



## **PATIENT'S FACT SHEET: SMOKING AND INFERTILITY**

The health risks of tobacco smoking are well known with regard to diseases of the heart, lungs, and blood vessels. Couples who are interested in pursuing pregnancy or attempting to achieve pregnancy should also understand that tobacco smoking, as well as any tobacco usage, has a negative impact on their ability to become pregnant and carry a pregnancy to term.

### **Impact of Cigarette Smoking on Reproduction in Women**

Research indicates that cigarette smoking is harmful to a woman's ovaries, and the degree of harm is dependent upon the amount and the period of time a woman smokes. Components in cigarette smoke such as nicotine and the heavy metal cadmium have been shown to interfere with the ability of cells in the ovary to make estrogen, and to cause a woman's eggs (oocytes) to be more prone to genetic abnormalities. As a result of smoking, fertility is reduced due to an accelerated depletion of eggs and an earlier onset of menopause (loss of ovarian function). In addition, prior to menopause, the ovaries become more resistant to releasing healthy eggs. Studies have documented that these effects of cigarette smoking cause a delay in the natural conception rate for couples and increase the risk of miscarriage.

### **Impact of Cigarette Smoking on Reproduction in Men**

The relationship between smoking and male factor infertility is less clear. Men who smoke cigarettes heavily (one to two packs per day) appear to have increased abnormalities in sperm motility and shape. Moreover, cigarette smoking may act in conjunction with other factors to reduce male fertility. Although the harmful effects of cigarette smoking on male fertility are controversial, passive smoke inhalation by women who do not smoke may contribute to abnormalities of reproductive function.

### **Smoking Cessation as a Treatment Issue in Couples Undergoing Fertility Therapy**

In couples undergoing IVF, female smoking has been associated with a decreased number of eggs available for fertilization, decreased pregnancy and delivery rates and markedly increased miscarriage rates in most studies. One important investigation showed that cessation of smoking for at least two months before attempting IVF significantly improved chances for conception. Although long-term cigarette smoking can have an irreversible effect on ovarian function, the harmful effect on the ovaries may, in part, be reversed if smoking is discontinued prior to entering into fertility therapy. Pregnant smokers are more likely to have low birth weight babies and premature birth. The incidence of sudden infant death syndrome (SIDS) increases in households where someone smokes.

### **Summary**

Smoking cessation may improve fertility and success rates with infertility treatment. It is healthy for the growing fetus and will create a smoke-free environment for an infant.