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## Treating Endometrial Cancer

If you've been diagnosed with endometrial cancer, your cancer care team will discuss your treatment options with you. It's important to weigh the benefits of each treatment option against the possible risks and side effects.

### How is endometrial cancer treated?

The most common types of treatment for women with endometrial cancer are:

- [Surgery for Endometrial Cancer](#)
- [Radiation Therapy for Endometrial Cancer](#)
- [Chemotherapy for Endometrial Cancer](#)
- [Hormone Therapy for Endometrial Cancer](#)
- [Targeted Therapy for Endometrial Cancer](#)
- [Immunotherapy for Endometrial Cancer](#)

### Common treatment approaches

Surgery is the main treatment for most women with this cancer. But in some cases, a more than 1 kind of treatment may be used. The choice of treatment depends largely on the type of cancer and stage of the disease when it's found. Other factors could play a part in choosing the best treatment plan. These include your age, your overall state of health, whether you plan to have children, and other personal considerations.

- [Treatment Choices for Endometrial Cancer, by Stage](#)

### Who treats endometrial cancer?

Depending on the type and stage of the endometrial cancer, you may need more than

one type of treatment. Doctors on your cancer treatment team may include:

- A **gynecologist**: a doctor who specializes in diseases of the female reproductive tract
- A **gynecologic oncologist**: a doctor who specializes in treating cancers of the female reproductive system (including surgery and chemotherapy)
- A **radiation oncologist**: a doctor who uses radiation to treat cancer
- A **medical oncologist**: a doctor who uses chemotherapy and other medicines to treat cancer

Many other specialists may be involved in your care as well, including nurses, nurse practitioners, social workers, psychologists, rehabilitation specialists, and other health professionals.

- [Health Professionals Associated With Cancer Care<sup>1</sup>](#)

## **Making treatment decisions**

It's important to talk with your family and treatment team about all of your treatment options, as well as their possible side effects, so you make the choice that best fits your needs. If there's anything you don't understand, ask to have it explained.

If time permits, it's often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more sure of the treatment plan you choose.

- [Questions to Ask About Endometrial Cancer<sup>2</sup>](#)
- [Seeking a Second Opinion<sup>3</sup>](#)

## **Thinking about taking part in a clinical trial**

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials.

- [Clinical Trials](#)<sup>4</sup>

## Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor's medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- [Complementary and Alternative Medicine](#)<sup>5</sup>

## Help getting through cancer treatment

People with cancer need support and information, no matter what stage of illness they may be in. Knowing all of your options and finding the resources you need will help you make informed decisions about your care.

Whether you are thinking about treatment, getting treatment, or not being treated at all, you can still get supportive care to help with pain or other symptoms. Communicating with your cancer care team is important so you understand your diagnosis, what treatment is recommended, and ways to maintain or improve your quality of life.

Different types of programs and support services may be helpful, and can be an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- [Palliative Care](#)<sup>6</sup>

- [Find Support Programs and Services in Your Area](#)<sup>7</sup>

## Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- [If Cancer Treatments Stop Working](#)<sup>8</sup>

*The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask him or her questions about your treatment options.*

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# Surgery for Endometrial Cancer

Surgery is often the main treatment for endometrial cancer and consists of a **hysterectomy**, often along with a **salpingo-oophorectomy**, and **removal of lymph nodes**. In some cases, pelvic washings are done, the omentum is removed, and/or peritoneal biopsies are done. If the cancer has spread throughout the pelvis and abdomen (belly), a debulking procedure (removing as much cancer as possible) may be done. These are discussed in detail below.

## Hysterectomy

## Types of hysterectomy

The main treatment for endometrial cancer is surgery to take out the uterus and cervix. This operation is called a hysterectomy. When the uterus is removed through an incision (cut) in the abdomen (belly), it's called a **simple or total abdominal hysterectomy**.

If the uterus is removed through the vagina, it's known as a **vaginal hysterectomy**. This may be an option for women who are not healthy enough for other types of surgery.

When endometrial cancer has spread to the cervix or the area around the cervix (called the *parametrium*), a **radical hysterectomy** is done. In this operation, the entire uterus, the tissues next to the uterus (parametrium and uterosacral ligaments), and the upper part of the vagina (next to the cervix) are all removed. This operation is most often done through the abdomen, but it can also be done through the vagina.

## Surgeries done along with hysterectomy

It's rare to remove the uterus but not the ovaries when treating endometrial cancer. (Still, it might be done in certain cases for women who are premenopausal.) Removing the ovaries and fallopian tubes is called a **bilateral salpingo-oophorectomy (BSO)**. It isn't really part of a hysterectomy. It's a separate procedure that's done during the same operation. (See the Bilateral salpingo-oophorectomy section below.)

To decide what [stage<sup>1</sup>](#) the cancer is in, lymph nodes in the pelvis and around the aorta also need to be removed. This is called **lymph node dissection**. It can be done through the same incision as the abdominal hysterectomy. If the hysterectomy is done vaginally, lymph nodes can be removed with laparoscopic surgery. (See "Lymph node surgery" below.)

## How is hysterectomy done?

As mentioned above, this surgery can be done through a large cut in the belly (abdomen). It can also be done through the vagina. **Laparoscopic surgery** or minimally invasive surgery is another option that's becoming more common.

[Laparoscopy<sup>2</sup>](#) is a technique that lets the surgeon look at the inside of the abdomen and pelvis through narrow tubes put in through very small cuts (incisions) made in the belly. Long, tiny surgical instruments can be controlled through the tubes. This allows the surgeon to operate without making a large incision in the abdomen. It's been linked to

less pain and blood loss, and it can shorten recovery time after surgery.

