

## Fertility Issues in Boys and Men with Cancer

Many cancer treatments can affect a boy's or a man's fertility. Most likely, your doctor will talk with you about whether or not cancer treatment may lower fertility or cause infertility.

However, not all doctors bring up this topic. Sometimes you, a family member, or parents of a child being treated for cancer may need to initiate this conversation.



Treatment for cancer may cause changes to a boy's or a man's fertility. Credit: National Cancer Institute

Whether or not your fertility is affected depends on factors such as:

- your baseline fertility
- your age at the time of treatment
- the type of cancer and treatment(s)
- the amount (dose) of treatment
- the length (duration) of treatment
- the amount of time that has passed since treatment
- other personal health factors

It's important to learn how the recommended cancer treatment may affect fertility before starting treatment if at all possible. Consider asking questions such as:

- Could treatment increase the risk of, or cause, infertility?
- Are there other recommended cancer treatments that might not cause fertility problems?
- Which fertility preservation options would you advise for me?
- What fertility preservation options are available at this hospital? At a fertility clinic?
- Would you recommend a fertility specialist (such as a reproductive endocrinologist) that I could talk with to learn more?
- Is condom use advised, based on the treatment I'm receiving?
- Is birth control also recommended?
- What are the chances that my fertility will return after treatment?

## Cancer Treatments May Affect Your Fertility

Cancer treatments are important for your future health, but they may harm reproductive organs and glands that control fertility. Changes to your fertility may be temporary or permanent. Talk with your healthcare team to learn what to expect based on your treatment(s):

- Chemotherapy (especially alkylating drugs) can damage sperm in men and sperm-forming cells (germ cells) in young boys.
- Hormone therapy (also called endocrine therapy) can decrease the production of sperm.
- Radiation therapy to the reproductive organs as well as radiation near the abdomen, pelvis, or spine may lower sperm counts and testosterone levels, causing infertility. Radiation may also destroy sperm cells and the stem cells that make sperm. Radiation therapy to the brain can damage the pituitary gland and decrease the production of testosterone and sperm. For some types of cancers, the testicles can be protected from radiation through a procedure called testicular shielding.
- Surgery for cancers of the reproductive organs and for pelvic cancers (such as bladder, colon, prostate, and rectal cancer) can damage these organs and/or nearby nerves or lymph nodes in the pelvis, leading to infertility.
- Stem cell transplants such as bone marrow transplants and peripheral blood stem cell transplants, involve receiving high doses of chemotherapy and/or radiation. These treatments can damage sperm and sperm-forming cells.
- Other treatments: Talk with your doctor to learn whether or not other types of treatment, such as immunotherapy and targeted cancer therapy, may affect your fertility.

## Emotional Considerations and Support for Fertility Issues

For some men, infertility can be one of the most difficult and upsetting long-term effects of cancer treatment. Although it might feel overwhelming to think about your fertility right now, most people benefit from having talked with their doctor (or their child's doctor, when a child is being treated for cancer) about how treatment may affect their fertility and learning about options to preserve their fertility.

Although most people want to have children at some point in their life, families can come together in many ways. For extra support during this time, reach out to your health care team with questions or concerns, as well as to professionally led support groups.

If you are the parent of a young boy or teen with cancer, this video of fertility options for young male cancer patients from the Children's Hospital of Philadelphia may help you talk with your son and his doctor. <https://www.youtube.com/watch?v=EYecwbPNkXE&t=18s>

# Fertility Preservation Options for Boys and Men

Men and boys with cancer have options to preserve their fertility. These procedures may be available at the hospital where you are receiving cancer treatment or at a fertility preservation clinic.

Talk with your doctor about the best option(s) for you based on your age, the type of cancer you have, and the specific treatment(s) you will be receiving. The success rate, financial cost, and availability of these procedures varies.

- Sperm banking (also called semen cryopreservation) is the most common and easy option for young men of reproductive age who would like to have children one day. Samples of semen are collected and checked under a microscope in the laboratory. The sperm are then frozen and stored (banked) for the future. Sperm can be frozen for an indefinite amount of time.
- Testicular shielding (also called gonadal shielding) is a procedure in which a protective cover is placed on the outside of the body to shield the testicles from scatter radiation to the pelvis when other parts of the body are being treated with radiation.
- Testicular sperm extraction (TESE) is a procedure for males who are not able to produce a semen sample. Sperm is collected through a medical procedure and frozen for future use.
- Testicular tissue freezing (also called testicular tissue cryopreservation) is still considered an experimental procedure at most hospitals. For boys who have not gone through puberty and are at high risk of infertility, this procedure may be an option.

If you choose to take steps to preserve your fertility, your doctor and a fertility specialist will work together to develop a treatment plan that includes fertility preservation procedures whenever possible.

## Finding More Information

- The Oncofertility Consortium <https://oncofertility.msu.edu/>
- Livestrong Fertility Program: <https://www.livestrong.org/what-we-do/program/fertility>
- American Society for Reproductive Medicine: <https://www.reproductivefacts.org>

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