

Mothers Who Smoke While Pregnant

Headline

The percentage of births to women who smoked during pregnancy dropped dramatically during the 1990s from 19.5 percent in 1989 to 12.0 percent in 2001. ([See Figure 1](#))

Importance

Smoking during pregnancy is associated with many adverse outcomes for children. These include “low birthweight, intrauterine growth retardation and infant mortality, as well as negative consequences for child health and development.”¹ Smoking during pregnancy may indicate that a woman is not taking a healthy approach to childbearing and, thus, may be associated with other problem behaviors. For example, smoking during pregnancy is associated with substance abuse and criminal behavior in both male and female children when they reach adulthood.²

Trends

Between 1989 and 2001, the percentage of births to mothers who smoked during pregnancy decreased by more than a third, from 19.5 percent to 12.0 percent. However, for women ages 15-17 and 18-19, the downward trend halted in 1994, and the percentage of births to teen mothers who smoked during pregnancy actually increased between 1994 and 1999 before declining slightly in 2000 and 2001. ([See Figure 1](#))

The general downward trend in smoking during pregnancy held for all races and for both Hispanic and non-Hispanic women. It was also apparent for women of all educational levels. ([See Table 1](#))

Differences by Race and Ethnicity

American Indian or Alaska Native women are the most likely to smoke during pregnancy, followed by white non-Hispanic women. In 2001, 19.9 percent of American Indian or Alaska Native births and 15.5 percent of white non-Hispanic births were to women who smoked during pregnancy. ([See Figure 2](#))

In contrast, very few Hispanic or Asian or Pacific Islander women smoke during pregnancy. In 2001, less than 3 percent of Asian or Pacific Islander births and less than 3.2 percent of Hispanic births were to women who smoked during pregnancy. Smoking rates for non-Hispanic black mothers fall in the middle. A little over nine percent of black non-Hispanic births were to women who smoked during pregnancy. ([See Figure 2](#))

There is substantial variation in smoking rates among the subgroups within both the Hispanic and Asian or Pacific Islander categories. Among Hispanics, the percentage of

women who smoked during pregnancy ranges from less than 2 percent for Central and South American mothers to 9.7 percent for Puerto Rican mothers. Similarly, among Asian or Pacific Islanders, the percentages range from less than one percent for Chinese mothers to 14.8 percent for Hawaiian and part Hawaiian mothers. ([See Table 1](#))

Differences by Age

Women ages 15-24 are much more likely to smoke during pregnancy than older women. In 2001, 17.5 percent of births to women ages 15-19 and 17.0 percent of births to women ages 20-24 were to women who smoked during pregnancy. In contrast, less than 11 percent of births to women ages 25 and up were to women who smoked during pregnancy. ([See Figure 3](#))

Education of Mother

Among women age 20 and older, those with a college degree are the least likely to smoke during pregnancy. In 2001, less than 2 percent of births to college graduates were to women who smoked during pregnancy. In contrast, 24.8 percent of women with 9-11 years of education smoked during pregnancy. Women with less than 9 years of education are also relatively unlikely to smoke (8.9 percent) ([See Figure 4](#)). In part, this is because Hispanic women, who, as shown above, have low rates of smoking during pregnancy, account for a high percentage of women with less than 9 years of education.

State and Local Estimates

Estimates of the percentage of births to mothers who smoked during pregnancy for 1990-2000 are available for all states and the 50 largest cities in the U.S. from *The Right Start for America's Newborns: A Decade of City and State Trends*.

<http://www.aecf.org/kidscount/rightstart2003/>

International Estimates

None available

National Goals

Healthy People 2010 has set a goal to increase the percent of pregnant women who do not smoke during pregnancy from 87 percent in 1998 to 99 percent by 2010.

More information is available at:

<http://www.health.gov/healthypeople/document/html/objectives/16-17.htm>

(Goal 16-17-c)

Definition

Women were considered to be smokers if they reported smoking at least one cigarette daily during pregnancy.