Both a simple hysterectomy and a radical hysterectomy can be done through the abdomen using laparoscopic surgery. Laparoscopic surgery might also be used to help safely remove other organs and tissues when a vaginal hysterectomy is done.

Laparoscopic surgery for endometrial cancer seems to be just as good as more traditional open procedures if done by a surgeon who has a lot of experience in laparoscopic cancer surgeries.

A **robotic** approach is increasingly being used to do laparoscopic procedures, and outcomes are much the same. In robotic surgery, the surgeon sits at a control panel in the operating room and moves robotic arms to operate through many small incisions. Robotic surgeries do tend to take longer than regular laparoscopic surgeries.

For any of these procedures, general anesthesia is used so the patient is in a deep sleep and doesn't feel pain during the operation.

## **Bilateral salpingo-oophorectomy**

This operation removes both fallopian tubes and both ovaries. It's usually done at the same time the uterus is removed (either by simple hysterectomy or radical hysterectomy) to treat endometrial cancers. Removing both ovaries means that you'll go into menopause if you haven't done so already.

If you're younger than 45 and have stage I endometrial cancer, you may want to talk to your surgeon about keeping your ovaries. Even though women whose ovaries are removed might have a lower chance of the cancer coming back, removing the ovaries doesn't seem to help them live longer.

## **Lymph node surgery**

**Pelvic and para-aortic lymph node dissection** is an operation done to remove lymph nodes from the pelvis and the area next to the aorta. The nodes are tested to see if they contain cancer cells that have spread from the endometrial tumor. This information is part of finding the surgical stage of the cancer.

The surgery is called a **lymph node dissection** when most or all of the lymph nodes in the area are removed. This is usually done at the same time as the operation to remove the uterus (hysterectomy). If you're having an abdominal hysterectomy, the lymph nodes can be removed through the same incision. In women who have had a vaginal

hysterectomy, lymph nodes may be removed by [laparoscopic surgery](#)<sup>3</sup>.

When only a few of the lymph nodes in an area are removed, it's called **lymph node sampling**.

Depending on the cancer type and grade, the amount of cancer in the uterus (tumor size), and how deeply the cancer invades the muscle of the uterus, and imaging test results, lymph nodes might not need to be removed.

### **Sentinel lymph node mapping**

Sentinel lymph node (SLN) mapping may be used in early-stage endometrial cancer if imaging tests don't clearly show signs that cancer has spread to the lymph nodes in your pelvis. To do this, a blue or green dye is injected into the area with the cancer, near the cervix. The surgeon then looks for the lymph nodes that turn blue or green (from the dye). These lymph nodes are the ones that the cancer would first drain into (the *sentinel* nodes). They're removed and tested to see if there are cancer cells in them. If so, more lymph nodes are taken out because they likely have cancer cells in them, too. If there are no cancer cells in sentinel nodes, no more nodes are removed. This procedure is usually done at the same time as surgery to remove the uterus (hysterectomy). Your doctor will talk with you about whether SLN mapping is an option for you.

### **Pelvic washings (peritoneal lavage)**

In this procedure, the surgeon "washes" the abdominal and pelvic cavities with salt water (saline). The fluid is then collected (using suction) and sent to the lab to see if it contains cancer cells. This is also called **peritoneal lavage**. If there are endometrial cancer cells in the fluid, the cancer stage may change (the surgical stage) and the next steps of treatment could be impacted.

### **Other procedures that might be used to look for cancer spread**

**Omentectomy:** The omentum is the layer of fatty tissue that covers the abdominal contents, sort of like an apron. Cancer sometimes spreads to this tissue. When this tissue is taken out, it's called an omentectomy. This may be done during a hysterectomy if cancer has spread there. Biopsies of the omentum might also be done to check for cancer spread. (Small pieces are taken out and tested for cancer cells.)

**Peritoneal biopsies:** The tissue lining the pelvis and abdomen is called the peritoneum. Peritoneal biopsies remove small pieces of this lining to check for cancer

cells.

## Tumor debulking

If cancer has spread throughout the abdomen, the surgeon might try to take out as much of the tumor as possible. This is called *debulking*. Debulking a cancer can help other treatments, like [radiation](#) or [chemotherapy](#), work better. So, it might be helpful in treating some types of endometrial cancer.

## Recovery after surgery

The hospital stay for an **abdominal hysterectomy** is usually 3 to 7 days. The average hospital stay after an abdominal **radical hysterectomy** is about 5 to 7 days. Complete recovery can take up to 4 to 6 weeks. A laparoscopic procedure and **vaginal hysterectomy** usually require a hospital stay of 1 or 2 days and 2 to 3 weeks for recovery. Complications of these surgeries are not common and depend on the surgical approach. They include nerve or vessel damage, excessive bleeding, wound infection, blood clots, and damage to nearby tissues (the urinary and intestinal systems).

A radical hysterectomy affects the nerves that control the bladder, so a catheter is used to drain urine right after surgery. It's often kept in for at least a few days. If the bladder hasn't recovered completely when the catheter removed, it may be put back in. Another option is that you're shown how to put a catheter yourself several times a day to empty your bladder. Over time, bladder function returns.

## Side effects of surgery

Any hysterectomy causes infertility (you won't be able to get pregnant).

For women who were premenopausal before surgery, removing the ovaries will cause menopause right away. This can lead to symptoms like hot flashes, night sweats, and vaginal dryness. Long-term, it can lead to osteoporosis and increased risk for heart disease, which impact all post-menopausal women.

Removing lymph nodes in the pelvis can lead to a build-up of fluid in the legs and genitals. This can become a life-long problem called [lymphedema](#)<sup>4</sup>. It's more likely if radiation is given after surgery.

