

Paternal Exposures

This sheet is about paternal exposures in a pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

What is a “paternal exposure”?

A paternal exposure is anything a male parent or sperm donor is exposed to before a pregnancy is conceived, while trying to conceive pregnancy, or after their partner is pregnant. This includes things such as substances of use (alcohol, tobacco, marijuana, opioid misuse), chemotherapy or radiation treatments (for conditions like cancer), workplace exposures, and prescription or over-the-counter medications.

Can paternal exposures make it harder to conceive a pregnancy?

Some exposures may affect a male’s ability to conceive a pregnancy by lowering the desire for sex, reducing the ability to perform sexually, or by directly changing the sperm. These changes include the size or shape of sperm, the number of sperm produced or how the sperm work. Such changes could cause a male to be unable to conceive a pregnancy (infertility) or take longer to conceive a pregnancy.

Do paternal exposures increase the chance of birth defects in a pregnancy?

Every pregnancy starts out with a 3-5% chance of having a birth defect. This is called the background risk.

A father does not share a blood connection with a pregnancy, so medications or chemicals that are in their blood stream do not reach the developing baby. Substances that a male is exposed to might be present in small amounts in semen. For most exposures, however, sexual intercourse during pregnancy is not expected to increase the chance of birth defects. This is because the amount of substance or the exposure that is present in the semen is usually not large enough to cause problems for the developing baby.

How else could a male’s health impact a pregnancy?

If a male is infected with a virus, it is possible that his semen contains the virus as well. The virus from the semen can be transmitted to a sexual partner during intercourse. If a person who is pregnant is infected with a virus during intercourse, they may pass the virus to the developing baby during pregnancy. Some viruses can cause negative effects on the baby if the baby becomes infected.

One such example is the Zika virus. If a male is infected with the Zika virus, it is possible to transfer the virus to a sexual partner during intercourse. If a person who is pregnant is infected with Zika virus, there is a chance the virus will pass to the developing baby. If this happens, it can increase the chance for a pattern of birth defects caused by Zika infection in pregnancy.

Zika is not the only infection that a male can give to a partner that could cause negative pregnancy outcomes. Contact MotherToBaby to discuss specific exposures.

If a male has chemotherapy or radiation treatments, can that affect a pregnancy?

Sperm production can be affected during cancer treatment. In some cases, sperm production may return to normal after chemotherapy or radiation treatments; in some cases, it may not. Males who need cancer treatment can talk to their healthcare providers about their options to save or protect sperm to have children in the future (fertility preservation).

Because different types of cancers require different forms of treatments, there are no general recommendations on cancer treatment and pregnancy. Before trying to get pregnant, talk to your healthcare provider about when is the best time to start. At this time, there are no studies showing an increase in birth defects in children of males who were treated for cancer.

Can a male’s use of alcohol, tobacco, or other substances affect my pregnancy?

These substances can affect the sperm but none are proven to cause an increased chance for birth defects.

Workplace Exposures:

There have been a number of studies looking at reproductive health of males 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 less sperm production, increased sperm abnormalities, decreased fertility, and an unproven increased chance for miscarriage in the partners of these workers. Most workplace exposures in males have not been associated with an increased chance for birth defects. Contact MotherToBaby to discuss specific exposures.

Males exposed to heavy metals and other chemicals in the workplace may carry these agents on their clothes and shoes into the car and the home. This may cause direct exposure to their partners before or during pregnancy. As a precaution, anyone who is exposed to heavy metals or chemicals in the workplace may want to change their clothes and shoes before coming home. There are general tips on working with chemicals in the MotherToBaby fact sheet *Reproductive Hazards of the Workplace: Tips for Job Safety* <https://mothertobaby.org/fact-sheets/reproductive-hazards-workplace/>.

Please click here to view references.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at [MotherToBaby.org](https://mothertobaby.org).

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