

“I have cancer today. How can I build a family tomorrow?”

We can help explain the *risks*, explore your *options* and plan for your *future*.

Table of Contents

MEN	3
WOMEN	7
SPECIAL CONSIDERATIONS	13
TURNING INFORMATION INTO ACTION	15
SAMPLE QUESTIONS TO ASK YOUR DOCTOR	17

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Introduction

If you want to become a parent after cancer, we would like to give you the information you need to make that happen.

In this booklet, you will find an overview of information about the risks of infertility from cancer treatments and your family-building options. We encourage you to use this information:

- To understand how your fertility can be affected by cancer and cancer treatments
- To help you think about planning your family before, during and after cancer
- To educate your friends, family and caregivers about why planning your family is important to you

Please remember, this booklet provides only an overview. For more detailed information about your risks, options, clinics in your area and other tools designed to help you customize what you find here, visit our website at [LIVESTRONG.org/Fertility](https://www.livestrong.org/Fertility) or call 855.220.7777.

Men

Infertility means that you cannot initiate a pregnancy. For men, infertility happens when:

- You do not produce sperm
- You produce very low quantities of sperm or very low-quality sperm
- Damage to the reproductive system or sperm transport system prevents sperm from exiting the body

Fertility Risks

The risk of infertility from cancer treatments depends on many things, including:

