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Causes of Infertility

Cancer treatment can interfere with fertility in many ways, as the medicines and treatments that work to kill cancer cells also affect other cells, organs and hormones in the body. Since every patient is different, your doctor may not be able to predict whether your cancer treatment will make you infertile. The effects from cancer treatment may be temporary or permanent. If fertility does recover, it may not happen right away.

Fertility after cancer treatment will be affected by age at the time of cancer treatment, especially for women; type of treatment; the type and dose of chemotherapy drugs used; amount and target area of radiation; type and extent of surgery; whether one or multiple cancer treatments are used; and how long treatment lasts.

Causes of Infertility in Women

Some cancer treatments, such as a hysterectomy, cause permanent infertility in women at any age. Total body irradiation causes very high rates of infertility, but a few young women have had babies afterward.

Another cause of infertility in women is premature ovarian failure, which is when menopause occurs before a woman is 40 years old. Premature ovarian failure happens when both ovaries are surgically removed, and may also occur if the ovaries are damaged by chemotherapy. High-dose chemotherapy can be more destructive to the eggs than lower doses. Chemotherapy with alkylating agents may directly affect the ovaries. Radiation to the ovaries can result in temporary or permanent menopause.

Young women are at risk for infertility and menopause because eggs in the ovaries may be affected by cancer treatment. Younger women and those who had lower doses of chemotherapy or radiation therapy are more likely to regain menstrual periods, though they may not occur regularly. Women over 35 are less likely to recover their fertility.

Preserving Fertility in Women

There are several ways to try to preserve fertility in women. Some options are not appropriate for certain patients, depending on the type of cancer.

Embryo Freezing: Eggs are removed from the patient and fertilized with the sperm of a partner or donor. A fertilized egg is called an embryo. The resulting embryos are then frozen and stored for later use. It takes about two to four weeks from the start of a woman's menstrual cycle to get eggs to use for in vitro fertilization (IVF); waiting may be a problem with a fast-growing cancers. Also, for this treatment, IVF cycle hormones are given, the use of these hormones may stimulate cancer cells to grow and your oncologist may not recommend their use. Insurance rarely covers these procedures, and they often cost \$8,000-\$12,000. There are several financial assistance programs available for women with cancer who need fertility therapy. Rocky Mountain Fertility Center in Colorado (303-999-3877) provides discounts and works with several programs such as Livestrong™ to assist women with cancer that need fertility saving procedures.

Egg Freezing: Some women opt to have their eggs frozen unfertilized. Egg freezing is best for women without a partner who do not want to use donor sperm to fertilize their eggs. Later, even years later, the eggs can be thawed and fertilized. Techniques for egg freezing are now successful and have resulted in thousands of births around the world.

Preserving Fertility in Women cont.

Some women have parts of their ovaries removed surgically and frozen before cancer treatment. Although some centers are banking ovarian tissue before cancer treatment, this technique is still experimental and has resulted in only a few pregnancies worldwide.

For women receiving chemotherapy, one option may be to take a hormone that puts the ovaries into temporary menopause during treatment. These drugs cut down the blood flow to the ovary therefore potentially less of the chemotherapy drugs may get to the ovaries to cause damage. This works best in women under 35 years of age. For women receiving radiation treatment, it may be possible to move the ovaries out of the radiation area surgically. Sometimes they can be relocated at the sides of the pelvis, out of the radiation target field. There is a 50% chance that women will resume menstruating after this procedure.

Other options for becoming a mother after cancer treatment include using **donor embryos**, using **donor eggs**, using a **gestational carrier** (where another woman carries the child), or adoption. A gestational carrier is used for women who have lost their uterus to cancer or the lining of the uterus fails to thicken due to the effects of radiation. Donor embryos or donor eggs are utilized for women whose ovaries have been affected by the chemotherapy.

Recovery of Fertility After Cancer Treatment

For some people, fertility does return after cancer treatment. However, it may take a long time.

For women, the return of menstruation may or may not signal fertility, but getting blood tests for hormones and other tests performed by an infertility specialist can give a better answer.

Women who have had chemotherapy or have had radiation treatment to the pelvic or abdominal area should consult an fertility specialist before trying to get pregnant, to make sure that their heart, lungs, eggs and uterus are healthy enough to avoid pregnancy complications.

Questions to Ask Your Doctor

If you wish to have children after cancer treatment, discuss the issue with your oncology doctor as soon as possible. You also may want to talk to a fertility specialist to prepare yourself for challenges and decisions about your future fertility.

Here are some questions you may want to ask your oncologist or a fertility specialist:

Is there anything that can be done before starting my cancer treatment to increase the likelihood that I will be able to have children in the future?

I am interested in freezing eggs or embryos. Is this an option for me?

I stopped having my period, but could I still get pregnant? Should I be using birth control?

For how long will we need to prevent pregnancy during cancer treatment? Are condoms the best method for us or do I need to use another method?

Will my cancer treatment cause me to be infertile? Do you expect this to be temporary or permanent?

Now that my cancer treatment has ended, I would like to have children. Is it OK to try to become pregnant?