



**FERTILITY
PRESERVATION:
UNDERSTAND YOUR
OPTIONS**

**ISAR FERTILITY PRESERVATION
SPECIAL INTEREST GROUP**

What is fertility preservation?

Fertility preservation is the effort to help cancerous and non-cancerous patients retain their fertility, or ability to procreate. Research into how cancer affects reproductive health and preservation options are growing, sparked in part by the increase in the survival rate of cancer patients.

What are the Indications of fertility preservation?

Men and women with oncological disorders where treatment would affect their reproductive health

- ***Surgical treatments***
- ***Chemotherapy***
- ***Radiotherapy***
- ***Rheumatological disorders which hamper fertility or require medications that suppress fertility.***
- ***Preservation for apparent age related decline in fertility.***
- ***Infectious disorders hampering fertility.***

How does cancer treatment affect fertility?

Certain cancer treatments can harm your fertility or cause sterility. The effects might be temporary or permanent. The likelihood that cancer treatment will harm your fertility depends on the type and stage of cancer, cancer treatment, and your age at the time of treatment.

Surgical Treatment:

Male fertility can be harmed by the surgical removal of the testicles and female fertility can be compromised by cancer treatments that involve the surgical removal of the uterus or ovaries.



If the treatment includes:

The following options should be considered:

Oncologic surgery

Fertility-sparing surgery preserving gonads. Preservation of the uterus in females. Use of cryopreservation may also be considered prior to surgery if the risk of gonadal damage is high

Radiation therapy to pelvic organs and gonads

Shielding aiming at reducing damage of reproductive organs and surgical ovarian transposition
Use of cryopreservation may also be considered prior to radiotherapy

Cytotoxic treatment with high risk of gonadal damage

Use of cryopreservation methods such as sperm banking for males, freezing of embryos and oocytes for females and gonadal tissue freezing

Hormone therapy for estrogen-sensitive breast cancer

Cryopreservation may be considered in women >33 years of age when being planned for a 5-year tamoxifen treatment, as natural fertility diminishes with age

When should I talk to my doctor about fertility preservation?

If you are planning cancer treatment and want to preserve your fertility, talk to your doctor, oncologist or a reproductive specialist as soon as possible. Your fertility can be damaged by one cancer therapy session and, for women, some methods of fertility preservation are typically done during certain phases of the menstrual cycle.

How can women preserve fertility before cancer treatment?

Women who are about to undergo cancer treatment have various options when it comes to fertility preservation. For example:

Embryo cryopreservation - In this procedure, eggs are harvested from your ovaries, fertilized through in vitro fertilization (IVF), frozen and stored. Typically, at the start of your menstrual cycle, you will be treated with synthetic hormones to stimulate your ovaries to produce multiple eggs. Mature eggs are removed, combined with sperm — provided by a partner or sperm donor — and frozen. This method has the highest chance of success. Timing ovarian stimulation can delay cancer treatment by two to three weeks, but research suggests that random ovarian stimulation can be successful.

Egg freezing (oocyte cryopreservation) - Similar to embryo cryopreservation, you will be treated with synthetic hormones and have your eggs harvested. Then your unfertilized eggs are frozen.

Gonadal shielding - If you are having radiation applied to an area far from your pelvis, carefully placed shields can reduce your reproductive organs' exposure to scatter radiation.

Ovarian transposition (oophoropexy) - During this procedure — recommended if you are having radiation applied to a nonpelvic tumor and no chemotherapy — one or both ovaries are surgically repositioned, so they are protected from the planned radiation field. However, because of scatter radiation, ovaries are not always protected. After treatment, you might need to have your ovaries repositioned again or use IVF to conceive.

Surgical removal of the cervix (radical trachelectomy) - If you have early-stage cervical cancer, this procedure can help preserve your uterus. Other methods of fertility preservation for women still being researched include:

Ovarian tissue cryopreservation - During this procedure, ovarian tissue is surgically removed, frozen and later reimplanted.

Ovarian suppression before cancer therapy - In this treatment, hormonal therapy is used to suppress ovarian function and protect eggs during cancer treatment.

What can men do to preserve fertility before cancer treatment?

Men can also take steps to preserve their fertility before undergoing cancer treatment. For example:

Sperm cryopreservation - Before cancer treatment, you will provide semen samples through masturbation or another method, such as testicular sperm extraction via a needle. Samples are frozen and can be stored for years. Depending on the amount of sperm available, samples might be used with intrauterine insemination, where the sperm is thawed and placed in the uterus, or with in vitro fertilization.

Gonadal shielding - Carefully placed shields can reduce your testicles' exposure to radiation.

Another method of fertility preservation for men still being researched, is a procedure in which testicular tissue is surgically removed, frozen and later reimplanted (testicular tissue cryopreservation).

Can fertility preservation interfere with successful cancer therapy or increase the risk of recurring cancer?

Research in these areas is limited. There is no evidence that current fertility preservation methods can directly compromise the success of cancer treatments. However, you could compromise the success of your treatment if you delay surgery or chemotherapy to pursue fertility preservation.

There appears to be no increased risk of cancer recurrence associated with most fertility preservation methods. While there is a concern that reimplanting cryopreserved ovarian tissue could reintroduce cancer cells — depending on the type and stage of cancer — no such problems have occurred in humans.

Can cancer treatment increase the risk of health problems in children conceived afterward?

As long as you do not expose your baby to cancer treatments in utero, cancer treatments does not appear to increase the risk of congenital disorders or other health problems for future children.

However, if you receive a cancer treatment that affects the functioning of your heart or lungs or if you receive radiation in your pelvic area, talk to a specialist before becoming pregnant to prepare for possible pregnancy complications.

What can parents do to preserve the fertility of a child who has cancer?

Taking steps to preserve the fertility of a child who has cancer can be difficult because he or she might not understand the consequences of impaired fertility. If your child has begun puberty, options might include oocyte or sperm cryopreservation. Your consent and your child's might be required. However, efforts to preserve the fertility of a child who has not begun puberty, are considered experimental.



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