Chemotherapy

This sheet talks about exposure to chemotherapy in pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

**What is chemotherapy?**

Chemotherapy (also called chemo) is a term that describes the use of medication to treat or control cancer by killing cancer cells. It is one of the most widely used methods to treat cancer, along with surgery and radiation treatment (radiotherapy). A chemotherapeutic drug can be given orally (by mouth) or intravenously (through a vein).

**How does chemotherapy work?**

Cancer cells are different from healthy cells in your body. Cancer cells multiply and grow very fast, and can spread to other areas of your body. Chemotherapy tries to block cancer cell growth.

**Will I be able to become pregnant after having chemotherapy?**

Chemotherapeutic drugs affect the division of cancer cells, and also interfere with the division of normal cells, including those in the reproductive system (organs needed for pregnancy). This could affect a woman’s ability to become pregnant. For most women, reproductive function (ability to get pregnant) 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 providers. 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 treatments for cancer.

**I’m pregnant, and I had chemotherapy as a child. Will that cause birth defects in my baby?**

At this time, studies do not suggest that exposure to chemotherapy in childhood increases the chance for birth defects in the children of women who later become pregnant.

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

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. While there have been case reports of healthy babies born to women who had chemotherapy during the first trimester, exposure to chemotherapy early in pregnancy has been associated with increased risk of birth defects above the background risk. 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 much of the baby’s body is developing and cells are growing quickly. Exposure to chemotherapeutic drugs during the first trimester may also increase the chance for miscarriage and fetal deaths. If possible, chemotherapy should be avoided during the first trimester of pregnancy.

**Are there any risks from chemotherapy later in pregnancy?**

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 some medications after the first trimester.

Exposure to chemotherapeutic drugs in the second and third trimester has been associated with a greater chance for premature delivery (delivery before 37 weeks of pregnancy), higher rate of stillbirth, low birth weight, and a temporary reduction in some of the baby’s blood cells (low blood counts).

**Are some chemotherapeutic drugs less harmful than others during pregnancy?**

Some chemotherapy drugs show a stronger link with an increase in birth defects than others, and certain medications may be less likely to cause birth defects. Different factors, such as the number of medications used during pregnancy,
how often they are taken, how long the medications are used, and the trimester in which they are used can also affect the outcome. Please call MotherToBaby at 1-866-626-6847 to speak with an information specialist about your specific treatments.

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

It can depend on the medication(s) used or in what trimester they are used. In some studies, a higher risk of premature delivery is reported with use of some medications. Premature delivery is associated with a higher risk of long-term adverse effects for the baby. In other studies, growth restriction or low/lower birth weight have been reported. It’s unclear if the adverse effects reported in some studies are due to a medication, other factors, or a combination of factors.

Can I breastfeed my baby while I am having chemotherapy?

For most chemotherapeutic drugs, there is not enough information about use in breastfeeding. Generally, breastfeeding is not recommended while women are receiving chemotherapy. There could be serious side effects in the nursing infant, such as suppression of the immune system and an increased risk for cancer. Be sure to talk to your healthcare provider about all of your breastfeeding questions.

If a man has had chemotherapy, could it affect his fertility (ability to get partner pregnant) or increase the chance of birth defects?

A man's ability to make sperm (sperm production) is often affected by cancer treatment. Sperm production may return to normal after chemotherapy, but it is not guaranteed. Also, damage to the structure of chromosomes in sperm may happen. It is believed that most of the damage is not permanent, but some studies have found higher levels of abnormal sperm for years after the end of chemotherapy. Men who need cancer treatments may wish to consider sperm banking (freezing and storing) before treatment.

While information is limited, if sperm production restarts, it appears that a man's treatment with chemotherapeutic drugs before 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 on paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/.

Please click here for references.