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Fertility and Women With Cancer

Cancer and its treatment can sometimes affect a woman's ability to have children. Here we offer information on how cancer treatment can affect fertility, ways to preserve fertility before treatment, and fertility options available after treatment.

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Need Help?

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How Cancer Treatments Can Affect Fertility in Women

A lot of things must take place for a couple to make a baby, and a “body system malfunction” at any point can lead to changes in fertility. Cancer, or more often cancer treatments, can interfere with some part of the process and affect your ability to have children. Different types of treatments can have different effects.

What is infertility?

Infertility is not being able to become pregnant. Doctors diagnose women with infertility after they have been trying to conceive for a year without success. Women are infertile if:

- Their ovaries don't contain healthy eggs. (Remember a woman is born with all the eggs she will ever have and they're stored in her ovaries.)
- Damage to other parts of the reproductive system prevents eggs from being fertilized.
- A fertilized egg cannot implant and grow inside the uterus.

If you can, talk with your doctor, nurse, or another member of your health care team about fertility before treatment. There might be ways to save or protect your fertility before and maybe even during treatment. But after treatment, options are often more limited. (Parents of children with cancer should consider this, too. These special concerns are addressed in [Preserving Fertility in Girls and Teens with Cancer¹](#).)

Some of the things that must be considered when trying to preserve fertility in women are:

- If the cancer has spread or whether a woman has a high risk of getting cancer in these organs in the future
- If it is risky to delay starting cancer treatment (some options to preserve fertility might take too much time when the cancer is fast-growing)
- Chances of success (most fertility procedures are less successful for women over age 40).

Studies have suggested that women with cancer are less likely to be given information about preserving their fertility than men. Women who already have at least one child or those who are not married also are less likely to receive information. If you're interested in having children in the future, you may need to start this conversation with your cancer team or doctor.

Most cancer survivors can still choose to become a parent if they wish. It might not happen the way you planned before cancer, but if you can be flexible, you'll find that you have options. These include possible freezing of eggs, embryos, or pieces of your ovary, having infertility treatment after cancer, adopting, or using a donated egg or embryo to have a child (sometimes with the help of another woman to carry the pregnancy).

How chemotherapy can affect fertility in women

Most chemotherapy (chemo) drugs can damage a woman's eggs, affecting her fertility. This depends on the woman's age, the types of drugs she gets, and the drug doses, making it hard to predict if a woman is likely to be fertile after chemo.

The chemo drugs **most likely** to cause egg damage and infertility are:

- Busulfan
- Carboplatin
- Carmustine (BCNU)
- Chlorambucil
- Cisplatin
- Cyclophosphamide (Cytosan[®])
- Dacarbazine
- Doxorubicin (Adriamycin[®])
- Ifosfamide
- Lomustine (CCNU)
- Mechlorethamine
- Melphalan
- Procarbazine
- Temozolomide

On the other hand, the chemo drugs that have a **low risk** of damaging the eggs include:

- 5-fluorouracil (5-FU)
- Bleomycin
- Cytarabine
- Dactinomycin
- Daunorubicin
- Fludarabine
- Gemcitabine
- Idarubicin
- Methotrexate
- Vinblastine
- Vincristine

Talk to your doctor about the chemo drugs you will get and the fertility risks that come

with them.

Chemo and pregnancy

Age makes a difference: The younger you are, the more eggs you usually have in your ovaries. This gives you a higher chance to keep some fertility in spite of damage from treatments. Women who are treated for cancer before they are 35 have the best chance of becoming pregnant after treatment. Some women in their teens or twenties never stop having periods. Young women who stop having menstrual periods during treatment may have a return of periods again after they are off chemo for a while.

After chemo, fertility may not last as long: Girls who had chemo before puberty (the time when periods begin) or young women whose menstrual periods start back after chemo are at risk for early (premature) menopause. When a woman stops having periods before age 40, long before the average age (about 51), it's considered **premature ovarian failure** or **primary ovarian insufficiency**. She becomes infertile because her ovaries stop making the hormones needed for fertility: estrogen and progesterone.

