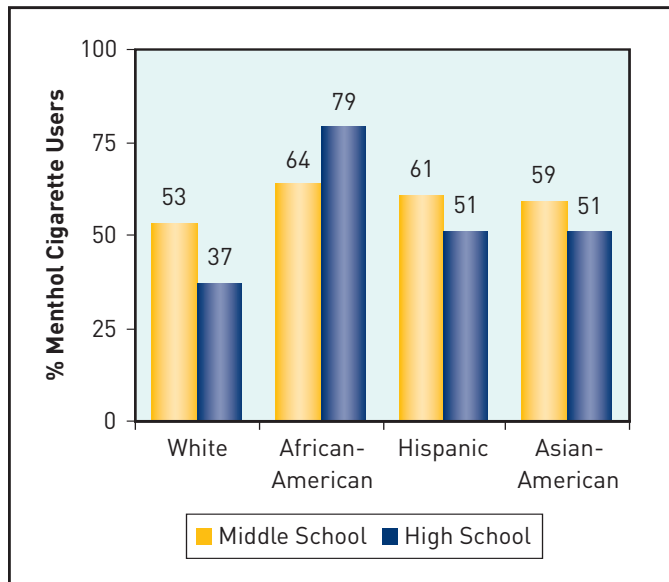




### Menthol Cigarettes

The analyses for menthol cigarettes are also among current smokers with a usual brand. As shown in Figure 5, menthol cigarette use is significantly higher in middle school (56 percent) than in high school (42 percent). In both middle school and high school, menthol use is more common among minority students than among White students. Menthol use was more prevalent among African-American students (79 percent) than among White (37 percent), Hispanic (51 percent), and Asian-American (51 percent) students. The prevalence of menthol use drops in high school among all but African-American students, for whom it increases from 64 percent to 79 percent.

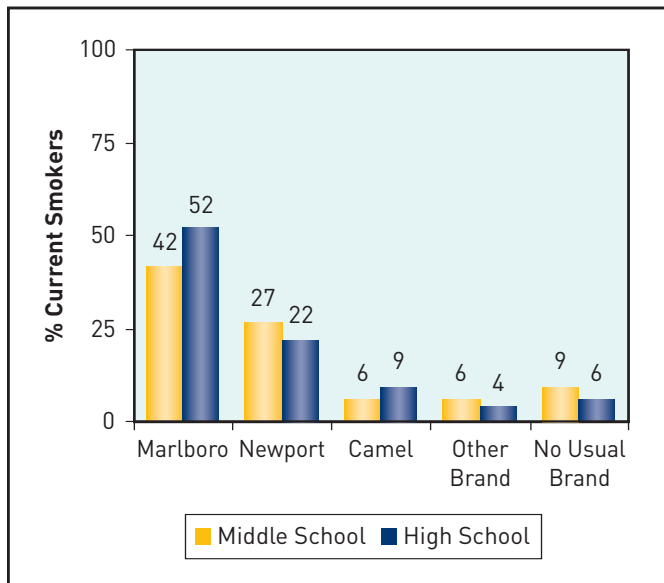
**Figure 5. Percentage of Menthol Cigarette Users among Middle School and High School Current Smokers by Race/Ethnicity**



### Brand Preferences

Brand preference among current smokers with a usual brand is consistent with what we have observed in the past (Farrelly et al., 2001). Marlboro continues to be the most popular brand, followed by Newport and Camel. As shown in Figure 6, both middle school (42 percent) and high school (52 percent) smokers are more likely to smoke Marlboro than Newport (27 percent and 22 percent for middle school and high school, respectively) and Camel (6 percent and 9 percent for middle school and high school, respectively). There are significant racial/ethnic differences in brand preference. Again, similar to what we observed in the past, White, Hispanic, and Asian-American students are more likely to use Marlboro, whereas African-American students prefer Newport cigarettes. African-American students are least likely to use Marlboro in middle school, but the prevalence of Marlboro use increases by 50 percent for African-American students when they are in high school (from 9 percent to 14 percent). There are no significant gender differences.

**Figure 6. Cigarette Brand Preference among Middle School and High School Current Smokers**



## SUMMARY

This report presents positive news, but it also offers a challenge. Current smoking has declined among high school students (from 28 percent in 2000 to 23 percent in 2002), but at 10 percent, it remains relatively unchanged among middle school students. Surprisingly, African-American and Asian-American middle school youth who are frequent smokers smoke more cigarettes than their counterparts in high school. More research is needed to explore these two groups' access to cigarettes. There were no significant gender differences in intensity of smoking.