Data Source

Data for 1970-1999: Eberhardt MS, Ingram DD, Makuc DM, et al. *Urban and Rural Health Chartbook. Health, United States, 2001*. Hyattsville, Maryland: National Center for Health Statistics. <http://www.cdc.gov/nchs/products/pubs/pubd/hus/hus.htm> (Table 11)

Data for 2000: Martin JA, Hamilton BE, Ventura SJ, Menacker F, Park MM. "Births: Final data for 2000." National Center for Health Statistics. 2002. Tables 24, 25, 29, 30, 31. http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_05.pdf

Data for 2001: Martin JA, Hamilton, BE, Ventura SJ, Menacker F, Park MM, Sutton PD. "Births: Final data for 2001." National vital statistics reports; vol 51 no.2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Tables 24, 25, 29, 30, 31. http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_02.pdf

Raw Data Source

Birth Data, National Vital Statistics System
<http://www.cdc.gov/nchs/nvss.htm>

Approximate Date of Next Update

December 2003

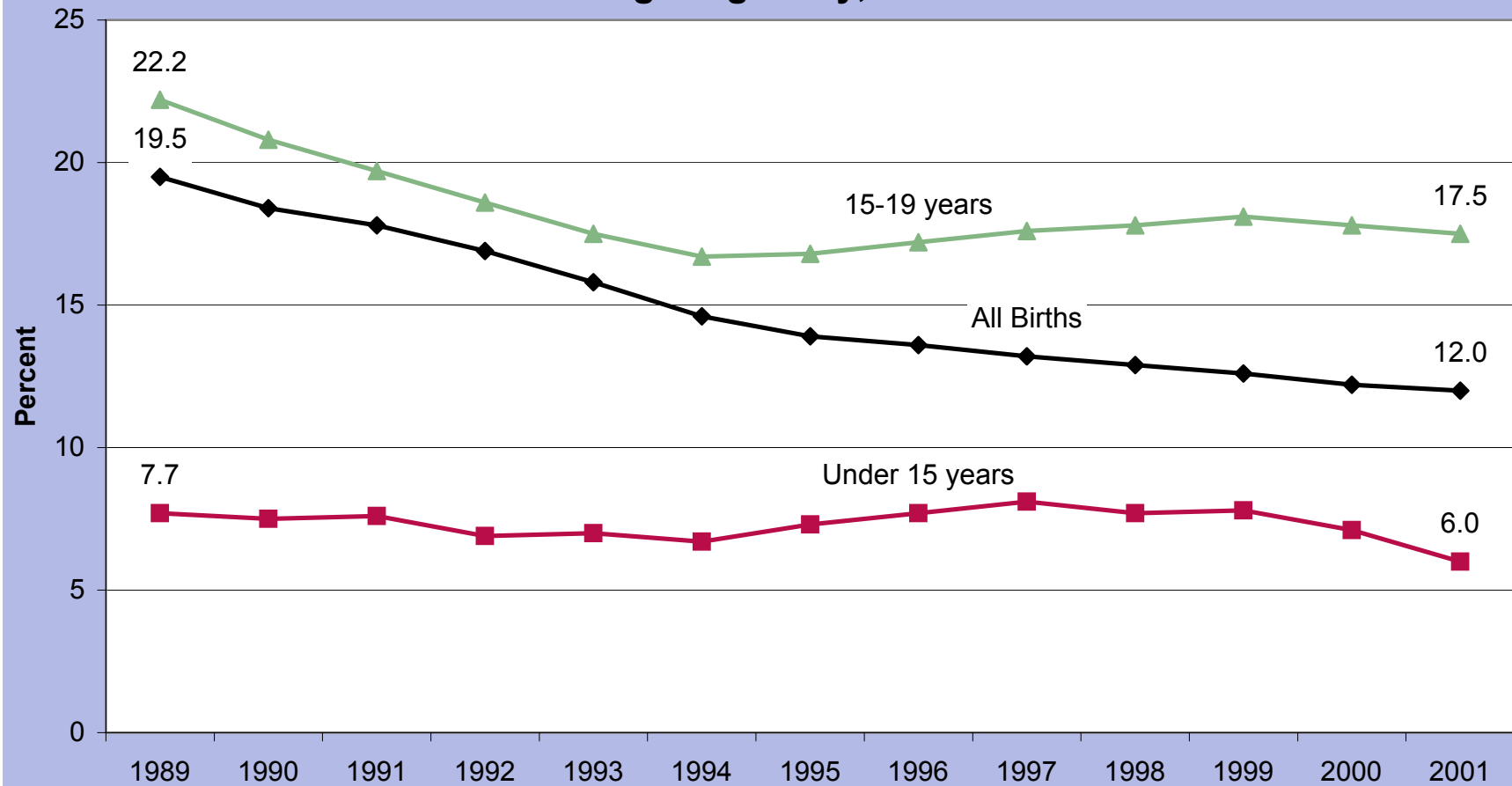
¹ Mathews, T.J. "Smoking During Pregnancy, 1990-96," *National Vital Statistics Reports*, Vol 47, No. 10. Hyattsville, MD: National Center for Health Statistics, 1998.

