Highlights: Scientific Review of Findings Regarding Reproductive Health

Tobacco Smoke Harms Overall Reproductive Health

Cigarette smoking and exposure to tobacco smoke are harmful to reproductive health, affecting fertility, fetal and child development, and pregnancy outcome.

Tobacco smoke contains more than 7,000 chemicals, some of which are known to be toxic to reproductive health.

Current studies suggest that smoking affects estrogen and other hormone production and may alter hormone function, which could explain reduced fertility among women who smoke.

Tobacco Smoke Can Complicate a Pregnancy

Studies relate maternal smoking to reproductive problems originating in the oviduct, or fallopian tube. Exposure to tobacco smoke diminishes oviductal functioning and could affect fertility. Smoking also may lead to an increased risk for ectopic pregnancy, a condition in which the fertilized egg fails to move through the fallopian tube to the uterus and instead attaches to the wall of the fallopian tube or elsewhere outside the womb. Ectopic pregnancy causes fetal death and poses a serious risk to the health of the mother.

Smoking during pregnancy also causes tissue damage in the fetus, particularly in the lungs and brain. Tobacco smoke contains carbon monoxide that deprives the fetus of necessary oxygen. Tobacco smoke also contains other chemicals that could have toxic effects on the fetus. Carbon monoxide may also play a role in neurologic deficits, including cognitive and neurobehavioral effects in the offspring of smokers.

Smoking during pregnancy is linked to spontaneous abortion, or miscarriage. Fetal growth and development depend on the normal formation and function of the placenta, the organ that makes possible the exchange of nutrients and metabolic products between mother and fetus. Women who smoke also have an increased risk for placental abruption, a condition in which the placenta detaches from the uterus prematurely. Placental abruption leads to preterm delivery and can result in maternal or fetal death. Tobacco smoke also constricts blood vessels and produces antimetabolic effects that result in interference with growth. Both can result in insufficiency of the placenta and may lead to fetal death.

Women who smoke while pregnant also have an increased risk of placenta previa, a condition in which the placenta partially obstructs the cervix. Placenta previa can lead to preterm delivery or maternal or fetal death.

Maternal smoking leads to a thickening of the membrane of the placenta, which decreases the ability of nutrients to pass through the placenta to the fetus. Low birth weight among the babies of mothers who smoke while pregnant is well documented.

Disclaimer: Data and findings provided on this page reflect the content of the 2010 Surgeon General's Report *(How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*). More recent information may exist elsewhere on the Smoking & Tobacco Use Web site (for example, in fact sheets, frequently asked questions, or other materials that are reviewed on a regular basis and updated accordingly).