Surgery and menopausal symptoms can also affect your sex life. For more, see [Sex and the Woman With Cancer](#)<sup>5</sup>.



Talk with your treatment team about side effects you might have right after surgery and later on. There might be things you can do to help prevent side effects. Know what to expect so you can get help right away.

## More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)<sup>6</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>7</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html)
2. [www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy/laparoscopy.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy/laparoscopy.html)
3. [www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy/laparoscopy.html](http://www.cancer.org/treatment/understanding-your-diagnosis/tests/endoscopy/laparoscopy.html)
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7. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

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See all references for Endometrial Cancer ([www.cancer.org/cancer/endometrial-cancer/references.html](http://www.cancer.org/cancer/endometrial-cancer/references.html))

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## Radiation Therapy for Endometrial Cancer

Radiation therapy uses high-energy radiation (like x-rays) to kill cancer cells. It can be given in 2 ways to treat endometrial cancer:

- By putting radioactive materials inside the body. This is called **internal radiation therapy** or **brachytherapy**.
- By using a machine that focuses beams of radiation at the tumor, much like having

an x-ray. This is called **external beam radiation therapy**.

In some cases, both brachytherapy and external beam radiation therapy are used. When that's done, the external beam radiation is usually given first, followed by the brachytherapy. The [stage](#)<sup>1</sup> and grade of the cancer are used to help decide what areas need to be treated with radiation therapy and which types of radiation are used.

Radiation is most often used after surgery to treat endometrial cancer. It can kill any cancer cells that may still be in the treated area. If your treatment plan includes radiation after [surgery](#), you will be given time to heal before starting radiation. Often, at least 4 to 6 weeks are needed.

Less often, radiation might be given before surgery to help shrink a tumor so it's easier to remove.

Women who are not healthy enough for surgery may get radiation as their main treatment.

## Brachytherapy

Women who have had their uterus (and cervix) removed may have the upper part of the vagina treated with brachytherapy. This is called **vaginal brachytherapy**. A source of radiation (a radioactive material) is put into a cylinder (called an applicator) and the cylinder is put into the vagina. (It feels a lot like a snug tampon.) The size of the cylinder and how much radiation is in it depend on each case. The upper part of the vagina, closest to the uterus, is always treated. With brachytherapy, the radiation mainly affects the area of the vagina in contact with the cylinder. Nearby structures like the bladder and rectum get less radiation exposure.

This procedure is done in the radiation therapy area of a hospital or a radiation treatment center. There are 2 types of brachytherapy used for endometrial cancer, low-dose rate (LDR) and high-dose rate (HDR).

- In **LDR brachytherapy**, the applicator with the radiation source in it is left in for about 1 to 4 days. The patient needs to be still to keep the applicator from moving during treatment, so she's usually needs to stay in the hospital during treatment. Because the patient has to stay immobile, this form of brachytherapy carries a risk of serious blood clots in the legs (called *deep venous thrombosis* or *DVT*). LDR isn't commonly used in the US.
- In **HDR brachytherapy**, the radiation is stronger. Each treatment takes a very short

time (usually less than an hour), and the radiation is only in for 10 to 20 minutes. The applicator is only in place when the treatment is done. You will be able to go home the same day. For endometrial cancer, HDR brachytherapy might be given weekly or even daily for at least 3 doses.

The most common side effect is changes in the lining of the vagina. (Called radiation vaginitis, this is discussed in more detail below, in the side effects section.) If needed, pain medicines can be used to help you be more comfortable while the applicator is in.

## External beam radiation therapy

In this type of treatment the radiation is delivered from a source outside of the body.

External beam radiation therapy is often given 5 days a week for 4 to 6 weeks. The skin covering the treatment area is carefully marked with permanent ink or tiny tattoos. A special mold of the pelvis and lower back is custom made to make sure you are in the exact same position for each treatment. Each treatment takes less than a half-hour, but daily visits to the radiation center are needed.

Sometimes chemotherapy is given along with the radiation to help it work better. This is called **chemoradiation**.

## Side effects of radiation therapy

### Short-term side effects

Common side effects of radiation therapy include tiredness, upset stomach, or loose stools. Severe fatigue, which may not start until about 2 weeks after treatment begins, is also common. Diarrhea is common, but usually can be controlled with over-the-counter medicines. Nausea and vomiting may occur, but can be treated with medicine. These side effects are more common with external beam radiation than with brachytherapy.

Side effects tend to be worse when chemotherapy is given with radiation.

**Skin changes**, which can range from mild redness to peeling and blistering, are quite common. The skin may release fluid, which can lead to infection, so care must be taken to clean and protect the area exposed to radiation. Sometimes, as it heals, the skin in the treated area becomes darker or less flexible (harder).

Radiation can irritate the bladder, and you might have problems urinating. Irritation to the bladder, called **radiation cystitis**, can result in discomfort, blood in the urine, and an urge to urinate often.

Radiation can also cause irritation in the intestine. Rectal irritation or bleeding is called **radiation proctitis**. It's sometimes treated with enemas that contain a steroid (like hydrocortisone) or suppositories that contain an anti-inflammatory.

Radiation can irritate the vagina, leading to discomfort and drainage (a discharge). This is called **radiation vaginitis**. If it occurs, the doctor may recommend douching with a dilute solution of hydrogen peroxide. When the irritation is severe, open sores can develop in the vagina, which may need to be treated with an estrogen cream.

Radiation can also lead to **low blood counts**, causing anemia (low red blood cells) and leukopenia (low white blood cells). The blood counts usually return to normal within a few weeks after radiation is stopped.

