

PRAM-O-GRAM

Fact Sheet Series: Number 6, 2008

Impact of Alcohol and Tobacco on the Fetus

According to the U.S. Surgeon General, no amount of alcohol consumed during pregnancy can be considered safe, and several negative consequences can result, including:¹

- Risk of alcohol-related birth defects; e.g., growth deficiencies, facial abnormalities, behavioral disorders, central nervous system impairment, and impaired intellectual development.
- Damage to a fetus at any stage of pregnancy, including during the first weeks of pregnancy before a woman may even know that she is pregnant.
- Lifelong behavioral and mental problems.

A mother's smoking during pregnancy also poses risks for the developing fetus, including:³

- Risk of pregnancy complications, premature delivery, low-birth-weight infants (a leading cause of infant deaths), stillbirth, and sudden infant death syndrome (SIDS).
- Reduction of the baby's lung function.

Fortunately, alcohol- and tobacco-related birth defects are entirely preventable!



Maternal Use of Alcohol and Tobacco

The North Dakota Pregnancy Risk Assessment Monitoring System (PRAMS) survey data, based on a representative sample of mothers who gave birth in 2002, provides information about mothers' alcohol and tobacco usage before and during their pregnancies. Substance use during pregnancy can have devastating effects on an infant (see side bar at left), and routine use before pregnancy can be problematic since one-third of pregnancies in North Dakota are unplanned (36% in 2002). In 2002, one in 20 infants was born at a low birthweight (less than 2,500 grams/5 pounds 8 ounces) and one in 10 was placed in a neonatal intensive care unit (5% and 11%, respectively).

Alcohol Usage

The vast majority of mothers indicated they drank alcoholic drinks in the past two years (81%). In the three months before becoming pregnant, two-thirds of mothers said they drank alcohol (65%) and one-third had five or more drinks on at least one occasion (i.e., binge drinking) (37%) (see Figure 1). In the last three months of pregnancy, few mothers said they drank alcohol (4% drank alcohol and 1% binge drank).

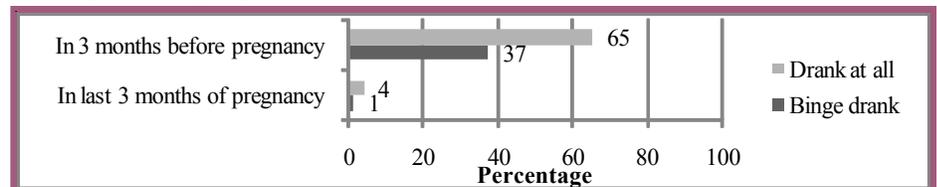


Consuming alcohol during the early stages of pregnancy is dangerous to the fetus. Many mothers may be drinking while pregnant and not even know they are pregnant. Among all mothers who did not get prenatal care as early as they wanted, 37 percent said the reason was that they did not know they were pregnant. Even if a mother quits drinking once she knows she is pregnant, she may not have quit in time.

Women of childbearing age should consult their physician and take steps to reduce the possibility of prenatal alcohol exposure.¹ One option for women who are sexually active and not using effective birth control methods is that they should not drink alcohol since they may become pregnant and not know for several weeks.²

North Dakota data from the Behavioral Risk Factor Surveillance System show that, in 2006, 57 percent of women of childbearing age (18 to 44 years) had one or more drinks within the last 30 days, and one-fifth binge drank (22% had five or more drinks on any one occasion).² Health professionals should regularly ask women of childbearing age about alcohol consumption, including advising them of the risks and telling them to not drink during pregnancy.¹ In 2002, 31 percent of North Dakota mothers said health-care workers did not discuss during a prenatal care visit how drinking during pregnancy could affect the baby.

Figure 1. Percentage of Alcohol Usage by North Dakota Mothers Who Gave Birth in 2002



North Dakota mothers on use of alcohol and tobacco:

"It is only 10 months out of your life. Please do not ever drink, smoke or put the baby or yourself in harm's way."

"I have two friends who were pregnant at the same time I was, and I told them they shouldn't drink but they didn't listen, and women have to understand once they become pregnant whatever they take into their body, their babies take in."

"More teaching is needed on the effects of smoking and secondhand smoke on your baby."

