

## Possible Side Effects

Side effects are different for everyone. Some patients feel fine during treatment while others may experience side effects. Before treatment, ask your doctor to describe what you can expect.

- Mild tiredness may develop. However, tiredness from radiation should improve within a few weeks after radiation treatment ends.
- Skin irritation may occur with external beam radiation. Clean the area regularly with mild soap and warm water.
- Changes in bowel habits are common. There is usually some urgency or loose bowel movements. In some cases there may be more frequent bowel movements, nausea and bloating.
- Urinary discomfort and urgency may occur. These symptoms are often more common with brachytherapy.
- Infertility can occur after radiation to the pelvic area. If you are considering having children after radiation treatment, ask your doctor about fertility preservation options.

Do not be embarrassed to talk to your doctor about sexual side effects. Although side effects can sometimes decrease interest in or pleasure with sexual activity, most women are able to resume sexual relations. Ask your doctor or nurse how to manage these changes. Medications, vaginal dilators and moisturizers may help. Pelvic rehabilitation therapy, a type of physical therapy, may also be helpful in treating late sexual and urinary side effects.

For more specific acute and long-term side effects, refer to the side effects chart at [www.rtanswers.org/gynsideeffects](http://www.rtanswers.org/gynsideeffects).

Visit  
[www.rtanswers.org](http://www.rtanswers.org)  
to download a complete  
chart of side effects on  
gyn cancer.

Organ System	Side effects of Gynecologic Cancer Radiation Treatment	
	Acute Complications (Days-Months After Treatment)	Late Complications (Months-Years After Treatment)
General	<ul style="list-style-type: none"> <li>• Acute fatigue</li> <li>• Weight loss</li> <li>• Decreased blood counts</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic fatigue (uncommon)</li> <li>• Second cancer (rare)</li> </ul>
Skin	<ul style="list-style-type: none"> <li>• Redness</li> <li>• Peeling and/or blistering</li> <li>• Swelling</li> <li>• Tenderness or pain</li> <li>• Pelvic hair loss or thinning</li> </ul>	<ul style="list-style-type: none"> <li>• Tissue scarring, thickening, firmness (fibrosis)</li> <li>• Coloration changes (lighter or darker)</li> <li>• Tissue thinning</li> <li>• Pelvic hair loss or thinning</li> </ul>
Gynecologic	<ul style="list-style-type: none"> <li>• Vaginal pain</li> <li>• Hot flashes</li> </ul>	<ul style="list-style-type: none"> <li>• Vaginal dryness</li> <li>• Difficulty with intercourse such as pain and/or narrowing of vagina</li> <li>• Ovarian failure</li> <li>• Infertility</li> </ul>
Urinary	<ul style="list-style-type: none"> <li>• Pain or burning with urination</li> <li>• Increased frequency of urination</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty urinating due to damage to bladder or urethra</li> <li>• Blood with urination</li> </ul>
Gastrointestinal	<ul style="list-style-type: none"> <li>• Increased frequency of bowel movements</li> <li>• Pain with bowel movements</li> <li>• Loose stools or diarrhea</li> <li>• Nausea/vomiting</li> <li>• Bloating/gas</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty with bowel movements due to damage to anus, rectum or bowels</li> <li>• Blood with bowel movements</li> <li>• Bowel obstruction</li> <li>• Bowel adhesions</li> <li>• Bowel perforation</li> </ul>
Musculoskeletal		<ul style="list-style-type: none"> <li>• Pelvic or femoral head fracture</li> </ul>
Lymphatic		<ul style="list-style-type: none"> <li>• Lymphedema (swelling of legs)</li> </ul>

### LEARNING ABOUT CLINICAL TRIALS

The radiation oncology team is constantly exploring new ways to treat gynecologic cancers through studies called clinical trials. For more information on clinical trials, ask your doctor or visit:

#### National Cancer Institute

[www.cancer.gov](http://www.cancer.gov)

#### NRG Oncology (Clinical Trials Using Radiation)

[www.nrgoncology.org](http://www.nrgoncology.org)

