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Treating Anal Cancer

After the cancer is found and staged, your cancer care team will talk with you about treatment options. A key goal of treatment is to save the muscles of the anal sphincter so you can control your bowels and stool so your overall quality of life is not affected.

Your treatment options depend on many factors. The location, type, and the stage (extent of spread) of the tumor are important. In choosing your treatment plan, you and your cancer care team will also take into account your age, your overall health, and your personal preferences.

How is anal cancer treated?

There are many ways to treat anal cancer.

- [Surgery for Anal Cancer](#)
- [Radiation Therapy for Anal Cancer](#)
- [Chemotherapy for Anal Cancer](#)
- [Immunotherapy for Anal Cancer](#)

Common treatment approaches

Often the best approach combines 2 or more treatment approaches

- [Programs & Services](#)

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](#)

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 your cancer care team any questions you may have about your treatment options.

Surgery for Anal Cancer

In most cases, surgery is not the first treatment used for anal cancer. For people who do need surgery, the type of operation depends on the type and location of the tumor.

Local resection

A local resection is an operation that removes only the tumor, plus a small amount of normal tissue around the tumor. It's most often used to treat cancers of the perianal area (also called the anal margin) if the tumor is small and has not spread to nearby tissues or [lymph nodes](#)¹.

intense orgasms. An APR can also damage the nerves that control ejaculation, leading to “dry” orgasms (orgasms without semen).

APR usually does not cause a loss of sexual function for women, but abdominal adhesions (scar tissue) may sometimes cause pain during sex.

More information on dealing with the sexual impact of cancer and its treatment can be found at [Sex and the Adult Male With Cancer](#)³ and [Sex and the Adult Female With Cancer](#)⁴.

More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)⁵.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁶.

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/lymph-nodes-and-cancer.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery/ostomies/colostomy.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/sexuality-for-men-with-cancer.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/sexuality-for-women-with-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Radiation Therapy for Anal Cancer

Radiation therapy uses high-energy x-rays or particles to kill cancer cells. Depending on the stage of the anal cancer and other factors, radiation therapy might be used:

- Along with chemotherapy as part of the main treatment for most anal cancers (This is called *chemoradiation*.)
- After surgery if the doctor is concerned that all of the cancer might not have been removed. This might be seen in cancers of the perianal area.
- After surgery for some cancers of the perianal area (anal margin) that are at a high risk of coming back
- To help treat cancer that has come back in the groin [lymph nodes](#)¹ after initial treatment
- To help control [cancer that has spread](#),² such as to the lungs or to relieve symptoms it causes such as pain or bleeding

Types of radiation therapy used for anal cancer

Different types of radiation therapy can be used to treat anal cancer. There are 2 main types:

- External beam radiation therapy
- Brachytherapy (internal radiation therapy)

External-beam radiation therapy

[External-beam radiation therapy](#)³ (EBRT) focuses radiation from outside the body onto the cancer. This is the type of radiation therapy most often used to treat anal cancer or its spread to other organs.

Treatment is much like getting an x-ray, but the radiation dose is stronger. The procedure itself is painless and each treatment lasts only a few minutes. Most often, radiation treatments to the anal area are given 5 days a week for 5 to 7 weeks, but this can vary based on the type of EBRT and the reason it's being given.

Newer techniques allow doctors to give higher doses of radiation to the cancer while reducing the radiation to nearby healthy tissues:

Three-dimensional conformal radiation therapy (3D-CRT) uses special computers to precisely map the location of the cancer. Radiation beams are then shaped and aimed at the tumor from several directions. This makes them less likely to damage normal tissues. You will most likely be fitted with a plastic mold like a body cast to keep you in the exact same position each time so that the radiation can be aimed more accurately.

Intensity-modulated radiation therapy (IMRT) is a form of 3D therapy and the

Side effects of external radiation therapy

Side effects vary based on the part of the body treated and the dose of radiation given. Some common short-term side effects include:

- Diarrhea
- Skin changes (like a sunburn) in areas being treated
- Anal irritation and pain (called *radiation proctitis*)
- Discomfort during bowel movements
- Tiredness
- Nausea
- Low blood cell counts

In women, radiation may irritate the vagina. This can lead to discomfort and discharge.

Most of these side effects get better over time after radiation stops.

Long-term side effects can also occur:

- Damage to anal tissue by radiation may cause scar tissue to form. This can sometimes keep the anal sphincter muscle from working as it should, which could lead to problems with bowel movements.
- Radiation to the pelvis can weaken the bones, increasing the risk of fractures of the pelvis or hip.
- Radiation can damage blood vessels that nourish the lining of the rectum and lead to chronic radiation proctitis (inflammation of the lining of the rectum). This can cause rectal bleeding and pain.
- Radiation can affect fertility (the ability to have children) . People with anal cancer should discuss options for sperm banking or egg freezing with their doctor. (For more on this, see [Male Fertility and Cancer](#)⁴ and [Female Fertility and Cancer](#)⁵.)
- Radiation can lead to vaginal dryness and even a narrowing or shortening of the vagina (called *vaginal stenosis*), which can make sex painful. A woman can help prevent this problem by stretching the walls of her vagina several times a week. This can be done using a vaginal dilator (a plastic or rubber tube used to stretch out the vagina). (To learn more, see [Sex and the Adult Female With Cancer](#)⁶.)
- Radiation can lower sexual function in men and impotence is often reported.
- If radiation is given to the lymph nodes in the groin, it can lead to swelling problems in the genitals and legs, called [lymphedema](#)⁷.