Having periods doesn't always mean fertility: Even if a woman's periods start back after cancer treatment has stopped, her fertility is still uncertain. Usually some eggs are destroyed by cancer treatment. You may need a fertility expert to help you find out if you are fertile or learn how long the fertility window may last.

Avoid getting pregnant during chemo: Many chemo drugs can hurt a developing fetus, causing birth defects or other harm. You might be fertile during some types of chemo, so you'll need to use very effective birth control. Talk with your doctor about this. Remember, too, that some women can get pregnant even when their periods have stopped. For this reason, it's important to use birth control whether or not you have periods.

If you get pregnant too soon after chemo, it can harm the baby: Women are often advised not to get pregnant within the first 6 months after chemo because the medicine may have damaged the eggs that were maturing during treatment. If a damaged egg is fertilized, the embryo could miscarry or develop into a baby with a genetic problem. Studies about this are hard to find. This is something you should talk to your doctor about before trying to become pregnant.

See [Chemotherapy²](#) for more information.

Targeted and immune therapies

Targeted drugs attack cancer cells differently from standard chemo drugs. Use of these medicines has increased a lot in recent years, but little is known about their effects on fertility or problems during pregnancy. Bevacizumab (Avastin[®]) is one exception – studies have found that this drug can cause ovarian failure, and some women’s ovaries never recover.

Some targeted drugs (thalidomide and lenalidomide) have such a high danger of causing **birth defects** that women are asked to use two effective types of birth control while taking them.

Another group of drugs that are of concern are targeted drugs called **tyrosine kinase inhibitors** (TKIs) such as imatinib (Gleevec[®]), which cause birth defects in lab animals. At this time the recommendation is that women talk to their doctors before becoming pregnant while taking TKIs.

See [Targeted Therapy](#)³ and [Cancer Immunotherapy](#)⁴ to learn more about these cancer treatments.

It's very important to talk to your doctor about any targeted or immunotherapy drugs you will get and the fertility risks that might come with them.

How a bone marrow or stem cell transplant can affect fertility in women

A bone marrow or stem cell transplant usually involves high doses of chemo and sometimes radiation to the whole body before the transplant. In most cases, this permanently stops a woman’s ovaries from releasing eggs. Talk with your doctor or nurse about this risk before starting treatment. See [Chemotherapy](#)⁵ and [Radiation Therapy](#)⁶ for more on these parts of the transplant procedure.

To learn more about transplants, see [Stem Cell Transplant for Cancer](#)⁷.

How radiation therapy can affect fertility in women

Radiation treatments use high-energy rays to kill cancer cells. These rays can also damage a woman’s ovaries. For a woman getting radiation therapy to the abdomen (belly) or pelvis, the amount of radiation absorbed by the ovaries will determine if she becomes infertile. High doses can destroy some or all of the eggs in the ovaries and might cause infertility or early menopause. Most women getting pelvic radiation will lose their fertility, but about half may keep some eggs alive if the ovaries are moved further from the target area in a minor surgery before radiation begins.

Even if the radiation is not aimed right at the ovaries, the rays can bounce around inside the body and might still damage the ovaries. When radiation is directed inside the vagina, the ovaries absorb a high dose of radiation.

Radiation to the uterus can cause scarring, which decreases the flow of blood to the uterus and also makes the uterus unable to stretch to full size during pregnancy. Women who have had radiation to the uterus have an increased risk of miscarriage, low-birth weight infants, and premature births. These problems are most likely in women who had radiation during childhood, before the uterus began to grow during puberty.

Sometimes radiation to the brain affects the pituitary gland. The pituitary gland normally signals the ovaries to make hormones, so interfering with these signals can affect ovulation (the release of eggs from the ovaries). This might or might not affect fertility depending on the focus and dose of the radiation.

You may be fertile when you start getting radiation treatments, but it's important not to become pregnant until treatment is completed because radiation can harm the fetus. Talk with your doctor about this.

You can get more details about this type of treatment in [Radiation Therapy](#)⁸.

