

# MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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*CDC*  
*Surveillance*  
*Summaries*

## Surveillance for Selected Tobacco-Use Behaviors — United States, 1900–1994

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
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Centers for Disease Control and Prevention..... David Satcher, M.D., Ph.D.  
*Director*

The production of this report as an *MMWR* serial publication was coordinated in:

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## Contents

Introduction.....	2
Methods.....	2
Results.....	5
Discussion.....	33

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**Reports Published in *CDC Surveillance Summaries* Since 1984**

<b>Subject</b>	<b>Responsible CIO/Agency*</b>	<b>Most Recent Report</b>
Abortion	NCCDPHP	1993; Vol. 42, No. SS-6
AIDS/HIV		
Distribution by Racial/Ethnic Group	NCID	1988; Vol. 37, No. SS-3
Among Black & Hispanic Children & Women of Childbearing Age	NCEHIC	1990; Vol. 39, No. SS-3
Behavioral Risk Factors	NCCDPHP	1991; Vol. 40, No. SS-4
Birth Defects		
B.D. Monitoring Program (see also Malformations)	NCEH	1993; Vol. 42, No. SS-1
Contribution of B.D. to Infant Mortality		
Among Minority Groups	NCEHIC	1990; Vol. 39, No. SS-3
Breast & Cervical Cancer	NCCDPHP	1992; Vol. 41, No. SS-2
<i>Campylobacter</i>	NCID	1988; Vol. 37, No. SS-2
Chancroid	NCPS	1992; Vol. 41, No. SS-3
Chlamydia	NCPS	1993; Vol. 42, No. SS-3
Cholera	NCID	1992; Vol. 41, No. SS-1
Congenital Malformations, Minority Groups	NCEHIC	1988; Vol. 37, No. SS-3
Contraception Practices	NCCDPHP	1992; Vol. 41, No. SS-4
Cytomegalovirus Disease, Congenital	NCID	1992; Vol. 41, No. SS-2
Dengue	NCID	1994; Vol. 43, No. SS-2
Dental Caries & Periodontal Disease Among Mexican-American Children	NCPS	1988; Vol. 37, No. SS-3
Diabetes Mellitus	NCCDPHP	1993; Vol. 42, No. SS-2
Dracunculiasis	NCID	1992; Vol. 41, No. SS-1
Ectopic Pregnancy	NCCDPHP	1993; Vol. 42, No. SS-6
Elderly, Hospitalizations Among	NCCDPHP	1991; Vol. 40, No. SS-1
Endometrial & Ovarian Cancers	EPO, NCCDPHP	1986; Vol. 35, No. 2SS
<i>Escherichia coli</i> O157	NCID	1991; Vol. 40, No. SS-1
Evacuation Camps	EPO	1992; Vol. 41, No. SS-4
Foodborne Disease	NCID	1990; Vol. 39, No. SS-1
Gonococcal Infection	NCPS, NCID	1984; Vol. 33, No. 4SS
Gonorrhea & Syphilis, Teenagers	NCPS	1993; Vol. 42, No. SS-3
Hazardous Substances Emergency Events	ATSDR	1994; Vol. 43, No. SS-2
Health Surveillance Systems	IHPO	1992; Vol. 41, No. SS-4
Hepatitis	NCID	1985; Vol. 34, No. 1SS
Homicide	NCEHIC	1992; Vol. 41, No. SS-3
Homicides, Black Males	NCEHIC	1988; Vol. 37, No. SS-1
Hysterectomy	NCCDPHP	1986; Vol. 35, No. 1SS
Infant Mortality (see also National Infant Mortality; Birth Defects; Postneonatal Mortality)	NCEHIC	1990; Vol. 39, No. SS-3
Influenza	NCID	1993; Vol. 42, No. SS-1
Injury		
Death Rates, Blacks & Whites	NCEHIC	1988; Vol. 37, No. SS-3
Drownings	NCEHIC	1988; Vol. 37, No. SS-1
Falls, Deaths	NCEHIC	1988; Vol. 37, No. SS-1
Firearm-Related Deaths, Unintentional	NCEHIC	1988; Vol. 37, No. SS-1
Head & Neck	NCIPC	1993; Vol. 42, No. SS-5
In Developing Countries	NCEHIC	1992; Vol. 41, No. SS-1

**\*Abbreviations**

ATSDR	Agency for Toxic Substances and Disease Registry
CIO	Centers/Institute/Offices
EPO	Epidemiology Program Office
IHPO	International Health Program Office
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCEH	National Center for Environmental Health
NCEHIC	National Center for Environmental Health and Injury Control
NCID	National Center for Infectious Diseases
NCIPC	National Center for Injury Prevention and Control
NCPS	National Center for Prevention Services
NIOSH	National Institute for Occupational Safety and Health

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**Reports Published in *CDC Surveillance Summaries* Since 1984— Continued**


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Subject	Responsible CIO/Agency*	Most Recent Report
In the Home, Persons <15 Years of Age	NCEHIC	1988; Vol. 37, No. SS-1
Motor Vehicle-Related Deaths	NCEHIC	1988; Vol. 37, No. SS-1
Objectives of Injury Control, State & Local	NCEHIC	1988; Vol. 37, No. SS-1
Objectives of Injury Control, National	NCEHIC	1988; Vol. 37, No. SS-1
Residential Fires, Deaths	NCEHIC	1988; Vol. 37, No. SS-1
Tap Water Scalds	NCEHIC	1988; Vol. 37, No. SS-1
Lead Poisoning, Childhood	NCEHIC	1990; Vol. 39, No. SS-4
Low Birth Weight	NCCDPHP	1990; Vol. 39, No. SS-3
Maternal Mortality	NCCDPHP	1991; Vol. 40, No. SS-2
Measles	NCPS	1992; Vol. 41, No. SS-6
Meningococcal Disease	NCID	1993; Vol. 42, No. SS-2
Mining	NIOSH	1986; Vol. 35, No. 2SS
National Infant Mortality (see also Infant Mortality; Birth Defects)	NCCDPHP	1989; Vol. 38, No. SS-3
<i>Neisseria gonorrhoeae</i> , Antimicrobial Resistance in	NCPS	1993; Vol. 42, No. SS-3
Nosocomial Infection	NCID	1986; Vol. 35, No. 1SS
Occupational Injuries/Disease		
Asthma	NIOSH	1994; Vol. 43, No. SS-1
Hazards, Occupational	NIOSH	1985; Vol. 34, No. 2SS
In Meatpacking Industry	NIOSH	1985; Vol. 34, No. 1SS
Silicosis	NIOSH	1993; Vol. 42, No. SS-5
State Activities	NIOSH	1987; Vol. 36, No. SS-2
Parasites, Intestinal	NCID	1991; Vol. 40, No. SS-4
Pediatric Nutrition	NCCDPHP	1992; Vol. 41, No. SS-7
Pelvic Inflammatory Disease	NCPS	1983; Vol. 32, No. 4SS
Pertussis	NCPS	1992; Vol. 41, No. SS-8
Plague	NCID	1985; Vol. 34, No. 2SS
Plague, American Indians	NCID	1988; Vol. 37, No. SS-3
Poliomyelitis	NCPS	1992; Vol. 41, No. SS-1
Postneonatal Mortality	NCCDPHP	1991; Vol. 40, No. SS-2
Pregnancy Nutrition	NCCDPHP	1992; Vol. 41, No. SS-7
Pregnancy, Teenage	NCCDPHP	1993; Vol. 42, No. SS-6
Rabies	NCID	1989; Vol. 38, No. SS-1
Racial/Ethnic Minority Groups	Various	1990; Vol. 39, No. SS-3
Respiratory Disease	NCEHIC	1992; Vol. 41, No. SS-4
Reye Syndrome	NCID	1984; Vol. 33, No. 3SS
Rocky Mountain Spotted Fever	NCID	1984; Vol. 33, No. 3SS
Rotavirus	NCID	1992; Vol. 41, No. SS-3
Rubella & Congenital Rubella	NCPS	1984; Vol. 33, No. 4SS
<i>Salmonella</i>	NCID	1988; Vol. 37, No. SS-2
Sexually Transmitted Diseases in Italy	NCPS	1992; Vol. 41, No. SS-1
Smoking	NCCDPHP	1990; Vol. 39, No. SS-3
Smoking-Attributable Mortality	NCCDPHP	1994; Vol. 43, No. SS-1
Tobacco-Use Behaviors	NCCDPHP	1994; Vol. 43, No. SS-3
Streptococcal Disease (Group B)	NCID	1992; Vol. 41, No. SS-6
Sudden Unexplained Death Syndrome Among Southeast Asian Refugees	NCEHIC, NCPS	1987; Vol. 36, No. 1SS
Suicides, Persons 15–24 Years of Age	NCEHIC	1988; Vol. 37, No. SS-1
Syphilis, Congenital	NCPS	1993; Vol. 42, No. SS-6
Syphilis, Primary & Secondary	NCPS	1993; Vol. 42, No. SS-3
Tetanus	NCPS	1992; Vol. 41, No. SS-8
Toxic-Shock Syndrome	NCID	1984; Vol. 33, No. 3SS
Trichinosis	NCID	1991; Vol. 40, No. SS-3
Tuberculosis	NCPS	1991; Vol. 40, No. SS-3
Waterborne Disease Outbreaks	NCID	1993; Vol. 42, No. SS-5
Years of Potential Life Lost	EPO	1992; Vol. 41, No. SS-6

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## Surveillance for Selected Tobacco-Use Behaviors — United States, 1900–1994

Gary A. Giovino, Ph.D., M.S.<sup>1</sup>  
Michael W. Schooley, M.P.H.<sup>1</sup>  
    Bao-Ping Zhu, Ph.D.<sup>2</sup>  
    Jeffrey H. Chrismon<sup>3</sup>  
Scott L. Tomar, D.M.D., Dr.P.H.<sup>1</sup>  
    John P. Peddicord, M.S.<sup>1</sup>  
    Robert K. Merritt, M.A.<sup>1</sup>  
Corinne G. Husten, M.D., M.P.H.<sup>1</sup>  
    Michael P. Eriksen, Sc.D.<sup>1</sup>

<sup>1</sup>*Office on Smoking and Health  
National Center for Chronic Disease Prevention  
and Health Promotion, CDC*  
<sup>2</sup>*Battelle Memorial Institute  
Atlanta, GA*  
<sup>3</sup>*The Orkand Corporation  
Atlanta, GA*

### **Abstract**

**Problem/Condition:** Surveillance of tobacco use is an essential component of any tobacco-control program. The information gathered can be used to guide research initiatives, intervention programs, and policy decisions.

**Reporting Periods:** This report covers the period 1900–1994 for per capita cigarette consumption; 1965–1991 for trends in cigarette smoking prevalence and cessation; 1974–1991 for trends in the number of cigarettes smoked daily by current smokers; 1987–1991 for recent patterns of tobacco use; 1970, 1987, and 1991 for trends in cigar/pipe smoking and snuff/chewing tobacco use; 1984–1992 for trends in state-specific prevalences of regular cigarette smoking; 1987–1992 for state-specific estimates of smokeless-tobacco use; and 1976–1993 for trends in cigarette smoking among U.S. high school seniors.

**Description of Systems:** Estimates of cigarette consumption are reported by the U.S. Department of Agriculture, which uses data from the U.S. Department of the Treasury, the U.S. Department of Commerce, the Tobacco Institute, and other sources. The National Health Interview Survey uses household interviews to provide nationally representative estimates (for the civilian, noninstitutionalized population) of cigarette smoking and other behaviors related to tobacco use. The Behavioral Risk Factor Surveillance System uses telephone surveys of civilian, noninstitutionalized adults (≥18 years of age) to provide state-specific estimates of current cigarette smoking and use of smokeless tobacco. The University of Michigan's Institute for Social Research uses school-based, self-administered questionnaires to gather data on cigarette smoking from a representative sample of U.S. high school seniors.

**Results:** During the period 1900–1963, per capita cigarette consumption increased; after 1964, consumption declined. During the years 1965–1991, current cigarette smoking prevalence among persons ages  $\geq 18$  years declined overall and in every sociodemographic category examined. Decrease in current smoking prevalence was slow in some groups (e.g., among persons with fewer years of formal education). Both the prevalence of never smoking and the prevalence of cessation increased from 1965 through 1991. The prevalence of current cigarette smoking, any tobacco smoking, and any tobacco use was highest among American Indians/Alaska Natives and non-Hispanic blacks and lowest among Asians/Pacific Islanders. The prevalence of cigar smoking and pipe smoking has declined substantially since 1970. The prevalence of smokeless-tobacco use among white males ages 18–34 years was higher in 1987 and 1991 than in 1970; among persons  $\geq 45$  years of age, the use of smokeless tobacco was more common among blacks than whites in 1970 and 1987. Cigarette smoking prevalence has decreased in most states. The prevalence of smokeless tobacco use was especially high among men in West Virginia, Montana, and several southern states. From 1984–1993, prevalence of cigarette smoking remained constant among U.S. high school seniors. However, prevalence increased slightly for male seniors and white seniors, decreased slightly for female high school seniors, and decreased sharply for black high school seniors.

**Interpretation:** With the exceptions of increases in cigarette smoking among white and male high school seniors and in the use of smokeless tobacco among white males ages 18–34 years, reductions in tobacco use occurred in every subgroup examined. This decrease must continue if the national health objectives for the year 2000 are to be reached.

**Actions Taken:** Surveillance of tobacco use is ongoing. Effective interventions that discourage initiation and encourage cessation are being disseminated throughout the United States.

## INTRODUCTION

Knowledge of the historical patterns of tobacco use in the United States aids in understanding patterns of morbidity and mortality, predicting future disease burden, understanding the effects of activities that promote tobacco use, evaluating tobacco-control interventions, identifying groups at high risk for tobacco-attributable diseases, and consulting with officials from other countries that are at earlier stages of the tobacco-use epidemic (1–5). Data gathered from tobacco-use surveillance can be used to guide research initiatives, intervention programs, and policy decisions. This report uses data from several sources to update or expand upon earlier reports (1,4,6–16) of selected tobacco-use behaviors in the United States.

## METHODS

### Sources of Data

#### *U.S. Department of Agriculture*

The Economic Research Service of the U.S. Department of Agriculture makes annual estimates of total and adult (i.e., persons  $\geq 18$  years of age) per capita

consumption of cigarettes (17–19). Their estimates are based on data from the Bureau of Alcohol, Tobacco, and Firearms (BATF) of the U.S. Department of Treasury; the Bureau of Commerce of the U.S. Department of Commerce; the Tobacco Institute; and other private and industry sources. The BATF reports the number of cigarettes on which federal taxes are paid; the U.S. Bureau of Commerce reports the number of cigarettes that are imported into the United States; and the Tobacco Institute reports the number of packs of cigarettes on which state taxes are paid (1).

Estimates of total and per capita consumption are based on both federal and state taxes paid on cigarettes at the time of transfer from the warehouses to the points of sale, as well as on imports; adjustments are made for inventory changes and smuggling. Population data from the U.S. Bureau of the Census are used to calculate the per capita estimates. (1,19).

### ***National Health Interview Survey***

Since 1965, CDC has collected data on tobacco use through the National Health Interview Survey (NHIS). The survey uses a probability sample of the civilian, non-institutionalized adult population of the United States (20–22). This report uses data from the surveys conducted since 1965 that included respondents  $\geq 18$  years of age (i.e., 1965–1966, 1970, 1974, 1978–1980, 1983, 1985, 1987–1988, and 1990–1991). Some of the responses from the 1965, 1966, and 1970 surveys were collected from proxy respondents. Most interviews were conducted in the respondent's home; however, when respondents could not be interviewed in person, they were interviewed by telephone. Overall sample sizes ranged from 10,342 in 1980 to 86,332 in 1966. Data were adjusted for nonresponse and were weighted to provide national estimates. Confidence intervals were calculated by using variance curves for 1965 and 1966 (21) and by using standard errors generated by the Software for Survey Data Analysis (SUDAAN) for more recent years (23).

NHIS respondents are classified as current smokers if they report that they have smoked  $\geq 100$  cigarettes and that they currently smoke. Former smokers are those who have smoked  $\geq 100$  cigarettes and who do not currently smoke. Never smokers have either smoked no cigarettes or  $< 100$  cigarettes. Ever smokers comprise current smokers and former smokers. The prevalence of cessation (i.e., the percentage of ever smokers who no longer smoke) was obtained by dividing the number of former smokers by the number of ever smokers and multiplying by 100 percent. This measure has been referred to previously as the "quit ratio" (1,9,12,13). In the surveys conducted from 1965 through 1990, current smokers were asked to report the average number of cigarettes they smoked daily. In 1991, current smokers who smoked every day were asked the same question; those who reported that they only smoked on some days (occasional smokers) were asked to report the number of days during the previous 30 days they had smoked any cigarettes and the average number that they had smoked on those days; for those occasional smokers, the average number of cigarettes smoked daily was calculated by using a composite of those two reports.

A percentage-point change was calculated for certain trend data by subtracting the percentage-point estimate for the first year in the sequence from the estimate for the last year. A relative percentage change was calculated by dividing the percentage-point change by the percentage-point estimate from the first year in the sequence.

The 1970, 1987, and 1991 NHIS defined current cigar smokers as those who had smoked  $\geq 50$  cigars and who reported that they currently smoked cigars. The 1970

NHIS defined current pipe users as those who had smoked at least three packages of pipe tobacco and who currently smoked a pipe. The 1987 and 1991 NHIS defined current pipe smokers as those who had smoked a pipe at least 50 times and who currently smoked a pipe.

