



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**

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Chemotherapy

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to chemotherapy may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

What is chemotherapy?

Chemotherapy is a term that describes the use of drugs to treat cancer. It is one of the most widely used methods to treat cancer. When a chemotherapeutic drug is given orally (by mouth) or intravenously (through vein), it enters the bloodstream and travels throughout the body.

How does chemotherapy work?

Cancer cells are different from healthy cells in your body. Cancer cells multiply and grow very fast, and sometimes they spread to other areas of your body. Chemotherapy tries to block cancer cell growth. Each drug has its own specific use, strengths, and side effects.

Will I be able to become pregnant after having chemotherapy?

When chemotherapeutic drugs affect the division of cancer cells, they also interfere with the division of normal cells, including those in the reproduction system (organs needed for pregnancy). This could affect a woman's ability to become pregnant. For most women, reproductive function (ability to get pregnancy) can return to normal within months after chemotherapy has been completed. For some women, it can take several years. How much a chemotherapy treatment would affect a woman's future ability to get pregnant varies from one drug to another. Discuss your specific medication with your healthcare provider. In general, younger women are more likely to regain reproductive function than older women.

Women should discuss options for fertility preservation with their healthcare providers before starting chemotherapy or other treatment for cancer. One option is the freezing and storing of fertilized eggs, but there may be other options.

I had chemotherapy as a child. I am now pregnant. Will my previous exposure to these drugs cause birth defects in my baby?

Probably not. So far, studies do not suggest that exposure to chemotherapeutic agents in childhood increases the risk for birth defects in the children of women who later become pregnant.

If I need chemotherapy in early pregnancy, can it cause birth defects?

Possibly. While there have been case reports of healthy babies born to women who underwent chemotherapy during the first trimester, there is a potential risk for birth defects. The chance for birth defects to happen is greatest when the fetus is exposed to chemotherapy during the first trimester of pregnancy. This is because the first trimester is when many of the internal and external structures of the developing baby are forming and cells are growing quickly. Exposure to chemotherapeutic drugs during the first trimester may also increase the chance for miscarriage. Therefore, if possible, chemotherapy is avoided during the first trimester of pregnancy.

Are there any risks from chemotherapy later in pregnancy?

Possibly. The chance for birth defects is less when chemotherapy is given in the second or third trimester. Most organ system development is completed by the beginning of the second trimester. However, the brain and the

reproductive system may still be sensitive to the medications after the first trimester.

Exposure to chemotherapeutic drugs in the second and third trimester has been associated with a greater risk for premature birth, low birth weight, and a temporary reduction in some of the baby's blood cells (low blood counts).

Are some chemotherapeutic drugs safer than others for use in pregnancy?

Yes. Some chemotherapy drugs show a stronger link with an increase in birth defects than others. Although no drug can be considered safe for use in pregnancy, certain drugs may be less likely to cause birth defects. In addition to the specific chemotherapeutic drug used for maternal therapy, factors such as the number of medications, used during pregnancy, how often they are taken, how long the medications are used, and the trimester they are used, can also influence the outcome. Please call MotherToBaby at 1-866-626-6847 to speak with an information specialist about your specific treatments.

If I undergo chemotherapy while I am pregnant, can it cause problems for my child as they grow older?

It is unclear and it may depend on the medication(s) used or what trimester they are used. In some studies, a higher risk of premature delivery is reported with use of the medications. Premature delivery, on its own, is associated with a higher risk of long-term adverse effects for the baby. Studies are unclear if the adverse effects reported in some studies are the result of the prenatal exposure to the medication, the premature delivery or a combination of both. In other studies, growth restriction or low/lower birth weight have been reported. Again, this may have effects on the infant that may not be related to the drug directly. More studies are needed.

Is it safe to breastfeed my baby while I am having chemotherapy?

No, breastfeeding is not recommended while women are receiving chemotherapy. Although it is not known how much of the medications can be found in breast milk, there could be serious side effects in the nursing infant. These side effects could include suppression of the immune system and an increased risk for cancer. Be sure to talk to your health care provider about all of your breastfeeding questions.

If the father of my child has undergone chemotherapy, will this affect my pregnancy?

Men who are facing cancer treatments may wish to consider sperm banking (freezing and storing) before treatment. Sperm production is frequently affected during cancer treatment. Although sperm production may return to normal after chemotherapy, it is not guaranteed. In addition, damage to the structure of chromosomes in sperm may occur. It is believed that most of the damage is not permanent, but some studies have detected higher than normal levels of abnormal sperm for years after the end of chemotherapy. Although the data are limited, if sperm production resumes, it appears that a man's treatment with chemotherapeutic agents prior to conception does not increase the risk of birth defects in future children.

In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

References Available By Request

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