### Long-term side effects

Radiation therapy may cause changes to the lining of the vagina leading to vaginal dryness. This is more common after vaginal brachytherapy than after pelvic radiation therapy. In some cases scar tissue can form in the vagina. The scar tissue can make the vagina shorter or more narrow (called **vaginal stenosis**), which can make sex (vaginal penetration) painful. A woman can help prevent this problem by stretching the walls of her vagina several times a week. This can be done by having sex 3 to 4 times a week or by using a vaginal dilator (a plastic or rubber tube used to stretch out the vagina). Still, vaginal dryness and pain with sex can be long-term side effects of radiation. Some centers have physical therapists who specialize in pelvic floor therapy which can help to treat these vaginal symptoms and sometimes improve sexual function. Ask your doctor about this if you are bothered by these problems. You can also find some helpful information in [Sex and the Woman With Cancer<sup>2</sup>](#).

Pelvic radiation can damage the ovaries, resulting in **premature menopause**. This is not an issue for most women treated for endometrial cancer because they have already gone through menopause, either naturally or as a result of surgery to treat the cancer (hysterectomy and removal of the ovaries).

Pelvic radiation therapy can also lead to blockages that keep fluid from draining out of the leg. This can lead to severe swelling, called **lymphedema**. Lymphedema is a long-term side effect; it doesn't go away after radiation is stopped. In fact it may not start for several months or even years after treatment ends. This side effect is more common if pelvic lymph nodes were removed during surgery to remove the cancer. There are

specialized physical therapists who can help treat this. It's important to start treatment right away if you develop it. To learn more, see [Lymphedema](#)<sup>3</sup>.

Radiation to the pelvis can **weaken the bones**, leading to fractures of the hips or pelvic bones. It's important that women who have had endometrial cancer contact their doctor right away if they have pelvic pain. Such pain might be caused by a fracture, recurrent cancer (cancer that's come back after treatment), or other serious conditions.

Pelvic radiation can also lead to long-term problems with the bladder (radiation cystitis) or bowel (radiation proctitis). Rarely, radiation damage to the bowel can cause a **blockage** (called *obstruction*) or for an abnormal connection to form between the bowel and the vagina or outside skin (called a *fistula*). These conditions may need to be treated with surgery.

If you are having side effects from radiation, discuss them with your doctor. There are things you can do to get relief from these symptoms or to prevent them from happening.

## More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)<sup>4</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>5</sup>.

## Hyperlinks

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## Chemotherapy for Endometrial Cancer

Chemotherapy (chemo) is the use of drugs that kill cancer cells. They're given into a vein or taken by mouth as pills. These drugs go into the bloodstream and reach throughout the body. Because of this, chemo is often part of the treatment when endometrial cancer has spread beyond the endometrium to other parts of the body and surgery can't be done.

Chemo is also commonly used for high grade cancers, which grow and spread quickly,

and cancer that comes back after treatment.

Chemo is not used to treat stage I and II endometrial cancers.

In most cases, a combination of chemo drugs is used. Combination chemotherapy tends to work better than one drug alone.

Chemo is often given in cycles: a period of treatment, followed by a rest period. The chemo drugs may be given on one or more days in each cycle.

Chemo drugs used to treat endometrial cancer may include:

- Paclitaxel (Taxol<sup>®</sup>)
- Carboplatin
- Doxorubicin (Adriamycin<sup>®</sup>) or liposomal doxorubicin (Doxil<sup>®</sup>)
- Cisplatin
- Docetaxel (Taxotere<sup>®</sup>)

Most often, 2 or more drugs are combined for treatment. The most common combinations include carboplatin/paclitaxel and cisplatin/doxorubicin. Less often, carboplatin/docetaxel and cisplatin/paclitaxel/doxorubicin may be used.

For carcinosarcoma, the chemo drug ifosfamide (Ifex<sup>®</sup>) is often used, either alone or along with either cisplatin or paclitaxel. The targeted drug called trastuzumab (Herceptin<sup>®</sup>) might be added for carcinosarcomas that are HER2 positive. (HER2 is a protein that helps some cancer cells grow and spread faster. You can learn more about it at [Breast Cancer HER2 Status<sup>1</sup>](#).)

Sometimes chemo is given for a few cycles, followed by [radiation](#). Then chemo is given again. This is called **sandwich therapy**. It's sometimes used for endometrial papillary serous cancer and uterine carcinosarcoma.

Another treatment option is to give chemo with radiation (called **chemoradiation**). The chemo can help the radiation work better, but it can be harder on the patient because the combination causes more side effects.

## Side effects of chemotherapy

These drugs kill cancer cells but can also damage some normal cells, which in turn causes side effects. Side effects of chemotherapy depend on the drugs used, the



amount taken, and how long treatment is given. Common side effects include:

- Nausea and vomiting
- Loss of appetite
- Mouth sores
- Vaginal sores
- Hair loss

Also, most chemo drugs can damage the blood-producing cells of the bone marrow. This can result in low blood cell counts, such as:

- Low white blood cells, which increases the risk of infection
- Low platelet counts, which can cause bleeding or bruising after minor cuts or injuries
- Low red blood cells (anemia), which can cause problems like fatigue and shortness of breath

Most of the side effects of chemotherapy get better over time when treatment ends, but some can last a long time. Different drugs can cause different side effects. For instance, doxorubicin can damage the heart muscle over time. The chance of heart damage goes up as the total dose of the drug goes up, so doctors put a limit on how much doxorubicin a person can get.