After answering questions about whether they used cigarettes, cigars, or pipes, respondents (or their proxies) to the 1970 NHIS were asked if they currently used "any other form of tobacco, such as snuff or chewing tobacco." In 1987 and 1991, current snuff users were those who had used snuff  $\geq 20$  times and were currently using snuff. The same criteria were used to classify users of chewing tobacco.

### ***Behavioral Risk Factor Surveillance System***

CDC coordinates state surveillance of behavioral risk factors through the Behavioral Risk Factor Surveillance System (BRFSS) (24,25). States that participate in the BRFSS provide estimates of several risk behaviors for the adult (i.e., persons  $\geq 18$  years of age) population in each state. Data are collected through random-digit-dialed telephone interviews. This report provides data collected from 15 states in 1984 and from 49 states (including the District of Columbia) in 1992. (Beginning in 1994, all 50 states and the District of Columbia regularly collected data as part of the BRFSS.) Sample sizes ranged from 476 (Indiana, 1984) to 3,988 (California, 1992). Since 1991, at least 1,178 persons have been included in the sample in each state. The data are weighted to provide state-specific estimates. Ninety-five percent confidence intervals have been calculated by using SESUDAAN (26).

The BRFSS has routinely reported estimates of "regular" cigarette smoking. Current regular smokers are defined as those a) who report that they have smoked  $\geq 100$  cigarettes and that they currently smoke and b) who do not respond that they are occasional smokers when asked to report the average number of cigarettes they smoke daily. The use of a measure of current regular smoking generally results in median prevalence estimates that are about 0.7 to 1.0 percentage points lower than those estimates that include current occasional smokers (CDC, unpublished data).

Thirty-three states in 1987 and 37 states in 1988 added (to the BRFSS core questionnaire) questions assessing smokeless-tobacco use. During the period 1989–1992, fewer states, ranging from 8 to 17, assessed smokeless-tobacco use. Smokeless-tobacco users were defined as those who said that they had ever used or tried any smokeless-tobacco products (such as chewing tobacco or snuff) and who currently used any smokeless-tobacco products.

### ***Monitoring the Future Project (Surveys of High School Seniors)***

Each spring since 1975, the University of Michigan's Institute for Social Research, under grants from the National Institute on Drug Abuse, has surveyed nationally representative samples of high school seniors as part of the Monitoring the Future Project. This report includes data from published reports for 1976–1992 (27–43) and unpublished data for 1993 (University of Michigan, Institute for Social Research). (The year 1975 was not included because the response rate was lower and the sample size was smaller than in subsequent years [44].) Sample sizes ranged from 15,850 to 18,448. The data were weighted to provide national estimates. Responses to the question "How frequently have you smoked cigarettes during the last 30 days?" were used to estimate the percentage of seniors who smoked an average of one or more cigarettes per day during the previous 30 days. Although this measure is referred to as a

measure of daily smoking, it does not technically measure smoking every day because some adolescents will average one or more cigarettes per day and still not smoke on every day (15).

### **Racial/Ethnic Comparisons**

Whenever possible, persons who classified themselves as being of Hispanic origin were classified as Hispanic (rather than white, black, Asian/Pacific Islander, or American Indian/Alaska Native). Differences in tobacco-use behaviors among racial/ethnic groups may be influenced by differences in both educational levels and socioeconomic status, as well as by social and cultural phenomena that require further explanation. For example, tobacco-product marketing that appeals to certain populations may play a role in maintaining or increasing prevalence among those groups (1). *Healthy People 2000's* national health objectives for reducing smoking prevalence by the year 2000 have targeted special populations including blacks, Hispanics, American Indians/Alaska Natives, and Southeast Asian men (16).

## **RESULTS**

### **Cigarette Consumption**

Total annual consumption of cigarettes in the United States was 2.5 billion cigarettes in 1900, peaked at 640 billion in 1981, and will be approximately 480 billion cigarettes in 1994 (Table 1). Total consumption in 1994 will be approximately equal to that of 1960. Per capita (i.e., adults  $\geq 18$  years of age) annual consumption was 54 cigarettes in 1900, peaked at 4,345 in 1963, and is estimated to fall to 2,493 in 1994. With the exceptions of 1901, 1920, 1930–1932, 1938, 1946–1947, 1949, 1953–1954, and 1962, per capita consumption increased steadily from 1900 through 1963. Since 1963, however, consumption has declined with rebounds being observed only in 1965–1966 and 1971–1973. Per capita consumption in 1994 will approximately equal that of 1942.

### **Cigarette Smoking Prevalence**

In 1965, the year the NHIS first assessed cigarette smoking, an estimated 42% of U.S. adults were current smokers—52% of men and 34% of women (Table 2). In 1991, cigarette smoking prevalence was 26% overall (28% for men and 24% for women). Generally, blacks were more likely to smoke than whites. Hispanics were less likely to smoke than non-Hispanics. Prevalence by age was highest among persons ages 25–44 years (30%) and lowest for those  $\geq 65$  years of age (13%). Prevalence decreased with increasing education: 31% of persons with  $< 12$  years of formal education and 14% of persons with  $\geq 16$  years of formal education were current smokers in 1991.

During the 27-year study period, current cigarette smoking prevalence greatly declined for all sociodemographic groups examined. From 1965–1991, the prevalence of cigarette smoking decreased 46% among men and 31% among women; from 1983–1991, prevalence decline approximately 20% for both sexes. The decrease in current smoking prevalence from 1965 through 1991 was similar for whites and blacks and more pronounced among Hispanics than non-Hispanics (from 1978 through 1991), among younger than older persons, and among persons with more education. The largest percentage change from 1965 through 1991 was for persons with  $\geq 16$  years of education (-61%).

**TABLE 1. Total and per capita yearly consumption\* of manufactured cigarettes and percentage changes in per capita consumption — United States, 1900–1994**

Year	Total cigarettes (billions)	Cigarettes per capita†	Percentage changes in per capita consumption from previous year
1900	2.5	54	
1901	2.5	53	- 1.9
1902	2.8	60	+13.2
1903	3.1	64	+ 6.7
1904	3.3	66	+ 3.1
1905	3.6	70	+ 6.1
1906	4.5	86	+22.9
1907	5.3	99	+15.1
1908	5.7	105	+ 6.1
1909	7.0	125	+19.0
1910	8.6	151	+20.8
1911	10.1	173	+14.6
1912	13.2	223	+28.9
1913	15.8	260	+16.6
1914	16.5	267	+ 2.7
1915	17.9	285	+ 6.7
1916	25.2	395	+38.6
1917	35.7	551	+39.5
1918	45.6	697	+26.5
1919	48.0	727	+ 4.3
1920	44.6	665	- 8.5
1921	50.7	742	+11.6
1922	53.4	770	+ 3.8
1923	64.4	911	+18.3
1924	71.0	982	+ 7.8
1925	79.8	1,085	+10.5
1926	89.1	1,191	+ 9.8
1927	97.5	1,279	+ 7.4
1928	106.0	1,366	+ 6.8
1929	118.6	1,504	+10.1
1930	119.3	1,485	- 1.3
1931	114.0	1,399	- 5.8
1932	102.8	1,245	-11.0
1933	111.6	1,334	+ 7.1
1934	125.7	1,483	+11.2
1935	134.4	1,564	+ 5.5
1936	152.7	1,754	+12.1
1937	162.8	1,847	+ 5.3
1938	163.4	1,830	- 0.9
1939	172.1	1,900	+ 3.8
1940	181.9	1,976	+ 4.0
1941	208.9	2,236	+13.2
1942	245.0	2,585	+15.6
1943	284.3	2,956	+14.4
1944	296.3	3,039	+ 2.8
1945	340.6	3,449	+13.5
1946	344.3	3,446	- 0.1
1947	345.4	3,416	- 0.9
1948	358.9	3,505	+ 2.6
1949	360.9	3,480	- 0.7
1950	369.8	3,552	+ 2.1
1951	397.1	3,744	+ 5.4
1952	416.0	3,886	+ 3.8
1953	408.2	3,778	- 2.8
1954	387.0	3,546	- 6.1

**TABLE 1. Total and per capita yearly consumption\* of manufactured cigarettes and percentage changes in per capita consumption — United States, 1900–1994 — Continued**

Year	Total cigarettes (billions)	Cigarettes per capita†	Percentage changes in per capita consumption from previous year
1955	396.4	3,597	+ 1.4
1956	406.5	3,650	+ 1.5
1957	422.5	3,755	+ 2.9
1958	448.9	3,953	+ 5.3
1959	467.5	4,073	+ 3.0
1960	484.4	4,171	+ 2.4
1961	502.5	4,266	+ 2.3
1962	508.4	4,266	0.0
1963	523.9	4,345	+ 1.9
1964	511.3	4,194	- 3.5
1965	528.8	4,258	+ 1.5
1966	541.3	4,287	+ 0.7
1967	549.3	4,280	- 0.2
1968	545.6	4,186	- 2.2
1969	528.9	3,993	- 4.6
1970	536.5	3,985	- 0.2
1971	555.1	4,037	+ 1.3
1972	566.8	4,043	+ 0.1
1973	589.7	4,148	+ 2.6
1974	599.0	4,141	- 0.2
1975	607.2	4,122	- 0.5
1976	613.5	4,091	- 0.8
1977	617.0	4,043	- 1.2
1978	616.0	3,970	- 1.8
1979	621.5	3,861	- 2.7
1980	631.5	3,849	- 0.3
1981	640.0	3,836	- 0.3
1982	634.0	3,739	- 2.5
1983	600.0	3,488	- 6.7
1984	600.4	3,446	- 1.2
1985	594.0	3,370	- 2.2
1986	583.8	3,274	- 2.8
1987	575.0	3,197	- 2.4
1988	562.5	3,096	- 3.3
1989	540.0	2,926	- 5.5
1990	525.0	2,817	- 3.7
1991	510.0	2,713	- 3.7
1992	500.0	2,640	- 2.7
1993§	485.0	2,539	- 3.8
1994¶	480.0	2,493	- 1.8

\*U.S. military forces overseas are included in the estimated total consumption for the periods 1917–1919 and 1940–1994 and in the estimated per capita consumption for 1930–1994.

†Among persons  $\geq 18$  years of age.

§Subject to revision.

¶Estimated, based on projection for entire year.

Sources: References 17–19.

**TABLE 2. Percentage of adults\* who were current, former, or never smokers,† overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>  </sup>
<b>Smoking status</b>															
Total population															
Current	42.4	42.6	37.4	37.1	34.1	33.5	33.2	32.1	30.1	28.8	28.1	25.5	25.7	- 16.7	- 39.4
Former	13.6	13.6	18.5	19.5	20.8	21.3	21.3	21.8	24.2	22.8	23.8	24.6	24.1	+10.5	+ 77.2
Never	44.0	43.7	44.2	43.4	45.0	45.2	45.5	46.1	45.8	48.4	48.1	49.9	50.2	+ 6.2	+ 14.1
<b>Sex</b>															
Male															
Current	51.9	52.5	44.1	43.1	38.1	37.5	37.6	35.1	32.6	31.2	30.8	28.4	28.1	- 23.8	- 45.9
Former	19.8	20.1	26.3	27.7	28.3	28.4	28.1	28.3	30.9	28.9	29.6	30.3	29.9	+10.1	+ 51.0
Never	28.3	27.4	29.6	29.2	33.6	34.1	34.4	36.6	36.5	39.9	39.6	41.3	42.1	+13.8	+ 48.8
Female															
Current	33.9	33.9	31.5	32.1	30.7	29.9	29.3	29.5	27.9	26.5	25.7	22.8	23.5	- 10.4	- 30.7
Former	8.0	7.9	11.6	12.7	14.2	15.0	15.1	15.9	18.1	17.4	18.6	19.5	19.0	+11.0	+137.5
Never	58.1	58.2	56.9	55.2	55.2	55.1	55.5	54.6	54.0	56.0	55.8	57.7	57.6	- 0.5	- 0.9
<b>Race</b>															
White															
Current	42.1	42.4	37.0	36.4	33.9	33.3	32.9	31.8	29.6	28.5	27.8	25.6	25.5	- 16.6	- 39.4
Former	14.2	14.3	19.4	20.5	21.9	22.3	22.2	22.8	25.5	24.2	25.3	25.9	25.7	+11.5	+ 81.0
Never	43.8	43.3	43.6	43.1	44.3	44.4	44.9	45.3	44.9	47.3	47.0	48.5	48.9	+ 5.1	+ 11.6
Black															
Current	45.8	45.9	41.4	44.0	37.7	36.9	36.9	35.9	34.9	32.9	31.7	26.2	29.1	- 16.7	- 36.5
Former	8.4	7.6	10.7	10.8	13.3	13.8	13.8	14.2	15.9	14.8	15.2	16.7	14.6	+ 6.2	+ 73.8
Never	45.8	46.5	47.8	45.3	49.0	49.4	49.4	49.9	49.2	52.3	53.1	57.1	56.2	+10.4	+ 22.7
<b>Hispanic origin</b>															
Hispanic															
Current	NA	NA	NA	NA	31.6	29.5	30.0	25.3	25.9	23.6	23.6	23.0	20.2	- 11.4**	- 36.1**
Former	NA	NA	NA	NA	15.6	16.9	15.1	15.7	17.2	16.1	19.2	17.0	16.9	+ 1.3**	+ 8.3**
Never	NA	NA	NA	NA	52.9	53.6	54.9	59.0	56.9	60.4	57.3	60.0	63.0	+10.1**	+ 19.1**
Non-Hispanic															
Current	NA	NA	NA	NA	34.3	33.7	33.4	32.6	30.3	29.2	28.4	25.7	26.1	- 8.2**	23.9**
Former	NA	NA	NA	NA	21.1	21.6	21.6	22.2	24.6	23.4	24.1	25.3	24.8	+ 3.7**	+ 17.5**
Never	NA	NA	NA	NA	44.6	44.6	45.0	45.3	45.1	47.5	47.4	49.0	49.0	+ 4.4**	+ 9.9**

**TABLE 2. Percentage of adults\* who were current, former, or never smokers,<sup>†</sup> overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991 — Continued**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>  </sup>
<b>Age (years)</b>															
18–24															
Current	45.5	44.6	38.0	37.8	34.4	34.4	33.3	34.2	29.3	27.1	25.9	24.5	22.9	- 22.6	- 49.7
Former	6.9	6.0	9.2	9.5	9.2	10.6	10.5	9.3	10.1	8.0	9.3	9.5	7.7	+ 0.8	+ 11.6
Never	47.6	49.4	52.8	52.7	56.4	55.0	56.2	56.5	60.6	64.9	64.8	66.0	69.3	+21.7	+ 45.6
25–44															
Current	51.2	51.4	44.6	44.5	39.3	38.9	37.8	36.3	34.8	33.2	32.9	29.7	30.4	- 20.8	- 40.6
Former	13.6	13.5	18.8	18.4	19.5	19.6	19.8	19.0	21.4	19.6	19.2	20.0	19.4	+ 5.8	+ 42.7
Never	35.3	35.1	36.6	37.1	41.2	41.5	42.5	44.7	43.8	47.2	47.9	50.3	50.2	+14.9	+ 42.2
45–64															
Current	41.6	42.7	38.6	37.7	36.7	34.8	35.6	33.3	31.6	30.9	29.4	27.0	26.9	- 14.7	- 35.3
Former	16.1	16.4	21.7	24.8	26.1	27.2	26.6	28.8	31.2	29.9	32.9	32.9	32.9	+16.8	+104.4
Never	42.3	41.0	39.7	37.5	37.3	38.0	37.9	37.9	37.3	39.3	37.6	40.1	40.2	- 2.1	- 5.0
≥65															
Current	17.9	17.9	16.1	17.3	16.3	16.4	17.2	16.7	16.0	15.2	14.9	12.8	13.3	- 4.6	- 25.7
Former	15.0	16.0	21.3	23.3	28.1	27.5	27.9	30.7	34.0	34.1	34.5	36.6	36.4	+21.4	+142.7
Never	67.2	66.1	62.6	59.4	55.6	56.2	54.9	52.6	50.0	50.7	50.6	50.6	50.3	- 16.9	- 25.2
<b>Education (years)<sup>§§</sup></b>															
<12															
Current	NA	41.7	37.5	37.8	35.7	35.1	35.1	34.7	34.2	34.2	32.9	30.8	31.4	- 10.3 <sup>††</sup>	- 24.7 <sup>††</sup>
Former	NA	14.1	18.6	19.8	21.0	22.6	21.7	23.2	26.3	24.8	25.8	26.3	25.3	+11.2 <sup>††</sup>	+ 79.4 <sup>††</sup>
Never	NA	44.2	43.9	42.4	43.4	42.3	43.2	42.2	39.6	41.0	41.3	42.9	43.3	- 0.9 <sup>††</sup>	- 2.0 <sup>††</sup>
12															
Current	NA	44.7	39.3	38.8	37.0	35.3	35.4	34.9	33.4	32.9	32.7	30.1	30.6	- 14.1 <sup>††</sup>	- 31.5 <sup>††</sup>
Former	NA	14.3	19.9	20.9	23.0	22.7	22.8	23.7	25.1	24.7	25.0	26.2	26.1	+11.8 <sup>††</sup>	+ 82.5 <sup>††</sup>
Never	NA	41.0	40.8	40.4	40.0	42.0	41.8	41.4	41.5	42.5	42.3	43.7	43.3	+ 2.3 <sup>††</sup>	+ 5.6 <sup>††</sup>
13–15															
Current	NA	44.8	38.7	37.9	34.3	35.2	33.9	32.1	30.6	28.2	28.1	24.6	25.5	- 19.3 <sup>††</sup>	- 43.1 <sup>††</sup>
Former	NA	17.0	22.1	24.1	26.9	24.7	24.9	25.1	27.5	26.1	27.2	27.5	28.1	+11.1 <sup>††</sup>	+ 65.3 <sup>††</sup>
Never	NA	38.2	39.2	38.0	38.8	40.0	41.2	42.8	42.0	45.7	44.7	47.9	46.4	+ 8.2 <sup>††</sup>	+ 21.5 <sup>††</sup>
≥16															
Current	NA	35.3	28.8	28.8	24.2	23.7	24.5	20.6	19.0	16.6	16.3	13.9	13.9	- 21.4 <sup>††</sup>	- 60.6 <sup>††</sup>
Former	NA	21.5	27.7	27.8	26.6	27.9	27.6	26.5	30.3	27.2	28.2	28.7	27.6	+ 6.1 <sup>††</sup>	+ 28.4 <sup>††</sup>
Never	NA	43.2	43.5	43.4	49.2	48.4	47.9	52.9	50.7	56.2	55.5	57.4	58.5	+15.3 <sup>††</sup>	+ 35.4 <sup>††</sup>

**TABLE 2. Percentage of adults\* who were current, former, or never smokers,<sup>†</sup> overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991 — Continued**

\* Persons  $\geq 18$  years of age.  
<sup>†</sup> Current smokers reported smoking  $\geq 100$  cigarettes and currently smoked. Former smokers reported smoking  $\geq 100$  cigarettes and did not currently smoke. Never smokers reported that they had smoked  $< 100$  cigarettes.  
<sup>§</sup> Percentage point difference from 1965 through 1991, except where noted.  
<sup>¶</sup> Percentage change from 1965 through 1991, except where noted.  
\*\* From 1978 through 1991.  
†† From 1966 through 1991.  
<sup>§§</sup> Data on education are presented for persons  $\geq 25$  years of age.  
NA=Data not available.

