

## Smoking and Reproductive Health

Cigarette smoking can affect fertility, sexual function in men, the health of pregnant women and their unborn child, and the health of young children.

### **Fertility**

Smoking affects both men's and women's fertility. Women who smoke take longer to conceive. Among smokers, the chances of conceiving fall by 10 – 40 per cent per cycle. The greater the quantity of cigarettes smoked, the longer a woman is likely to take to achieve pregnancy<sup>1</sup>. Cigarette smoking can also affect male fertility. Men who smoke have a lower sperm count than non-smokers, and their semen contains a higher proportion of malformed sperm. By-products of nicotine present in semen of smokers have been found to reduce the motility of sperm<sup>2</sup>.

### **Male sexual impotence**

Mounting evidence indicates smoking may cause male sexual impotence. Impotence, or penile erectile dysfunction, is the repeated inability to have or maintain an erection. A meta-analysis of studies published since 1980 found that 40% - 80% of impotent men were current smokers, compared with 28% of men in the general population<sup>3</sup>.

### **Smoking and oral contraceptives**

Women who use oral contraceptives are liable to increased risk of heart disease. Although the risk of heart disease in young women is low, pill-users who smoke have a 20 times higher risk of having a heart attack<sup>4</sup>.

### **Smoking and pregnancy**

Once pregnant, women who smoke are about twice as likely to experience complications such as placenta previa, a condition where the placenta grows too close to the opening of the uterus. Pregnant women who smoke also are more likely to have placental abruption, where the placenta prematurely separates from the wall of the uterus. This can lead to preterm delivery, stillbirth, or early infant death. Estimates for risk of placental abruption among smokers range from 1.4 to 2.4 times that of nonsmokers. Pregnant smokers also are at a higher risk for premature rupture of membranes before labor begins. This makes it more likely that a smoker will carry her baby for a shorter than normal gestation period<sup>5</sup>.

### **Fetal growth and birth weight**

Women who smoke have a 2.5 times greater risk for having a baby in the smallest 5% to 10% of birth weights<sup>6</sup>. Low birth weight is associated with higher risks of death and disease in infancy and early

<sup>1</sup> Curtis KM, Savitz DA & Arbuckle Effects of cigarette smoking, caffeine consumption, and alcohol intake on fecundability. *Am J Epidemiol* 1997 146: 32-41

<sup>2</sup> Sofikitis N et al Effects of nicotine on sperm motility, membrane function and fertilizing capacity in vitro. *Urological Research* 2000 28: 370 - 5

<sup>3</sup> Tengs, T.O. Osgood N.D. The link between smoking and impotence: two decades of evidence. *Preventive Medicine* 2001; 32(6): 447-452

<sup>4</sup> WHO Collaborative Study of Cardiovascular Disease and Steroid Hormone Contraception 1996 Ischaemic stroke and combined oral contraceptives: results of an international, multicentre, case-control study. *Lancet* 348: 498 - 505.

<sup>5</sup> U.S. Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General. 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, 2004.

<sup>6</sup> U.S. Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General. 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, 2004.

The rate of miscarriage is higher in women who smoke.

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childhood. However the Surgeon General's 1990 Report on the Health Benefits of Smoking Cessation reported that if a woman stops smoking within the first three to four months of pregnancy, her risk of having a low-weight baby will be similar to that of a non-smoker.

### **Spontaneous abortion**

The rate of spontaneous abortion (miscarriage) is substantially higher in women who smoke. This is the case even when other factors have been taken into account<sup>7</sup>.

### **Perinatal mortality**

Perinatal mortality (defined as still-birth or death of an infant within the first four weeks of life) has increased rates for babies of smokers. Approximately 25% of all stillbirths and 20% of all infant deaths can be attributed to pregnant smokers who do not quit within the first three to four months of pregnancy<sup>8</sup>.