How surgery can affect fertility in women

Surgery on certain parts of the reproductive system can cause infertility. For some cancers, a hysterectomy is part of the treatment. A hysterectomy is surgery to remove the uterus (womb) either through the vagina or through a cut made in the abdomen (belly). Once the uterus is removed, a woman cannot carry a child. A very few women have now had babies by having a uterus transplanted into their body, but this is a very complicated, risky procedure. The woman needs to take drugs to suppress her immune system. The new uterus must be removed either when the baby is born, or maybe after a second birth.

The ovaries might be removed (called an *oophorectomy*) at the same time the uterus is taken out. Without ovaries, a woman can't get pregnant because she no longer has any eggs. In some women with early stage ovarian or cervical cancer, the surgeon will try to save one ovary, if possible, to preserve eggs, which might still allow a woman to become pregnant. Keeping at least one ovary also preserves the hormones that prevent menopause symptoms like hot flashes and vaginal dryness.

Some women with small [cervical cancers](#)⁹ can have a surgery called a *trachelectomy*, which removes the cervix but leaves the uterus behind so a woman can carry a

pregnancy. (See Radical trachelectomy in [Preserving Fertility in Women with Cancer](#)¹⁰.)

Sometimes surgery can cause scarring in the fallopian tubes. These scars may block the tubes and prevent eggs from traveling to meet the sperm. This means they can't become fertilized and move on to the uterus to implant in the lining.

¹¹[Cancer Surgery](#)¹² gives you more information on surgery as a cancer treatment.

Other treatments that can affect fertility in women

[Hormone therapies used to treat breast cancer](#)¹³ or other cancers can affect your ability to have a child. Women taking tamoxifen can get pregnant, but it also causes birth defects, so women are advised to use effective birth control while taking it. Other hormone therapies may prevent ovulation completely, since a woman is put into temporary menopause.

The effect of some other treatments on fertility and pregnancy is not yet known. It's always best to talk to your doctor, nurse, or other member of your health care team about your treatment and any possible effects on your sexual function and fertility.

Hyperlinks

1. [/ssLINK/fertility-and-women-with-cancer-preserving-fertility-in-girls-teens](#)
2. [/ssLINK/understanding-chemotherapy-a-guide-to](#)
3. [/ssLINK/targeted-therapy-to](#)
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html
5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
6. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
7. <https://author-prod.cancer.org/content/cancer/en/treatment/treatments-and-side-effects/treatment-types/stem-cell-transplant.html>
8. [/ssLINK/understanding-radiation-therapy-to](#)
9. <https://author-prod.cancer.org/content/cancer/en/cancer/cervical-cancer.html>
10. https://author-prod.cancer.org/content/launches/2017/05/15/2017_rewrite_-_fertility/content/cancer/en/treatment/treatments-and-side-effects/physical-side-

[effects/fertility-and-sexual-side-effects/fertility-and-women-with-cancer/preserving-fertility-in-women.html](https://www.cancer.org/effects/fertility-and-sexual-side-effects/fertility-and-women-with-cancer/preserving-fertility-in-women.html)

11. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html
12. www.cancer.org/cancer/breast-cancer/treatment/hormone-therapy-for-breast-cancer.html

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Last Medical Review: November 6, 2016 Last Revised: June 28, 2017

Preserving Fertility in Women With Cancer

You can use this information to learn more and then discuss your fertility options with your doctor. In some cases, you and your doctor might decide to use more than one option to try to preserve your fertility, especially if one option has a low or unknown success rate. Be sure that you understand the risks and chances of success of any fertility option you are interested in, and keep in mind that no method works 100% of the time. Married women and those with long-term partners might want to include them in these discussions and decisions. Even married women should be aware that embryos created with a husband are often unable to be used if a divorce occurs. A woman has the most control over her future fertility if she freezes unfertilized eggs or ovarian tissue.