http://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_10.pdf

² Brennan, P.A., Grekin, E.R., Mortensen, E.L., Mednick, S.A, "Relationship of Maternal Smoking During Pregnancy with Criminal Arrest and Hospitalization for Substance Abuse in Male and Female Adult Offspring," *American Journal of Psychiatry*, Vol. 159, No. 1, pp. 48-54, 2002.

Figure 1

Percent of Total Births to Women Who Smoked During Pregnancy, 1989-2001

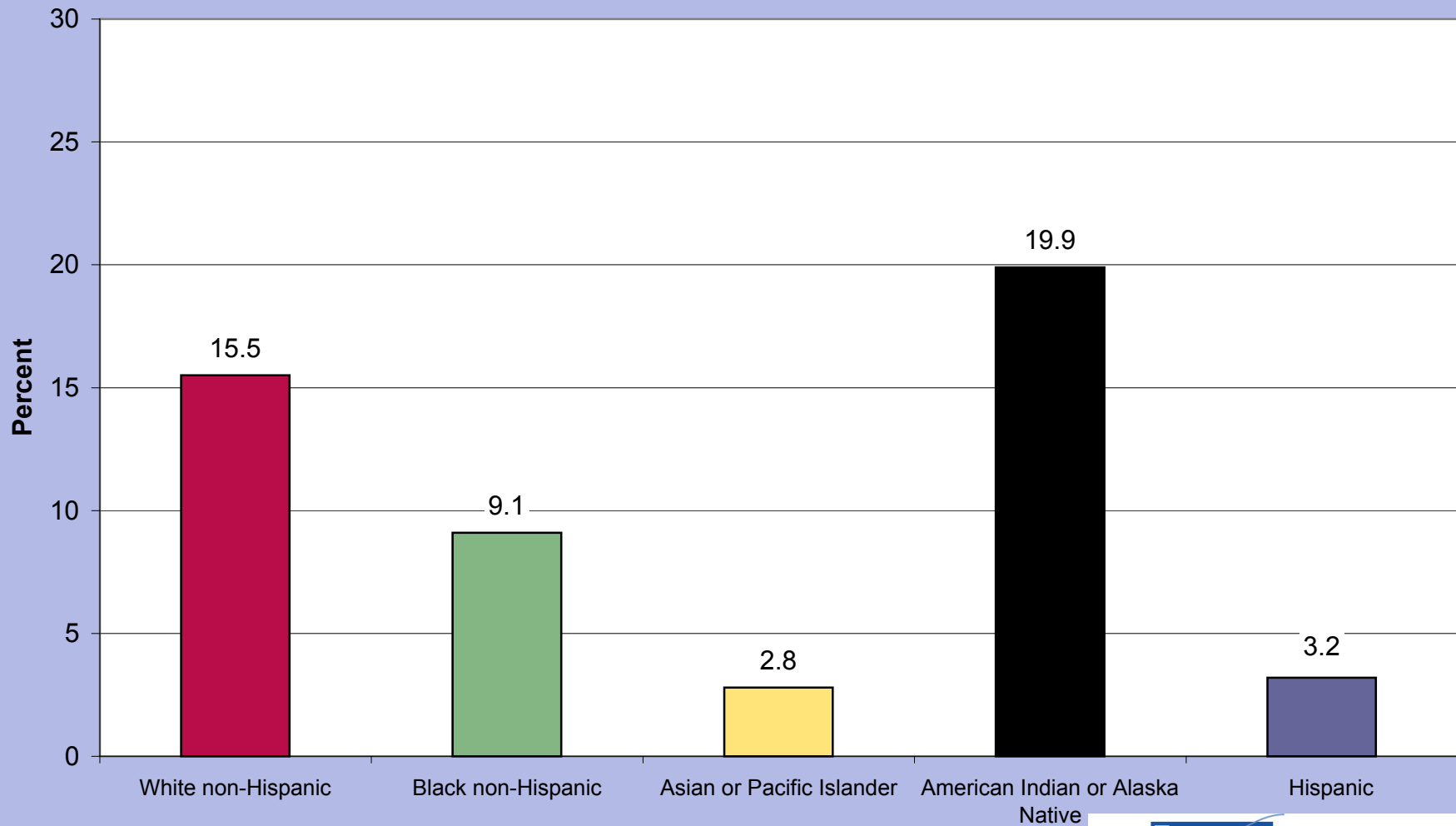


Source: Data for 1970-1999: Eberhardt MS, Ingram DD, Makuc DM, et al. *Urban and Rural Health Chartbook. Health, United States, 2001*. Hyattsville, Maryland: National Center for Health Statistics. 