SMOKING BEFORE AND DURING PREGNANCY

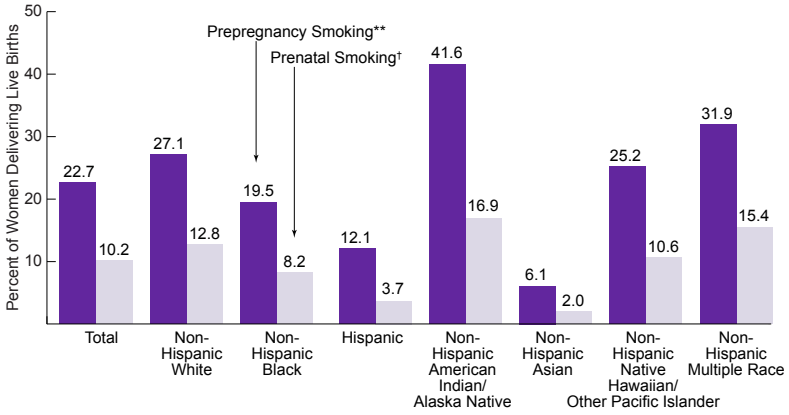
After alcohol, tobacco is the most prevalent substance consumed by women of child-bearing age.[1] Smoking among nonpregnant women contributes to reduced fertility. Fetal effects of smoking during pregnancy include premature birth, fetal growth restriction/low birth weight, orofacial clefts, and heightened risk of sudden infant death syndrome.[2,3] Notable maternal complications of smoking are placental abruption, premature rupture of membranes, and placenta previa. In addition, there is evidence of a causal relationship between maternal smoking and ectopic pregnancy.[2]

In 2011, 22.7 percent of recent mothers in 23 states and New York City reported smoking in the 3 months before pregnancy. The proportion of mothers who smoked dropped by approximately half by the last 3 months of pregnancy (10.2 percent). Smoking during both preconception and prenatal periods varied by race and ethnicity. Smoking in the 3 months prior to pregnancy ranged from 6.1 percent among non-Hispanic Asian mothers to 41.6 percent among non-Hispanic American Indian-Alaska Native mothers (figure 1). Similarly, smoking in the last 3 months of pregnancy ranged from 2.0 percent among non-Hispanic Asian mothers to 16.9 percent among non-Hispanic American Indian/Alaska Native mothers. Preconception and prenatal smoking rates were also relatively low among Hispanic mothers (12.1 and 3.7 percent, respectively). Rates of smoking cessation, defined as not smoking in the last 3 months of pregnancy among those who smoked prior to pregnancy, were highest for Hispanic mothers (69.5 percent) and non-Hispanic Asian mothers (66.6 percent) compared to 55.3 percent overall.

The proportion of mothers who reported smoking before and during pregnancy also varied by maternal age. Compared to older mothers, preconception and prenatal smoking were more prevalent among mothers aged 20–24 years (33.1 and 16.0 percent, respectively) and under 20 years of age (32.4 and 15.5 percent, respectively; figure 2). Mothers aged 35 years or older were the least likely to smoke before conception (12.8 percent), while mothers aged 30–34 years and 35 years or older were least likely to smoke during the prenatal period (6.7 and 5.6 percent, respectively).

Smoking before and during pregnancy also varied by maternal education and marital status. Smoking before pregnancy was at least 3 times greater among mothers with 12 years of education or less (29.3 to 33.3 percent) than among those with 16 or more years of education (8.9 percent). Prenatal smoking was about 12 times greater among mothers with 12 years of education or less (17.0 to 17.2

Figure 1. Cigarette Smoking Before and During Pregnancy, by Maternal Race/Ethnicity, 2011*