Possible natural pregnancy

After cancer treatment, a woman's body may recover naturally and produce mature eggs that can be fertilized. The medical team may recommend waiting anywhere from 6 months to 2 years before trying to get pregnant. Waiting 6 months may reduce the risk of birth defects from eggs damaged by chemotherapy or other treatments. The 2-year period is generally based on the fact that the risk of the cancer coming back (recurring) is usually highest in the first 2 years after treatment. The length of time depends on the type of cancer and the treatment used.

But women who have had chemo or radiation to the pelvis are also at risk for sudden, early menopause even after they start having menstrual cycles again. Menopause may start 5 to 20 years earlier than expected. Because of this, women should talk to their doctors about how long they should wait to try to conceive and why they should wait. It's best to have this discussion before going on with a pregnancy plan.

Egg (oocyte) freezing

Egg freezing (or **oocyte cryopreservation**) is an established method of preserving fertility in women, although it has not been used as long as embryo freezing (described below). This may be a good choice for women who do not have a partner. It also gives women in a relationship more complete control over the future use of frozen genetic material. For now, most fertility storage centers and courts give a man control over embryos created with his sperm, so if a breakup or divorce happens, a woman may not be able to use the embryos for a pregnancy.

For egg freezing, mature eggs are removed and frozen before being fertilized with sperm. This process might also be called **egg banking**. When the woman is ready to become pregnant, the eggs can then be thawed, fertilized, and implanted in her uterus.

Collecting the eggs typically takes 10 to 14 days, depending on where a woman is in her menstrual cycle. During the process, a woman takes injectable hormone medications for, on average, 8 to 14 days, to allow several eggs to develop in the ovaries at once (often about 12 eggs in a woman under age 35). She comes in for monitoring ultrasounds to measure the follicles, where the eggs develop, about 3 to 5 times during the process. The eggs are then collected during outpatient surgery, usually with a light anesthetic (drugs given to make you sleepy while it's done). An ultrasound is used to guide a needle through the upper part of the vagina and into the ovary to collect the eggs.

Some women might not be able to follow the schedule of hormone shots described. This could include women who have fast-growing cancers (who cannot delay cancer treatment). A concern has been that women with breast cancer or other estrogen-dependent tumors could increase tumor growth because of the high levels of estrogen caused by the hormone shots. However, research has not shown any increase in cancer recurrence in women with breast cancer who go through a hormone cycle to freeze eggs or embryos, and recent recommendations suggest good evidence that it is safe.

Traditionally, egg freezing has been more difficult than freezing embryos. This is because the egg is the largest cell in the human body and has a lot of water so ice crystals can form and damage the egg. However, a new method of freezing called **vitrification** has made egg freezing more efficient and successful. The methods and success rates of egg freezing have greatly improved in the past several years and it's no longer considered experimental. Many fertility centers now report success rates much the same as using unfrozen eggs.

Another option for women undergoing fertility preservation, especially if a large number of eggs are retrieved, is to freeze half the eggs and fertilize the other half with sperm from a partner or donor and then freeze embryos. The benefit of this is that freezing embryos is still more efficient than freezing eggs but it allows a woman more flexibility if her relationship status changes or if she wants to avoid having excess frozen embryos.

If you are looking at egg freezing, ask how many live births the facility has had using frozen eggs. You might also want to ask how many eggs is recommended, on average, to produce a single live birth. This will depend largely on your age. You will want to know the cost of the procedure (including all the medicines), annual storage costs of the frozen eggs, and the estimated costs of fertilizing and implanting later. Egg freezing

usually costs slightly less than embryo freezing.

An important note about freezing

If you have frozen eggs, embryos, or ovarian tissue, it's important to stay in contact with the cryopreservation facility to be sure that any yearly storage fees are paid and your address is updated.

Embryo freezing

Embryo freezing, or **embryo cryopreservation**, is the most established and successful method of preserving a woman's fertility today. Mature eggs are removed from a woman's ovaries and fertilized in the lab. This is called **in vitro fertilization (IVF)**. Sometimes thousands of sperm are put in a sterile dish with each egg. Sometimes one sperm is injected into each egg using a special lab equipment under a microscope. The embryos are then frozen to be used after cancer treatment.