2001: Table 11; Data for 2000: Martin JA, Hamilton BE, Ventura SJ, Menacker F, Park MM. "Births: Final data for 2000." National vital statistics reports; vol 50 no. 5. Hyattsville, Maryland: National Center for Health Statistics. 2002. Table 30.; Data for 2001 from Martin JA, Hamilton, BE, Ventura SJ, Menacker F, Park MM, Sutton PD. Births: Final data for 2001. National vital statistics reports; vol 51 no.2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Table 30.



Figure 2

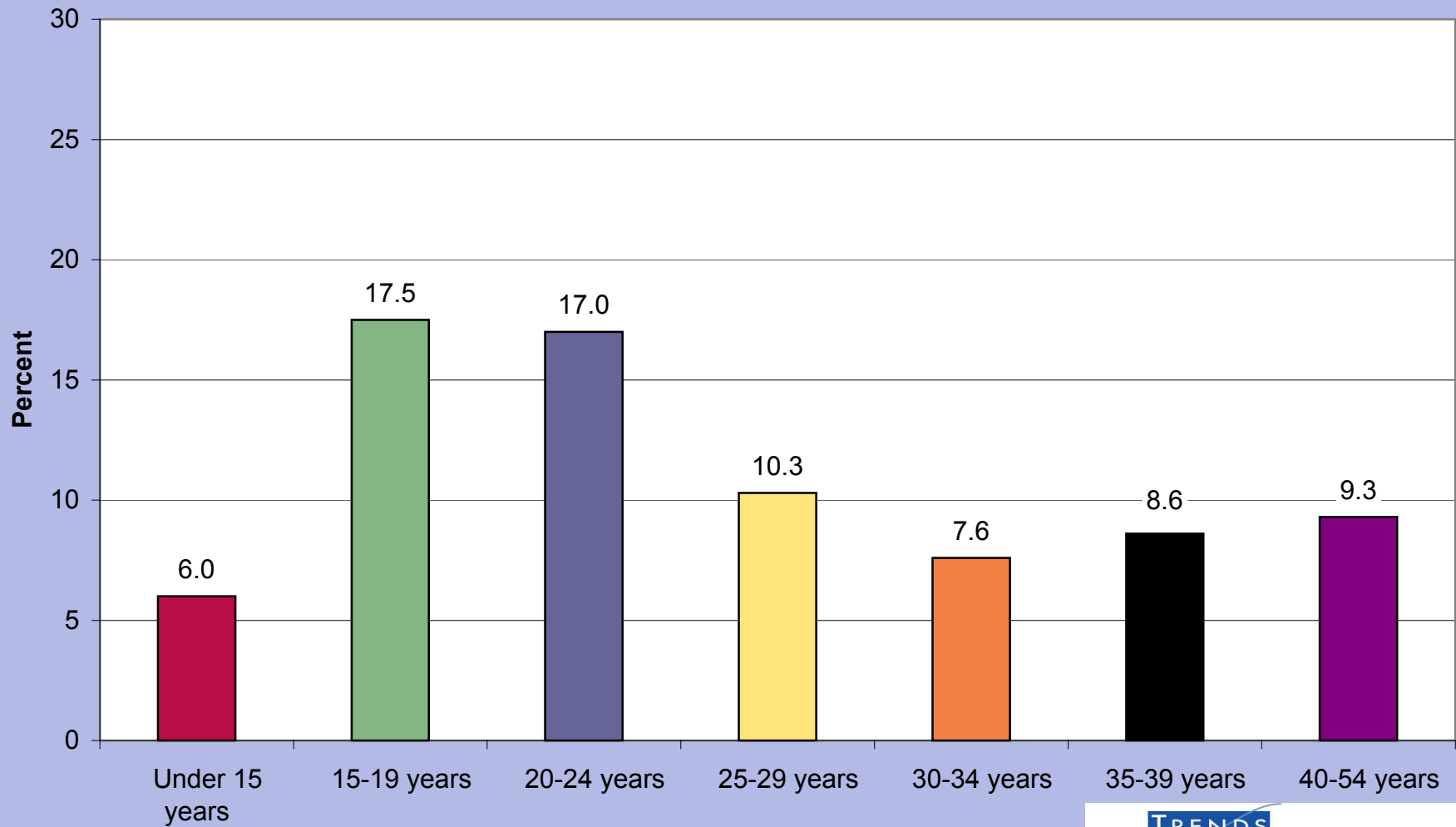
Percent of Total Births to Women Who Smoked During Pregnancy by Race and Hispanic Origin, 2001