Source: National Health Interview Surveys: 1965, 1966, 1970, 1974, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991.

Note: For any year, 95% confidence intervals do not exceed  $\pm 1.2\%$  for the total population,  $\pm 1.8\%$  for men,  $\pm 1.4\%$  for women,  $\pm 1.2\%$  for whites,  $\pm 3.9\%$  for blacks,  $\pm 4.7\%$  for Hispanics,  $\pm 1.2\%$  for non-Hispanics,  $\pm 2.4\%$  for persons ages 18–24 years,  $\pm 1.8\%$  for persons ages 25–44 years,  $\pm 1.8\%$  for persons ages 45–64 years,  $\pm 2.5\%$  for persons ages  $\geq 65$  years,  $\pm 2.1\%$  for  $< 12$  years of education,  $\pm 1.9\%$  for 12 years of education,  $\pm 3.2\%$  for 13–15 years of education, and  $\pm 2.9\%$  for  $\geq 16$  years of education.

Among U.S. adults, the prevalence of never smoking increased from 44% in 1965 to 50% in 1991. Although women were consistently more likely than men to have never smoked, men demonstrated a more promising trend. The prevalence of never smoking among men increased steadily, from 28% in 1965 to 42% in 1991—a 49% increase. Among women, the trend was opposite: the prevalence of never smoking decreased steadily from 58% in 1965 to 54% in 1985. Although this trend increased thereafter, in 1991 the prevalence of women who had never smoked (57.6%) remained half a percentage point lower than the 1965 figure. Throughout the study period, blacks were more likely to have never smoked than whites, and the percentage increase in this behavior was greater for blacks (23%) than for whites (12%). Similarly, during the period for which data were available (1978–1991), U.S. residents of Hispanic origin were more likely to have never smoked than persons of non-Hispanic origin, and the percentage increase was greater for Hispanics (19%) than for non-Hispanics (10%). Large increases were observed in the prevalence of never smoking during the period 1965–1991 among persons  $\leq 44$  years of age, and a substantial decline was observed among persons  $\geq 65$  years of age. The prevalence of never smoking increased directly with increasing education, and the relative percentage change between 1966 and 1991 also increased with higher levels of education.

### **Number of Smokers**

The number of cigarette smokers in the United States was 50.1 million in 1965, 53.5 million in 1983, and 46.3 million in 1991 (Table 3). The actual number of smokers was slightly higher at the end of the observation period than at the beginning for women, blacks, Hispanics, persons 25–44 and  $\geq 65$  years of age, and persons with  $\geq 12$  years of education. The number of former and never smokers increased substantially over the observation period for every group examined.

### **Intensity of Smoking**

Among current cigarette smokers, the percentage who reported that they smoked  $< 15$  cigarettes per day was approximately 32% in 1974, 29% in 1980, and 37% in 1991 (Table 4). The percentage of smokers who were heavier smokers (i.e., who reported that they smoked  $\geq 25$  cigarettes per day) was about 25% in 1974, 29% in 1980, and 22% in 1991. The average self-reported number of cigarettes smoked daily by current smokers was 20 in 1974, 21 in 1980, and 18 in 1991. The percentage of current smokers who were heavier smokers declined across all subgroups after 1980 (except among persons  $\geq 65$  years of age for whom this behavior peaked in 1987 and among U.S. residents of Hispanic origins for whom this behavior peaked in 1985). Heavier smoking was more prevalent among men than women, among whites than blacks, among non-Hispanics than Hispanics, and among persons ages 25–64 years than persons ages 18–24 and  $\geq 65$  years of age.

### **Prevalence of Cigarette Smoking Among Young Adults**

Current prevalence of cigarette smoking among persons ages 18–24 years was approximately half as high in 1991 (23%) as in 1965 (46%) (Table 5). Among these young adults, the rate of decline in prevalence was greater for men than women. In 1965, the prevalence among men 18–24 years of age was 16 percentage points higher than among women; by 1991, the prevalence of smoking was only 1.1 percentage points higher among men than women. Current smoking prevalence among young black

**TABLE 3. Number\* of adults† who were current, former, or never smokers,§ overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991
<b>Smoking status</b>													
Total population													
Current	50.1	51.1	48.1	48.9	51.3	51.1	51.6	53.5	50.4	48.9	49.4	45.8	46.3
Former	16.0	16.3	23.8	25.8	31.3	32.5	33.0	36.2	40.5	38.8	41.8	44.1	43.5
Never	52.0	52.4	56.8	57.3	67.7	68.9	70.8	76.8	76.6	82.2	84.5	89.6	90.6
<b>Sex</b>													
Male													
Current	28.9	29.6	26.4	25.8	26.9	26.9	27.5	27.6	25.7	25.1	25.6	24.2	24.0
Former	11.0	11.3	15.8	16.6	20.0	20.4	20.6	22.2	24.4	23.2	24.6	25.8	25.6
Never	15.8	15.4	17.8	17.5	23.8	24.5	25.2	28.8	28.8	32.1	33.0	35.1	36.0
Female													
Current	21.1	21.5	21.6	23.1	24.4	24.1	24.1	25.9	24.7	23.8	23.7	21.6	22.2
Former	5.0	5.0	8.0	9.1	11.3	12.1	12.4	14.0	16.1	15.6	17.1	18.4	18.0
Never	36.2	37.0	39.0	39.8	43.9	44.4	45.6	48.0	47.8	50.1	51.5	54.4	54.6
<b>Race</b>													
White													
Current	44.6	45.5	42.6	42.7	44.8	44.6	45.2	46.2	43.1	41.7	41.9	39.3	39.1
Former	15.0	15.4	22.3	24.1	28.9	29.9	30.6	33.1	37.0	35.3	38.1	39.8	39.4
Never	46.4	46.6	50.1	50.5	58.6	59.5	61.7	65.8	65.3	69.2	70.8	74.6	75.0
Black													
Current	5.0	5.2	5.1	5.8	5.9	5.8	5.8	6.4	6.3	6.1	6.1	5.2	5.9
Former	0.9	0.9	1.3	1.4	2.1	2.2	2.2	2.5	2.9	2.8	2.9	3.3	2.9
Never	5.0	5.2	5.9	6.0	7.7	7.8	7.8	8.9	8.9	9.8	10.3	11.4	11.3
<b>Hispanic origin</b>													
Hispanic													
Current	NA	NA	NA	NA	2.5	2.7	2.6	2.6	2.5	2.9	2.8	3.2	3.0
Former	NA	NA	NA	NA	1.2	1.6	1.3	1.6	1.7	2.0	2.3	2.4	2.5
Never	NA	NA	NA	NA	4.2	4.9	4.8	6.0	5.6	7.4	6.8	8.4	9.3
Non-Hispanic													
Current	NA	NA	NA	NA	48.5	48.1	48.8	50.6	47.7	45.8	46.4	42.4	43.1
Former	NA	NA	NA	NA	30.0	30.8	31.6	34.5	38.7	36.7	39.4	41.6	41.0
Never	NA	NA	NA	NA	63.2	63.6	65.7	70.4	70.8	74.6	77.4	80.8	80.9

**TABLE 3. Number\* of adults† who were current, former, or never smokers,§ overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991 — Continued**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991
<b>Age (years)</b>													
18–24													
Current	8.0	8.4	8.3	8.8	9.4	9.6	9.2	9.8	7.8	6.9	6.6	6.1	5.5
Former	1.2	1.1	2.0	2.2	2.5	2.9	2.9	2.6	2.7	2.0	2.4	2.4	1.9
Never	8.4	9.2	11.6	12.3	15.4	15.3	15.6	16.1	16.2	16.5	16.5	16.3	16.8
25–44													
Current	23.1	23.2	20.8	21.5	22.4	22.7	22.9	24.7	24.6	24.5	25.3	23.5	24.2
Former	6.1	6.1	8.8	8.9	11.1	11.4	12.0	12.9	15.1	14.5	14.7	15.8	15.4
Never	15.9	15.8	17.1	17.9	23.5	24.2	25.8	30.4	30.9	34.9	36.7	39.9	40.0
45–64													
Current	15.9	16.5	15.9	15.2	15.8	15.0	15.3	14.7	13.8	13.3	13.3	12.4	12.5
Former	6.1	6.3	8.9	10.0	11.3	11.7	11.5	12.7	13.6	12.9	14.9	15.2	15.3
Never	16.1	15.8	16.3	15.1	16.1	16.4	16.3	16.7	16.3	17.0	17.0	18.5	18.8
≥65													
Current	3.1	3.1	3.0	3.5	3.7	3.8	4.1	4.3	4.2	4.2	4.2	3.8	4.0
Former	2.6	2.8	4.0	4.7	6.4	6.4	6.7	7.9	9.0	9.4	9.8	10.8	10.9
Never	11.6	11.6	11.8	12.0	12.7	13.1	13.1	13.6	13.2	14.9	14.3	14.9	15.1
<b>Education<sup>¶</sup> (years)</b>													
<12													
Current	NA	21.1	17.8	16.4	14.2	14.0	13.6	13.2	12.1	11.6	11.1	10.1	10.2
Former	NA	7.1	8.8	8.6	8.4	9.0	8.4	8.9	9.3	8.4	8.7	8.6	8.2
Never	NA	22.3	20.8	18.3	17.3	16.8	16.7	16.1	14.0	13.9	14.0	14.0	14.0
12													
Current	NA	13.7	13.7	14.3	16.4	16.0	16.4	17.8	17.7	18.2	18.5	17.6	17.8
Former	NA	4.4	6.9	7.7	10.2	10.3	10.6	12.0	13.3	13.6	14.2	15.3	15.1
Never	NA	12.6	14.3	14.9	17.8	19.0	19.4	21.1	22.0	23.5	24.0	25.5	25.1
13–15													
Current	NA	4.0	4.4	5.1	6.2	6.4	6.8	7.2	7.5	7.4	7.9	7.3	7.8
Former	NA	1.5	2.5	3.3	4.9	4.5	5.0	5.6	6.8	6.8	7.6	8.2	8.6
Never	NA	3.4	4.4	5.1	7.0	7.3	8.3	9.6	10.3	11.9	12.6	14.2	14.2
≥16													
Current	NA	3.3	3.4	4.0	4.6	4.7	5.3	5.3	5.2	4.8	5.1	4.7	4.8
Former	NA	2.0	3.3	3.9	5.1	5.5	6.0	6.8	8.3	7.9	8.8	9.7	9.6
Never	NA	4.0	5.1	6.0	9.5	9.6	10.4	13.6	13.9	16.2	17.3	19.3	20.3

**TABLE 3. Number\* of adults† who were current, former, or never smokers,§ overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991 — Continued**

\* In millions.

† Persons ≥18 years of age.

§ Current smokers reported smoking ≥100 cigarettes and currently smoked. Former smokers reported smoking ≥100 cigarettes and did not currently smoke. Never smokers reported that they had smoked <100 cigarettes.

¶ Data on education are presented for persons ≥25 years of age.

Source: National Health Interview Surveys: 1965, 1966, 1970, 1974, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991.

Note: For any year, 95% confidence intervals do not exceed ±1.8 million for the total population, ±1.4 million for men, ±1.5 million for women, ±2.0 million for whites, ±1.6 million for blacks, ±1.5 million for Hispanics, ±2.1 million for non-Hispanics, ±1.0 million for persons ages 18–24 years, ±1.3 million for persons ages 25–44 years, ±0.9 million for persons ages 45–64 years, ±1.1 million for persons ages ≥65 years, ±1.4 million for <12 years of education, ±1.1 million for 12 years of education, ±0.8 million for 13–15 years of education, and ±1.0 million for ≥16 years of education.

For any year, the percent of persons for whom smoking status was unavailable does not exceed 5.8% for the total population, 8.9% for men, 3.0% for women, 5.6% for whites, 7.2% for blacks, 4.2% for Hispanics, 3.0% for non-Hispanics, 7.4% for persons ages 18–24 years, 6.0% for persons ages 25–44 years, 6.1% for persons ages 45–64 years, 3.4% for persons ages ≥65 years, 4.1% for <12 years of education, 5.3% for 12 years of education, 5.8% for 13–15 years of education, and 7.1% for ≥16 years of education.

**TABLE 4. Percentage distribution of adult\* current cigarette smokers,<sup>†</sup> by number of cigarettes smoked per day, and percentage of adult current cigarette smokers who smoked  $\geq 25$  cigarettes per day, by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1974–1991**

	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>  </sup>
<b>Current smokers</b>												
Number of cigarettes smoked per day												
<15	31.6	29.4	29.8	29.1	29.3	31.6	32.1	31.0	34.5	36.6	+ 5.0	+15.8
15–24	43.2	42.6	42.7	42.1	44.7	41.8	41.4	43.4	42.6	41.9	- 1.3	- 3.0
$\geq 25$	25.3	28.0	27.5	28.8	26.0	26.6	26.6	25.6	22.9	21.5	- 3.8	- 15.0
Mean	19.8	20.9	20.6	21.2	20.3	20.3	20.1	20.2	19.1	18.2	- 1.6	- 8.1
<b>Percent smoking <math>\geq 25</math> cigarettes per day</b>												
Sex												
Male	31.1	34.5	32.4	33.7	32.3	32.4	32.8	30.5	28.5	26.4	- 4.7	- 15.1
Female	18.7	20.8	22.0	23.2	19.4	20.6	19.9	20.3	16.6	16.1	- 2.6	- 13.9
Race												
White	27.6	30.5	29.8	31.6	28.6	29.5	29.6	28.4	25.4	23.8	- 3.8	- 13.8
Black	8.7	9.7	10.5	9.4	9.2	9.3	8.2	9.0	6.0	8.6	- 0.1	- 1.2
Hispanic origin												
Hispanic	NA	16.3	12.0	13.4	9.2	15.8	12.0	9.7	6.8	5.3	- 11.0**	- 67.5**
Non-Hispanic	NA	28.7	28.4	29.6	26.8	27.2	27.5	26.6	24.1	22.5	- 6.2**	- 21.6**
Age (years)												
18–24	15.1	17.8	16.1	17.0	11.7	13.6	12.6	10.5	9.1	9.2	- 5.9	- 39.1
25–44	29.2	30.5	30.7	31.5	29.2	29.5	28.3	27.7	22.9	21.0	- 8.2	- 28.1
45–64	27.3	32.5	32.6	34.5	32.8	31.1	32.5	31.7	30.8	29.3	+ 2.0	+ 7.3
$\geq 65$	17.7	19.5	16.6	18.2	17.3	19.4	20.4	17.4	18.9	17.1	- 0.6	- 3.4
Education <sup>††</sup> (years)												
<12	25.8	28.5	27.9	29.4	29.1	29.0	28.8	29.1	24.5	27.4	+ 1.6	+ 6.2
12	27.8	30.7	30.7	31.6	29.1	29.0	29.8	28.1	25.7	22.9	- 4.9	- 17.6
13–15	32.5	33.1	33.1	32.7	30.3	29.3	28.1	27.9	25.5	20.0	- 12.5	- 38.5
$\geq 16$	27.3	30.9	30.8	33.3	28.4	28.7	26.9	25.0	22.6	20.1	- 7.2	- 26.4

**TABLE 4. Percentage distribution of adult\* current cigarette smokers,<sup>†</sup> by number of cigarettes smoked per day, and percentage of adult current cigarette smokers who smoked  $\geq 25$  cigarettes per day, by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1974–1991 — Continued**

- \*Persons  $\geq 18$  years of age.  
<sup>†</sup> Current smokers reported smoking  $\geq 100$  cigarettes and currently smoked.  
<sup>§</sup> Percentage point difference (or actual difference for the mean number of cigarettes smoked daily) from 1974 through 1991, except where noted.  
<sup>¶</sup> Percentage change from 1974 through 1991, except where noted.  
<sup>\*\*</sup> Percentage change from 1978 through 1991.  
<sup>††</sup> Data on education are presented for persons  $\geq 25$  years of age.

