



Effects of Smoking on Reproduction

According to the March of Dimes, an organization that works to improve the health of babies, an estimated 20 percent of women in the United States smoke, many of them while they are pregnant. Cigarette smoking is linked to the development of heart disease, cancer, and many respiratory conditions. It can be harmful to the fetus as it develops in the womb and to the baby at birth, leading to premature birth, low birthweight, and respiratory disorders. Smoking also can affect a woman's reproductive health before pregnancy. Studies show that smoking may reduce a woman's ability to become pregnant.

Toxic smoke

There are over 4,000 chemicals in cigarette smoke.

Carbon monoxide and nicotine are two that are known to be harmful to a fetus.

When a pregnant woman smokes, these chemicals pass through her blood stream into the placenta, the tissue that provides oxygen and nutrients to the fetus. Carbon monoxide and nicotine cause the vessels that supply blood to the fetus to narrow, thus preventing enough food and oxygen from reaching the developing baby.



Mothers and babies at risk

Women who smoke during pregnancy are at risk for having premature and low birthweight babies (a low birthweight is under 5½ pounds). These babies may be small because of

poor growth before birth and/or early delivery (nine months being full term). In 2002, 12.2 percent of babies born to American women who smoked were of low birthweight. Meanwhile, only 7.5 percent of babies born to nonsmoking women were of low birthweight. Pregnant women who are regularly exposed to secondhand smoke also are at risk for having premature and low birthweight babies. And these babies then are at risk for serious health problems.

Children born to mothers who smoked during the pregnancy may have more colds, earaches, and respiratory problems than children born to nonsmoking mothers. Sudden Infant Death Syndrome (SIDS) is another risk for infants whose mothers smoked while pregnant. SIDS is the sudden and unexplained death of an infant under a year old. Studies show that babies whose mothers smoked while pregnant are up to three times more likely to die of SIDS than babies born to nonsmokers.

Smoking affects future generations

Women who smoke while pregnant risk health problems not only in their children, but also in their grandchildren. This means that smoking's harmful effects can reach two generations of a family. Researchers call this the "grandma effect." Scientists have found that when a pregnant woman smokes, her future grandchildren may have double the risk of developing asthma. Asthma is a respiratory disorder that causes wheezing, coughing, and tightness in the chest. This may happen to a child whose mother did not smoke during the pregnancy but whose grandmother smoked while pregnant.

How does this grandma effect happen? Some scientists believe that chemicals in cigarette smoke may change the DNA in a female fetus's eggs. DNA is the molecule that stores all of a person's genetic information. Eggs are the

female sex cells that are produced in a fetus while she is in the womb. It is thought the chemicals in smoke may change the genes that program the fetus's immune system. These altered genes may then trigger the development of asthma.



Efforts to reduce smoking

There are many organizations working to reduce the number of smokers in the United States. The March of Dimes supports research on the risks of smoking during pregnancy and provides information to pregnant women and their doctors. The Centers for Disease Control (CDC) also provides educational resources about the risks of smoking, with its aim being that, by 2010, less than 1 percent of pregnant women will be smoking.



Questions:

1. What impact do the toxic substances in cigarette smoke have on the development of a fetus?
2. What complications may occur in women who smoke both before they are pregnant and during their pregnancy?
3. List several smoking risks that may occur in developing fetuses and in newborns.
4. What is the "grandma effect"? What impact can a woman's smoking have on her grandchildren?