CHEMOTHERAPY

- Type
- Duration
- Dose

SURGERY

- Location
- Scope of surgery

RADIATION

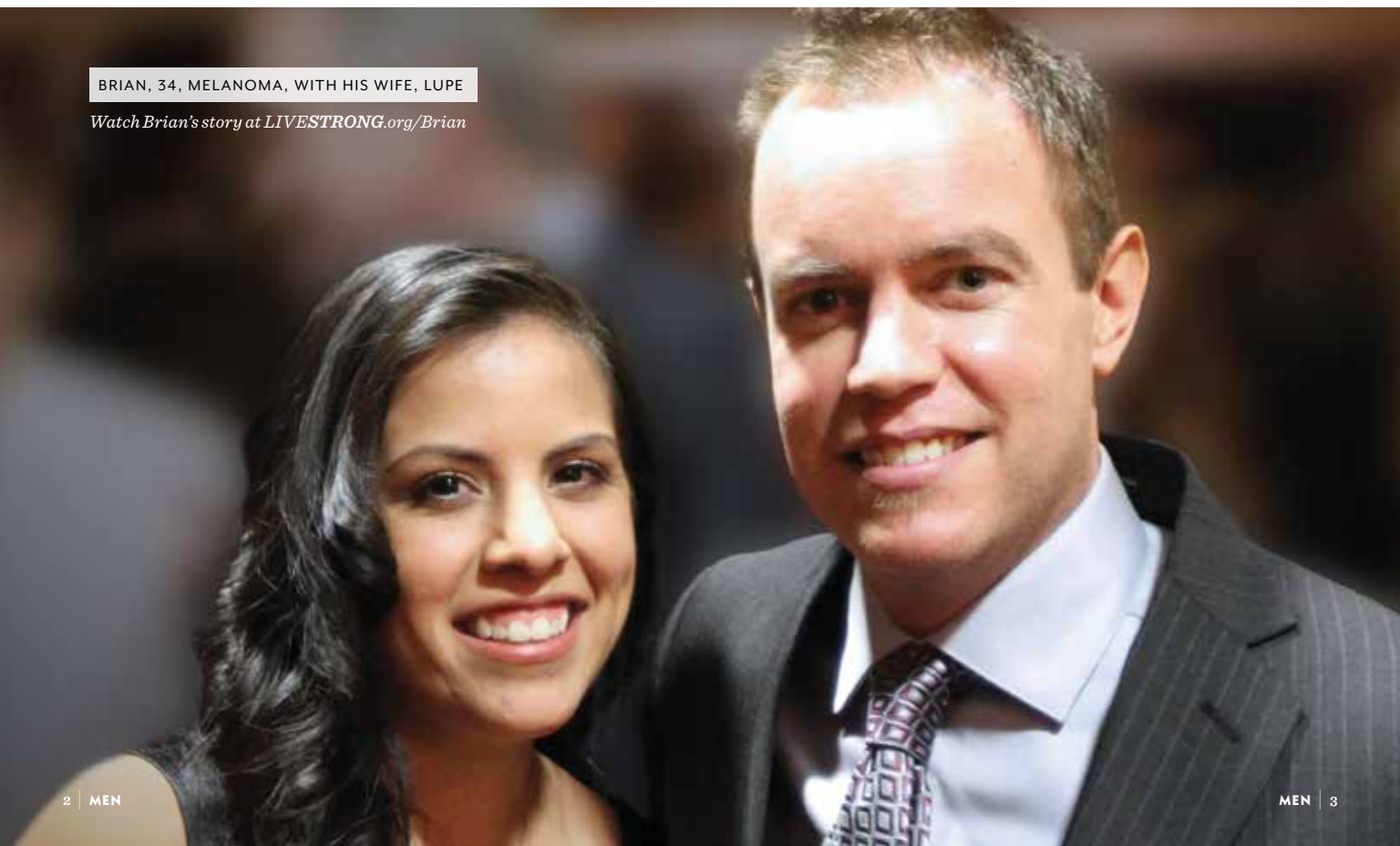
- Location
- Dose

OTHER

- Age
- Pretreatment fertility status
- Cancer type

BRIAN, 34, MELANOMA, WITH HIS WIFE, LUPE

Watch Brian's story at [LIVESTRONG.org/Brian](https://www.livestrong.org/Brian)



Fertility Preservation Options

There are several ways to preserve fertility before cancer treatments. The following are options you may consider in order to minimize damage to your reproductive system and/or preserve your sperm.

SPERM BANKING

A semen specimen is produced, analyzed, frozen and stored for future use.

TESTICULAR SPERM EXTRACTION (TESE)

A surgical procedure for men post puberty in which testicular tissue is obtained and examined for sperm cells to be used immediately for IVF or frozen for future use.

RADIATION SHIELDING

Special shields are placed over one or both of the testicles during radiation treatment.

TESTICULAR TISSUE FREEZING*

Testicular tissue, including the cells that produce sperm, is surgically removed, analyzed, frozen and stored. This procedure is mostly aimed at pre-pubescent boys who are not yet producing sperm.

**experimental*

Possible Fertility Outcomes

Cancer treatments can affect the reproductive system in many ways. After treatment, your fertility may fall into one of these categories:

NORMAL FERTILITY

Normal sperm function and count. Many men undergo cancer treatment and are able to father children naturally with no change in their fertility.

TEMPORARY INFERTILITY

No sperm in the ejaculate. Sperm production may stop for a temporary amount of time. It may return immediately or many years after the cancer treatments end.

COMPROMISED FERTILITY

Compromised sperm function and/or count. This can occur due to impaired sperm production, interference with hormone production or damage to the nerves and ducts that carry sperm out of the body. This can make natural conception hard and may require the assistance of fertility doctors.

PERMANENT STERILITY

No ejaculated sperm. Some men will no longer produce sperm after treatment. There may be low levels of sperm in the testicles that may be used to try to have children with help from a doctor.

Parenthood Options After Cancer

There are many ways to become a father after cancer. After your cancer treatments end, a test called a semen analysis can measure your fertility. Based on the results of the test, the following may be options for you:

NORMAL FERTILITY

- Natural conception
- Adoption

TEMPORARY INFERTILITY

- Natural conception
- Conception with the help of a doctor using fresh or banked sperm, donor sperm or TESE
- Adoption

COMPROMISED FERTILITY

- Natural conception
- Conception with the help of a doctor using fresh or banked sperm, donor sperm or TESE
- Adoption

Women

PERMANENT STERILITY

- Conception with the help of a doctor using fresh or banked sperm, donor sperm or TESE
- Adoption

Important Tips

- Not all cancers and cancer treatments will affect your ability to have a baby. Ask your oncology team about your risks and consult a male reproductive specialist if possible.
- Sperm banking is the most successful and least expensive way to preserve your fertility. It should be done before cancer treatments start.
- Even if you have a very low sperm count, sperm banking is generally recommended.
- Sperm can be frozen for many years and still used to try to have a baby.
- Due to possible genetic damage to sperm from cancer treatments, doctors usually recommend waiting six to 12 months after the end of chemotherapy or radiation before trying to conceive naturally.
- Sperm production may return immediately or many years after cancer treatments. If you do not want to become a parent, you should use contraception, even if you think you are infertile.
- Children born to cancer survivors are not at higher risk for birth defects of cancer, unless the cancer involved is caused by a known genetic mutation. If this is the case, it may be possible to use certain genetic screening methods to help prevent passing the gene mutation on to your children.

Infertility is when you cannot start or maintain a pregnancy. For women, infertility happens when:

- The ovaries no longer contain a supply of healthy eggs
- Damage to the reproductive system prevents a fertilized egg from successfully implanting and growing in the uterus
- Damage to the reproductive system prevents you from being able to carry a pregnancy

Fertility Risks

The risk of infertility from cancer treatments depends on many things including:

CHEMOTHERAPY

- Type
- Duration
- Dose

SURGERY

- Location
- Scope of surgery

RADIATION

- Location
- Dose

OTHER

- Age
- Pretreatment fertility status
- Cancer type

A photograph of a woman with long brown hair, smiling warmly while holding a young child with blonde hair. The child is looking up and smiling. They are in front of a patterned background with circular floral motifs. The woman is wearing a light-colored, textured top, and the child is wearing a striped shirt with a pink tie.