Cisplatin can cause kidney damage, so you'll be given lots of IV fluids before and after chemo to help protect the kidneys. Both cisplatin and paclitaxel can cause nerve damage (called **neuropathy**). This can lead to numbness, tingling, or even pain in the hands and feet. Ifosfamide can injure the lining of the bladder, causing it to bleed (called **hemorrhagic cystitis**). To prevent this, you might be given large amounts of IV fluids and a drug called mesna along with the chemo.

Before starting chemotherapy, be sure to discuss the drugs and their possible side effects with your health care team.

If you have side effects while on chemotherapy, remember that there are ways to prevent or treat most of them. For instance, there are many anti-nausea drugs that can help prevent or reduce nausea and vomiting. Be sure to tell your health care team about any side effects you have. Treating them right away can often keep them from getting worse.

## More information about chemotherapy

For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](#)<sup>2</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>3</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html](http://www.cancer.org/cancer/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html)
2. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html)
3. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

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See all references for Endometrial Cancer ([www.cancer.org/cancer/endometrial-cancer/references.html](http://www.cancer.org/cancer/endometrial-cancer/references.html))

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# Hormone Therapy for Endometrial Cancer

This type of treatment uses hormones or hormone-blocking drugs to treat cancer. It's not the same as the hormone therapy given to ease the symptoms of menopause ([menopausal hormone therapy](#)<sup>1</sup>). It's most often used to treat endometrial cancer that's advanced (stage III or IV) or has come back after treatment (recurred). Hormone therapy is often used along with chemotherapy.

Hormone treatment for endometrial cancer can include:

- Progestins (This is the main hormone treatment used.)
- Tamoxifen
- Luteinizing hormone-releasing hormone agonists (LHRH agonists)
- Aromatase inhibitors (AIs)

At this time, no one type of hormone treatment has been found to be the best for endometrial cancer.

## Progestins

The main hormone treatment for endometrial cancer uses progesterone or drugs like it (called **progestins**). The 2 most commonly used progestins are:

- Medroxyprogesterone acetate (**Provera**®), which can be given as an injection or as a pill
- Megestrol acetate (**Megace**®), which is given as a pill or liquid

These drugs slow the growth of endometrial cancer cells. They've been found to be useful in treating women with endometrial cancer who want to be able to get pregnant in the future, and this is an area of research interest.

**Side effects can include:**

- Hot flashes
- Night sweats
- Weight gain (from fluid retention and an increased appetite)

- Worsening of depression
- Increased blood sugar levels in women with diabetes
- Serious blood clots (this is rare)

Sometimes endometrial hyperplasia and early endometrial cancers can be treated with an intrauterine device (IUD) that contains a progestin called levonorgestrel. This may be combined with another hormone drug, like medroxyprogesterone acetate or a luteinizing hormone-releasing hormone agonist. (See below.)

## Tamoxifen

Tamoxifen is an anti-estrogen drug often used to treat breast cancer. It might also be used to treat advanced or recurrent endometrial cancer. Alternating progesterone and tamoxifen is an option that seems to work well and be better tolerated than progesterone alone.

The goal of tamoxifen therapy is to keep any estrogens in the woman's body from boosting the growth of the cancer cells. Though tamoxifen may keep estrogen from "feeding" the cancer cells, it acts like a weak estrogen in other parts of the body. It doesn't cause bone loss, but it can cause hot flashes and vaginal dryness. Women taking tamoxifen also are at higher risk for serious blood clots in the legs.

## Luteinizing hormone-releasing hormone agonists

Most women with endometrial cancer have had their ovaries removed as a part of treatment. Some women might have had [radiation treatments](#) that made their ovaries inactive. This helps keep the body from making estrogen and may also slow the growth of the cancer.

Luteinizing hormone-releasing hormone agonists (LHRH agonists) are drugs that lower estrogen levels in women who still have working ovaries. These drugs "turn off" the ovaries in women who are premenopausal so they don't make estrogen.

**Goserelin** (Zoladex<sup>®</sup>) and **leuprolide** (Lupron<sup>®</sup>) are drugs that might be used to treat endometrial cancer. They're given as a shot every 1 to 3 months. These drugs are also called *gonadotropin-releasing hormone (GNRH) agonists*.

Side effects can include any of the symptoms of menopause, such as hot flashes and vaginal dryness. They can also cause muscle and joint aches. If taken for a long time (years), these drugs can weaken bones, sometimes leading to osteoporosis.

## Aromatase inhibitors

Even after the ovaries are removed (or are not working), estrogen is still made in fat tissue. This becomes the body's main source of estrogen. Drugs called aromatase inhibitors can stop this estrogen from being made and lower estrogen levels even further. Examples of aromatase inhibitors include **letrozole** (Femara<sup>®</sup>), **anastrozole** (Arimidex<sup>®</sup>), and **exemestane** (Aromasin<sup>®</sup>). These drugs are most often used to treat breast cancer, but can be helpful in treating endometrial cancer, too. They're most often used to treat women who cannot have surgery, but doctors are looking at other ways these drugs could be helpful.

Side effects can include headaches, joint and muscle pain, and hot flashes. If taken for a long time (years), these drugs can weaken bones, sometimes leading to osteoporosis. These drugs are still being studied for how to best use them to treat endometrial cancer.

## Hyperlinks

1. [www.cancer.org/cancer/cancer-causes/medical-treatments/menopausal-hormone-replacement-therapy-and-cancer-risk.html](http://www.cancer.org/cancer/cancer-causes/medical-treatments/menopausal-hormone-replacement-therapy-and-cancer-risk.html)

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See all references for Endometrial Cancer ([www.cancer.org/cancer/endometrial-cancer/references.html](http://www.cancer.org/cancer/endometrial-cancer/references.html))

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## Targeted Therapy for Endometrial Cancer

Targeted therapy is treatment with drugs that are made to target certain changes in the cancer cells. Some people group them with chemotherapy, but they aren't the same. Targeted therapies leave most healthy cells alone. They often cause fewer and different side effects than chemo.