Data for 2001 from Martin JA, Hamilton, BE, Ventura SJ, Menacker F, Park MM, Sutton PD. Births: Final data for 2001. National vital statistics reports; vol 51 no.2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Tables 24 and 30.

Figure 3

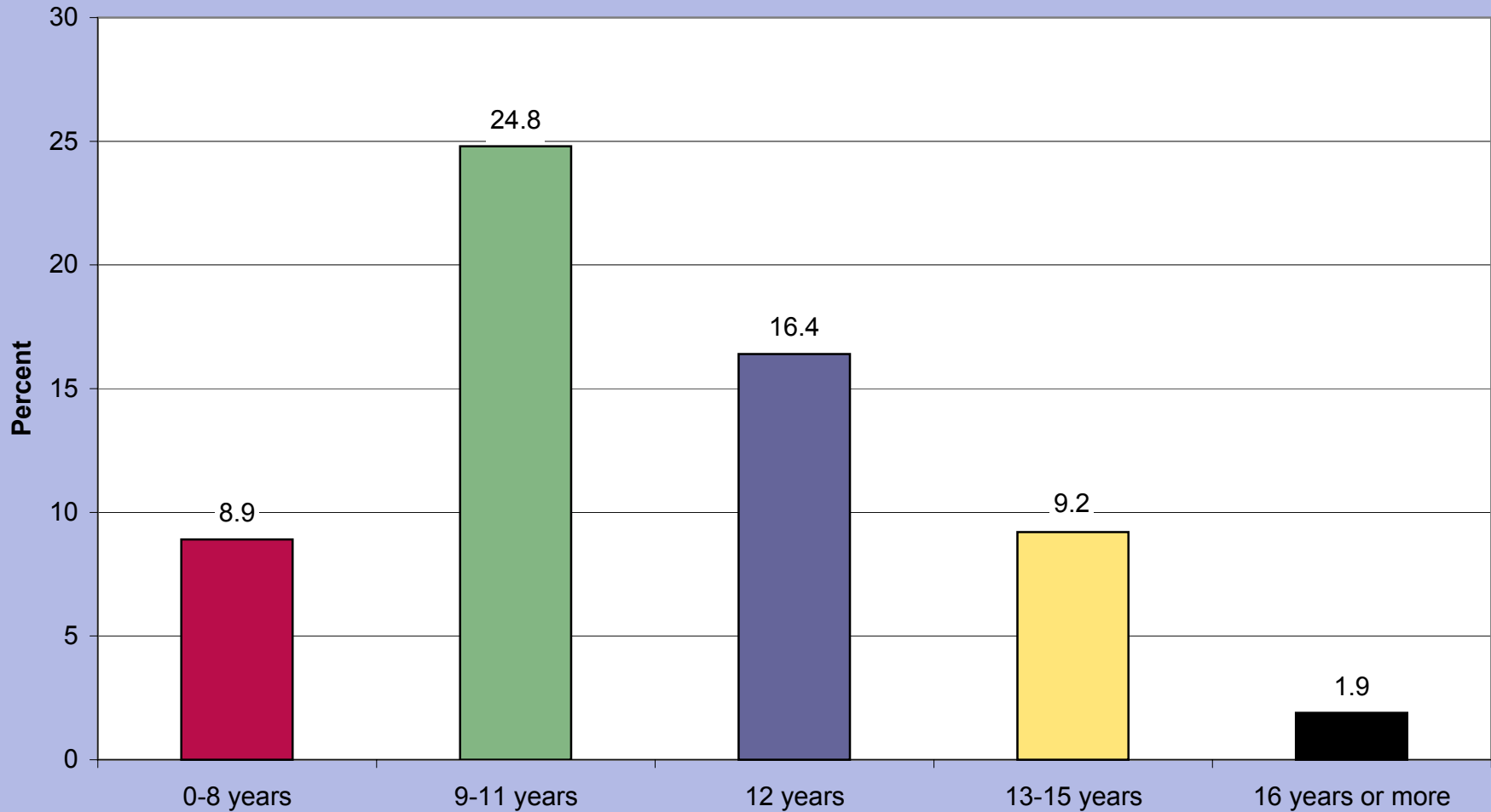
Percent of Total Births to Women Who Smoked During Pregnancy by Age, 2001