#### Clinical Trials.gov

[www.clinicaltrials.gov](http://www.clinicaltrials.gov)

#### Gynecologic Oncology Group

[www.gog.org](http://www.gog.org)

### HELPFUL WEBSITES ON GYNECOLOGIC CANCERS

- **RT Answers (Information about radiation treatment for cancer)**  
[www.RTanswers.org](http://www.RTanswers.org)
- **Cancer.net**  
[www.cancer.net](http://www.cancer.net)
- **National Cervical Cancer Coalition**  
[www.nccc-online.org](http://www.nccc-online.org)
- **Women's cancer network**  
[www.wcn.org](http://www.wcn.org)

### ABOUT THE RADIATION ONCOLOGY TEAM

Radiation Oncologists are the doctors who oversee the care of patients undergoing radiation treatment. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each of these professionals does or to locate a radiation oncologist near you, visit [www.rtanswers.org](http://www.rtanswers.org).



### ABOUT ASTRO

The American Society for Radiation Oncology is the premier radiation oncology society in the world with more than 10,000 members who specialize in treating cancer with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy. Visit [www.astro.org](http://www.astro.org) for information.



#### AMERICAN SOCIETY FOR RADIATION ONCOLOGY

251 18th Street South, 8th Floor, Arlington, VA 22202  
Phone: 703-502-1550 • Fax: 703-502-7852

[www.astro.org](http://www.astro.org) • [www.rtanswers.org](http://www.rtanswers.org)

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## Radiation Therapy for Gynecologic Cancers



Gynecologic cancers include malignancies of the female genital tract involving the vulva, vagina, cervix, uterus, fallopian tubes or ovaries. According to the American Cancer Society, 105,890 women will be diagnosed with some form of gynecologic cancer this year. Cancers of the uterus and cervix are most common gynecologic cancers treated with radiation and account for 60,050 new cases each year. Widespread screening with the Pap test allows doctors to find pre-cancerous changes in the cervix and vagina early.





## TREATING GYNECOLOGIC CANCERS

Treatment for gynecologic cancers depends on several factors, including the type of cancer, its extent (stage), its location and your overall health. It is important to talk with several cancer specialists, including a radiation oncologist, surgeon and medical oncologist, before deciding on the best treatment for you, your cancer and your lifestyle. Sometimes, your cancer may be treated by using only one type of treatment. In other cases, your cancer may be best treated using a combination of surgery, radiation therapy and chemotherapy.

### Radiation Therapy

**Radiation therapy**, sometimes called radiotherapy, is the careful use of radiation to treat cancer safely and effectively. **Radiation oncologists** use radiation therapy to try to cure cancer, control cancer growth or relieve symptoms, such as pain.

Radiation therapy works within cancer cells by damaging their ability to multiply. When these cells die, the body naturally eliminates them. Healthy cells are also affected by radiation, but they can repair themselves in a way that cancer cells cannot.

There are two types of radiation therapy. **External beam radiation therapy** directs radiation beams at the cancer from outside your body. Internal radiation therapy, or **brachytherapy**, is delivered with radioactive sources that are temporarily placed into the vagina, uterus and/or surrounding tissues to kill the cancer cells.

### Surgery

**Surgery** is an important part of treatment for many tumors of the female reproductive system. A **gynecologic oncologist** is a doctor who specializes in surgically removing and treating gynecologic cancers.

For uterine and cervical cancers, surgery usually involves the removal of the uterus and cervix, called a hysterectomy. The surgeon may also remove lymph

nodes and check for any cancer cells within the fluid within the abdomen. For less common tumors like vulvar cancer, surgery is more likely to involve removing part or all of the vulva and sampling lymph nodes.

Surgery and radiation can be combined to help lower the risk of recurrence of cancer after surgery, but this strategy varies based upon the disease and stage (how much the tumor seems to have spread).

In cases where radiation is the main treatment, it is often still important to keep your surgeon involved in follow-up after radiation to monitor for signs of recurrence.