This option works well for women who already have a partner, though single women can still freeze embryos using donor sperm.

The process of collecting eggs for embryo freezing is the same as for egg freezing (see above). Eggs are collected during outpatient surgery, usually with a light anesthetic (drugs are given to make you sleepy while it's done). An ultrasound is used to see the ovaries and the fluid sacs (follicles) that contain ripe eggs. A needle is guided through the upper vagina, into each follicle to collect the eggs. The eggs are inseminated with sperm and the embryos that develop are then frozen and stored.

A woman will have a better chance of a successful pregnancy if several embryos are stored. A woman's age will play a large role in the chances of pregnancy, with a younger age at the time of egg retrieval resulting in higher pregnancy rates. The quality of the embryos also makes a difference, however. Some labs freeze embryos when they are only 2 cells. When they are thawed, these embryos are nourished while they develop further. Once embryos have had 5 days to grow they reach the blastocyst stage. Some embryos do not make it that far. Blastocysts are much more likely to implant and begin a pregnancy than are 2-cell embryos. Some labs let the embryos develop into blastocysts before freezing them. An advantage of using blastocysts in a replacement cycle is that only one, or at most 2 can be placed in the woman's uterus. For women under age 35, a single embryo transfer is the safest way of using IVF to get pregnant to avoid multiple pregnancy. Although many couples say they would like to have twins, a twin pregnancy is much higher risk to the babies and mother, and should be avoided as much as possible.

Successful pregnancy rates vary from center to center. Centers with the most experience usually have better success rates, Costs vary, too, see [Frequently Asked Questions About Fertility and Cancer](#)¹ for more on this.

Fertility-sparing surgery (for ovarian cancer)

This type of surgery might be an option in young women with [ovarian cancer](#)² in only one ovary. The cancer must be one of the types that's slow-growing and less likely to spread, like borderline, low malignant potential, germ cell tumors, or stromal cell tumors (typically Grade 1 and some Grade 2 epithelial ovarian cancers).

In this case, the surgeon can remove just the ovary with cancer, leaving the healthy ovary and the uterus (womb) in place. Studies have found that this does not affect long-term survival, and allows future fertility. If there's a risk of the cancer coming back, the remaining ovary may be removed later, after the woman has finished having children.

GnRH agonist treatment (ovarian suppression)

Gonadotropin-releasing hormone (GnRH) agonists are long-acting hormone drugs that can be used to make a woman go into menopause for a short time. The goal of this treatment is to shut down the ovaries during cancer treatment to help protect them from damaging effects. The hope is that reducing activity in the ovaries during treatment will reduce the number of eggs that are damaged, so women will resume normal menstrual cycles after treatment. These hormones are usually given as a monthly shot starting a couple of weeks before [chemo](#)³ or pelvic [radiation therapy](#)⁴ begins. GnRH treatment is given the entire time a woman receiving cancer treatment and is available in injections that last either 1 month or 3 months.

Studies suggest that this method might help prolong fertility in some women, especially those 35 and younger, but results are not at all clear. Most research studies have not found it to improve later pregnancy rates. This treatment is considered experimental. If this treatment is used, it's best done with a back-up method of preserving fertility like embryo freezing.

The injections are expensive and the drugs can weaken a woman's bones if used for more than 6 months. The most common side effect is hot flashes. GnRH treatment can be useful to prevent heavy menstrual bleeding during chemo, especially for women with leukemia.

Ovarian tissue freezing

All or part of one ovary is removed by laparoscopy (a minor surgery where a thin, flexible tube is passed through a small cut near the navel to reach and look into the pelvis). The ovarian tissue is usually cut into small strips, frozen, and stored.

After cancer treatment, the ovarian tissue can be thawed and placed in the pelvis. Once the transplanted tissue starts to function again, the eggs can be collected and fertilized in the lab. In another approach, the whole ovary is frozen with the idea of putting it back in the woman's body after treatment, but this has not yet been done in humans.