Source: National Health Interview Surveys, 1974, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991.

Note: For any year, 95% confidence intervals do not exceed  $\pm 2.0\%$  for the total population,  $\pm 0.6$  for the mean number of cigarettes smoked per day,  $\pm 2.4\%$  for men,  $\pm 2.0\%$  for women,  $\pm 1.9\%$  for whites,  $\pm 3.0\%$  for blacks,  $\pm 5.3\%$  for Hispanics,  $\pm 1.7\%$  for non-Hispanics,  $\pm 2.8\%$  for persons ages 18-24 years,  $\pm 2.4\%$  for persons ages 25-44 years,  $\pm 3.5\%$  for persons ages 45-64 years,  $\pm 4.6\%$  for persons ages  $\geq 65$  years,  $\pm 3.2\%$  for  $< 12$  years of education,  $\pm 3.1\%$  for 12 years of education,  $\pm 5.0\%$  for 13-15 years of education, and  $\pm 5.3\%$  for  $\geq 16$  years of education.

**TABLE 5. Percentage of young adults\* who were current, former, or never smokers,<sup>†</sup> overall and by sex, race, and education, National Health Interview Surveys, selected years — United States, 1965–1991**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>  </sup>
<b>Smoking status</b>															
Total population															
Current	45.5	44.6	38.0	37.8	34.4	34.4	33.3	34.2	29.3	27.1	25.9	24.5	22.9	- 22.6	- 49.7
Former	6.9	6.0	9.2	9.5	9.2	10.6	10.5	9.3	10.1	8.0	9.3	9.5	7.7	+ 0.8	+11.6
Never	47.6	49.4	52.8	52.7	56.4	55.0	56.2	56.5	60.6	64.9	64.8	66.0	69.3	+21.7	+45.6
<b>Sex</b>															
Male															
Current	54.1	54.2	44.3	42.1	36.0	35.0	35.4	32.9	28.1	28.2	25.5	26.6	23.5	- 30.6	- 56.6
Former	7.6	6.4	10.7	11.6	10.1	11.2	10.5	8.1	10.7	6.7	9.6	9.1	8.0	+ 0.4	+ 5.3
Never	38.3	39.5	45.0	46.3	53.9	53.8	54.1	59.0	61.3	65.2	64.9	64.4	68.4	+30.1	+78.6
Female															
Current	38.1	36.6	32.7	34.1	32.9	33.8	31.4	35.5	30.4	26.2	26.3	22.5	22.4	- 15.7	- 41.2
Former	6.2	5.7	8.0	7.8	8.3	10.0	10.4	10.4	9.6	9.2	9.0	9.9	7.5	+ 1.3	+21.0
Never	55.7	57.7	59.3	58.2	58.7	56.2	58.2	54.1	60.0	64.7	64.7	67.6	70.2	+14.5	+26.0
<b>Race</b>															
White															
Current	45.2	44.9	37.9	37.2	35.0	34.4	33.1	34.6	30.1	28.5	27.1	26.4	25.1	- 20.1	- 44.5
Former	7.4	6.5	9.9	10.3	9.4	11.6	11.3	9.9	10.9	8.8	10.6	10.6	8.4	+ 1.0	+13.5
Never	47.4	48.7	52.2	52.5	55.6	54.0	55.7	55.5	58.9	62.8	62.3	63.1	66.5	+19.1	+40.3
Black															
Current	48.8	44.5	39.8	43.4	32.1	35.4	35.6	33.0	25.3	22.4	20.3	15.2	13.3	- 35.5	- 72.8
Former	2.6	2.4	4.6	3.2	8.0	4.5	5.2	6.2	6.0	3.7	3.4	5.2	3.9	+ 1.3	+50.0
Never	48.6	53.2	55.6	53.4	59.8	60.1	59.3	60.8	68.7	73.8	76.3	79.6	82.8	+34.2	+70.4

**TABLE 5. Percentage of young adults\* who were current, former, or never smokers,<sup>†</sup> overall and by sex, race, and education, National Health Interview Surveys, selected years — United States, 1965–1991 — Continued**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>¶</sup>
<b>Education**</b>															
≤12 years															
Sex															
Male															
Current	66.6	68.8	60.0	52.7	46.1	46.8	51.0	49.1	43.0	43.8	40.1	37.3	34.5	- 32.1	- 48.2
Former	8.0	6.5	11.1	11.9	11.5	13.1	10.5	10.3	11.6	7.4	11.4	10.2	11.0	+ 3.0	+ 37.5
Never	25.4	24.6	29.0	35.4	42.4	40.2	38.5	40.6	45.4	48.8	48.6	52.4	54.5	+29.1	+114.6
Female															
Current	43.9	42.7	40.2	40.1	39.4	41.4	40.3	45.5	43.6	37.6	37.0	33.4	30.6	- 13.3	- 30.3
Former	6.8	6.8	8.7	9.5	10.2	12.1	12.5	11.7	11.8	10.8	11.5	11.7	9.0	+ 2.2	+ 32.4
Never	49.3	50.4	51.1	50.4	50.4	46.4	47.2	42.8	44.6	51.6	51.4	54.9	60.5	+11.2	+ 22.7
≥13 years															
Sex															
Male															
Current	45.2	46.4	33.2	34.7	26.4	23.4	20.1	16.2	15.5	16.3	12.1	16.1	12.2	- 33.0	- 73.0
Former	11.1	9.2	13.9	13.9	15.1	12.1	14.7	7.1	10.9	8.4	9.8	10.3	9.2	- 1.9	- 17.1
Never	43.7	44.4	52.8	51.4	58.6	64.5	65.3	76.7	73.7	75.4	78.1	73.7	78.6	+34.9	+ 79.9
Female															
Current	36.3	36.6	26.8	26.4	21.6	21.9	20.0	22.9	17.2	15.1	16.2	13.8	14.6	- 21.7	- 59.8
Former	8.8	8.3	12.1	6.4	8.6	9.8	8.3	9.4	9.7	10.0	8.9	8.5	7.6	- 1.2	- 13.6
Never	54.9	55.1	61.1	67.2	69.8	68.4	71.8	67.7	73.2	74.9	74.9	77.8	77.8	+22.9	+ 41.7

\* Persons ages 18–24 years.

<sup>†</sup> Current smokers reported smoking ≥100 cigarettes and currently smoked. Former smokers reported smoking ≥100 cigarettes and did not currently smoke. Never smokers reported that they had smoked <100 cigarettes.

<sup>§</sup> Percentage point difference from 1965 through 1991.

<sup>¶</sup> Percentage change from 1965 through 1991.

\*\* Data on education are presented for persons ages 20–24 years, because some students enter college after age 18.

Source: National Health Interview Surveys: 1965, 1966, 1970, 1974, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991.

Note: For any year, 95% confidence intervals do not exceed ±2.4% for the total population, ±3.7% for men, ±3.4% for women, ±2.6% for whites, ±7.6% for blacks, ±4.5% for men with ≤12 years education, ±4.0% for women with ≤12 years education, ±5.3% for men with ≥13 years education, and ±5.5% for women with ≥13 years education.

adults declined more rapidly than among young white adults, especially after 1980. Blacks ages 18–24 years were substantially less likely than whites to be current smokers in 1991. Current prevalence of cigarette smoking among persons ages 20–24 years declined more rapidly among those with  $\geq 13$  years of education than among those with  $\leq 12$  years of education. Among women ages 20–24 years with  $\leq 12$  years of education, current smoking prevalence was approximately equal in 1965 and 1985. By 1991, however, prevalence in this group had declined substantially.

Among 18- through 24-year-olds, prevalence of never smoking increased more rapidly both among men than women and among blacks than whites. In every year, never smoking was more common among young adults with  $\geq 13$  years of education than among those with  $\leq 12$  years of education. The rate of increase in never smoking was higher among women ages 20–24 years with  $\geq 13$  years of education than among women with  $\leq 12$  years of education; among men, however, the rate of increase was higher among persons with  $\leq 12$  years of formal education.

With the exception of young adult men (in particular those with  $\geq 13$  years of education), the declines in current smoking and the increases in never smoking among young adults leveled off during the period 1978–1983.

### Prevalence of Cessation

The prevalence of smoking cessation almost doubled between 1965 and 1991 (Table 6). In 1991, nearly half of the U.S. population who had smoked at least 100 cigarettes no longer smoked (i.e., were former cigarette smokers). By 1990, more than half of U.S. men and more than half of U.S. white adults who had ever smoked cigarettes had quit. The prevalence of quitting was higher for men than women, for whites than blacks, and for non-Hispanics than Hispanics. Prevalence of cessation increased as both age and education increased.

### Prevalence of Tobacco Use, 1987–1991

For the combined years of 1987, 1988, 1990, and 1991, current cigarette smoking prevalence among men was highest among American Indians/Alaska Natives (AI/ANs) and non-Hispanic blacks, intermediate among non-Hispanic whites and Hispanics, and lowest among Asians/Pacific Islanders (A/Pis) (Table 7). The prevalence of never smoking was highest among A/Pis and lowest among AI/ANs, regardless of sex. The prevalences of both current and never smoking were higher among non-Hispanic black men than among non-Hispanic white men. Current cigarette smoking prevalence was approximately equal among non-Hispanic white women and non-Hispanic black women; non-Hispanic black women were more likely than non-Hispanic white women to have never smoked. Current cigarette smoking prevalence among women was estimated to be about 36% for AI/ANs, 26% for non-Hispanic whites, 25% for non-Hispanic blacks, 17% for Hispanics, and 8% for A/Pis. For both sexes combined, current smoking prevalence was 37.1% (95% confidence interval [CI]= $\pm 5.8\%$ ) among AI/ANs, 30.1% (CI= $\pm 0.8\%$ ) among non-Hispanic blacks, 27.3% (CI= $\pm 0.4\%$ ) among non-Hispanic whites, 22.5% (CI= $\pm 1.0\%$ ) among all Hispanics, and 16.0% (CI= $\pm 1.7\%$ ) among A/Pis. For both sexes, the percentage of current smokers who had smoked  $\geq 25$  cigarettes per day was highest among non-Hispanic whites, intermediate among AI/ANs, and lowest among non-Hispanic blacks, A/Pis, and Hispanics.

The prevalence of current use of cigars or pipes was highest among AI/AN men and for both sexes of this race combined (Table 8); use was intermediate among non-

**TABLE 6. Percentage of adult\* ever smokers who are former smokers† (prevalence of cessation), overall and by sex, race, Hispanic origin, age, and education, National Health Interview Surveys, selected years — United States, 1965–1991**

	1965	1966	1970	1974	1978	1979	1980	1983	1985	1987	1988	1990	1991	Percentage point difference <sup>§</sup>	Percentage change <sup>¶</sup>
<b>Total</b>	24.3	24.2	33.1	34.5	37.9	38.9	39.0	40.4	44.5	44.3	45.8	49.1	48.5	+24.2	+99.6
<b>Sex</b>															
Male	27.6	27.7	37.4	39.2	42.7	43.1	42.8	44.6	48.7	48.0	49.0	51.6	51.6	+24.0	+ 87.0
Female	19.1	18.9	26.9	28.3	31.6	33.4	34.0	35.1	39.4	39.6	42.0	46.0	44.7	+25.6	+134.0
<b>Race</b>															
White	25.2	25.3	34.3	36.1	39.2	40.2	40.4	41.8	46.2	45.8	47.6	50.4	50.2	+25.0	+ 99.2
Black	15.5	14.2	20.6	19.7	26.1	27.2	27.2	28.3	31.3	31.0	32.4	38.9	33.4	+17.9	+115.5
<b>Hispanic origin</b>															
Hispanic	NA	NA	NA	NA	33.0	36.4	33.5	38.4	40.0	40.5	44.9	42.5	45.6	+12.6**	+ 38.2**
Non-Hispanic	NA	NA	NA	NA	38.2	39.0	39.3	40.5	44.8	44.5	45.9	49.5	48.7	+10.5**	+ 27.5**
<b>Age (years)</b>															
18–24	13.1	12.0	19.6	20.2	21.1	23.5	23.9	21.3	25.7	22.8	26.5	28.0	25.2	+12.1	+ 92.4
25–44	21.0	20.8	29.7	29.2	33.2	33.5	34.3	34.4	38.1	37.2	36.8	40.3	38.9	+17.9	+ 85.2
45–64	27.9	27.8	36.0	39.7	41.6	43.9	42.8	46.3	49.7	49.2	52.8	55.0	55.1	+27.2	+ 97.5
≥65	45.5	47.2	56.9	57.5	63.4	62.7	61.8	64.8	68.1	69.2	69.8	74.1	73.3	+27.8	+ 61.1
<b>Education†† (years)</b>															
<12	NA	25.2	33.1	34.4	37.0	39.1	38.2	40.1	43.5	42.1	44.0	46.1	44.6	+19.4 <sup>§§</sup>	+ 77.0 <sup>§§</sup>
12	NA	24.3	33.6	35.0	38.3	39.2	39.2	40.4	42.9	42.9	43.3	46.5	46.0	+21.7 <sup>§§</sup>	+ 89.3 <sup>§§</sup>
13–15	NA	27.5	36.4	38.9	44.0	41.3	42.4	43.9	47.4	48.1	49.2	52.8	52.3	+24.8 <sup>§§</sup>	+ 90.2 <sup>§§</sup>
≥16	NA	37.9	49.1	49.1	52.4	54.0	52.9	56.2	61.5	62.1	63.4	67.3	66.5	+28.6 <sup>§§</sup>	+ 75.5 <sup>§§</sup>

\* Persons ≥18 years of age.

† Current smokers reported smoking ≥100 cigarettes and currently smoked. Former smokers reported smoking ≥100 cigarettes and did not currently smoke. Ever smokers include both current and former smokers.

§ Percentage point difference from 1965 through 1991, except where noted.

¶ Percentage change from 1965 through 1991, except where noted.

\*\* From 1978 through 1991.

†† Data on education are presented for persons ≥25 years of age.

§§ From 1966 through 1991.

NA=Data not available.

Source: National Health Interview Surveys: 1965, 1966, 1970, 1974, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991.

Note: For any year, 95% confidence intervals do not exceed ±1.6% for the total population, ±2.0% for men, ±2.2% for women, ±1.6% for whites, ±4.1% for blacks, ±6.3% for Hispanics, ±1.7% for non-Hispanics, ±2.9% for persons ages 18–24 years, ±2.3% for persons ages 25–44 years, ±2.4% for persons ages 45–64 years, ±4.0% for persons ages ≥65 years, ±2.6% for <12 years of education, ±2.6% for 12 years of education, ±4.0% for 13–15 years of education, and ±3.9% for ≥16 years of education.

**TABLE 7. Percentage of adults\* who are current, former, and never smokers† and percentage distribution of adult current smokers by number of cigarettes smoked per day, by race, ethnicity, and sex, National Health Interview Surveys, 1987, 1988, 1990, 1991 (combined) — United States**

	Non-Hispanic					Hispanic					Total§
	White	Black	Asian/ Pacific Islander	American Indian/ Alaska Native	All	Mexican American	Puerto Rican American	Cuban American	Other	All	
<b>Sex</b>											
<b>Male</b>											
Smoking status											
Current	29.1	35.9	23.6	38.0	29.7	29.0	28.3	26.3	28.6	28.6	29.6
Former	32.1	19.6	19.6	26.0	30.3	22.1	19.4	24.1	20.8	21.6	29.6
Never	38.9	44.6	56.8	36.1	40.0	48.9	52.4	49.6	50.6	49.8	40.7
Cigarettes smoked per day¶											
<15	21.7	54.1	56.1	27.5	26.9	65.9	52.1	38.5	52.4	58.8	29.1
15–24	42.9	36.3	37.8	49.7	42.0	27.2	31.7	39.9	35.7	30.9	41.2
≥25	35.4	9.6	6.1	22.8	31.2	6.9	16.2	21.6	11.9	10.3	29.7
<b>Female</b>											
Smoking status											
Current	25.7	25.4	7.8	36.2	25.3	15.5	22.7	16.4	17.2	17.0	24.6
Former	20.4	12.0	6.9	17.9	19.1	11.7	14.0	12.5	16.3	13.4	18.6
Never	53.9	62.6	85.3	46.0	55.7	72.7	63.3	71.1	66.5	69.5	56.8
Cigarettes smoked per day¶											
<15	32.1	65.8	64.6	52.3	36.6	72.8	52.3	49.2	65.9	65.2	38.1
15–24	46.9	27.9	27.6	30.9	44.3	23.2	41.1	40.4	26.6	28.8	43.5
≥25	21.1	6.3	7.9	16.8	19.1	4.0	6.6	10.5	7.5	6.0	18.4
<b>Total</b>											
Smoking status											
Current	27.3	30.1	16.0	37.1	27.4	22.2	25.0	20.7	22.4	22.5	27.0
Former	26.0	15.4	13.4	21.9	24.4	16.8	16.3	17.5	18.4	17.2	23.8
Never	46.7	54.6	70.6	41.1	48.2	61.0	58.7	61.9	59.3	60.3	49.2
Cigarettes smoked per day¶											
<15	26.8	59.6	58.1	39.7	31.6	68.4	52.2	43.3	57.9	61.4	33.4
15–24	44.8	32.4	35.3	40.4	43.1	25.7	36.7	40.1	32.0	30.0	42.3
≥25	28.3	8.0	6.5	19.9	25.3	5.9	11.1	16.6	10.1	8.6	24.3

**TABLE 7. Percentage of adults\* who are current, former, and never smokers† and percentage distribution of adult current smokers by number of cigarettes smoked per day, by race, ethnicity, and sex, National Health Interview Surveys, 1987, 1988, 1990, 1991 (combined) — United States — Continued**

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\*Persons ≥18 years of age.