Targeted therapy is used to treat many types of cancer, but it's very new in the treatment of certain types of endometrial cancer. Only a few of these drugs are in use at this time, and are only given as part of a [clinical trial](#)<sup>1</sup>, but many more are being studied. As doctors learn more about endometrial cancer cells, targeted therapy could become an important part of treatment. Today, these drugs are mostly used to treat high-risk endometrial cancers and those that have spread (metastasized) or come back (recurred) after treatment.

### Bevacizumab

Bevacizumab (Avastin®) belongs to a class of drugs called angiogenesis inhibitors. For

cancers to grow and spread, they need to make new blood vessels to nourish themselves (a process called angiogenesis). This drug attaches to a protein called VEGF (which signals new blood vessels to form) and slows or stops cancer growth.

Bevacizumab is often given along with chemotherapy, but it can be given alone. It's given as an infusion into the vein (IV) every 2 to 3 weeks.

Common side effects include high blood pressure, tiredness, bleeding, low white blood cell counts, headaches, mouth sores, loss of appetite, and diarrhea. Rare, but possibly serious side effects include blood clots, severe bleeding, slow wound healing, holes forming in the colon (perforations), and the formation of abnormal connections between the bowel and the skin or bladder (fistulas). If a perforation or fistula forms, it can lead to severe infection and surgery may be needed.

## mTOR inhibitors

These drugs block a cell protein known as mTOR, which normally helps cells grow and divide into new cells. These drugs might be given alone or added to chemo or hormone therapy to treat advanced (higher stage ) endometrial cancers, or those that come back after treatment.

**Everolimus (Afinitor<sup>®</sup>)** is taken as a pill once a day.

Common side effects include mouth sores, diarrhea, nausea, feeling weak or tired, shortness of breath, and cough. Everolimus can also cause low blood counts, increase blood lipids (cholesterol and triglycerides), and raise your blood sugar, so your doctor will check your blood work often while you are taking this drug.

**Temsirolimus (Torisel<sup>®</sup>)** is given as an intravenous (IV) infusion, typically once a week. It can be given alone.

The most common side effects of this drug are skin rash, weakness, mouth sores, diarrhea, nausea, loss of appetite, fluid build-up in the face or legs, and increases in blood sugar and cholesterol levels. Rarely, more serious side effects have been reported.

**Ridaforolimus** can be taken as a pill or given as an IV infusion. So far, it has been studied in women with endometrial cancer that has spread or come back after treatment.

Common side effects of ridaforolimus include diarrhea, mouth sores, loss of appetite,

weakness, nausea, high blood sugars, and vomiting.

## More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see [Targeted Cancer Therapy](#)<sup>2</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>3</sup>.

## Hyperlinks

1. [www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html](http://www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html)
2. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html)
3. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

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## Immunotherapy for Endometrial Cancer

Immunotherapy is treatment with drugs that help a person's own immune system better recognize and kill cancer cells. Immunotherapy can be used to treat certain types of endometrial cancer that has spread or come back (recurred).

### Immune checkpoint inhibitors

An important part of the immune system is its ability to keep itself from attacking the body's normal cells. To do this, it uses "checkpoints" – molecules on immune cells that need to be turned on (or off) to start an immune response. Cancer cells sometimes use these checkpoints to avoid being attacked by the immune system. But newer drugs that target these checkpoints hold a lot of promise as cancer treatments. There are a lot of [clinical trials](#)<sup>1</sup> looking at how these drugs can be used to help treat endometrial cancer.

**Pembrolizumab (Keytruda®)** targets PD-1, a protein on immune system cells called T cells. PD-1 normally helps keep T-cells from attacking other cells in the body. By blocking PD-1, this drug boosts the immune response against cancer cells. This can shrink some tumors or slow their growth. It might be used for endometrial tumors that are not responding to other treatments or come back (recur) after treatment.

Pembrolizumab can be used in women with endometrial cancer cells that are MMR deficient (dMMR) and MSI high (MSI-H). Both of these are linked to gene mutations (changes) in the cancer cells. Tumors can be tested for these changes.

This immunotherapy drug is given as an intravenous (IV) infusion every 3 weeks.

### Possible side effects

Side effects can include fatigue, fever, nausea, headache, skin rash, loss of appetite, constipation, joint/muscle pain, and diarrhea.

Other, more serious side effects occur less often. These drugs work by basically taking the brakes off the body's immune system. Sometimes the immune system starts attacking other parts of the body, which can cause serious or even life-threatening problems in the lungs, intestines, liver, hormone-making glands, kidneys, or other organs.

It's very important to report any new side effects to your health care team right away. If you do have a serious side effects, treatment may need to be stopped and you may be given high doses of corticosteroids to suppress your immune system.

## More information about immunotherapy

To learn more about how drugs that work on the immune system are used to treat cancer, see [Cancer Immunotherapy](#)<sup>2</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>3</sup>.

## Hyperlinks

1. [www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html](http://www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html)
2. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html)
3. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

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## Treatment Choices for Endometrial Cancer, by Stage

The stage (extent) of endometrial cancer is the most important factor in choosing treatment. But other factors can also affect your treatment options, including the type of cancer, your age and overall health, and whether you want to be able to have children. Tests done on the cancer cells are also used to find out if certain treatments, like hormone and targeted therapy, might work.