Ovarian tissue removal does not usually require a hospital stay. It can be done either **before or after puberty**. Still, it's experimental and has produced a small number of live births so far. Doctors are studying it now to learn the best methods for success. Faster freezing of the tissue (vitrification) has greatly improved outcomes over older, slow-freezing methods.

The ovarian tissue does grow a new blood supply and produces hormones after it's transplanted, but some of the tissue usually dies and it may only last for a few months to several years. Because they last such a short time, ovarian tissues are usually only transplanted when a woman is ready to try for a pregnancy.

At this time, ovarian tissue freezing and transplant is not recommended for women with blood cancers (such as leukemias or lymphomas) or ovarian cancer due to the risk of putting cancer cells back in the body with the frozen tissue.

Ovarian tissue freezing costs vary a lot, so you will want to ask about the freezing and annual storage costs as well as removal and transplant expenses. In some patients, ovarian tissue can be removed as part of another necessary surgery so that some of the cost is covered by insurance.

Ovarian transposition

Ovarian transposition means moving the ovaries away from the target zone of radiation treatment. It's a standard option for girls or women who are going to get pelvic radiation. It can be used either before or after puberty.

This procedure can often be done as outpatient surgery and does not require staying in the hospital (unless it is being done as part of a larger operation). Surgeons will usually move the ovaries above and to the side of the central pelvic area.

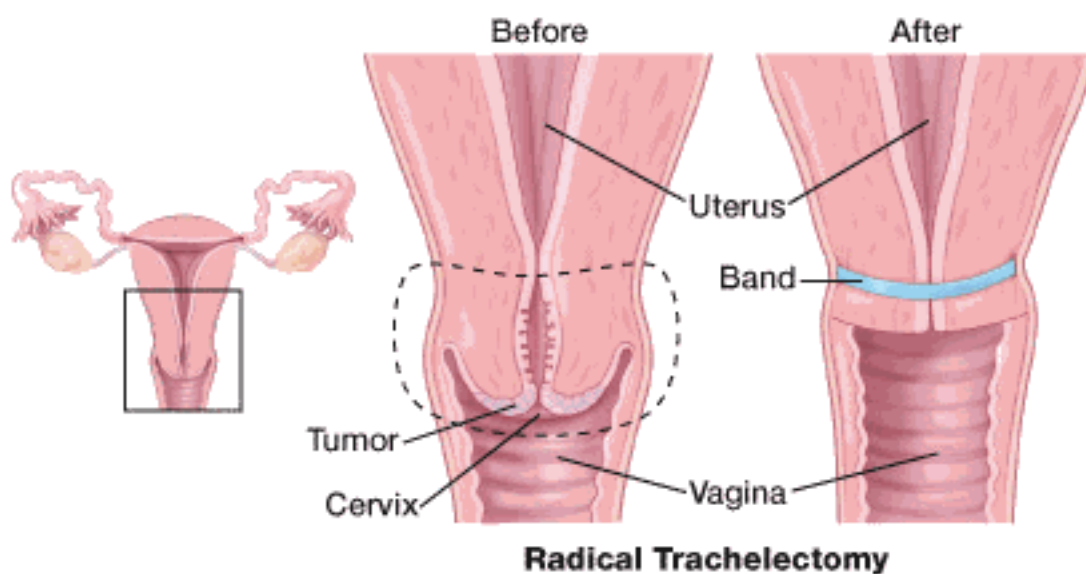
The success rates for this procedure have usually been measured by the percentage of women who regain their menstrual periods, not by rates of a live birth. Typically, about

half the women start menstruating again.

It's hard to estimate the costs of ovarian transposition, since this procedure may sometimes be done during another surgery that is covered by insurance. It's usually best to move the ovaries just before starting radiation therapy, since they tend to fall back into their old places over time.

Radical trachelectomy

Radical trachelectomy is an option for [cervical cancer](#)⁵ patients who have very small, localized tumors. The cervix is removed but the uterus and the ovaries are left, and the uterus is connected to the upper part of the vagina. A special band or stitch is wrapped around the bottom of the uterus to tighten the opening while still allowing blood from your period to flow out and sperm to enter to fertilize an egg. Trachelectomy is a surgery used to treat early cervical cancer, so insurance should cover some or all of the costs. Talk to your doctor about this.



