



# Fertility After Cancer Treatment

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For Individuals Assigned  
Male at Birth (AMAB)



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This handout will provide you with information about your fertility options after cancer treatment.

**Fertility is the ability to have biological children.**

Your medical team will talk to you about your short-term and long-term follow-up after your cancer treatment ends. They can also refer you to a fertility provider (if you have not been connected with one already) to talk about your options after treatment.

**Your experiences and preferences regarding your sexual and reproductive health are important.**

**A**

## The Basics: Why do we need to talk about this?

- Cancer treatment can affect how the testes work and whether someone can have biological children in the future.
  - This depends on things like age, the type of cancer, and the kind of treatment used.
- Going through cancer treatment can be a challenging time and cause many different feelings. After treatment, it may take time to be ready to think about relationships, sex, or having children.



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How old do you have to be to do sperm banking? Is any part of the process painful?

*-Patient/Family Advisor*

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**B**

## The Reproductive System

The reproductive system has many parts and is controlled by a small part of the brain called the pituitary gland.

When puberty begins (around age 9-14 for AMAB individuals), the pituitary gland sends out two hormones. These hormones tell the testes to start making testosterone and sperm. Sperm is needed to fertilize the egg (created by the female reproductive system) to develop into a baby.

As puberty continues, testosterone causes changes in the body, like a deeper voice, a bigger penis and testes, more facial and body hair, and stronger muscles.



## How does cancer treatment affect the testes?

Some cancer treatments can cause infertility. It can happen after certain types of chemotherapy, radiation to the brain or testes, or surgery on the reproductive system (penis, scrotum, testicles).

Cancer treatment can also cause low testosterone. If this happens before puberty, puberty may not start without hormone medicine given by a health care provider. If this happens after puberty, testosterone therapy may be needed to replace the hormones your testes are not making.

### Surgery

- If both testicles were removed by surgery (bilateral orchectomy) during cancer treatment, this causes permanent infertility since the testes are no longer there to produce sperm or testosterone. Hormone replacement therapy (HRT) can be used to replace testosterone, but sperm production cannot be replaced.
- Pelvic, spinal, or abdominal surgery can sometimes damage the nerves needed for ejaculation of sperm. Prostate or bladder removal can lead to problems with erections or ejaculation.
- Surgery to the pituitary gland in the brain may impact hormones that are required for fertility.



## How does cancer treatment affect the testes?

continued

### Systemic Therapy

- Certain types of chemotherapy, immunotherapy, and targeted therapy can damage testes and/or sperm.
- The higher the dose of these types of chemotherapy that was received, the higher the risk of infertility.

### Radiation

Radiation therapy can affect the testes in two ways:

- *Radiation to or near the testes*: sperm-producing cells are very sensitive to radiation. Testosterone-producing cells are less sensitive to radiation, but higher doses may cause damage and cause lower testosterone.
- *Radiation to the brain*: some areas of the brain (the hypothalamus and pituitary gland), help with sexual development and allow the testes to make sperm. Damage to these areas of the brain from radiation may lead to low hormone levels. People with low levels of these hormones may need to take testosterone hormone replacement. Some people may regain fertility with hormone treatments which a fertility care provider can help with.

If your treatment for cancer included both radiation and chemotherapy, the risk of damage may be higher.

## D Fertility Follow-Up

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People who are post-pubertal, and have had cancer treatments that might affect the testes, should have fertility follow-up approximately one year after completion of treatment. You can arrange this with your health care provider.

If cancer treatment was received before puberty, fertility discussions may begin later than this – i.e. once you reach puberty. If you have questions, do not hesitate to ask your health care provider during follow-up.

- Blood tests may be done to check hormone levels. If problems are found, a health care provider may send you to a specialist for additional care.
- People who have had both testicles removed should begin seeing an endocrinologist starting at age 11-12 for hormone replacement therapy.
- People who have saved and frozen sperm should talk to a fertility care provider about options for having children in the future.
- These regular check-ups can help find and treat problems early.

**E**

## Common Questions

### **What are the effects of cancer treatment on the reproductive system?**

**Failure to enter puberty:** Some people who have received cancer treatment but have not started puberty yet may not start puberty. This is because their testes may not work properly due to their cancer treatment. If this happens, a doctor may give hormones to help the body go through puberty.

**Low testosterone:** People with low testosterone may need testosterone replacement therapy. Testosterone can be given in several ways, including skin patches, injections, and topical gel. Your doctor will help you decide which option is best for you.

**Sometimes, infertility happens for reasons that are not related to cancer.**

**E**

## Common Questions

continued

### ✓ **How will I know if I'm infertile?**

The best way to check the ability to make sperm is with a semen analysis, which looks for sperm in a sample of semen.

If a person cannot or does not want to provide a semen sample, doctors can check hormones in the blood to get some information about sperm production.

If multiple semen tests show azoospermia (no sperm), this may mean infertility. People with oligospermia (low sperm count) may still be able to have children with the help of a fertility doctor.

**E**

## Common Questions

continued

✓ **What if only one testicle or a portion of one testicle was surgically removed?**

If only one testicle or part of a testicle was removed, fertility and testosterone levels are usually not impacted. The remaining testicle can still produce sperm and testosterone.

However, it is important to protect the remaining testicle from injury. Always wear an athletic supporter with a protective cup when playing sports or doing activities that could harm the groin, such as contact sports (football, hockey, wrestling), baseball, or other high impact activities.

✓ **How long does chemotherapy stay in my body?**

Some cancer medications can stay in your body fluids up to 5 days after treatment. Ask your medical team how long you should follow this guideline if you are unsure.

**E**

## Common Questions

continued

### ✓ What are my parenthood options?

If your fertility has been unaffected by your cancer treatment, you may be able to have a baby using natural conception (using a partner's eggs and your sperm through sexual intercourse). There are also other family building options, such as adoption and gestational carriers, that may be a better option for you and your family.

If you experience temporary infertility, it may return quickly or take a long time after your cancer treatments end. If this happens, you may still be able to have a baby with natural conception or you may need the help of a fertility health care provider for other family building methods such as:

- Conception using fresh or banked frozen sperm, donor sperm, or TESE (a sperm retrieval procedure that removes a small piece of tissue from the testicle to extract sperm).

If your cancer treatments resulted in permanent sterility (a condition that prevents someone from reproducing), you may still be able to have a baby with the help of a medical practitioner using donor sperm.

**E**

## Common Questions

continued

✓ **How long should I wait after cancer treatment ends before trying to have a biological child?**

Some experts recommend waiting 1-2 years after treatment completion to try to have children. It is recommended to speak to your health care team if you have specific questions on when to start a family following your cancer treatment.

✓ **What is the impact of cancer treatment on sexual health?**

Resources on sexual health and cancer can be found by scanning this QR code.



## Notes





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