### Medical Therapy

Anti-cancer drugs known as **chemotherapy** have been proven to improve cancer cure rates in certain gynecologic cancer patients. These medications are used in a variety of different cancers and tend to be used for stage III and IV gynecologic cancers. The dose and schedule for treatment varies, and chemotherapy can be done either alone or with radiation therapy. Because chemotherapy recommendations vary significantly depending on disease and stage, it is important to discuss this with a **medical oncologist** or **gynecologic oncologist (surgeon)**. Both can prescribe chemotherapy for gynecologic cancers. Talk with your surgeon about whether you need a separate appointment with a medical oncologist for evaluation or treatment.

## EXTERNAL RADIATION THERAPY

**External beam radiation therapy** involves a series of daily outpatient treatments to accurately deliver radiation to the cancer. Treatments are painless. They are usually given in a series of daily sessions, Monday through Friday, for up to five to six weeks.

Before beginning treatment, you will be scheduled for a planning session to map out the treatment area. This procedure is called a **simulation**. Simulation involves

having a CT scan and possibly an MRI, which can help visualize soft tissues near the cancer. You may also receive small pen marks or tattoos on your skin at the simulation that will help the radiation therapists precisely position you each time for daily treatment. Typically, radiation therapy is done with high energy X-rays, also called photons. Another form of external radiation is **proton beam therapy (PBT)**, which, in certain rare circumstances, may reduce radiation dose to normal parts of the body not involved by the cancer.

Different techniques can be used for treatment. **Three-dimensional conformal radiotherapy (3-D CRT)** combines multiple radiation treatment fields to deliver precise doses of radiation to the affected area. Tailoring each of the radiation beams to focus on the tumor delivers a high dose of radiation to the tumor and lowers the dose to nearby healthy tissue. **Intensity modulated radiation therapy (IMRT)** is another advance in the delivery of radiation therapy. Modifying the intensity of the radiation within each of the beams allows more precise adjustment of doses delivered to the tissues within the target area. Your radiation oncologist will evaluate you for the best form of treatment.

## INTERNAL RADIATION THERAPY

Sometimes radiation is placed inside the body to get the source of the radiation as close to the tumor as possible. This type of radiation therapy is called **brachytherapy**. In gynecologic cancers, this is often a very important part of treatment and it is commonly utilized. Other names for this type of treatment besides internal radiation therapy or brachytherapy including interstitial implants and intracavitary implants. Brachytherapy can be done alone or in combination with external radiation therapy.

Usually, the radiation source is placed inside the body for short periods of time and then taken out. Your radiation oncologist will discuss with you whether brachytherapy will be used alone or with standard radiation therapy to treat your type of cancer.

**High-dose-rate (HDR) brachytherapy** usually does not usually require you be admitted to the hospital and is now the most commonly used type of brachytherapy for this type of cancer. A typical course of treatment involves 3-6 high-dose-rate brachytherapy treatments given 1-2 times per week. **Low-dose-rate (LDR) brachytherapy** is delivered in a single continuous treatment over the course of 48 to 72 hours. You will be admitted to the hospital to receive this treatment. This is less commonly used.

## CARING FOR YOURSELF DURING TREATMENT

It is important to care for yourself during radiation therapy. Parts of your body that are near the tumor are also receiving some radiation, although not as much as the cancer. These normal parts of your body need time and support to heal. A balanced diet, adequate hydration, a mild amount of physical activity and taking time to rest are all important parts of your cancer treatment.

- Follow your doctor's orders. If you are unsure of anything, ask your nurse or doctor.
- Be sure to tell your radiation oncologist about any medications, vitamins or supplements that you are currently taking to make sure they are safe to take during radiation therapy.
- During, and even after radiation therapy is over, you will need to take special care of your skin. Stay out of the sun, avoid hot or cold packs, and do not use lotions or ointments without checking with your doctor or nurse first. Clean the skin over the areas receiving radiation therapy with warm water and mild soap.

Completing treatment and recovery can be challenging. Seek out help from support groups and friends ahead of time. Having a support network in place before and during treatment will make it easier for you to get through side effects. If you need additional support, let your doctor and nurse know.