Trachelectomy appears to be just as successful as radical hysterectomy (removal of the uterus and cervix) in treating cervical cancer in certain women with small tumors. Women can become pregnant after the surgery, but are at risk for miscarriage and premature birth because the opening to the uterus may not close as strongly or tightly as before. These women will need specialized obstetrical care while they are pregnant, and the baby will need to be delivered by Cesarean section (C-section).

Progesterone therapy for early-stage uterine cancer

Younger women sometimes have endometrial hyperplasia (pre-cancerous changes in the cells that line the uterus) or an early-stage, slow-growing cancer of the lining of the uterus (adenocarcinoma). The usual treatment would be hysterectomy (surgery to remove the uterus). However, women with stage 1 Grade 1 endometrial cancer who still want to have a child can be treated instead with the hormone progesterone, via an intrauterine device or as a pill. Up to three-quarters of women respond well, allowing them time to try to get pregnant. Most have removal of the uterus, fallopian tubes, and both ovaries after giving birth. About 25% of women with hyperplasia, and up to 40% with uterine cancer have a recurrence within several years of progesterone therapy. Since they also have a high risk of ovarian cancer, many oncologists believe young women with uterine cancer should not freeze ovarian tissue and put it back into their bodies later on.

Options for women who are not fertile after cancer treatment

Adoption

Adoption is usually an option for anyone who wants to become a parent. Adoption can take place within your own country through a public agency or by a private arrangement, or internationally through private agencies. Some agencies specialize in placing children with special needs, older children, or siblings.

Most adoption agencies state that they do not rule out cancer survivors as potential parents. But agencies often require a letter from your doctor stating that you are cancer-free and can expect a healthy lifespan and a good quality of life. Some agencies or countries require a period of being off treatment and cancer-free before a cancer survivor can apply for adoption. Five years seems to be an average length of time.

There's a lot of paperwork to complete during the adoption process, and at times it can seem overwhelming. Many couples find it helpful to attend adoption or parenting classes before adopting. These classes can help you understand the adoption process and give you a chance to meet other couples in similar situations. The process takes different lengths of time depending on the type of adoption you choose. Most adoptions can be completed in 1 to 2 years.

Costs of adopting vary greatly, from less than \$4,000 (for a public agency, foster care, or special needs adoption) up to \$50,000 (for some international adoptions, including travel costs).

You might be able to find an agency that has experience working with cancer survivors. Some discrimination clearly does occur both in domestic and international adoption.

Yet, most cancer survivors who want to adopt can do so.

Donor eggs

Donor egg is an option for women who have a healthy uterus and are cleared by their doctors to carry a pregnancy but do not have any eggs or have healthy eggs to conceive with their own eggs. The process involves in vitro fertilization (IVF), in which mature eggs are removed from a woman's ovaries, fertilized with sperm in the lab, and then put in a woman's uterus to develop. In donor egg, eggs from a donor are used. Success rates for IVF are measured as the percent of cycles that end in the birth of a live baby. After age 40, this success rate goes way down if a woman uses her own eggs.

Older women or cancer survivors may have more chance of a having a baby by using donated eggs. Donated eggs come from women who have volunteered to go through a cycle of hormone stimulation and have their eggs collected. In the United States, donors can be known or anonymous. Some couples find their own donors through programs at infertility clinics or on the Internet. Some women have a sister, cousin, or close friend who is willing to donate her eggs without payment. Most egg donors are paid, however. There are also frozen egg banks available in which a woman purchases a group of frozen eggs that are then send to a fertility center for IVF.

Per regulations, egg donors are carefully screened for sexually transmitted infections and genetic diseases. Every egg donor should also be screened by a mental health professional familiar with the egg donation process. These screenings are just as important for donors who are friends or family members. For known donors, everyone also needs to agree on what the donor's relationship with the child will be, and be certain that the donor was not pressured emotionally or financially to donate her eggs. You want to be sure that everyone agrees about what the child will or will not be told in the future.