SARAH, 34, TWO-TIME BREAST CANCER SURVIVOR

Watch Sarah's story at [LIVESTRONG.org/Sarah](https://www.livestrong.org/Sarah)

Fertility Preservation Options

There are several ways to preserve fertility before cancer treatments. The following are options you may consider in order to minimize damage to your reproductive system and/or preserve your eggs.

EMBRYO FREEZING

Mature eggs are removed through a surgical procedure and fertilized in the lab with sperm to create embryos. Embryos that develop successfully are frozen for future use.

EGG (OOCYTE) FREEZING

Mature eggs are removed through a surgical procedure and frozen for future use.

OVARIAN SHIELDING

Special shields are placed over the site of the ovaries during radiation treatment.

OVARIAN TRANSPOSITION

Ovaries are surgically moved higher in the abdomen and away from the radiation field to minimize exposure and damage.

FERTILITY-SPARING SURGERY

Procedures aimed at removing cancer with an effort to preserve as much reproductive function as possible.

OVARIAN TISSUE FREEZING*

Part or all of an ovary is removed through a surgical procedure. Removed tissue that contains hormone-producing cells and immature eggs is divided into strips and frozen for future use.

OVARIAN SUPPRESSION*

Gonadotropin-releasing hormone analog treatments are used to cause the ovaries to temporarily shut down.

**experimental*

Possible Fertility Outcomes

Cancer treatments can affect the reproductive system in many ways. After treatment, your fertility may fall into one of these categories:

NORMAL FERTILITY

Many women who undergo cancer treatment have no change in their fertility and are able to have a baby naturally.

FERTILITY FOLLOWED BY EARLY MENOPAUSE

Many cancer treatments damage some, but not all, of the eggs in your ovaries. This means that you may have a period of time when you are fertile after cancer treatments and then go into early menopause.

COMPROMISED FERTILITY

This can happen from damage to the ovaries, hormone production or reproductive system. This damage can make natural conception hard, but pregnancy may be possible with help from a fertility doctor.

IMMEDIATE MENOPAUSE

This can happen if your eggs are damaged or destroyed by your cancer treatments and/or your reproductive organs are damaged or removed.

Parenthood Options After Cancer

There are many ways to become a mother after cancer. After your cancer treatments end, a doctor can measure your fertility with hormone tests and ovarian ultrasounds. Based on the results of these tests, and your ability to carry a pregnancy, the following may be options for you:

NORMAL FERTILITY

- Natural conception
- Other family-building options such as adoption and surrogacy

FERTILITY FOLLOWED BY EARLY MENOPAUSE

- Natural conception
- Fertility preservation options in case you enter menopause before you complete building your family
- Conception with the help of a doctor using frozen embryos, eggs or ovarian tissue
- Donor eggs or embryos
- Gestational surrogacy
- Adoption

COMPROMISED FERTILITY

- Natural conception
- Conception with the help of a doctor using frozen embryos, eggs or ovarian tissue
- Donor eggs or embryos
- Gestational surrogacy
- Adoption

IMMEDIATE MENOPAUSE

- Using frozen embryos, eggs, ovarian tissue or donor eggs or embryos with a gestational surrogate
- Adoption

Special Considerations

Important Tips

- Not all cancers and cancer treatments will affect your ability to have a baby. Ask your oncology team about your risks and consult a reproductive specialist if possible.
- Even if your period returns, damage to your ovaries from your cancer treatments may put you into menopause five, 10 or even 20 years earlier than is common.
- Eggs, embryos and ovarian tissue can be frozen for many years and still be used to try to have a baby.
- Your medical team may recommend that you wait anywhere from six months to five years after cancer treatments to try to get pregnant.
- The return of your period does not always mean that you are fertile—and the absence of a period does not always mean that you are infertile. If you are not ready to become a parent, you should use contraception, even if you think you are infertile.
- Current research shows that pregnancy after cancer does not cause recurrence, even after breast cancer.
- Some cancer treatments can cause long-term damage to your heart and lungs. This damage can sometimes complicate pregnancy. Ask your doctor if pregnancy is safe for you.
- Children born to cancer survivors are not at higher risks for birth defects or cancer, unless the cancer involved is caused by a known genetic mutation. If this is the case, it may be possible to use certain genetic screening methods to help prevent passing the gene mutation on to your children.