†Current smokers reported smoking ≥100 cigarettes and currently smoked. Former smokers reported smoking ≥100 cigarettes and did not currently smoke. Never smokers reported that they had smoked <100 cigarettes.

§Includes other, unknown, multiple race, and unknown Hispanic origin.

¶Among current smokers.

Source: National Health Interview Surveys, 1987, 1988, 1990, and 1991 (combined).

Note: For cigarette-smoking status, 95% confidence intervals do not exceed ±0.6% for non-Hispanic whites, ±1.4% for non-Hispanic blacks, ±3.1% for non-Hispanic Asians/Pacific Islanders, ±6.6% for non-Hispanic American Indians/Alaska Natives, ±0.5% for all non-Hispanics, ±2.3% for Mexican Americans, ±5.2% for Puerto Rican Americans, ±6.5% for Cuban Americans, ±3.3% for other Hispanics, ±1.7% for all Hispanics, and ±0.5% for the total population.

For the number of cigarettes smoked daily, 95% confidence intervals do not exceed ±0.8% for non-Hispanic whites, ±2.2% for non-Hispanic blacks, ±9.7% for non-Hispanic Asians/Pacific Islanders, ±10.4% for non-Hispanic American Indians/Alaska Natives, ±0.9% for all non-Hispanics, ±4.7% for Mexican Americans, ±8.6% for Puerto Rican Americans, ±12.4% for Cuban Americans, ±6.8% for other Hispanic, ±3.4% for all Hispanics, and ±0.8% for the total population.

**TABLE 8. Percentage of adults\* who used† cigars, pipes, chewing tobacco, snuff, or any form of tobacco, by Hispanic origin, race, and sex, National Health Interview Surveys, 1987, 1991 (combined) — United States**

	Non-Hispanic <sup>§</sup>					Hispanic <sup>§</sup>					Total <sup>§</sup>
	White	Black	Asian/ Pacific Islander	American Indian/ Alaska Native	All	Mexican American	Puerto Rican American	Cuban American	Other	All	
<b>Cigar smoking</b>											
Male	4.8	3.9	2.2	5.3	4.6	1.3	1.5	2.5	3.8	2.1	4.4
Female	0.1	0.1	0.1	0.2	0.1	0.1	.	.	0.2	0.1	0.1
<b>Total</b>	<b>2.3</b>	<b>1.8</b>	<b>1.1</b>	<b>2.7</b>	<b>2.2</b>	<b>0.7</b>	<b>0.6</b>	<b>1.0</b>	<b>1.9</b>	<b>1.1</b>	<b>2.1</b>
<b>Pipe smoking</b>											
Male	2.9	2.4	2.3	6.9	2.8	0.2	1.5	2.6	1.7	1.0	2.7
Female	0.1	.	.	.	0.0	.	.	.	.	.	0.0
<b>Total</b>	<b>1.4</b>	<b>1.1</b>	<b>1.2</b>	<b>3.5</b>	<b>1.4</b>	<b>0.1</b>	<b>0.7</b>	<b>1.1</b>	<b>0.8</b>	<b>0.5</b>	<b>1.3</b>
<b>Cigar or pipe smoking</b>											
Male	6.7	5.6	3.3	9.8	6.5	1.5	2.7	5.1	4.3	2.7	6.2
Female	0.1	0.1	0.1	0.2	0.1	0.1	.	.	0.2	0.1	0.1
<b>Total</b>	<b>3.3</b>	<b>2.5</b>	<b>1.7</b>	<b>4.9</b>	<b>3.1</b>	<b>0.8</b>	<b>1.2</b>	<b>2.1</b>	<b>2.1</b>	<b>1.3</b>	<b>3.0</b>
<b>Any tobacco smoking</b>											
Male	33.2	40.2	24.0	37.3	33.7	29.4	31.9	30.8	27.2	29.3	33.4
Female	26.3	26.5	7.8	35.6	25.9	14.8	23.1	16.9	16.9	16.8	25.2
<b>Total</b>	<b>29.6</b>	<b>32.6</b>	<b>16.0</b>	<b>36.4</b>	<b>29.6</b>	<b>22.1</b>	<b>26.8</b>	<b>22.5</b>	<b>21.7</b>	<b>22.7</b>	<b>29.1</b>
<b>Chewing tobacco use</b>											
Male	4.1	2.7	0.4	5.3	3.8	0.8	0.3	.	1.1	0.7	3.5
Female	0.1	1.5	.	0.8	0.3	0.1	.	.	0.1	0.1	0.3
<b>Total</b>	<b>2.0</b>	<b>2.0</b>	<b>0.2</b>	<b>3.1</b>	<b>2.0</b>	<b>0.4</b>	<b>0.1</b>	<b>.</b>	<b>0.5</b>	<b>0.4</b>	<b>1.8</b>
<b>Snuff use</b>											
Male	3.8	0.9	0.9	3.2	3.4	1.0	0.6	0.3	1.6	1.0	3.2
Female	0.3	1.9	.	0.4	0.5	0.2	.	.	0.0	0.1	0.4
<b>Total</b>	<b>1.9</b>	<b>1.4</b>	<b>0.5</b>	<b>1.8</b>	<b>1.8</b>	<b>0.6</b>	<b>0.3</b>	<b>0.1</b>	<b>0.8</b>	<b>0.5</b>	<b>1.7</b>

**TABLE 8. Percentage of adults\* who used† cigars, pipes, chewing tobacco, snuff, or any form of tobacco, by Hispanic origin, race, and sex, National Health Interview Surveys, 1987, 1991 (combined) — United States — Continued**

	Non-Hispanic <sup>§</sup>					Hispanic <sup>§</sup>					Total <sup>§</sup>
	White	Black	Asian/ Pacific Islander	American Indian/ Alaska Native	All	Mexican American	Puerto Rican American	Cuban American	Other	All	
<b>Chewing tobacco or snuff use</b>											
Male	6.8	3.1	1.2	7.8	6.2	1.5	0.6	0.3	2.3	1.5	5.9
Female	0.3	2.9	.	1.2	0.6	0.3	.	.	0.1	0.1	0.6
<b>Total</b>	<b>3.4</b>	<b>3.0</b>	<b>0.6</b>	<b>4.5</b>	<b>3.3</b>	<b>0.9</b>	<b>0.3</b>	<b>0.1</b>	<b>1.1</b>	<b>0.8</b>	<b>3.1</b>
<b>Any tobacco use</b>											
Male	38.0	42.4	25.6	43.9	38.2	30.7	32.8	31.2	28.4	30.4	37.6
Female	26.8	29.3	7.9	36.6	26.7	15.1	23.3	17.0	17.1	17.0	26.0
<b>Total</b>	<b>32.2</b>	<b>35.2</b>	<b>16.8</b>	<b>40.2</b>	<b>32.2</b>	<b>22.9</b>	<b>27.4</b>	<b>22.7</b>	<b>22.4</b>	<b>23.4</b>	<b>31.5</b>

\*Persons ≥18 years of age.

†Current use identified those persons who, for cigars, had smoked ≥50 cigars and currently smoked cigars; for pipes, had smoked a pipe ≥50 times and currently smoked a pipe; for cigars or pipes, were current users of cigars or pipes; for any tobacco smoking, were current users of cigarettes (i.e., had smoked ≥100 cigarettes and currently smoked cigarettes), cigars, or pipes; for chewing tobacco, had used chewing tobacco ≥20 times and currently used chewing tobacco; for snuff, had used snuff ≥20 times and currently used snuff; for chewing tobacco or snuff, were current users of chewing tobacco or snuff; for any tobacco use, were current users of cigarettes, cigars, pipes, chewing tobacco, or snuff.

§Includes other, unknown, and multiple race and unknown Hispanic origin.

0.0 Indicates a value >0 and <0.05.

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Source: National Health Interview Survey, 1987 and 1991 (combined)

Note: 95% confidence intervals do not exceed: ±0.7% for non-Hispanic whites, ±2.1% for non-Hispanic blacks, ±4.0% for non-Hispanic Asians/Pacific Islanders, ±9.6% for non-Hispanic American Indians/Alaska Natives, ±0.7% for all non-Hispanics, ±2.9% for Mexican Americans, ±7.0% for Puerto Rican Americans, ±8.0% for Cuban Americans, ±3.9% for other Hispanics, ±2.2% for all Hispanics, and ±0.7% for the total population.

Hispanic whites and non-Hispanic blacks and lowest among Hispanics (with slightly higher use among Cuban Americans and the population of other Hispanics) and A/PIs. Neither of these types of tobacco use was prevalent among women of any of the racial/ethnic groups. Overall, AI/ANs were most likely to use chewing tobacco or snuff; prevalence of use was intermediate among non-Hispanic whites and non-Hispanic blacks and lowest among A/PIs and Hispanics. Approximately 8% of AI/AN males and 7% of white males used either chewing tobacco or snuff. Approximately 3% of non-Hispanic black women and 1% of AI/AN women used smokeless tobacco (i.e., chewing tobacco or snuff). The prevalence of use of any tobacco product was 40.2% (CI=±6.4%) among AI/ANs, 35.2% (CI=+1.4%) among non-Hispanic blacks, 32.2% (CI=+0.5%) among non-Hispanic whites, 23.4% (CI=+1.4%) among all Hispanics, and 16.8% (CI=+2.6%) among A/PIs. The sex-specific rank order of tobacco-use prevalence was the same among these five groups.

Data from the 1970, 1987, and 1991 NHIS indicated that the prevalence of cigar smoking and of pipe smoking among U.S. men declined substantially during the years 1970–1991 for whites, blacks, and the total adult male population (Table 9). The difference between 1970 and 1991 prevalence data was greater among men ages ≤34 years than it was among older men. With the exception of black women ≥65 years of age in 1970, the prevalence of cigar and pipe smoking was <1% among all subgroups of U.S. women examined.

The prevalence of chewing tobacco use and of snuff use increased substantially between 1970 and 1987 among white men ≤34 years of age. This trend was not observed among black men, black women, or white women. Among white men in 1970, chewing tobacco and snuff use was most prevalent among those ≥65 years of age; in 1987 and 1991, use was most prevalent among white males ages 18–24 years. The use of chewing tobacco and snuff has been higher among older than younger black men, regardless of the survey year. In 1970 and 1987, black men ≥45 years of age were more likely than white men ≥45 years of age to use chewing tobacco or snuff. In 1970, white women ≥45 years of age were more likely to use snuff than were white women ≤44 years of age; this difference was much smaller in 1987. The use of chewing tobacco and snuff among black women tended to increase with increasing age, regardless of survey year. Use was substantially more common among black than among white women. Nearly one fourth of black men and women ≥65 years of age used either form of smokeless tobacco in 1970.

### State-Level Prevalences of Regular Cigarette Smoking

The median prevalence of regular cigarette smoking was 27.4% within the 15 states participating in the BRFSS in 1984 and 22.2% within the 49 states participating in 1992 (Table 10). The prevalence of cigarette smoking has declined consistently in some states and has remained fairly constant in others. In 1992, cigarette smoking prevalence was highest in Nevada (30.5%) and lowest in Utah (15.6%). In 1992, the prevalences in 11 states and the District of Columbia (Arizona, California, the District of Columbia, Georgia, Hawaii, Idaho, Iowa, Maryland, Montana, Nebraska, New Mexico, and Utah) were <20%.

The prevalence of smokeless-tobacco use was especially high among men in West Virginia, Montana, and several southern states. (Table 11). Smokeless-tobacco use was reported by at least 2% of women in Alabama, Georgia, Mississippi, and North Carolina.

**TABLE 9. Percentage of adults\* who used† cigars, pipes, chewing tobacco, or snuff, by race, sex, and age, National Health Interview Surveys, 1970, 1987, and 1991 — United States**

	White			Black			Total§		
	1970	1987	1991	1970	1987	1991	1970	1987	1991
<b>Cigar smoking</b>									
Male (age in years)									
18-24	7.4	1.8	1.0	3.2	0.4	.	6.8	1.6	0.8
25-34	17.3	5.3	2.4	11.8	2.4	2.2	16.7	4.9	2.3
35-44	19.5	7.5	4.9	16.5	5.5	3.0	19.0	7.1	4.6
45-64	18.8	7.4	5.2	22.0	4.2	6.9	19.0	7.0	5.5
≥65	16.7	4.2	2.7	23.8	10.7	6.6	17.2	4.8	3.0
<b>Total</b>	<b>16.5</b>	<b>5.6</b>	<b>3.6</b>	<b>15.2</b>	<b>4.0</b>	<b>3.6</b>	<b>16.3</b>	<b>5.3</b>	<b>3.5</b>
Female (age in years)									
18-24	0.2	0.0	.	0.1	0.1	.	0.2	0.0	.
25-34	0.2	0.1	0.1	0.6	.	0.2	0.2	0.1	0.1
35-44	0.3	0.0	0.1	0.1	.	.	0.3	0.0	0.1
45-64	0.2	0.1	0.1	.	0.2	0.1	0.2	0.1	0.1
≥65	0.1	0.0	.	1.0	0.2	.	0.2	0.1	0.0
<b>Total</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>
<b>Pipe smoking</b>									
Male (age in years)									
18-24	8.7	0.7	0.3	4.3	0.3	.	8.1	0.8	0.2
25-34	14.6	1.8	0.8	9.5	2.3	0.6	13.9	2.0	0.8
35-44	14.0	4.1	2.7	10.2	4.0	2.3	13.5	4.0	2.7
45-64	14.4	5.2	3.0	14.3	4.4	1.8	14.3	5.1	3.0
≥65	14.8	4.4	3.2	17.0	7.9	2.4	14.9	4.7	3.1
<b>Total</b>	<b>13.5</b>	<b>3.4</b>	<b>2.1</b>	<b>10.8</b>	<b>3.4</b>	<b>1.4</b>	<b>13.1</b>	<b>3.4</b>	<b>2.0</b>
Female (age in years)									
18-24	0.1	.	0.1	.	.	.	0.1	.	0.0
25-34	0.0	0.2	0.0	0.2	.	.	0.0	0.1	0.0
35-44	0.2	0.1	0.1	0.2	.	.	0.2	0.1	0.0
45-64	0.1	0.0	0.0	0.6	.	.	0.1	0.0	0.0
≥65	0.1	.	0.0	2.6	.	.	0.3	.	0.0
<b>Total</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.5</b>	<b>.</b>	<b>.</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>
<b>Cigar or pipe smoking</b>									
Male (age in years)									
18-24	13.8	2.2	1.2	6.4	0.7	.	12.9	2.1	1.0
25-34	25.9	6.4	3.1	17.6	4.4	2.6	24.9	6.1	3.0
35-44	27.1	10.0	6.5	22.3	7.9	5.2	26.4	9.5	6.4
45-64	26.8	10.8	7.3	29.5	7.5	8.4	26.9	10.3	7.5
≥65	25.7	7.4	5.3	33.3	15.2	8.5	26.1	8.1	5.5
<b>Total</b>	<b>24.4</b>	<b>7.8</b>	<b>5.0</b>	<b>21.3</b>	<b>6.3</b>	<b>4.7</b>	<b>24.0</b>	<b>7.5</b>	<b>5.0</b>
Female (age in years)									
18-24	0.4	0.0	0.1	0.1	0.1	.	0.3	0.0	0.0
25-34	0.2	0.3	0.1	0.6	.	0.2	0.2	0.2	0.1
35-44	0.4	0.1	0.1	0.2	.	.	0.4	0.1	0.1
45-64	0.2	0.1	0.1	0.6	0.2	0.1	0.3	0.1	0.1
≥65	0.2	0.0	0.1	2.9	0.2	.	0.4	0.1	0.1
<b>Total</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.7</b>	<b>0.1</b>	<b>0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>

**TABLE 9. Percentage of adults\* who used† cigars, pipes, chewing tobacco, or snuff, by race, sex, and age, National Health Interview Surveys, 1970, 1987, and 1991 — United States — Continued**