The success of the egg donation depends on carefully timing hormone treatment (to prepare the lining of the uterus) to be ready for an embryo to be placed inside. The eggs are taken from the donor and fertilized with the sperm. Embryos are then transferred to the recipient to produce pregnancy. If the woman receiving the donor eggs has ovarian failure (she's in permanent menopause), she must take estrogen and progesterone to prepare her uterus for the embryo(s). After the transfer, the woman will continue to need hormone support until the placenta develops and can produce its own hormones.

Egg donation is often a successful treatment for infertility in women who can no longer produce healthy eggs. The entire process of donating eggs, fertilizing them with sperm, and implanting them usually takes 6 to 8 weeks per cycle. The major health risk for

cancer survivors and babies is the risk of having twins or triplets. Responsible programs may transfer only 1 or 2 embryos to reduce this risk, freezing extras for a future cycle. The price of a donor egg cycle should include the price of IVF plus any payment to the egg donor, but it's good to find out all the costs beforehand (see [Frequently Asked Questions About Fertility and Cancer](#)⁶)⁷

Donor embryos

Any woman who has a healthy uterus and can maintain a pregnancy can have in vitro fertilization (IVF) with donor embryos. IVF; a fertilized egg, an embryo, is put in a woman's uterus to develop. This approach lets a couple experience pregnancy and birth together, but neither parent will have a genetic relationship to the child. Embryo donations usually come from a couple who has had IVF and used assisted reproductive technology and has extra frozen embryos. When that couple has fulfilled their family goals or for some other reason chooses not to use those frozen embryos, they might decide to donate them.

One problem with this option is that the couple donating the embryo may not agree to have the same types of genetic testing as is usually done for egg or sperm donors, and they may not want to supply a detailed health history. On the other hand, the embryos are free, so the cancer survivor only needs to pay the cost of getting her uterus ready and having the embryo placed. However, the costs are usually less for the intended parents than using an egg donor. Still, legal and medical fees can mount up.

Most women who use the donor embryo procedure must get hormone treatments to prepare the lining of the uterus and ensure the best timing of the embryo transfer. The embryo is thawed and transferred to the woman's uterus to develop and grow. After the embryo is transferred, the woman stays on hormone support until blood work shows that the placenta is making hormones on its own.

There's no published research on the success rates of embryo donation, so it's important that you research the IVF success rates of the centers you may use.

Surrogacy

Surrogacy is an option for women who cannot carry a pregnancy, either because they no longer have a working uterus, or would be at high risk for a health problem if they got pregnant. There are 2 types of surrogate mothers:

- A **gestational carrier** is a healthy female who receives the embryos created from the egg and sperm of the intended parents or from egg or sperm donors. The

gestational carrier does not contribute her own egg to the embryo and has no genetic relationship to the baby.

- A **traditional surrogate** is usually a woman who becomes pregnant through artificial insemination with the sperm of the male in the couple (or a sperm donor) who will raise the child. She gives her egg (which is fertilized with his sperm in the lab), and carries the pregnancy. She is the genetic mother of the baby.

Surrogacy can be a legally complicated and expensive process. Surrogacy laws vary, so it's important to have an attorney help you make the legal arrangements with your surrogate. You should consider the laws of the state where the surrogate lives, the state where the child will be born, and the state where you live. It's also very important that the surrogate mother be evaluated and supported by an expert mental health professional as part of the process. Very few surrogacy agreements go sour, but when they do, typically this step was left out.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/frequently-asked-questions.html
2. www.cancer.org/cancer/ovarian-cancer.html
3. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
5. www.cancer.org/cancer/cervical-cancer.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/frequently-asked-questions.html
7. [/content/cancer/en/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/faq-about-fertility-and-cancer.html](http://content.cancer/en/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/faq-about-fertility-and-cancer.html)

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Last Medical Review: November 6, 2016 Last Revised: June 28, 2017

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