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Paternal Exposures and Pregnancy

This sheet talks about paternal exposures and pregnancy. With each pregnancy, all women have a 3% to 5% chance of having a baby with a birth defect. This information should not take the place of medical care and advice from your health care provider.

What is a “Paternal Exposure”?

A paternal exposure is anything the father of the baby is exposed to before or during his partner’s pregnancy. This includes things such as alcohol, tobacco and other drugs, chemotherapy or radiation treatments (for conditions like cancer), workplace exposures, and prescription or over-the-counter medicines.

Do paternal exposures cause any problems related to pregnancy?

Yes. Some exposures may affect a man’s ability to father a child by changing the sperm. These changes include the size or shape of sperm, the number of sperm produced or how the sperm work. Such changes may cause infertility, delay in getting his partner pregnant, or early pregnancy loss in his partner.

Do paternal exposures before or at the time of conception cause birth defects?

Some exposures may cause changes in a man’s sperm. At this time, there is no evidence that paternal exposures at the time a pregnancy is conceived increase the risk of having a child with a birth defect.

Do paternal exposures during a woman’s pregnancy cause birth defects?

A father does not share a blood connection with a pregnancy, so medications or chemicals that are in his body do not get to the developing baby. Substances that a father is

exposed to may be found in small amounts in semen. It is not expected that sexual intercourse during pregnancy would result in a high enough exposure to the pregnant woman to increase the risk of birth defects.

Can the father’s use of alcohol, tobacco or other drugs affect my pregnancy?

These substances can affect the sperm but none are associated with an increased risk for birth defects.

Can chemotherapy or radiation for cancer treatments given to the father affect my pregnancy?

Sperm production is often affected during cancer treatment. Sperm production may return to normal after certain chemotherapy or radiation treatments, but there is a chance that it will not.

Men who are facing cancer treatment may wish to consider sperm banking before starting treatment. It is recommended that men undergoing chemotherapy wait at least three months after the end of treatment before trying to father a child. At this time, there are no studies showing an increase in birth defects in children whose fathers were treated for cancer.

Can the father’s workplace exposures affect my pregnancy?

There have been a number of studies looking at reproductive health of men who are exposed to various substances in the workplace

including lead, organic solvents, pesticides and radiation. Some studies suggest that such exposures may be associated with decreased sperm production, increased sperm abnormalities, decreased fertility, and an increased risk for miscarriage in the partners of these workers. However, none of the workplace exposures in men have been associated with an increased risk for birth defects.

Men exposed to heavy metals, pesticides, and other chemicals in the workplace may carry these agents on their clothes and shoes into the home. This may cause direct exposure to their partners before or during pregnancy. No data are available at this time regarding any increases in birth defects after such exposures. As a precaution, fathers who are exposed to heavy metals or chemicals in the workplace may want to change their clothes and shoes before coming home.

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Selected References:

Bellinger DC 2005. Teratogen update: lead and pregnancy. *Birth Defects Res A Clin Mol Teratol* 73(6):409-20.

Brent R 2009. Saving lives and changing family histories: appropriate counseling of pregnant women and men and women of reproductive age, concerning the risk of diagnostic radiation exposures during and before pregnancy. *Am J OB/GYN* 200(1):4-24.

Colie CF 1993. Male mediated teratogenesis. *Reprod Toxicol* 7:3-9.

Cordier S 2008. Evidence for a role of paternal exposures in developmental toxicity. *Basic Clin Pharmacol Toxicol* 102(2):176-81.

Friedman JM 2003. Implications of research in male-mediated developmental toxicity to clinical counselors, regulators, and occupational safety officers. *Advances in Male Mediated Developmental Toxicity*, edited by Bernard Robaire and Barbara F. Hales. Kluwer Academic/Plenum Publishers.

Polifka J and Friedman JM 2003. Developmental toxicity of ribavirin/IF α combination therapy: is the label more dangerous than the drugs? *Birth Defects Research (Part A)* 67:8-12.

Sallmé M et al. 2000. Time to pregnancy among the wives of men occupationally exposed to lead. *Epidemiology* 11(2): 141-7.

Savitz DA et al. 1997. Male pesticide exposure and pregnancy outcome. *Am J Epidemiol* 146(12):1025-36.

Tielemans E, et al. 1999. Occupationally related exposures and reduced semen quality: a case-control study. *Fert Steril* 71:690-696.

Trasler JM and Doerksen T. 1999. Teratogen Update: Paternal exposures-reproductive risks. *Teratology* 60(3):161-72.

Vine MF 1996. Smoking and male reproduction: a review. *Int J Androl* 19(6):323-37.

Zhu JL et al. 2006. Occupational exposure to pesticides and pregnancy outcomes in gardeners and farmers: a study within the Danish National Birth Cohort. *J Occup Environ Med* 48(4):347-52.

*If you have questions about the information on this fact sheet or other exposures during pregnancy, call **OTIS** at **1-866-626-6847**.*