Data for 2001 from Martin JA, Hamilton BE, Ventura SJ, Menacker F, Park MM, Sutton PD. Births: Final data for 2001. National vital statistics reports; vol 51 no.2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Table 29.

Figure 4

Percent of Total Births to Women Ages 20 and Older Who Smoked During Pregnancy by Educational Attainment, 2001



Data for 2001 from Martin JA, Hamilton BE, Ventura SJ, Menacker F, Park MM, Sutton PD. Births: Final data for 2001. National vital statistics reports; vol 51 no.2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Table 31.

Table 1

Percent of Total Births to Women Who Smoked During Pregnancy, by Mother's Detailed Race, Hispanic Origin, Age, and Education: Selected States, 1989-2001

	Percent of mothers who smoked ¹												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
All Races	19.5	18.4	17.8	16.9	15.8	14.6	13.9	13.6	13.2	12.9	12.6	12.2	12.0
Age													
Under 15 years	7.7	7.5	7.6	6.9	7.0	6.7	7.3	7.7	8.1	7.7	7.8	7.1	6.0
15-19 years	22.2	20.8	19.7	18.6	17.5	16.7	16.8	17.2	17.6	17.8	18.1	17.8	17.5
15-17 years	19.0	17.6	16.6	15.6	14.8	14.4	14.6	15.4	15.5	15.5	15.5	15.0	14.4
18-19 years	23.9	22.5	21.5	20.3	19.1	18.1	18.1	18.3	18.8	19.2	19.5	19.2	19.0
20-24 years	23.5	22.1	21.2	20.3	19.2	17.8	17.1	16.8	16.6	16.5	16.7	16.8	17.0
25-29 years	19.0	18.0	17.2	16.1	14.8	13.5	12.8	12.3	11.8	11.4	11.0	10.5	10.3
30-34 years	15.7	15.3	15.1	14.5	13.4	12.3	11.4	10.9	10.0	9.3	8.6	8.0	7.6
35-39 years	13.6	13.3	13.3	13.4	12.8	12.2	12.0	11.7	11.1	10.6	9.9	9.1	8.6
40-54 years ⁴	13.2	12.3	11.9	11.6	11.0	10.3	10.1	10.1	10.1	10.0	9.5	9.5	9.3
Race and Hispanic Origin of Mother													
White non-Hispanic ³	21.7	21.0	20.5	19.7	18.6	17.7	17.1	16.9	16.5	16.2	15.9	15.6	15.5
Black non-Hispanic ³	17.2	15.9	14.6	13.8	12.7	11.5	10.6	10.3	9.8	9.6	9.4	9.2	9.1
Asian or Pacific Islander ²	5.7	5.5	5.2	4.8	4.3	3.6	3.4	3.3	3.2	3.1	2.9	2.8	2.8
Chinese	2.7	2.0	1.9	1.7	1.1	0.9	0.8	0.7	1.0	0.8	0.5	0.6	0.7
Japanese	8.2	8.0	7.5	6.6	6.7	5.4	5.2	4.8	4.7	4.8	4.5	4.2	3.8
Filipino	5.1	5.3	5.3	4.8	4.3	3.7	3.4	3.5	3.4	3.3	3.3	3.2	3.2
Hawaiian and part Hawaiian	19.3	21.0	19.4	18.5	17.2	16.0	15.9	15.3	15.8	16.8	14.7	14.4	14.8
Other Asian or Pacific Islander	4.2	3.8	3.8	3.6	3.2	2.9	2.7	2.7	2.5	2.4	2.3	2.3	2.3
American Indian or Alaska Native	23.0	22.4	22.6	22.5	21.6	21.0	20.9	21.3	20.8	20.2	20.2	20.0	19.9
Hispanic ³	8.0	6.7	6.3	5.8	5.0	4.6	4.3	4.3	4.1	4.0	3.7	3.5	3.2
Mexican	6.3	5.3	4.8	4.3	3.7	3.4	3.1	3.1	2.9	2.8	2.6	2.4	2.4
Puerto Rican	14.5	13.6	13.2	12.7	11.2	10.9	10.4	11.0	11.0	10.7	10.5	10.3	9.7
Cuban	6.9	6.4	6.2	5.9	5.0	4.8	4.1	4.7	4.2	3.7	3.3	3.3	3.0
Central and South American	3.6	3.0	2.8	2.6	2.3	1.8	1.8	1.8	1.8	1.5	1.4	1.5	1.3
Other and unknown Hispanic	12.1	10.8	10.7	10.1	9.3	8.1	8.2	9.1	8.5	8.0	7.7	7.4	6.8
Education of mother⁵	Percent of mothers 20 years of age and over who smoked ²												
0-8 years	18.9	17.5	16.8	15.5	13.9	12.1	11.0	10.3	9.9	9.5	8.9	9.8	8.9
9-11 years	42.2	40.5	39.1	37.8	36.1	33.6	32.0	31.1	30.2	29.3	29.0	25.2	24.8
12 years	22.8	21.9	21.2	20.7	19.9	18.7	18.3	18.0	17.5	17.1	16.9	16.4	16.4
13-15 years	13.7	12.8	12.5	12.1	11.4	10.8	10.6	10.4	9.9	9.6	9.4	9.1	9.2
16 years or more	5.0	4.5	4.2	3.9	3.1	2.8	2.7	2.6	2.4	2.2	2.1	2.0	1.9

