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Fertility Concerns and Preservation for Men [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 03/2016

Many cancer treatments affect fertility. This effect can be temporary or permanent. Fertility is your ability to father a child. Infertility is when you are not able to father a child.

Before treatment begins, talk with your health care team about how treatment could affect your fertility. Also, ask about your options for preserving fertility.

How cancer treatments affect fertility

Fertility problems from cancer or cancer treatment occur in 2 main ways:

- Damage to endocrine glands or endocrine-related organs. Endocrine glands and endocrine-related organs include the testes, thyroid, and adrenal glands. These glands and organs release hormones that stimulate puberty and control fertility.
- Changes in the part of the brain that controls the endocrine system.

There are several concerns from treatment affect fertility for men:

- Damage to the sperm.
- Lowered ability to make new sperm.

- Low or no production of semen. Semen is the fluid made in the prostate that carries sperm during sex.

The following cancer treatments have known or possible fertility-related side effects:

- **Chemotherapy.** Some drugs, specifically alkylating agents, are linked to fertility issues. These include:

- Busulfan (Busulfex, Myleran)
- Carmustine (BiCNU)
- Chlorambucil (Leukeran)
- Cisplatin (Platinol)
- Cyclophosphamide (Neosar)
- Lomustine (CeeNU)
- Mechlorethamine (Mustargen)
- Melphalan (Alkeran)
- Procarbazine (Matulane)

- **Radiation therapy.** Radiation treatment may kill sperm cells and the stem cells that make sperm. Treatments that can harm fertility include:

- Radiation therapy to the entire body for stem cell/bone marrow transplants
- Radiation therapy directed at the abdomen, pelvis, lower spine, and testicles or near the testicles.

- Radiation therapy to the pituitary gland in the brain
- **Surgery.** Depending on the procedure, surgery may decrease fertility or cause infertility. This includes removing the prostate, bladder, one or both testicles, or the pelvic lymph nodes.

Fertility effects

For some men, cancer treatment leads to permanent infertility. For others, treatment may stop or slow sperm production for years before it returns. In general, men who receive higher doses of radiation therapy or chemotherapy need to wait longer to regain sperm production. These men also have a higher risk of permanent infertility.

Other factors, such as existing fertility issues or age, also affect fertility. For example, men older than 40 are less likely to regain fertility. But, younger boys who receive treatment for cancer before puberty may not have as much sperm damage. However, stronger treatments may still cause permanent future infertility in children. Such treatments include chemotherapy for a bone marrow/stem cell transplant.

It is important to note that although cancer treatments may make it less likely, a pregnancy can still occur. Many doctors recommend that men who had chemotherapy or radiation treatment wait 6 months so their sperm has enough time to repair. Talk with your doctor about the best time frame for you.

Options to preserve fertility

Most methods to preserve fertility need to be done before cancer treatment begins. The options available depend on several factors:

- Age
- How physically and sexually mature a man is
- Relationship status, such as whether a man currently has a female partner

Your doctor and/or a doctor who specializes in fertility issues can help you explore your options to preserve fertility. A doctor who specializes in fertility problems is called a reproductive endocrinologist. Your options may include:

- **Protecting the testes from radiation therapy.** It is possible to shield the testes from radiation if the cancer is in another part of the pelvis. This prevents sperm damage.
- **Sperm banking.** This procedure involves freezing and storing semen for intrauterine insemination or for in vitro fertilization (IVF) procedures. IVF is a process that involves collecting a woman's eggs and fertilizing them with the stored sperm outside her body. Then the embryo is put back into her body to develop.

Sperm banking is an option for most men who have been through puberty. Even with few sperm, it is still possible to attempt pregnancy through a procedure called intracytoplasmic sperm injection (ICSI). During ICSI, a sperm is injected directly into an egg obtained during IVF.

- **Testicular sperm extraction and epididymal sperm aspiration.** This procedure is for men who do not have mature sperm in their semen. It involves removing a small amount of tissue from the testicle and examining it under the microscope for mature sperm. Then, any mature sperm are frozen or used immediately for IVF.
- **Testicular-tissue freezing.** Researchers are still studying this procedure. It is for boys who have not been through puberty. The procedure involves removing, freezing, and storing testicular tissue before cancer treatment begins. This tissue contains stem cells that may become sperm over time. Researchers are studying how to thaw the tissue and surgically put it back into the body to restore sperm-producing capabilities.

Not all of these options are right for everyone. Some of these methods can be costly and stressful during an already stressful time, and their effectiveness varies. You may consider speaking with a [counselor](#) [3] for guidance about these decisions, in addition to your doctor.

Learn more about [ASCO's recommendations for preserving fertility](#) [4].

Questions to ask your health care team

Consider asking your health care team the following questions before treatment begins:

- What is the risk of infertility from each treatment option for my type, stage, and grade of cancer? Are there any other treatments with a lower risk that are equally effective?
- What options do I have to preserve my fertility?

- Will any of these options delay treatment? If so, how does this affect my chance of recovery?
- Will any of the methods to preserve fertility make my cancer treatment(s) less effective?
- Do any of the options to preserve fertility increase the risk that the cancer may come back?
- Should I talk with a doctor who specializes in fertility before starting treatment?
- What clinical trials are available to me?
- Where can I find support for coping with fertility issues?
- Whom can I contact if I need help talking with my spouse or partner about fertility issues?
- How will I know if I am fertile after cancer treatment?

More Information

[Moving Forward Video: Fertility for Young Adults with Cancer](#) [5]

[Having a Baby After Cancer: Fertility Assistance and Other Options](#) [6]

[Preserving Fertility in Children With Cancer](#) [7]

[Survivorship](#) [8]

Additional Resources

LiveStrong: [Fertility for Men](#) [9]

Several books are also available on this topic; check your library or bookseller.

Links

- [1] <http://www.cancer.net/navigating-cancer-care/dating-sex-and-reproduction/fertility-concerns-and-preservation-men>
[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24699>

[4] <http://www.cancer.net/node/29921>

[5] <http://www.cancer.net/node/28071>

[6] <http://www.cancer.net/node/29111>

[7] <http://www.cancer.net/node/29101>

[8] <http://www.cancer.net/node/22>

[9] <http://www.livestrong.org/we-can-help/fertility-services/fertility-men/>