	White			Black			Total§		
	1970	1987	1991	1970	1987	1991	1970	1987	1991
<b>Chewing tobacco use</b>									
Male (age in years)									
18-24	1.8	6.5	5.0	1.3	1.0	.	1.8	5.5	4.1
25-34	2.2	3.7	3.6	1.7	0.8	0.4	2.2	3.3	3.1
35-44	2.8	3.3	2.7	7.7	1.6	1.8	3.3	3.1	2.5
45-64	4.0	3.5	2.4	7.1	8.0	3.4	4.2	3.9	2.4
≥65	8.9	5.2	3.8	16.1	7.3	4.5	9.4	5.4	3.9
<b>Total</b>	<b>3.8</b>	<b>4.2</b>	<b>3.3</b>	<b>5.9</b>	<b>3.4</b>	<b>1.8</b>	<b>3.9</b>	<b>4.1</b>	<b>3.1</b>
Female (age in years)									
18-24	0.1	0.1	.	1.5	0.1	.	0.3	0.1	0.1
25-34	0.2	0.0	.	1.0	0.6	0.2	0.3	0.1	0.0
35-44	0.2	0.1	0.1	2.8	1.6	0.6	0.5	0.3	0.1
45-64	0.3	0.0	0.2	3.5	1.9	1.7	0.6	0.2	0.4
≥65	0.3	0.2	0.3	8.9	6.2	4.4	1.0	0.7	0.6
<b>Total</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>3.1</b>	<b>1.7</b>	<b>1.2</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Snuff use</b>									
Male (age in years)									
18-24	0.7	7.3	7.5	0.7	0.7	.	0.7	6.4	6.2
25-34	0.5	4.1	5.5	.	0.1	0.5	0.5	3.6	4.8
35-44	0.7	2.7	3.3	1.1	0.7	0.4	0.8	2.5	2.9
45-64	1.8	1.6	1.6	2.0	2.0	0.5	1.8	1.6	1.4
≥65	3.4	2.1	2.1	11.4	3.5	1.8	4.0	2.2	2.2
<b>Total</b>	<b>1.4</b>	<b>3.3</b>	<b>3.7</b>	<b>2.2</b>	<b>1.1</b>	<b>0.5</b>	<b>1.5</b>	<b>3.1</b>	<b>3.3</b>
Female (age in years)									
18-24	0.1	0.3	0.2	0.6	0.2	.	0.2	0.3	0.2
25-34	0.2	0.1	0.0	1.2	0.4	0.0	0.3	0.1	0.1
35-44	0.3	0.1	0.1	2.7	0.9	0.2	0.6	0.2	0.1
45-64	1.2	0.2	0.1	7.9	2.6	2.2	1.8	0.4	0.3
≥65	3.1	0.8	0.8	15.8	9.6	6.9	4.0	1.5	1.3
<b>Total</b>	<b>1.0</b>	<b>0.3</b>	<b>0.2</b>	<b>5.0</b>	<b>2.2</b>	<b>1.5</b>	<b>1.4</b>	<b>0.5</b>	<b>0.4</b>
<b>Chewing tobacco or snuff use</b>									
Male (age in years)									
18-24	2.2	10.4	10.1	1.5	1.0	.	2.2	8.9	8.4
25-34	2.7	6.9	7.9	1.7	0.8	0.7	2.5	6.0	6.9
35-44	3.5	5.1	5.4	7.7	2.3	2.1	3.9	4.8	4.9
45-64	5.6	4.7	3.8	8.8	8.4	3.8	5.8	5.0	3.7
≥65	11.8	6.6	5.5	24.5	9.5	6.0	12.7	6.9	5.6
<b>Total</b>	<b>5.0</b>	<b>6.4</b>	<b>6.2</b>	<b>7.4</b>	<b>3.8</b>	<b>2.2</b>	<b>5.2</b>	<b>6.1</b>	<b>5.6</b>
Female (age in years)									
18-24	0.2	0.4	0.2	2.0	0.3	.	0.4	0.3	0.2
25-34	0.3	0.1	0.0	1.9	0.7	0.2	0.5	0.2	0.1
35-44	0.5	0.1	0.1	4.6	1.8	0.8	1.0	0.3	0.2
45-64	1.4	0.2	0.3	10.9	3.8	3.5	2.3	0.6	0.6
≥65	3.3	0.9	1.0	23.2	13.4	9.9	4.8	1.9	1.7
<b>Total</b>	<b>1.2</b>	<b>0.3</b>	<b>0.3</b>	<b>7.5</b>	<b>3.2</b>	<b>2.4</b>	<b>1.8</b>	<b>0.6</b>	<b>0.6</b>

**TABLE 9. Percentage of adults\* who used† cigars, pipes, chewing tobacco, or snuff, by race, sex, and age, National Health Interview Surveys, 1970, 1987, and 1991 — United States — Continued**

\*Persons  $\geq 18$  years of age.

†For 1970, current use identified those persons who, for cigars, had smoked  $\geq 50$  cigars and currently smoked cigars; for pipes, had smoked  $\geq 3$  packages of pipe tobacco and currently smoked a pipe; for cigars or pipes, were current users of cigars or pipes; for chewing tobacco, currently used chewing tobacco; for snuff, currently used snuff; for chewing tobacco or snuff, were current users of chewing tobacco or snuff. For 1987 and 1991, current use identified those persons who, for cigars, had smoked  $\geq 50$  cigars and currently smoked cigars; for pipes, had smoked a pipe  $\geq 50$  times and currently smoked a pipe; for cigars or pipes, were current users of cigars or pipes; for chewing tobacco, had used chewing tobacco  $\geq 20$  times and currently used chewing tobacco; for snuff, had used snuff  $\geq 20$  times and currently used snuff; for chewing tobacco or snuff, were current users of chewing tobacco or snuff.

§Includes other, unknown, and multiple race.

0.0=Indicates a value  $>$ zero and  $< 0.05$ .

. Indicates a value of zero.

Source: National Health Interview Survey, 1970, 1987, and 1991.

Note: For any year and any age category, 95% confidence intervals do not exceed, for cigar smoking,  $\pm 1.1\%$  for white men,  $\pm 4.9\%$  for black men,  $\pm 1.1\%$  for all men,  $\pm 0.2\%$  for white women,  $\pm 1.4\%$  for black women, and  $\pm 0.2\%$  for all women; for pipe smoking,  $\pm 1.3\%$  for white men,  $\pm 4.1\%$  for black men,  $\pm 1.2\%$  for all men,  $\pm 0.1\%$  for white women,  $\pm 2.0\%$  for black women, and  $\pm 0.2\%$  for all women; for cigar or pipe smoking,  $\pm 1.5\%$  for white men,  $\pm 5.0\%$  for black men,  $\pm 1.4\%$  for all men,  $\pm 0.3\%$  for white women,  $\pm 2.1\%$  for black women, and  $\pm 0.3\%$  for all women; for chewing tobacco use,  $\pm 1.3\%$  for white men,  $\pm 4.3\%$  for black men,  $\pm 1.2\%$  for all men,  $\pm 0.2\%$  for white women,  $\pm 3.6\%$  for black women, and  $\pm 0.4\%$  for all women; for snuff use,  $\pm 1.6\%$  for white men,  $\pm 3.5\%$  for black men,  $\pm 1.3\%$  for all men,  $\pm 0.6\%$  for white women,  $\pm 3.8\%$  for black women, and  $\pm 0.6\%$  for all women; for chewing tobacco or snuff use,  $\pm 1.6\%$  for white men,  $\pm 4.7\%$  for black men,  $\pm 1.5\%$  for all men,  $\pm 0.6\%$  for white women,  $\pm 4.1\%$  for black women, and  $\pm 0.7\%$  for all women.

**TABLE 10. Current cigarette smoking\* prevalence (%) among adults,† Behavioral Risk Surveillance System, participating states — United States, 1984–1992§**

State	1984	1985	1986	1987	1988	1989	1990	1991	1992
Alabama	—	—	24.6	27.2	26.2	21.9	22.4	22.0	21.8
Alaska	—	—	—	—	—	—	—	25.9	28.0
Arizona	27.7	26.4	24.4	26.2	23.5	25.2	20.7	23.7	19.2
Arkansas	—	—	—	—	—	—	—	26.5	—
California	25.6	25.6	24.5	21.3	22.2	21.4	19.7	19.6	19.4
Colorado	—	—	—	—	—	—	21.3	23.5	23.1
Connecticut	—	26.7	—	—	26.7	26.6	22.2	22.4	22.1
Delaware	—	—	—	—	—	—	23.3	25.9	26.5
District of Columbia	—	26.0	26.6	24.2	20.0	21.9	19.4	21.5	18.7
Florida	—	27.2	27.9	28.0	23.9	24.6	23.6	24.6	22.1
Georgia	—	28.7	27.2	25.0	25.1	23.2	24.0	21.7	19.1
Hawaii	—	—	24.4	22.5	23.6	21.8	21.1	20.4	19.5
Idaho	24.5	23.7	23.4	20.5	20.1	19.2	20.4	21.1	18.7
Illinois	33.6	26.2	27.8	25.8	26.8	25.6	24.2	23.6	23.6
Indiana	25.7	32.2	27.2	28.7	27.3	27.0	26.6	24.4	27.0
Iowa	—	—	—	—	22.3	22.7	21.7	20.9	19.3
Kansas	—	—	—	—	—	—	—	—	22.3
Kentucky	—	29.3	34.7	32.3	34.2	30.4	29.1	30.2	27.9
Louisiana	—	—	—	—	—	—	24.9	24.2	24.2
Maine	—	—	—	27.7	26.4	27.2	26.9	26.1	23.2
Maryland	—	—	—	24.8	25.1	22.0	22.0	21.7	19.9
Massachusetts	—	—	27.0	26.4	26.4	23.6	23.5	22.5	22.9
Michigan	—	—	—	—	26.2	27.5	29.1	27.5	25.1
Minnesota	26.5	27.8	25.1	24.3	22.5	21.0	21.4	23.3	21.4
Mississippi	—	—	—	—	—	—	24.1	24.1	23.5
Missouri	—	—	25.7	29.2	26.0	25.9	26.2	25.1	23.3
Montana	28.9	24.6	23.0	22.3	19.7	19.4	19.4	21.0	18.0
Nebraska	—	—	—	24.0	20.9	22.3	22.7	22.0	17.4
Nevada	—	—	—	—	—	—	—	—	30.5
New Hampshire	—	—	—	26.6	28.0	24.8	22.0	23.8	22.8
New Jersey	—	—	—	—	—	—	—	22.4	20.1
New Mexico	—	—	26.1	20.9	23.8	22.1	22.3	16.4	19.6
New York	—	31.4	27.0	23.2	23.9	23.4	22.5	22.9	22.1
North Carolina	28.6	27.4	26.5	26.1	26.2	26.5	28.0	23.9	26.4
North Dakota	—	25.3	26.0	23.7	22.1	20.4	20.3	19.8	21.9
Ohio	28.7	28.7	28.0	26.8	26.2	26.6	26.1	22.9	23.4
Oklahoma	—	—	—	—	24.2	26.7	26.6	25.0	25.6
Oregon	—	—	—	—	—	23.4	21.9	20.6	20.8
Pennsylvania	—	—	—	—	—	27.0	23.6	25.3	24.4
Rhode Island	31.3	29.4	30.2	24.3	24.3	26.1	25.7	24.9	22.2
South Carolina	26.2	29.2	26.5	25.3	25.6	24.2	24.9	22.8	26.7
South Dakota	—	—	—	25.2	21.1	21.8	20.7	22.8	21.9
Tennessee	25.1	27.5	28.0	27.7	29.8	27.0	26.7	28.2	26.6
Texas	—	—	—	23.0	23.7	21.8	22.9	21.8	22.0
Utah	16.1	15.6	18.2	15.0	14.7	16.4	16.8	14.3	15.6
Vermont	—	—	—	—	—	—	21.6	21.6	21.7
Virginia	—	—	—	—	—	25.0	22.6	21.5	22.8
Washington	—	—	—	23.7	24.6	24.2	22.3	23.1	21.2
West Virginia	32.8	26.7	29.1	28.8	26.7	27.6	26.6	25.2	24.5
Wisconsin	27.4	24.6	26.0	26.0	24.3	26.0	24.7	26.4	22.5

**TABLE 10. Current cigarette smoking\* prevalence (%) among adults,† Behavioral Risk Surveillance System, participating states — United States, 1984–1992,§ — Continued**

State	1984	1985	1986	1987	1988	1989	1990	1991	1992
Median	27.4	26.9	26.5	25.2	24.3	24.2	22.7	23.0	22.2
Range									
Low	16.1	15.6	18.2	15.0	14.7	16.4	16.8	14.3	15.6
High	33.6	32.2	34.7	32.3	34.2	30.4	29.1	30.2	30.5
States participating	15	22	26	33	37	40	45	48	49

\*Current cigarette smokers were persons who a) reported ever smoking  $\geq 100$  cigarettes and currently smoked and b) did not volunteer that they are occasional smokers when asked to report the average number of cigarettes they smoke daily.

†Persons  $\geq 18$  years of age.

§No data were available for Wyoming.

Note: Ranges of 95% confidence intervals: 1984 ( $\pm 2.5\%$  to  $\pm 4.8\%$ ), 1985 ( $\pm 2.0\%$  to  $\pm 4.3\%$ ), 1986 ( $\pm 1.7\%$  to  $\pm 4.1\%$ ), 1987 ( $\pm 1.6\%$  to  $\pm 3.0\%$ ), 1988 ( $\pm 1.5\%$  to  $\pm 3.2\%$ ), 1989 ( $\pm 1.5\%$  to  $\pm 2.9\%$ ), 1990 ( $\pm 1.5\%$  to  $\pm 3.7\%$ ), 1991 ( $\pm 1.5\%$  to  $\pm 3.2\%$ ), 1992 ( $\pm 1.4\%$  to  $\pm 3.4\%$ ).

**TABLE 11. Percentage of adults\* who used smokeless tobacco,† by sex, Behavioral Risk Factor Surveillance System, participating states — United States, 1987–1992§**

State	1987			1988			1989			1990			1991			1992		
	Total	Male	Female															
Alabama	6.2	10.6	2.2	6.9	11.5	2.7	—	—	—	—	—	—	6.4	11.3	2.0	5.6	10.8	1.1
Alaska	—	—	—	—	—	—	—	—	—	—	—	—	5.4	9.4	0.9	5.4	9.0	1.4
Arizona	3.0	6.1	0.1	3.0	5.5	0.6	—	—	—	—	—	—	—	—	—	—	—	—
California	0.9	1.7	0.1	1.3	2.5	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Colorado	—	—	—	—	—	—	—	—	—	4.1	8.3	0.1	4.2	8.4	0.0	—	—	—
Connecticut	—	—	—	0.9	1.7	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Delaware	—	—	—	—	—	—	—	—	—	—	—	—	1.4	3.0	0.0	—	—	—
D.C.	0.8	1.5	0.2	0.6	0.6	0.6	—	—	—	—	—	—	—	—	—	—	—	—
Florida	2.7	4.4	1.1	2.5	5.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Georgia	4.2	7.0	1.7	3.0	4.0	2.1	—	—	—	5.2	9.0	1.8	4.4	6.5	2.6	4.4	5.8	3.2
Hawaii	0.6	1.3	0.0	0.8	1.6	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	5.1	10.0	0.5	3.8	7.7	0.0	—	—	—	—	—	—	—	—	—	4.4	8.8	0.3
Illinois	1.9	3.8	0.2	1.7	3.3	0.3	—	—	—	—	—	—	—	—	—	—	—	—
Indiana	3.6	7.4	0.2	3.6	7.4	0.2	2.7	5.5	0.0	3.1	6.4	0.1	3.4	7.1	0.1	3.2	6.5	0.1
Iowa	—	—	—	2.9	5.6	0.5	4.7	9.8	0.0	3.0	6.1	0.1	4.1	8.6	0.0	4.1	8.7	0.0
Kansas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.4	9.2	0.0
Kentucky	4.6	8.8	0.8	6.1	11.9	0.9	—	—	—	—	—	—	—	—	—	—	—	—
Louisiana	—	—	—	—	—	—	—	—	—	3.6	5.9	1.4	—	—	—	—	—	—
Maine	2.7	5.7	0.0	1.6	3.3	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Maryland	0.3	0.5	0.0	0.1	0.2	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Massachusetts	0.5	0.9	0.1	0.2	0.5	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	—	—	—	3.4	6.0	1.0	—	—	—	—	—	—	—	—	—	—	—	—
Minnesota	3.4	7.1	0.0	3.3	6.6	0.2	—	—	—	—	—	—	—	—	—	—	—	—
Mississippi	—	—	—	—	—	—	—	—	—	8.7	15.8	2.4	—	—	—	—	—	—
Missouri	2.9	5.8	0.3	2.6	5.2	0.3	—	—	—	3.6	7.1	0.4	3.2	6.8	0.0	—	—	—
Montana	6.5	13.1	0.2	7.9	15.4	0.1	6.3	12.2	0.6	7.6	15.4	0.0	7.9	15.3	0.6	7.2	14.4	0.3
Nebraska	4.2	8.6	0.2	4.4	8.8	0.3	3.8	8.0	0.0	4.5	9.5	0.0	4.2	8.6	0.2	4.7	9.9	0.0
New Hampshire	0.9	1.7	0.1	0.9	2.0	0.0	0.7	1.4	0.0	1.7	3.4	0.0	—	—	—	—	—	—
New Mexico	3.0	5.8	0.4	4.3	8.5	0.4	—	—	—	3.9	7.7	0.3	3.2	6.5	0.0	3.3	6.9	0.0
New York	0.6	1.2	0.2	0.6	0.5	0.7	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	5.8	8.4	3.4	5.4	7.6	3.5	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	5.0	10.0	0.1	3.9	7.8	0.1	—	—	—	—	—	—	4.1	8.2	0.0	—	—	—
Ohio	3.1	6.4	0.1	3.2	6.4	0.3	2.7	5.4	0.2	2.2	4.6	0.0	3.8	7.2	0.8	—	—	—
Oklahoma	5.1	10.3	0.3	—	—	—	—	—	—	5.4	10.7	0.5	6.2	12.6	0.3	5.4	11.4	0.0
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—	4.1	8.7	0.0	—	—	—
Rhode Island	0.5	1.1	0.0	0.5	0.9	0.1	—	—	—	—	—	—	—	—	—	—	—	—
South Carolina	6.1	10.7	1.8	4.7	8.0	1.6	—	—	—	—	—	—	—	—	—	—	—	—
South Dakota	4.6	9.3	0.1	4.9	10.0	0.0	—	—	—	5.0	10.2	0.1	—	—	—	—	—	—

**TABLE 11. Percentage of adults\* who used smokeless tobacco,<sup>†</sup> by sex, Behavioral Risk Factor Surveillance System, participating states — United States, 1987–1992<sup>§</sup> — Continued**

State	1987			1988			1989			1990			1991			1992		
	Total	Men	Women															
Tennessee	5.9	10.4	1.8	4.5	8.3	1.0	—	—	—	—	—	—	—	—	—	—	—	—
Texas	5.6	10.9	0.6	4.1	7.7	0.5	—	—	—	—	—	—	—	—	—	—	—	—
Utah	2.4	4.9	0.0	1.0	2.0	0.0	—	—	—	—	—	—	—	—	—	—	—	—
Vermont	—	—	—	—	—	—	—	—	—	—	—	—	1.6	3.3	0.0	—	—	—
Washington	3.7	7.1	0.3	2.2	4.5	0.0	—	—	—	—	—	—	—	—	—	2.7	5.3	0.1
West Virginia	8.3	17.0	0.4	9.7	19.5	0.8	8.6	17.7	0.4	8.1	16.6	0.3	9.0	18.1	0.7	9.0	18.8	0.4
Wisconsin	2.7	5.3	0.2	2.3	4.6	0.1	2.2	4.4	0.1	—	—	—	—	—	—	—	—	—
Median	3.1	6.4	0.2	3.0	5.6	0.3	3.3	6.6	0.1	4.1	8.3	0.1	4.1	8.4	0.1	4.4	9.0	0.1
Range																		
Low	0.3	0.5	0.0	0.1	0.2	0.0	0.7	1.4	0.0	1.7	3.4	0.0	1.4	3.0	0.0	2.7	5.3	0.0
High	8.3	17.0	3.4	9.7	19.5	3.5	8.6	17.7	0.6	8.7	16.6	2.4	9.0	18.1	2.6	9.0	18.8	3.2
States participating	34			36			8			15			17			13		

\* Persons ≥18 years of age.