¹ Excludes live births for whom smoking status of mother is unknown.

² Maternal tobacco use during pregnancy was not reported on the birth certificates of California, which in 1999 accounted for 32 percent of the births to Asian or Pacific Islander mothers.

³ Includes data for 42 States and DC in 1989, 44 States and DC in 1990, 45 States and DC in 1991-92, 46 States and DC in 1993, 46 States, DC, and NYC in 1994-98, and 48 States, DC, and NYC in 1999. Excludes data for California, and South Dakota (1989-99), New Hampshire (1989-92), Oklahoma (1989-90), Louisiana and Nebraska (1989), NYC (1989-93), and Indiana and NY (1989-98), which did not require the reporting of either Hispanic origin of mother or tobacco use during pregnancy on the birth certificate.

⁴ Prior to 1997 data are for live births to mothers 45-49 years of age.

⁵ Includes data for 42 States and DC in 1989, 44 States and DC in 1990, 45 States and DC in 1991, 46 States and DC in 1992-93, 46 States, DC, and NYC in 1994-98 and 48 States, DC, and NYC in 1999. Excludes data for California and South Dakota (1989-99), Washington (1989-91), Oklahoma (1989-90), Louisiana and Nebraska (1989), NYC (1989-93), and Indiana and NY (1989-98), which did not require the reporting of either mother's education or tobacco use during pregnancy on the birth certificate.

Notes: The race groups, white, black, American Indian or Alaska Native, and Asian or Pacific Islander, include persons of Hispanic and non-Hispanic origin. Conversely, persons of Hispanic origin may be of any race. All data are based on the National Vital Statistics System.

Source: Data for 1970-1999: Eberhardt MS, Ingram DD, Makuc DM, et al. *Urban and Rural Health Chartbook, Health, United States, 2001*. Hyattsville, Maryland: National Center for Health Statistics. 2001: Table 11; Data for 2000: Martin JA, Hamilton BE, Ventura SJ, Menacker F, Park MM. Births: Final data for 2000. National vital statistics reports; vol 50 no. 5. Hyattsville, Maryland: National Center for Health Statistics. 2002. Tables 24, 29, 30, 31; Data for 2001 from Martin JA, Hamilton, BE, Ventura SJ, Menacker F, Park MM, Sutton PD. Births: Final data for 2001. National vital statistics reports; vol 51 no. 2. Hyattsville, Maryland: National Center for Health Statistics, 2002. Tables 24, 25, 29, 30, 31.