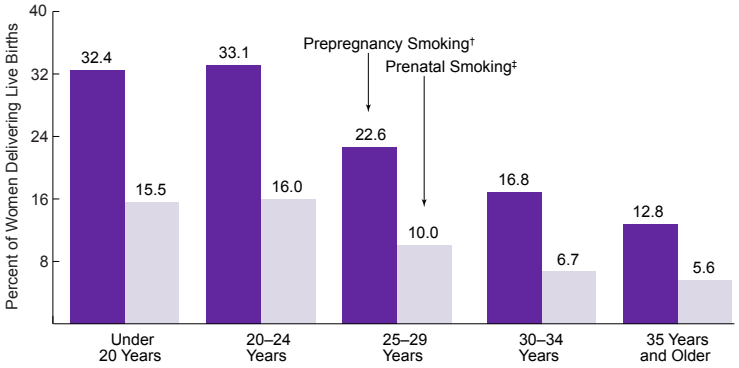


**Includes data from 23 states (AR, CO, GA, HI, ME, MD, MI, MN, MO, NE, NJ, NM, NY, OK, OR, PA, RI, UT, VT, WA, WV, WI, WY) and New York City. Mothers completed surveys between 2 and 9 months postpartum. Multiple race data were not reported by 5 of 23 states (AR, HI, ME, NJ, WV); therefore, specific race categories may include multiple race mothers. **Defined as the proportion of mothers who reported smoking in the 3 months before pregnancy. †Defined as the proportion of mothers who reported smoking in the last 3 months of pregnancy.*

percent) than among those with 16 or more years of education (1.4 percent). This reflects a considerably higher cessation rate for mothers with at least 16 years of education (85.0 percent) than for those with 12 years of education or less (42.0 to 48.3 percent). Unmarried mothers were more than twice as likely as married mothers to smoke in the 3 months before pregnancy (36.3 versus 14.4 percent, respectively) and three times more likely to smoke during pregnancy (18.5 versus 5.1 percent, respectively).

In order to avoid early pregnancy complications, it is recommended that women quit smoking before they become pregnant.[4] Due to awareness of the neonatal health consequences of smoking, pregnancy may be a time of heightened motivation to quit. The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians ask all pregnant women about tobacco use and provide augmented, pregnancy-tailored counseling for those who smoke.[5]

Figure 2. Cigarette Smoking Before and During Pregnancy, by Maternal Age, 2011*



**Includes data from 23 states (AR, CO, GA, HI, ME, MD, MI, MN, MO, NE, NJ, NM, NY, OK, OR, PA, RI, UT, VT, WA, WV, WI, WY) and New York City. Mothers completed surveys between 2 and 9 months postpartum. †Defined as the proportion of mothers who reported smoking in the 3 months before pregnancy. ‡Defined as the proportion of mothers who reported smoking in the last 3 months of pregnancy.*

Data Sources

Figure 1 and 2. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), Pregnancy Risk Assessment Monitoring System, 2011–2012. Analysis conducted by the CDC Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion.

Endnotes

1. Floyd RL, Jack BW, Cefalo R, et al. The clinical content of preconception care: alcohol, tobacco, and illicit drug exposures. *American Journal of Obstetrics and Gynecology*. 2008;199(6 Suppl 2):S333–S339.
2. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. *The Health Consequences of Smoking—50 Years of Progress*. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services; 2014.
3. Minnes S, Lang A, Singer L. Prenatal tobacco, marijuana, stimulant, and opiate exposure: outcomes and practice implications. *Addiction Science & Clinical Practice*. 2011;6:57–70.
4. Gregory KD, Niebyl JR, Johnson TRB. Preconception and prenatal care: part of the continuum. In: Gabbe SG, Niebyl JR, Simpson JL, eds. *Obstetrics: Normal and Problem Pregnancies*, 6th ed. Philadelphia, PA: Elsevier Churchill Livingstone; 2012.
5. U.S. Preventive Services Task Force. Counseling to prevent tobacco use and tobacco-caused disease in adults and pregnant women: reaffirmation recommenda¬tion statement. *American Family Physician*. 2010;82(10):1266–1268.

Suggested Citation

U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2014*. Rockville, Maryland: U.S. Department of Health and Human Services, 2015. Online at http://mchb.hrsa.gov/chusa14/