"Guilt is one of the worst feelings in the world. Every day I wonder if I might have caused a problem with my baby.... Message to all: STAY FREE!"

"I would like to say to please tell mothers to never smoke, drink, or do drugs when pregnant."

Sources: Unless indicated otherwise, all data and quotes are from North Dakota PRAMS, 2002: www.ndsu.edu/sdc/ndprams.htm; **1.** *Advisory on Alcohol Use in Pregnancy.* U.S. Surgeon General. 2005. www.surgeongeneral.gov/; **2.** *Fetal Alcohol Spectrum Disorders.* Centers for Disease Control & Prevention. www.cdc.gov/ncbddd/fas/; **3.** *The Health Consequences of Smoking.* U.S. Surgeon General. 2004. www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/highlights/1.htm; **4.** "Preventing Smoking and Exposure to Secondhand Smoke." www.cdc.gov/nccdphp/publications/factsheets/Prevention/smoking.htm; **5.** Van Meurs, K. "Cigarette Smoking, Pregnancy and the Developing Fetus." med.stanford.edu/medicalreview/smp14-16.pdf; **6.** "Pregnancy and Environmental Tobacco Smoke." www.rtmagazine.com/issues/articles/2003-08_03.asp.

Maternal Use of Alcohol and Tobacco, continued

Tobacco Usage

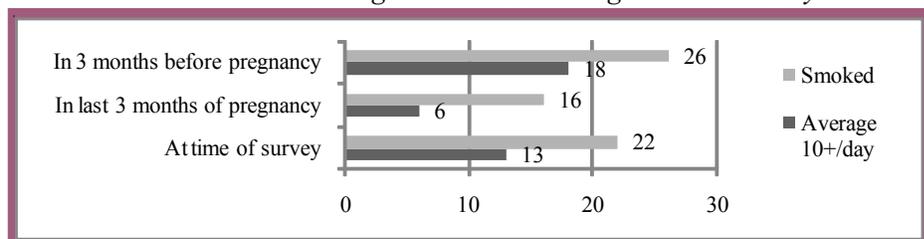
The PRAMS study focuses on cigarette smoking and exposure to secondhand smoke (not overall tobacco usage). Smoking before or during pregnancy is the most preventable cause of illness and death among mothers and infants. If mothers quit smoking before they become pregnant or early in their pregnancy, they "significantly reduce the risk for several adverse outcomes."⁴ Among mothers in North Dakota who gave birth in 2002, 26 percent said they smoked three months before pregnancy; 16 percent reported smoking during the last three months of pregnancy (see Figure 2). Among the mothers who smoked three months before pregnancy, one in five were not told during a prenatal care visit about how smoking during pregnancy could affect the baby (18%).



Smoking cessation counseling can help pregnant women quit smoking and prevent relapses for those who have quit. Pregnant women who receive the counseling are more likely to quit smoking, suggesting smoking cessation classes should be offered to pregnant mothers at the start of and throughout their pregnancies.⁴ Among North Dakota mothers who smoked three months before pregnancy, less than half said a health-care worker told them to quit smoking (48%); one in five were told to cut down (19%). More than two in five mothers who smoked before becoming pregnant were successful at quitting and were not smoking during their last trimester (43%); 22 percent were still nonsmokers at the time of the survey.

Nicotine is found in the breast milk of mothers who smoke as well as mothers who are exposed to passive cigarette smoke, also known as secondhand smoke.⁵ Secondhand smoke is composed of "mainstream" as well as "sidestream" smoke. Mainstream smoke consists of the substances a smoker exhales while smoking a burning cigarette, whereas sidestream smoke includes the substances that a burning cigarette itself releases into the atmosphere. Sidestream smoke has significantly higher concentrations of toxins and carcinogens because it is not filtered.⁶ Among North Dakota mothers in 2002, 13 percent said that they were regularly exposed to secondhand smoke at their workplace while pregnant.

Figure 2. Percentage of North Dakota Mothers Who Gave Birth in 2002 Who Smoked and Who Averaged 10 or More Cigarettes Per Day



More information about the Pregnancy Risk Assessment Monitoring System (PRAMS), North Dakota PRAMS 2002 data, and the PRAM-O-GRAM fact sheets is available online at www.ndsu.edu/sdc/ndprams.htm and www.ndhealth.gov.