### **Passive smoking and pregnancy (Secondhand Smoke Exposure)**

Non-smoking women exposed to other people's tobacco smoke during pregnancy are more likely to have lower weight babies. Babies born to non-smoking women whose partners smoked weighed less than babies born to non-smoking couples<sup>9</sup>. Other research suggests that non-smoking women who are exposed to second-hand smoke during their pregnancy are at increased risk of giving birth prematurely<sup>10</sup> and may be at increased risk of spontaneous abortion (miscarriage)<sup>11</sup>.

### **Breast feeding**

Research has shown that smoking cigarettes affect breast milk. According to the German Cancer Research Centre, a mother who smokes heavily will pass nicotine and toxins to their baby in substantial amounts (equivalent to the baby smoking one cigarette a day). These toxins are passed through the breast milk, causing delays in development, underweight babies, restlessness, and even vomiting. Smoking also leads to a decreased milk supply. One thing to note is that these effects can be found even if the mother doesn't smoke, but if she lives with a smoker<sup>12</sup>.

### **Health and long-term growth**

Infants of parents who smoke are twice as likely to suffer from serious respiratory infection than the children of non-smokers. Smoking during pregnancy can also increase the risk of asthma in young children<sup>13</sup>. Smoking in pregnancy may also have implications for the long term physical growth and

<sup>7</sup> Smoking and Reproductive Health. BMA, 2004

<sup>8</sup> Wisborg, Kirsten, Ulrik Kesmodel, Tine Brink Henriksen, Sjurður Frodi Olsen, & Niels Jorgen Secher. "Exposure to Tobacco Smoke in Utero and the Risk of Stillbirth and Death in the First Year of Life." *American Journal of Epidemiology*. 15 August 2001, 322-327

<sup>9</sup> Hrubá D & Kachlik P Influence of maternal active and passive smoking during pregnancy on birth weight in newborns. *Central European Journal of Public Health* 2000 8: 249 -52

<sup>10</sup> Windham GC et al Pre-natal active or passive tobacco smoke exposure and the risk of pre-term delivery. *Epidemiology* 2000 11: 427 - 33

<sup>11</sup> George L et al. Environmental tobacco smoke and risk of spontaneous abortion. *Epidemiology* 2006: 17 (5): 500-505

<sup>12</sup> Aetna, IntelliHealth. Smoking During Breast-Feeding Can Damage Baby. <http://www.intelihealth.com/IH/ih/IH/c/333/28041/1369169.html>. Retrieved November 2, 2010.

<sup>13</sup> Gilliland, F.D. et al. Effects of maternal smoking during pregnancy and environmental tobacco smoke on asthma and wheezing in children. *Am J Respir Crit Care Med* 2001; 163(2): 429-436



Smokers are likely to begin menopause earlier than non-smokers

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intellectual development of the child. It has been associated with a reduced height of children of smoking mothers as compared with non-smoking mothers, with lower attainments in reading and mathematics<sup>14</sup>.

### **Smoking and menopause**

Women who smoke are likely to begin menopause earlier than women who don't smoke. A study found that smokers are 59% more likely to begin menopause before the age of 45 years, which puts them at an increased risk of osteoporosis and heart disease. However the good news is that women who used to smoke, but had quit at least 10 years before menopause, were much less likely than current smokers to have begun menopause early<sup>15</sup>.

### ***Five tips for quitting***

Studies have shown that these five steps will help you quit and quit for good. You have the best chances of quitting if you use these five steps to develop and maintain your own quit plan.

1. Get ready.
2. Get Support
3. Learn new skills and behaviors.
4. Get medication and use it correctly.
5. Be prepared for difficult situations.

Talk to your health care provider, they can help. If you do not have insurance, or just need to talk to someone, call the Washington Tobacco Quitline.

**Tobacco Quit Line**  
**1-800-QUIT-NOW**  
toll-free 1-800-784-8669  
**QUITLINE.COM**

<sup>14</sup> Fogelman, K.R. and Manor, O. Br Med J 1988; 297: 1233-1236

<sup>15</sup> BMC Public Health, July 7, 2007.