These data indicate that light cigarettes are not a “starter product” for middle school students. In fact, middle school smokers prefer regular cigarettes to light cigarettes. Light cigarette use increases by about 50 percent in high school. Females are more likely than male students to smoke lights as their usual brand. The prevalence of menthol cigarette use is higher among minority students than among White students. In high school, more than 79 percent of African-American youth smoke menthol cigarettes as their usual brand, compared with 51 percent of Hispanic and Asian-American youth, and 37 percent of White youth. Marlboro continues to be the most popular cigarette brand overall, followed by Newport and Camel. Newport is the preferred brand among African-American youth.

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**Table A-1. Smoking Prevalence by Grade — 2002 NYTS [95% Confidence Interval]**

Grade	Current Cigarette Smokers (Overall)	Male	Female	White	African-American	Hispanic	Asian-American
6	6.7% [5.2–8.3]	7.1% [5.3–8.8]	6.2% [4.5–8.0]	5.9% [3.9–7.8]	8.6% [5.4–11.9]	5.8% [3.8–7.8]	9.9% [0.6–19.3]
7	9.8% [8.1–11.5]	10.0% [7.9–12.1]	9.6% [7.5–11.7]	10.0% [7.6–12.4]	8.4% [5.5–11.4]	9.6% [7.0–12.3]	6.7% [2.1–11.3]
8	13.9% [12.2–15.6]	13.9% [11.9–16.0]	14.0% [11.4–16.5]	15.2% [12.9–17.5]	11.2% [7.5–14.8]	11.9% [9.1–14.7]	5.8% [2.1–9.6]
9	16.5% [14.8–18.2]	17.4% [15.3–19.5]	15.7% [13.2–18.3]	17.5% [15.0–19.9]	11.6% [8.1–15.1]	18.4% [15.1–21.7]	10.0% [4.7–15.2]
10	21.0% [18.7–23.3]	23.1% [20.0–26.1]	19.0% [16.5–21.6]	23.3% [20.1–26.5]	15.2% [10.3–20.1]	17.7% [13.9–21.5]	15.4% [7.6–23.1]
11	23.5% [20.5–26.4]	24.8% [20.6–29.0]	22.2% [19.0–25.3]	27.4% [23.4–31.3]	13.1% [8.6–17.5]	18.9% [14.8–22.9]	3.9% [1.0–6.9]
12	33.3% [30.1–36.5]	36.1% [32.0–40.1]	30.6% [27.2–33.9]	36.6% [32.8–40.4]	19.2% [13.4–24.9]	29.9% [23.9–36.0]	22.5% [14.5–30.6]

**Table A-2. Smoking Prevalence by Grade — 2000 NYTS [95% Confidence Interval]**

Grade	Current Cigarette Smokers (Overall)	Male	Female	White	African-American	Hispanic	Asian-American
6	5.9% [4.6–7.1]	6.7% [4.8–8.5]	5.1% [3.9–6.3]	5.1% [3.7–6.6]	7.0% [4.8–9.2]	6.3% [4.7–7.9]	3.9% [0.5–7.4]
7	10.3% [8.8–11.8]	11.1% [8.8–13.3]	9.5% [7.8–11.1]	10.0% [8.2–11.8]	10.5% [7.5–13.4]	11.4% [8.1–14.8]	4.5% [0.6–8.4]
8	17.0% [15.1–18.8]	17.7% [15.3–20.0]	16.3% [14.1–18.6]	16.9% [14.4–19.4]	16.6% [13.3–19.8]	17.3% [14.5–20.2]	8.2% [4.2–12.2]
9	22.1% [19.8–24.4]	21.2% [18.6–23.8]	23.0% [20.3–25.6]	24.1% [21.2–26.9]	16.1% [12.0–20.1]	21.0% [16.4–25.7]	13.3% [9.1–17.4]
10	27.9% [25.2–30.6]	29.7% [27.1–32.3]	25.9% [22.3–29.5]	32.2% [29.0–35.3]	16.8% [12.0–21.6]	20.4% [16.8–24.0]	17.8% [12.3–23.3]
11	30.2% [27.9–32.4]	32.2% [29.2–35.2]	28.2% [25.4–31.0]	34.3% [31.6–37.0]	16.1% [12.3–20.0]	24.8% [20.4–29.2]	23.9% [17.6–30.3]
12	34.1% [31.0–37.2]	34.7% [31.4–38.1]	33.5% [29.8–37.3]	37.8% [33.9–41.7]	20.4% [15.1–25.7]	28.3% [23.8–32.8]	30.0% [22.0–37.9]