<sup>†</sup> Smokeless-tobacco users were persons who reported ever using smokeless tobacco (i.e., chewing tobacco or snuff) and who currently used smokeless-tobacco products.

<sup>§</sup> No data were available for Arkansas, Nevada, New Jersey, Oregon, Virginia, and Wyoming.

Note: Ranges of 95% confidence intervals: 1987 total (±0.3% to ±2.0%), men (±0.7% to ±3.8%), women (±0.0% to ±1.2%); 1988 total (±0.2% to ±2.8%), men (±0.5% to ±5.3%), women (±0.0% to ±2.1%); 1989 total (±0.2% to ±1.8%), men (±1.0% to 3.5%), women (±0.0% to ±0.9%); 1990 total (±0.8% to ±1.9%), men (±1.6% to ±3.7%), women (±0.0% to ±1.5%); 1991 total (±0.7% to ±1.8%), men (±1.5% to ±3.6%), women (±0.0% to ±1.2%); 1992 total (±0.8% to ±2.1%), men (±1.5% to ±3.7%), women (±0.0% to ±1.1%).

## Daily Smoking Among U.S. High School Seniors

Among U.S. high school seniors, the overall prevalence of daily smoking was approximately 35% lower in 1984 than in 1976 but approximately 2% higher in 1993 than in 1984 (Table 12). In contrast, among adults (Table 2), current smoking prevalence in 1991 was about 20% lower than in 1983. Similarly, the percentage changes between 1984 and 1993 for daily smoking among white (+14%) and male (+21%) high school seniors were substantially different from the changes observed between 1983 and 1991 for current smoking among white (-20%) and male (-20%) adults. Among female high school seniors, on the other hand, the prevalence of daily smoking was 11% lower in 1993 than in 1984; among adult women between 1983 and 1991, the decrease in current smoking was even more pronounced (20%). The most notable reduction in daily smoking among high school seniors was among blacks: their self-reported prevalence was 51% lower in 1993 than in 1984. Between 1983 and 1991, the reduction in current smoking was less pronounced among black adults (19%).

## DISCUSSION

### Cigarette Consumption

U.S. Department of Agriculture data on per capita cigarette consumption present an objective measure of cigarette smoking in the United States. With the exceptions of 1920, the first few years of the Great Depression, and the end of World War II, per capita consumption of cigarettes in the United States increased steadily from 1901 through 1952. This period was characterized by a marked increase in the advertising of cigarette products (15,45), by the glamorization of smoking in Hollywood-produced movies (45), and by the paucity of health warnings about the dangers of cigarette smoking (1). When reports (and subsequent articles in the popular press) from the first medical studies on the dangers of smoking were published in the early 1950s (1,46), per capita consumption declined substantially (1). The tobacco industry responded to these concerns with claims that their products were safe, with promises to conduct research on the relationship between cigarette smoking and health, and with the introduction of filter cigarettes (1,47). These activities likely resulted in renewed increases in per capita consumption in the mid-1950s.

Per capita consumption continued to increase until 1963. In 1964, the publication year of the landmark report of the Surgeon General's Advisory Committee on Smoking and Health (48), consumption decreased. After that year, however, consumption slowly increased again until 1967, which ushered in a 4-year period of reduced consumption. The period 1967-1970 marked the last years that tobacco manufacturers were permitted to advertise their products on radio and television; yet it was also the period when the Federal Communications Commission applied the Fairness Doctrine to cigarette advertising. This doctrine required television and radio stations to donate air time for health-promoting messages. When the advertising ban on tobacco products went into effect on January 2, 1971, the free spots for anti-smoking messages vanished along with the paid spots for cigarette advertisements.

Per capita consumption of cigarettes rose during the next 2 years but has declined every year since. Much of this decline is attributable to an increased public awareness of a) the health hazards associated with smoking, involuntary smoking, and use of smokeless tobacco; b) the benefits of smoking cessation; c) the addictive properties of

**TABLE 12. Prevalence of daily cigarette smoking\* among high school seniors, by sex and race, Monitoring the Future Project — United States, 1976–1993**

Year	Total	Sex		Race	
		Male	Female	White	Black
1976	28.8	28.0	28.8	28.8	26.8
1977	28.9	27.2	30.1	29.0	23.7
1978	27.5	25.9	28.3	27.8	22.2
1979	25.4	22.3	27.9	25.8	19.3
1980	21.4	18.5	23.5	21.8	15.7
1981	20.3	18.1	21.7	20.9	13.6
1982	21.0	18.2	23.2	22.4	12.4
1983	21.1	19.2	22.1	21.9	12.6
1984	18.7	16.0	20.5	20.1	9.0
1985	19.5	17.8	20.6	20.7	10.8
1986	18.7	16.9	19.8	20.4	7.8
1987	18.7	16.4	20.6	20.6	8.1
1988	18.1	17.4	18.1	20.5	6.7
1989	18.9	17.9	19.4	21.7	6.0
1990	19.1	18.7	19.3	21.8	5.4
1991	18.4	18.8	17.9	21.1	4.9
1992	17.2	17.2	16.7	19.9	3.7
1993	19.0	19.4	18.2	22.9	4.4
Percentage point difference					
1976–1993	- 9.8	- 8.6	-10.6	- 5.9	-22.4
1976–1984	-10.1	-12.0	- 8.3	- 8.7	-17.8
1984–1993	+ 0.3	+ 3.4	- 2.3	+ 2.8	- 4.6
Percentage change					
1976–1993	-34.0	-30.7	-36.8	-20.5	-83.6
1976–1984	-35.1	-42.9	-28.8	-30.2	-66.4
1984–1993	+ 1.6	+21.2	-11.2	+13.9	-51.1

\*Daily cigarette smokers were persons who reported smoking  $\geq 1$  cigarettes per day during the 30 days before the survey.

Source: University of Michigan, Institute for Social Research, Monitoring the Future Project. References 27–43 and unpublished data.

Note: For any year, 95% confidence intervals do not exceed  $\pm 1.3\%$  for the total population,  $\pm 1.6\%$  for males,  $\pm 1.6\%$  for females,  $\pm 1.4\%$  for whites, and  $\pm 3.5\%$  for blacks.

tobacco products; and d) the risk of premature death due to tobacco use (1,2,8,9,49–52). Also instrumental in reducing tobacco consumption have been the increased availability of interventions that both prevent and treat nicotine addiction and the increased presence of laws and policies to prevent the initiation of tobacco use, encourage cessation, and protect nonsmokers (1,2,8,15). Declines in consumption may also be attributed to the effects of the nonsmokers' rights movement and to increases since 1981 in the real price (i.e., the price adjusted for inflation) of cigarettes (1,15).

The overall effect of these various components of the antismoking campaign that began with the release of the 1964 Surgeon General's report has been a substantial decline in per capita consumption. Results from one analysis have suggested that the level of per capita cigarette consumption observed in 1987 was from 53% to 56% of what would have been expected in the absence of the antismoking campaign (1).

In 1900, 7.4 total pounds of tobacco were consumed per capita (ages  $\geq 15$  years) in the United States: 2% as cigarettes, 4% as snuff, 27% as cigars, 19% as smoking tobacco (pipe and roll-your-own), and 48% as chewing tobacco (53). By 1952, 12.9 pounds of tobacco were consumed per capita: 81% as cigarettes, 3% as snuff, 10% as cigars, 4% as smoking tobacco, and 3% as chewing tobacco (53). The per capita consumption of cigarettes in 1952 (10.41 pounds) was 10.25 pounds greater than in 1900 (0.16 pounds) (53). The per capita consumption of all other forms of tobacco was 4.76 pounds less in 1952 (2.51 pounds) than in 1900 (7.27 pounds). Thus, 5.49 pounds, or 54% of the increase in per capita consumption of cigarettes since 1900, can be considered as additional tobacco consumption. The other 46% of the increase may be regarded as a shift from other tobacco products to cigarettes. In 1991, 5.1 pounds of tobacco were consumed per capita (19,54):\* 87% as cigarettes, 4% as snuff, 4% as cigars, 1% as smoking tobacco, and 5% as chewing tobacco.†

### Cigarette Smoking Prevalence

Birth cohort analyses demonstrate that for U.S. males, smoking prevalence peaked in the 1940s and 1950s at approximately 67% for the cohort born during the period 1911–1930 (2). For females, smoking prevalence peaked in the 1960s at about 44% for the 1931–1940 birth cohort. In the absence of the antismoking campaign, the peak prevalences observed for U.S. males would likely have declined less rapidly after the 1940s, and the peak prevalences among females would likely have risen to a higher level (1).

Prevalence data collected since 1965 indicate that the gap between men and women has decreased markedly in the past 25 years. This trend seems more pronounced when data from the 1955 Current Population Survey are considered (6,8). In 1955, 54% of men and 24% of women were cigarette smokers; in contrast, the 1991 NHIS (Table 2) found that 28% of men and 24% of women were smokers. In 1989, researchers used data from the 1974–1985 NHIS and predicted that if trends observed at that time continued, more women than men would be smoking by 1995 (55). A more recent analysis, based on data from 1974 through 1991, suggested that cigarette-smoking prevalence among U.S. women would likely exceed that of men

\*The USDA published an estimate of 5.4 pounds per capita (ages  $\geq 18$  years) total tobacco consumption for 1991 (19). The 1991 estimate of 5.1 pounds per capita presented here was calculated, for comparison purposes, for persons ages  $\geq 15$  years.

†These calculations multiply the published number of pounds of snuff, smoking tobacco, and chewing tobacco by 0.68 to obtain the unstemmed processing weight.

only after the year 2000 (56). But if the recent parallel rate of decline observed from 1983 through 1991 continues (Table 2), the prevalences may not cross at all.

The major reason for the different projections from more recent surveys is the marked decline in smoking prevalence among women ages 20–24 years with  $\leq 12$  years of education (from 46% in 1983 to 31% in 1991) (Table 5). This finding is consistent with data from other surveys that indicate that the prevalence of cigarette smoking among adolescent females, which since at least the 1970s has been higher than the prevalence among adolescent males, has continued to decline in recent years and is now similar to that among adolescent males (15) (Table 12). Further research, including separate analyses of high school dropouts, should be conducted to determine the reason for this trend.

For years, the differences in prevalence of cigarette smoking observed among black and white adults (Table 2) generally have been seen only in males, with both black and white males being substantially more likely to smoke than black and white females (10) (Table 7). Data show that although blacks are more likely to be current smokers, they are also more likely to have never smoked. Thus, although a smaller proportion of blacks have ever smoked, those who do take up smoking are less likely to quit (9) (Tables 2,6). Also, blacks who try to quit are more likely to resume smoking (57,58).

The year 1991 was the first in more than 25 years of observations when more than half of the U.S. adult population had either smoked no cigarettes or had smoked  $< 100$  cigarettes (Table 2). Specifically, most women, blacks, Hispanics, persons ages 18–44 years and  $\geq 65$  years of age, and persons with  $\geq 16$  years of education had never smoked. Continuing this trend is important because preventing smoking initiation is an important way to reduce smoking-attributable mortality (15).

### **Number of Smokers**

The finding that the actual number of cigarette smokers is not declining in some groups, even though prevalence is declining, is a result of population increases. For example, the population of civilian, noninstitutionalized adults (for whom smoking status was known) increased from approximately 118 million persons in 1965 to approximately 180 million persons in 1991 (Table 3).

### **Intensity of Smoking**

The percentage of current heavy smokers (those who reported that they smoke  $\geq 25$  cigarettes a day) increased slightly from 1974 to 1980 but has decreased since. This measure has been used to monitor the proportion of current smokers who are hard-core smokers (i.e., persons who are less able to quit and less interested in quitting) (1). However, the increasing spread of restrictions on where persons can smoke has probably contributed to a decline in the average number of cigarettes smoked per day (1,59), independent of the proportion of hard-core smokers. Also, the nicotine yield of cigarettes smoked in the United States declined from the 1950s to the early 1980s and subsequently increased slightly (1). Smokers may have compensated for the reduced nicotine of cigarettes before the early 1980s by smoking more cigarettes per day (1,8). The need for this compensation may have declined after the nicotine yield of cigarettes stopped declining in the 1980s. Also, increases in the real price (i.e., the price adjusted for inflation) of cigarettes since 1981 (15) may have also contributed to the decline in the proportion of smokers who are heavy smokers.

Trends in both interest in cessation and diseases or conditions related to tobacco use (e.g., the prevalences of depression, other psychiatric conditions, heavy alcohol use, and drug abuse among smokers) should also be monitored to better assess the proportion of smokers who are hard-core smokers (56,60).

An alternative method for estimating the average number of cigarettes smoked each day by U.S. smokers has been described (61). This methodology divides the U.S. Department of Agriculture's estimate for yearly per capita consumption by 365 (to obtain an estimate of daily per capita consumption), and divides the result by the proportion of the population  $\geq 18$  years of age that currently smokes. For example, dividing the 1990 estimate of per capita consumption (2,817) by 365 yields a U.S. per capita estimate of 7.7 cigarettes smoked per day. Dividing this estimate by the proportion of the population  $\geq 18$  years of age that currently smoked in 1990 (e.g., 0.255 [Table 2]) yields a consumption/prevalence-based estimate of 30.3 cigarettes smoked daily by current smokers (versus 19.1 cigarettes per day based on self-report [Table 4]).

The consumption/prevalence-based estimate does not include the cigarettes smoked by persons ages  $< 18$  years and by former smokers who have quit within the previous year. It also does not incorporate the slight underreporting of current smoking prevalence that occurs in population-based surveys (9). These three factors will artifactually increase slightly the consumption/prevalence-based estimate of the number of cigarettes smoked daily by current smokers. The self-reported estimates are probably lowered substantially by a tendency to round down to a preferred digit (1).

Regardless of these limitations, the estimates obtained by using self-report and those obtained by using a consumption/prevalence approach both increased by 1.3 to 1.4 cigarettes per day from 1974 through 1978-80 and decreased by 2.7 to 3.0 cigarettes per day from 1980 through 1994 (Table 4) (61).

### **Prevalence of Cigarette Smoking Among Young Adults**

The prevalence of self-reported cigarette smoking among black adolescents and young adults (i.e., persons ages 18–24 years) has been decreasing much more rapidly than among their white counterparts (10,15,62) (Tables 5,12). This finding is true for both sexes (10,62). Both in-school and out-of-school (i.e., drop outs) black adolescents are less likely to report current smoking than are their white counterparts (15); the differences appear to hold after controlling for various sociodemographic differences (63). One explanation for some of the difference may be differential misclassification of smoking behavior, with black adolescent smokers being more likely than white adolescent smokers to misclassify themselves as nonsmokers (64). Further research on this topic, including studies of whether misclassification has changed by race over time, is warranted.

The decreasing prevalence among blacks ages 18–24 years suggests that the trends seen among black adolescents are continuing into young adulthood and that the later age of initiation generally seen in black populations does not account for the large decline observed among black adolescents (65).

### **Prevalence of Cessation**

This report updates earlier findings that the prevalence of cessation among men and women has increased at about the same rate (1,9,12). Although this proportion has remained higher for men, the absolute differences would be within two percentage points if this estimate were adjusted for the finding that U.S. male smokers are

more likely to either switch to or continue using cigars, pipes, chewing tobacco, or snuff after quitting cigarette smoking (9). In addition, men started quitting earlier in the century than did women. Recent reports also support the conclusion that women are as likely to quit as are men (57,66). Our knowledge of the patterns and predictors of smoking cessation (whether for men or women) would benefit from a prospective study that used a probability sample of the U.S. population of smokers to analyze the natural history of quitting smoking.

### **Prevalence of Tobacco Use, 1987–1991**

Among racial/ethnic groups, the pronounced prevalence of tobacco use among AI/ANs strongly suggests these groups' need for targeted interventions for the prevention and cessation of tobacco use. Although the prevalence of cigarette smoking is notably low among A/PI women, this population should be monitored to determine if recent immigrants tend to adopt smoking patterns similar to women in the United States.

