

# CANCER DURING PREGNANCY



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**If you have cancer and are pregnant – or could become pregnant –  
learn what you need to know about the risks and benefits of treatment.**

## Being diagnosed with cancer while pregnant

Finding out you have cancer is upsetting at any time in your life. When you are pregnant, it can be especially scary, as you also worry about the health of your baby.

In some cases, the therapy you need could be harmful to your baby. The right treatment plan – for you and your baby – will depend on what type of cancer you have and how far along you are in your pregnancy.

Cancer in pregnancy can usually be diagnosed and treated safely. Your medical team can help you understand risks and benefits of different options.

## Can the cancer affect my baby?

Most types of cancer do not pose a direct threat to your baby's health; instead, it is the treatment – which you need for your own health – that might be harmful to your baby.

## What is chemotherapy?

Chemotherapy is a treatment for cancer that usually involves several drugs. Most of these drugs can cross the placenta, meaning that they can reach your developing baby, even very early in pregnancy.

Almost all chemotherapy drugs are *teratogenic*: in large enough quantities they can cause major malformations (birth defects) and other health problems.

Most of these drugs act by killing cells that divide rapidly, which includes most cancer cells. By stopping cell division and growth, they pose direct risk to a developing embryo during the first trimester. Some newer drugs target proteins that are abnormally expressed in cancer cells and that are essential for their growth; this is sometimes referred to as *targeted chemotherapy*.

No matter the type of chemotherapy drugs, there have not been many studies on whether they can cause harm to developing babies.

## Chemotherapy during the 1<sup>st</sup> trimester

We have very little evidence about the safety of chemotherapy during the first three months of pregnancy. This is because very few women are diagnosed with cancer during this period; of those that are, many choose to end pregnancy or are able to delay chemotherapy.

Chemotherapy during the 1<sup>st</sup> trimester (up to 12 weeks of pregnancy) can increase the risk of miscarriage, still birth and malformations (birth defects). The most vulnerable period for malformations is from two to eight weeks of pregnancy, when your baby's organs are forming. Some evidence suggests the risk of a major malformation is 10 to 20 per cent when you have chemotherapy, but we don't know for sure. The risk may be lower if you don't use *folate antagonists*, which are the most risky type of drug.

If you have a slow-growing cancer, you may not need chemotherapy right away. Instead, you can be monitored closely for signs that the cancer is growing or spreading. If all goes well, you can wait until your 2<sup>nd</sup> trimester to start chemotherapy. In other cases, you can be treated during your 1<sup>st</sup> trimester with a single, safer chemotherapy drug, such as a *vinca alkaloid* or *anthracycline*. When you reach the 2<sup>nd</sup> trimester, you can start a more common multi-drug treatment.

Unfortunately, delaying chemotherapy will not be an option for all women. If you have an aggressive or advanced type of cancer, you may need to start chemotherapy immediately.

## Chemotherapy during the 2<sup>nd</sup> or 3<sup>rd</sup> trimester

Treatment plans which use a combination of *cyclophosphamide* and an *anthracycline* (usually for breast cancer or lymphoma) have been most commonly studied during pregnancy, and have generally been found to be safe. There is less evidence regarding the use of other drugs, but most babies exposed to chemotherapy during the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters are born healthy.

The use of chemotherapy during this period of pregnancy has not been associated with birth defects, but may increase the risk of intrauterine growth restriction, low birth weight and stillbirth.

If you are diagnosed with cancer late in your pregnancy, you may be able to delay the start of chemotherapy until after you have given birth. However, surgery or chemotherapy often cannot be delayed until the end of your pregnancy.

## Surgery during pregnancy

Surgery is often used to diagnose or treat some types of cancer. Having surgery while you are pregnant is usually safe for both you and your baby.

## Radiation during pregnancy

In some cases, radiation is okay to have during pregnancy. Tumors in your head, neck, or extremities can be treated with little risk to your baby during the 1<sup>st</sup> and 2<sup>nd</sup> trimesters. The rest of your body will be shielded from the radiation, which will reduce your baby's exposure by 50 to 75 per cent.

## Birth after chemotherapy

Though it is not always possible to choose when you give birth, it is best if delivery happens at least two to three weeks after chemotherapy. This allows the baby to recover bone marrow that may have been lost during treatment, and the placenta has time to help remove drugs from your baby's body before birth.

## Not pregnant yet, but thinking about it?

If you have been diagnosed with cancer and will need chemotherapy, you should delay your plans for childbearing. It is important to use contraception before and during your treatment. Some of the most harmful effects that drugs can have on your baby can be caused before you even know you are pregnant, during the first few weeks after conception.

## Breastfeeding

Women taking chemotherapy after delivery should usually not breastfeed their babies. Neither short-term nor long-term safety has been shown by scientific studies; we just don't know enough. One exception is *azathioprine*, which evidence shows does not accumulate in breast milk.

### Other resources:

- The Society of Obstetricians and Gynaecologists of Canada's clinical practice guideline, *Cancer during pregnancy*, available at [www.sogc.org/guidelines](http://www.sogc.org/guidelines)
- The Motherisk program of the hospital for Sick Children in Toronto is a recognized leader for information about medication and treatment in pregnancy and breastfeeding. You can talk to the team at Motherisk by calling the toll-free number 1-877-439-2744 or visiting [www.motherisk.org](http://www.motherisk.org).