Breast Cancer

SPECIAL CONSIDERATIONS	AVAILABLE OPTIONS
Some breast cancers are hormonally sensitive. This means that standard fertility treatments and medications may be unsafe.	There are new fertility options and medication choices that may be safer for breast cancer patients.
Some breast cancer patients carry the BRCA gene and do not want to pass it on to their children.	It may be possible to use certain genetic screening methods to help prevent passing the gene mutation on to your children.
Some breast cancer patients carry the BRCA gene and are at higher risk of ovarian cancer and may want their ovaries removed.	It may be possible to build your family or preserve your fertility before having your ovaries removed.

Turning Information into Action

Gynecologic Cancers

SPECIAL CONSIDERATIONS	AVAILABLE OPTIONS
Some gynecologic cancers are hormonally sensitive. This means that standard fertility treatments and medications may be unsafe.	There are new fertility options and medication choices that may be safer for gynecologic cancer patients.
Some gynecologic cancer surgeries can affect future fertility or the ability to carry a pregnancy.	For patients with early stage cancers, fertility-sparing surgery may provide successful preservation of your fertility/ability to carry a pregnancy.
Radiation to the pelvic area can cause changes to the uterus that may make it more difficult to get pregnant or carry a pregnancy to term.	Gestational surrogacy may be an option for patients who cannot carry a pregnancy.

Pediatrics

SPECIAL CONSIDERATIONS	AVAILABLE OPTIONS
Prepubescent boys and girls cannot bank sperm or freeze their eggs or embryos.	Experimental options like testicular tissue and ovarian tissue freezing may be available.
Children may be at risk for early or delayed puberty from their cancer treatments.	Both early and delayed puberty can be treated with medications.
Girls may go into premature ovarian failure (early menopause) from their cancer treatments.	Hormone replacement therapy or the birth control pill is often used to treat the side effects of early menopause in young girls, but this does not reverse infertility.

Financial Assistance

The **LIVESTRONG** Foundation offers donated fertility medications and discounted sperm, embryo and egg freezing services through a national network of reproductive clinics and sperm banking partners. For men who do not live near a participating center or who are in acute care, sperm banking by mail-in kit is available. These network members agree to directly discount their services for approved applicants.

Men and women diagnosed with cancer are eligible if they meet certain treatment and financial criteria. **LIVESTRONG** accepts patient applications on a rolling basis and works hard to provide a quick review process in consideration of tight treatment timelines. **LIVESTRONG** welcomes the participation of new fertility centers in the national network of organizations that provide discounted services. Enrollment of new centers occurs on a rolling basis.

For more information about the patient eligibility criteria, how to complete a patient application and how fertility centers can join the network, call us at 855.220.7777 or visit our website at [LIVESTRONG.org/Fertility](https://www.livestrong.org/Fertility).

Fertility Resources

For more comprehensive information about all of the options included in this booklet, visit [LIVESTRONG.org/Fertility](https://www.livestrong.org/Fertility). We have developed online tools to help you understand your risks and options based on your personal cancer experience.

FERTILITY RISK TOOL

This online tool allows you to search by cancer or treatment type to see if your risk of infertility is high, medium or low.

FAMILY-BUILDING OPTIONS TOOL

The online tool allows you to enter basic information about your individual medical situation and receive customized information about family-building options.

FERTILITY RESOURCE GUIDE

This guide is a searchable database of doctors and services, including reproductive endocrinologists, sperm banks, financial assistance, adoption agencies and legal resources.

One-on-One Cancer Support

LIVESTRONG Cancer Navigation Services help anyone affected by cancer—whether you have cancer or are a caregiver, family member, friend or health care provider of someone diagnosed.

In addition to fertility information, you can receive assistance with additional concerns such as:

- Accessing financial assistance for fertility preservation at a fertility clinic near you.
- Addressing your insurance and employment concerns.
- Finding ways to cope with day-to-day concerns through peer and professional emotional support.
- Educating and matching you to clinical trials and new treatments in development.
- Medical guidance and planning to help you become an expert patient.
- Locating and accessing local resources.

Sample Questions to Ask Your Doctor

We encourage you to ask your doctor the following questions if you are interested in learning more about your fertility and post-cancer parenthood options.

- Will any of my cancer treatments affect my fertility?
- Are there effective cancer treatment options for me that are less likely to cause infertility?
- What are my fertility preservation options?
- How will I know if I am fertile after treatment?
- What is the difference between premature ovarian failure (early menopause) and infertility?
- If I don't preserve my fertility before treatments, what are my options after treatment?
- Do I have a type of cancer that can be inherited by my children?
- How long do I need to wait after cancer treatments end to start a family?
- Can you refer me to local or national resources, such as experts, clinics and nonprofit organizations for more information?

For free assistance with your cancer-related concerns, contact us Monday through Friday, from 9 a.m.–5 p.m. CT. Toll-free: 855.220.7777 or [LIVESTRONG.org/WeCanHelp](https://www.livestrong.org/WeCanHelp).

