

ONCOFERTILITY

What is Oncofertility?

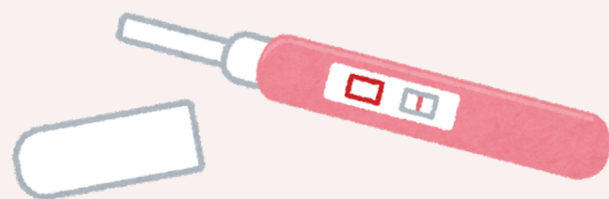
Oncofertility is an interdisciplinary medical field that brings **oncology** and **reproductive medicine** together to help preserve or protect fertility in people who are undergoing or have undergone cancer treatment

How can cancer treatment affect my ability to have a child?

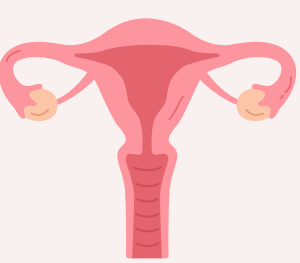
Cancer treatments like chemotherapy, radiation, and some surgeries can damage the ovaries, which can lead to genetic damage in oocytes, ovarian failure, premature menopause, and other reproductive complications.

The potential effects on reproductive health will differ depending on 4 factors:

- Type of treatment
- Targeted body region
- Duration of treatment
- Age of patient



Are there ways to preserve my fertility before I start treatment?



Yes! Many patients have successfully used cryopreservation (freezing). A doctor can retrieve oocytes (eggs) or ovarian tissue before starting treatment.

The eggs can be directly frozen or fertilized and then frozen as embryos. This gives patients the option of using their eggs or embryos to have children after treatment

Embryo Cryopreservation

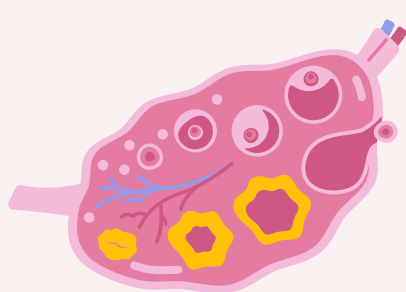
This option requires controlled ovarian stimulation (COS), stimulating the ovaries with gonadotropins. Oocytes are surgically removed in an egg retrieval procedure and inseminated in vitro. The embryos are grown to a specific stage, and then frozen. This requires the use of partner or donor sperm for insemination.

Mature Oocyte (Egg) Cryopreservation

This method has improved over the last 20 years, but data on pregnancy and live birth rates are lacking. It involves COS followed by egg retrieval. The mature oocytes are frozen. This eliminates the immediate need for a sperm donor.

Ovarian Tissue Cryopreservation

A newer option involves harvesting ovarian tissue that contains the oocytes, freezing it, and then transplanting it back after treatment is over. This is an option for patients requiring urgent treatment and are unable to wait for ovarian stimulation.



Which treatments can cause infertility?

Alkylizing Agent Chemotherapies

This type of chemotherapy works by targeting rapidly dividing cells and damaging their DNA, thereby preventing them from multiplying. These agents can also affect the ovaries, directly damaging primordial follicle cells, oocytes (eggs), and granulosa cells, which all play a role in the ability to reproduce.

Total Body or Pelvic Radiation



Radiation delivers high energy photons and kills rapidly dividing cancer cells by directly damaging DNA. Radiation, though effective often has off target effects on healthy cells like oocytes. Primordial follicles house oocytes which respond to DNA damage by initiating apoptosis. This is another way the ovarian reserve becomes depleted.

Women are born with a finite number of oocytes contained within primordial follicles. Any damage to this reserve accelerates reproductive aging.

What if I have already started treatment? Is it too late?

Pre-treatment intervention offers the highest chance of fertility preservation. Providers can evaluate the ovarian reserve and likelihood of natural fertility. Surrogacy and adoption are also family-building options.



Starting the Conversation

Here are some questions to ask your doctor:

- How will my diagnosis and treatment affect my fertility?
- Based on my treatment plan, what is my risk of infertility (high, moderate, low)?
- What are my options for fertility preservation before I begin treatment?
- Can you refer me to a fertility specialist to discuss my options further?



Additional Resources