**Surgery is the first treatment for almost all women with endometrial cancer.** The operation includes removing the uterus, fallopian tubes, and ovaries. (This is called a **total hysterectomy bilateral salpingo-oophorectomy** or TH/BSO). Lymph nodes from the pelvis and around the aorta may also be removed (a pelvic and para-aortic **lymph node dissection** [LND] or sampling) and tested for cancer spread. **Pelvic washings** may be done, too. The tissues removed at surgery are tested to see how far the cancer has spread (the stage). Depending on the [stage of the cancer](#)<sup>1</sup>, other treatments, such as [radiation](#) and/or [chemotherapy](#) may be recommended.

For some women who still want to be able to get pregnant, surgery may be put off for a time and other treatments tried instead.

If a woman isn't well enough to have surgery, other treatments, like radiation, will be used.

### Stage I cancers

Stage I is only in the uterus. It has not spread to lymph nodes or distant sites.

### Stage I endometrioid cancers

Standard treatment includes [surgery](#) to remove and [stage](#)<sup>2</sup> the cancer (see above). Sometimes this is the only treatment needed. The patient is then closely watched for signs that the cancer has come back (recurred).

For women with higher grade tumors, [radiation](#) will likely be recommended after surgery. Vaginal brachytherapy (VB), pelvic radiation, or both can be used.

Some younger women with early endometrial cancer may have their uterus removed without removing the ovaries. This prevents menopause and the issues that can come with it. This also increases the chance that the cancer will come back, but it doesn't make it more likely that you will die from the cancer. This may be something that you want to discuss with your doctor.

Women who cannot have surgery because of other medical problems or who are frail due to age are often treated with just radiation (external radiation and/or vaginal brachytherapy).

**Fertility-sparing treatment for stage IA grade 1 endometrioid cancers:** For young women who still want to have children, surgery may be postponed while [progestin therapy](#) is used to treat the cancer. Progestin treatment can cause the cancer to shrink or even go away for some time, giving the woman a chance to get pregnant. Still, this is experimental and can be risky if the patient isn't watched closely. An endometrial biopsy or a D&C should be done every 3 to 6 months. If there's still no cancer after 6 months, the woman can try to become pregnant. She will continue to be checked for cancer every 6 months. Because the cancer often comes back again, doctors recommend TH/BSO after childbearing is complete.

Many times, progestin treatment doesn't work and the cancer doesn't get better or keeps growing. Putting off surgery can give the cancer time to spread outside the uterus. If it doesn't go away in 6 to 12 months, surgery to remove and stage the cancer is recommended (hysterectomy and removal of both fallopian tubes and ovaries).

A second opinion from a gynecologic oncologist and pathologist (to confirm the grade of the cancer) before starting progestin therapy is important. Seeing a fertility expert is also a good idea. It's important to understand that this isn't a standard treatment and may increase risk of cancer growth and spread.

### **Other types of stage I endometrial cancers**

Cancers such as papillary serous carcinoma, clear cell carcinoma, or carcinosarcoma are more likely to have already spread outside the uterus when diagnosed. Women with these types of tumors don't do as well as those with lower grade tumors. If the biopsy

done before surgery shows a high-grade cancer, the surgery may be more extensive. Along with the total hysterectomy and removal of both fallopian tubes and ovaries, the pelvic and para-aortic lymph node will be removed, and the omentum is often removed, too.

After surgery, [chemotherapy](#) (chemo) with or without [radiation therapy](#) are given to help keep the cancer from coming back. The chemo usually includes the drugs carboplatin and paclitaxel, but other drugs can also be used.

If the cancer can't be removed with surgery, both chemotherapy (chemo) with or without radiation are used. Sometimes, the tumor then shrinks so that surgery can then be done to remove it.

## Stage II cancers

When an endometrial cancer is stage II, it has spread to the connective tissue of the cervix. But it still hasn't grown outside the uterus.

One treatment option is to have surgery first, followed by [radiation therapy](#). The surgery includes a **radical hysterectomy** (the entire uterus, the tissues next to the uterus, and the upper part of the vagina are removed), removal of both fallopian tubes and ovaries (BSO), and pelvic and para-aortic lymph node dissection (LND) or sampling. Radiation therapy, often both vaginal brachytherapy and external pelvic radiation, may be given after the patient has recovered from surgery. Another option is to give the radiation therapy first, and then do a simple hysterectomy, BSO, and possible LND or lymph node sampling.

The lymph nodes that have been removed are checked for cancer cells. If there's cancer in them, the cancer isn't really a stage II – it's a stage IIIC.

In some cases, a woman with early stage endometrial cancer might be too frail or ill from other diseases to safely have surgery. These women are treated with external radiation and brachytherapy.

For women with high-grade cancers, like papillary serous carcinoma or clear cell carcinoma, the surgery may include omentectomy and peritoneal biopsies along with the total hysterectomy, removal of both fallopian tubes and ovaries, pelvic and para-aortic lymph node dissections, and pelvic washings. After surgery, radiation therapy, [chemo](#), or both may be given to help keep the cancer from coming back. The chemo usually includes the drugs carboplatin and paclitaxel or possibly cisplatin and doxorubicin.

Someone with a stage II uterine carcinosarcoma often has the same type of surgery that's used for a high-grade cancer. After surgery, radiation, chemo, or both may be used. The chemo often includes paclitaxel and carboplatin but may instead include ifosfamide, along with paclitaxel or cisplatin.

## Stage III cancers

Stage III endometrial cancers have spread outside of the uterus.

If the surgeon thinks that all visible cancer can be removed, a hysterectomy is done and both ovaries and fallopian tubes are removed. Sometimes women with stage III cancers need a radical hysterectomy. A pelvic and para-aortic lymph node dissection may also be done. Pelvic washings will be done and the omentum may be removed. Some doctors will try to remove any remaining cancer (called debulking), but it isn't clear that this helps patients live longer.