Between 1970 and 1987, substantial increases in the prevalence of chewing tobacco and snuff use were observed among young white males (Table 9). This pattern suggests that the coincident, extensive marketing of smokeless tobacco products through advertising and promotional campaigns that appeal to young white males had had some effect (1,15). In 1986, however, advertising for smokeless tobacco products on radio and television was banned, and smokeless tobacco has since received increased public health and media attention (1,15). The prevalence of smokeless tobacco use among male adolescents and young adults appeared to have stabilized by the early 1990s. The finding that black men and women have higher mortality rates from oral cancer than white men and women (67) can partially be accounted for by the higher prevalences, during the past two decades, of smokeless tobacco use among older black men and women than among older white men and women. Race-specific differences in cigarette smoking prevalence, alcohol consumption, and dietary intake may also explain some of the observed differences (67).

### **State-level Prevalences of Tobacco Use**

Further analyses are needed to assess the lack of progress in reducing smoking prevalence in some states (Table 10). Trends in prevalence should be assessed by sex, race, age, and levels of education to provide a more complete picture of this phenomenon.

State-specific prevalence estimates for cigarette smoking and other forms of tobacco use from the 1985 and 1989 Current Population Surveys have also been published (68–70).

### **Daily Smoking Among U.S. High School Seniors**

Data from the Monitoring the Future Project (Table 12) are consistent with other data from high school seniors that demonstrate a lack of progress in preventing white and male adolescents from starting smoking (15). Cigarette advertising and promotion campaigns could have influenced initiation among these groups (15).

### **Actions Taken**

CDC will continue to conduct surveys to monitor tobacco use among adults and adolescents. The NHIS will measure tobacco-use behaviors throughout the 1990s to

monitor progress in achieving the national health objectives for the year 2000 (16). If current trends continue, the overall objective of reducing adult cigarette smoking prevalence to 15% will not be achieved (56).

Recent data indicate that approximately 15% of current U.S. smokers do not smoke cigarettes every day. Thus, CDC has expanded the NHIS definition of a current smoker to include this more occasional pattern of smoking. This more comprehensive measure may raise the estimated prevalence by approximately one percentage point (71).

In 1989, the Teenage Attitudes and Practices Survey (TAPS) provided in-depth information on patterns of tobacco use among U.S. adolescents (15). In 1993 follow-up interviews of the 1989 sample monitored possible factors influencing the initiation of tobacco use.

Existing programmatic activities focus on the prevention of nicotine addiction, the cessation of tobacco use, and the protection of nonsmokers from exposure to environmental tobacco smoke (ETS) (72). The national health objectives for the year 2000 call for dissemination of effective school health education programs (*Healthy People 2000* objective 3.10), the provision of tobacco-free schools (objective 3.10), more states enacting laws (objective 3.12) and worksite policies (objective 3.11) that protect nonsmokers from ETS, the restriction or elimination of tobacco-product advertising and promotion to which youth are likely to be exposed (objective 3.15), the effective prohibition of tobacco sales to young people (objective 3.13), the implementation of tobacco-control plans in every state (objective 3.14), and the increased use of cessation strategies by health-care providers for their patients who use tobacco (objective 3.16) (16). In addition, the potential increase in the excise taxes on tobacco products is likely to reduce consumption and subsequent mortality (73).

CDC has recently funded tobacco-control efforts in 32 states and the District of Columbia as part of its state Initiatives to Mobilize for the Prevention and Control of Tobacco Use (State IMPACT) program. The National Cancer Institute has funded 17 states as part of the American Stop Smoking Intervention Study for Cancer Prevention (Project ASSIST). California helps fund its antismoking programs by using monies from its excise tax initiative. These programs are designed to disseminate effective tobacco-control interventions (1,2,15,52). For the first time, every state and the District of Columbia have a dedicated tobacco-control program.

The most recent Surgeon General's report, *Preventing Tobacco Use Among Young People*, contains information that can further guide prevention activities (15). This report has been supplemented by a special publication, *SGR4KIDS*, which summarizes the findings of the report in a magazine-style format that is targeted to adolescents (74). In addition, CDC recently published *Guidelines for School Health Programs to Prevent Tobacco Use and Addiction* (75), which should facilitate the dissemination of effective tobacco-prevention education programs and tobacco-free policies for schools. CDC is also working with the Center for Substance Abuse Prevention to assess the effectiveness of Federal legislation (PL 102-321) designed to prohibit the sale and distribution of tobacco products to minors. In addition, the Agency for Health Care Policy and Research is developing clinical practice guidelines on smoking cessation (76).

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### References

1. CDC. Reducing the health consequences of smoking: 25 years of progress—a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1989; DHHS publication no. (CDC)89-8411.
2. US Department of Health and Human Services. Strategies to control tobacco use in the United States—a blueprint for public health action in the 1990s. Bethesda, MD: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, 1991; NIH publication no. 92-3316.
3. Brown CC, Kessler LG. Projections of lung cancer mortality in the United States: 1985-2005. *J Natl Cancer Inst* 1988;80:43-51.
4. Novotny TE, Fiore MC, Hatziandreu E, Giovino GA, Mills SL, Pierce JP. Trends in smoking by age and gender: United States, 1974-1987—the implications for disease impact. *Prev Med* 1990;19:552-61.
5. Pierce JP. Progress and problems in international public health efforts to reduce tobacco usage. *Ann Rev Public Health* 1991;12:383-400.
6. US Department of Health, Education, and Welfare. Tobacco smoking patterns in the United States: public health monograph No. 45. Washington, DC: US Department of Health, Education, and Welfare, Public Health Service, 1955; DHEW publication no. (PHS)463.
7. US Department of Health, Education, and Welfare. Smoking and health: a report of the Surgeon General. Washington, DC: US Department of Health, Education, and Welfare, Public Health Service, Office on Smoking and Health, 1979; DHEW publication no. (PHS)79-50066.
8. CDC. The health consequences of smoking: nicotine addiction—a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1988; DHHS publication no. (CDC)88-8406.
9. CDC. The health benefits of smoking cessation: a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1990; DHHS publication no. (CDC)90-8416.
10. National Center for Health Statistics. Health, United States, 1992. Hyattsville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1993; DHHS publication no. (PHS)93-1232.
11. National Center for Health Statistics. Changes in cigarette smoking habits between 1955 and 1966. Rockville, MD: US Department of Health, Education, and Welfare, Public Health Service, 1970; PHS publication no. (PHS)1000. (Vital and health statistics; series 10, no. 59).
12. Fiore MC, Novotny TE, Pierce JP, Hatziandreu EJ, Patel KM, Davis RM. Trends in cigarette smoking in the United States: the changing influence of gender and race. *JAMA* 1989;261:49-55.
13. Pierce JP, Fiore MC, Novotny TE, Hatziandreu EJ, Davis RM. Trends in cigarette smoking in the United States: educational differences are increasing. *JAMA* 1989;261:56-60.
14. McGinnis JM, Shopland D, Brown C. Tobacco and health: trends in smoking and smokeless tobacco consumption in the United States. *Ann Rev Public Health* 1987;8:441-67.

15. CDC. Preventing tobacco use among young people: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Public Health Service, CDC, 1994.
16. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212.
17. Miller R. U.S. cigarette consumption, 1900 to date. In: Harr W, ed. Tobacco yearbook. Bowling Green, KY: Cockrel Corporation, 1981.
18. US Department of Agriculture. Tobacco situation and outlook report. Washington, DC: US Department of Agriculture, Commodity Economics Division, Economic Research Service, 1987. (TS 200).
19. US Department of Agriculture. Tobacco situation and outlook report. Washington, DC: US Department of Agriculture, Commodity Economics Division, Economic Research Service, 1994. (TS 228).
20. National Center for Health Statistics. Health interview survey procedures, 1957–1974. Hyattsville, MD: US Department of Health, Education, and Welfare, Public Health Service, Health Resources Administration, 1975; DHEW publication no. (HRA)75-1311. (Vital and health statistics; series 1, no. 11).
21. National Center for Health Statistics, Kovar MG, Poe GS. The National Health Interview Survey design, 1973–84, and procedures, 1975–83. Hyattsville, MD: US Department of Health and Human Services, Public Health Service, 1985; DHHS publication no. (PHS)85-1320. (Vital and health statistics; series 1, no. 18).
22. National Center for Health Statistics, Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985–1994. Hyattsville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1989; DHHS publication no. (PHS)89-1384. (Vital and health statistics; series 2, no. 110).
23. Shah BV. Software for survey data analysis (SUDAAN) version 5.50 [Software documentation]. Research Triangle Park, NC: Research Triangle Institute, 1989.
24. Gentry EM, Kalsbeek WD, Hogelin GC, et al. The behavioral risk factor surveys: part II. design, methods, and estimates from combined state data. *Am J Prev Med* 1985;1:9–14.
25. Remington PL, Smith MY, Williamson DF, et al. Design, characteristics, and usefulness of state-based behavioral risk factor surveillance: 1981–1987. *Public Health Rep* 1988;103:366–75.
26. Shah BV. SESUDAAN: standard errors program for computing standardized rates from sample survey data [Software documentation]. Research Triangle Park, NC: Research Triangle Institute, 1981.
27. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1976. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1980.
28. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1977. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1980.
29. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1978. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1980.
30. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1979. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1980.
31. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1980. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1981.
32. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1981. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1982.
33. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1982. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1984.
34. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1983. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1984.

35. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1984. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1985.
36. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1985. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1986.
37. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1986. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1987.
38. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1987. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1991.
39. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1988. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1991.
40. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1989. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1992.
41. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1990. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1994.
42. Johnston LD, Bachman JG, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1991. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1994.
43. Bachman JG, Johnston LD, O'Malley PM. Monitoring the future: questionnaire responses from the nation's high school seniors 1992. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1994.
44. Johnston LD, Bachman JG. Monitoring the future: questionnaire responses from the nation's high school seniors 1975. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1980.
45. Ernster VL. Mixed messages for women: a social history of cigarette smoking and advertising. *NY State J Med* 1985;85:335-40.
46. Warner KE. Selling smoke: cigarette advertising and public health. Washington, DC: American Public Health Association, 1986.
47. Slade J. The tobacco epidemic: lessons from history. *J Psychoactive Drugs* 1989;21:281-91.
48. Public Health Service. Smoking and health: report of the Advisory Committee to the Surgeon General of the Public Health Service. Washington, DC: US Department of Health, Education, and Welfare, Public Health Service, CDC, 1964; PHS publication no. 1103.
49. US Department of Health and Human Services. The health consequences of involuntary smoking: a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Public Health Service, CDC, 1986; DHHS publication no. (CDC)87-8398.
50. National Institutes of Health. The health consequences of using smokeless tobacco: a report of the Advisory Committee to the Surgeon General. Bethesda, MD: US Department of Health and Human Services, Public Health Service, 1986; NIH publication no. 86-2874.
51. US Environmental Protection Agency. Respiratory effects of passive smoking: lung cancer and other disorders. Washington, DC: US Environmental Protection Agency, Office of Research and Development, Office of Air and Radiation, 1992; no. EPA/600/6-90.
52. National Cancer Institute. Smokeless tobacco or health: an international perspective. Bethesda, MD: US Department of Health and Human Services, Public Health Service, National Institutes of Health, 1992; NIH publication no. 92-3461, Monograph no. 2.
53. Millmore BK, Conover AG. Tobacco consumption in the United States, 1880 to 1955. In: Public Health Service. Tobacco smoking patterns in the United States. Washington, DC: US Department of Health, Education, and Welfare, Public Health Service, 1955. (Public health monograph no. 45).
54. US Department of Commerce. Statistical abstract of the United States—1993 (113th edition). Washington, DC: US Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1993.
55. Pierce JP, Fiore MC, Novotny TE, Hatzidreou EJ, Davis RM. Trends in cigarette smoking in the United States: projections to the year 2000. *JAMA* 1989;261:61-5.

56. Giovino GA, Shelton DM, Schooley MW. Trends in cigarette smoking cessation in the United States. *Tobacco Control* 1993;2(suppl):S3-S10.
57. CDC. Smoking cessation during previous year among adults—United States, 1990 and 1991. *MMWR* 1993;42:504-7.
58. Wagenknecht LE, Manolio TA, Lewis CE, et al. Race and education in relation to stopping smoking in the US: the CARDIA study. *Tobacco Control* 1994;2:286-92.
59. Burns DM, Axelrad R, Bal D, et al. Report on the tobacco policy research study group on smoke-free indoor air policies. *Tobacco Control* 1992;1(suppl):S14-S8.
60. Schoenborn CA, Horm J, National Center for Health Statistics. Negative moods as correlates of smoking and heavier drinking: implications for health promotion. Advance data from vital and health statistics; no. 236. Hyattsville, MD: US Department of Health and Human Services, 1993; DHHS publication no. (PHS)94-1250.
61. Harris J. A working model for predicting the consumption and revenue impacts of large increases in the U.S. federal cigarette excise tax. Cambridge, MA: National Bureau of Economic Research (Working paper no. 4803), July 1994.
62. Bachman JG, Wallace JM, O'Malley PM, et al. Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *Am J Public Health* 1991;81:372-7.
63. Wallace JM, Bachman JG. Explaining racial/ethnic differences in adolescent drug use: the impact of background and lifestyle. *Social Problems* 1991;38:333-57.
64. Bauman KE, Ennett SE. Tobacco use by black and white adolescents: the validity of self-reports. *Am J Public Health* 1994;84:394-8.
65. CDC. Differences in the age of smoking initiation between blacks and whites—United States. *MMWR* 1991;40:754-7.
66. Cohen S, Lichtenstein E, Prochaska JO, et al. Debunking myths about self-quitting: evidence from ten prospective studies of persons quitting smoking by themselves. *Am Psychol* 1989;44:1355-65.
67. CDC. Mortality trends for selected smoking-related cancers and breast cancer—United States, 1950-1990. *MMWR* 1993;42:857,863-6.
68. Marcus AC, Shopland DR, Crane LA, Lynn WR. Prevalence of cigarette smoking in the United States: estimates from the 1985 Current Population Survey. *J Natl Cancer Instit* 1989;81:409-14.
69. Marcus AC, Crane LA, Shopland DR, Lynn WR. Use of smokeless tobacco in the United States: recent estimates from the Current Population Survey. *NCI Monographs* 1989;8:17-23.
70. Shopland DR, Niemcryn SJ, Marconi KM. Geographic and gender variations in total tobacco use. *Am J Public Health* 1992;82:103-6.
71. CDC. Cigarette smoking among adults—United States, 1992, and changes in the definition of current cigarette smoking. *MMWR* 1994;43:342-6.
72. Satcher D, Eriksen MP. The paradox of tobacco control. *JAMA* 1994;271:627-8.
73. CDC. Smoking and health in the Americas. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1992; DHHS publication no. (CDC)92-8419.
74. CDC. SGR4Kids: the Surgeon General's report for kids about smoking. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1994.
75. CDC. Guidelines for school health programs to prevent tobacco use and addiction. *MMWR* 1994;43(No. RR-2).
76. US Department of Health and Human Services, Agency for Health Care Policy and Research. Development of clinical guidelines for smoking prevention and cessation (with CDC). *Federal Register* 1992;57:59353-5.

### State and Territorial Epidemiologists and Laboratory Directors

State and Territorial Epidemiologists and Laboratory Directors are acknowledged for their contributions to this report. The epidemiologists listed below were in the positions shown as of July 1994, and the laboratory directors listed below were in the positions shown as of June 1994.

State/Territory	Epidemiologist	Laboratory Director
Alabama	Charles H. Woernle, MD, MPH	William J. Callan, PhD
Alaska	John P. Middaugh, MD	Katherine A. Kelley, DrPH
Arizona	Lawrence Sands, DO, MPH	Barbara J. Erickson, PhD
Arkansas	Thomas C. McChesney, DVM	Michael G. Foreman
California	George W. Rutherford, III, MD	Michael G. Volz, PhD
Colorado	Richard E. Hoffman, MD, MPH	Ronald L. Cada, DrPH
Connecticut	James L. Hadler, MD, MPH	Sanders F. Hawkins, PhD
Delaware	A. LeRoy Hathcock, Jr, PhD	Mahadeo P. Verma, PhD
District of Columbia	Martin E. Levy, MD, MPH	James B. Thomas, ScD
Florida	Richard S. Hopkins, MD, MSPH	E. Charles Hartwig, ScD
Georgia	Kathleen E. Toomey, MD, MPH	Elizabeth A. Franko, DrPH
Hawaii	Richard L. Vogt, MD	Vernon K. Miyamoto, PhD
Idaho	Jesse F. Greenblatt, MD, MPH	Richard H. Hudson, PhD
Illinois	Byron J. Francis, MD, MPH	David F. Carpenter, PhD
Indiana	Edmundo M. Muniz, MD, MSc, PhD	—
Iowa	M. Patricia Quinlisk, MD, MPH	W. J. Hausler, Jr, PhD
Kansas	Andrew R. Pelletier, MD	Roger H. Carlson, PhD
Kentucky	Reginald Finger, MD, MPH	Thomas E. Maxson, DrPH
Louisiana	Louise McFarland, DrPH	Henry B. Bradford, Jr, PhD
Maine	Kathleen F. Gensheimer, MD, MPH	Philip W. Haines, DrPH
Maryland	Ebenezer Israel, MD, MPH	J. Mehsen Joseph, PhD
Massachusetts	Alfred DeMaria, Jr, MD	Ralph J. Timperi, MPH
Michigan	Kenneth R. Wilcox, Jr, MD, DrPH	Robert Martin, DrPH
Minnesota	Michael T. Osterholm, PhD, MPH	Pauline Bouchard, JD, MPH
Mississippi	Mary Currier, MD, MPH	Joe O. Graves, PhD
Missouri	H. Denny Donnell, Jr, MD, MPH	Eric C. Blank, DrPH
Montana	Todd D. Damrow, PhD, MPH	Douglas O. Abbott, PhD
Nebraska	Thomas J. Safranek, MD	John D. Blosser
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