If [tests done before surgery](#)<sup>3</sup> show that the cancer has spread too far to be removed completely, in rare cases, radiation therapy may be given before any surgery. It might shrink the tumor enough to make [surgery](#) an option.

**Stage IIIA:** A cancer stage IIIA has spread to the tissue covering the uterus (the serosa) or to other tissues in the pelvis, like the fallopian tubes or the ovaries (the adnexa). For these cancers, treatment after surgery may include [chemo](#), [radiation](#), or both. Radiation is given to the pelvis or to both the abdomen (belly) and pelvis. Vaginal brachytherapy is often used, too.

**Stage IIIB:** In this stage, the cancer has spread to the vagina. After surgery, stage IIIB may be treated with chemo and/or radiation.

**Stage IIIC:** This includes cancers that have spread to the lymph nodes in the pelvis (stage IIIC1) and those that have spread to the lymph nodes around the aorta (stage IIIC2). Treatment includes surgery, followed by chemo and/or radiation.

For women with high-grade cancers, such as papillary serous carcinoma or clear cell carcinoma, the surgery may include omentectomy and peritoneal biopsies along with the total hysterectomy, removal of both ovaries and fallopian tubes, pelvic and para-aortic lymph node dissections, and pelvic washings. After surgery, chemo, radiation therapy, or both may be given to help keep the cancer from coming back. The chemo usually includes the drugs carboplatin and paclitaxel or cisplatin and doxorubicin.

Women with stage III uterine carcinosarcoma often have the same type of surgery that's

used for a high-grade cancer. After surgery, radiation, chemo, or both may be used. The chemo often includes the drug paclitaxel and carboplatin, but ifosfamide, along with paclitaxel or cisplatin may be used. Targeted and/or immunotherapy may also be options for some women.

## Stage IV cancers

**Stage IVA:** These endometrial cancers have grown into the bladder or bowel.

**Stage IVB:** These endometrial cancers have spread to lymph nodes outside the pelvis or para-aortic area. This stage also includes cancers that have spread to the liver, lungs, omentum, or other organs.

Some endometrial cancers are stage IV because they have spread to lymph nodes in the abdomen (and not just the pelvis and para-aortic area), but they haven't spread to any other areas. Women with this kind of cancer spread may have better outcomes if all the cancer that's seen can be removed (debulked) and biopsies of other areas in the abdomen do not show cancer cells.

In most cases of stage IV endometrial cancer, the cancer has spread too far for it all to be removed with [surgery](#). A hysterectomy and removal of both fallopian tubes and ovaries may still be done to prevent excessive bleeding. [Radiation therapy](#) may also be used for this reason. When the cancer has spread to other parts of the body, [hormone therapy](#) may be used. But high-grade cancers and those without detectable progesterone and estrogen receptors on the cancer cells are not likely to respond to hormone therapy. Targeted and immunotherapy may also be options.

Combinations of [chemo](#) drugs may help some women for a time. The drugs used most often are paclitaxel, doxorubicin, and either carboplatin or cisplatin. These drugs are often used together in combination. Stage IV carcinosarcoma is often treated with much the same chemo. Cisplatin, ifosfamide, and paclitaxel may also be combined. Women with stage IV endometrial cancer should consider taking part in [clinical trials](#)<sup>4</sup> of chemotherapy or other new treatments.

## Recurrent endometrial cancer

Cancer is called recurrent when it come backs after treatment. Recurrence can be local (in or near the same place it started) or distant (spread to organs such as the lungs or bone). Treatment depends on the amount of cancer and where it is, as well as the kind of treatment was used the first time.

For local recurrences, such as in the pelvis, [surgery](#) (sometimes followed with [radiation therapy](#)) is used. For women who have other medical conditions that make them unable to have surgery, radiation therapy alone or combined with [hormone therapy](#) tends to be used.

For a distant recurrence, surgery and/or focused radiation therapy may be used when the cancer is only in a few small spots (like in the lungs or bones). Women with more extensive recurrences (widespread cancer) are treated like those with stage IV endometrial cancer. Either hormone therapy or [chemo](#) is recommended. Low-grade cancers containing progesterone receptors are more likely to respond well to hormone therapy. Higher-grade cancers and those without detectable receptors are unlikely to shrink during hormone therapy but may respond to chemo. [Targeted therapy](#) and [immunotherapy](#) may be used in some cases. [Clinical trials](#)<sup>5</sup> of new treatments are another good option.

## Hyperlinks

1. [www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html)
2. [www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/staging.html)
3. [www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/endometrial-cancer/detection-diagnosis-staging/how-diagnosed.html)
4. [www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html](http://www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html)
5. [www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html](http://www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html)

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National Cancer Institute. Endometrial Cancer Treatment (PDQ®)—Health Professional Version. January 19, 2018. Accessed at [www.cancer.gov/types/uterine/hp/endometrial-treatment-pdq/](http://www.cancer.gov/types/uterine/hp/endometrial-treatment-pdq/) on February 22, 2019.

National Cancer Institute. Endometrial Cancer Treatment (PDQ®)—Health Professional Version. January 19, 2018. Accessed at [www.cancer.gov/types/uterine/hp/endometrial-treatment-pdq/](http://www.cancer.gov/types/uterine/hp/endometrial-treatment-pdq/) on February 22, 2019.

See all references for Endometrial Cancer ([www.cancer.org/cancer/endometrial-cancer/references.html](http://www.cancer.org/cancer/endometrial-cancer/references.html))



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