Brachytherapy (internal radiation)

Brachytherapy is not commonly used to treat anal cancer. When it is used, it's usually given as a radiation boost along with external radiation when a tumor isn't responding to regular chemoradiation (chemo plus external radiation).

Brachytherapy involves putting small sources of radioactive materials in or near the tumor. It focuses the radiation in the area of the cancer to minimize radiation damage to normal nearby tissue. Interstitial radiation or intracavitary radiation are different types of brachytherapy.

The possible side effects are a lot like those seen with external beam radiation therapy.

More information about radiation therapy

To learn more about how radiation is used to treat cancer, see [Radiation Therapy](#)⁸.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)⁹.

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/lymph-nodes-and-cancer.html
2. www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer.html
3. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation/external-beam-radiation-therapy.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/fertility-and-men-with-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/fertility-and-women-with-cancer.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/sexuality-for-women-with-cancer.html
7. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/swelling/lymphedema.html
8. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
9. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Chemotherapy for Anal Cancer

Chemotherapy (chemo) is treatment with anti-cancer drugs that can be swallowed in pill form or injected into a vein. The drugs travel through the bloodstream to reach most parts of the body.

When is chemotherapy used?

Most people with anal cancer will need chemo, but chemo may be recommended in different situations:

- **Before surgery (neoadjuvant chemotherapy):** Neoadjuvant chemo combined with [radiation therapy](#) (known as *chemoradiation*) is often the first treatment for most anal cancers. This can often cure the cancer without the need for [surgery](#).
- **After surgery (adjuvant chemotherapy):** Adjuvant chemotherapy might be given along with radiation (chemoradiation) after surgery to try to kill any cancer cells that may have been left behind. It's done to lower the chance of the cancer coming back.
- **If the cancer comes back in the groin lymph nodes (recurrence):** Chemotherapy might be given alone or sometimes with radiation (if radiation was not given before)
- **For metastatic anal cancer:** If anal cancer has spread to distant parts of the body, such as the liver or lungs, chemo can help keep the cancer under control or relieve symptoms it's causing.

Chemotherapy drugs used to treat anal cancer

In most cases, 2 or more drugs are used at the same time to shrink the cancer.

- The main drug combination used to treat anal cancer is 5-fluorouracil (5-FU) and

mitomycin.

- The combination of 5-FU and cisplatin can also be used, especially in people who can't get mitomycin or for advanced anal cancer.
- In certain people who may be older or can't tolerate 2 chemotherapy drugs, 5-FU alone may be given with radiation.

In these treatments, the 5-FU is given into a vein 24 hours a day for 4 or 5 days. It's put in [a small pump that you can take home with you](#)¹. The other drugs are given more quickly on certain other days in the treatment cycle. Sometimes, the oral drug capecitabine might be given in place of 5-FU. Radiation is given 5 days a week for at least 5 weeks. Talk to your treatment team about your treatment plan and how and where you will get chemo.

For advanced anal cancer or anal cancer that has already been treated with 5-FU and mitomycin, other options for chemotherapy include:

- Carboplatin with paclitaxel (Taxol)
- 5-FU with cisplatin
- Oxaliplatin, Leucovorin and 5-FU
- Docetaxel (Taxotere), cisplatin and 5-FU
- Cisplatin, Leucovorin and 5-FU

Possible side effects of chemo for anal cancer

Chemo drugs can cause side effects. These depend on the type and dose of drugs



Immunotherapy is the use of medicines to stimulate a person's own immune system to recognize and destroy cancer cells more effectively.

Immune checkpoint inhibitors

An important part of the immune system is its ability to keep itself from attacking normal cells in the body. To do this, it uses “checkpoints” – proteins 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 drugs that target these checkpoints can be used to treat some people with anal cancer.

Nivolumab (Opdivo) and **pembrolizumab (Keytruda)** target PD-1, a protein on certain immune cells (called T cells) that normally helps keep these cells from attacking other cells in the body. By blocking PD-1, these drugs boost the immune response against cancer cells. This can shrink some tumors or slow their growth.

Nivolumab and pembrolizumab can be used in people with anal cancer that has spread (metastasized) and whose cancer starts growing after getting at least one type of chemotherapy.

Nivolumab can be given as an intravenous (IV) infusion every 2 or 4 weeks.
Pembrolizumab can be given as an intravenous (IV) infusion every 3 or 6 weeks.

Possible side effects of checkpoint inhibitors

Side effects of these drugs can include fatigue, cough, nausea, itching, skin rash, loss of appetite, constipation, joint pain, and diarrhea.

Other, more serious side effects occur less often.

Infusion reactions: Some people might have an infusion reaction while getting these drugs. This is like an allergic reaction, and can include fever, chills, flushing of the face, rash, itchy skin, feeling dizzy, wheezing, and trouble breathing. It's important to tell your doctor or nurse right away if you have any of these symptoms while getting these drugs.

Autoimmune reactions:

possible. If serious side effects do occur, treatment may need to be stopped and you may get 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](#)¹.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)².

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html

Treatment of Anal Cancer, by Stage

The type of treatment your cancer care team will recommend depends on the [type](#)¹ of anal cancer, where it is, and how far it has spread (the [stage](#)²).

Perianal tumors (previously called *anal margin cancers*) are sometimes treated differently from anal canal cancers.

Stages I and II

These cancers have grown into the anal wall but have not grown into nearby organs. Most often they have not spread to nearby [lymph nodes](#)³.

[Surgery](#) (local resection) might be used to remove some small tumors (usually less than 2 centimeter or 1 inch) that do not involve the sphincter muscle. In some cases, this may be followed with [chemo](#) and [radiation therapy](#).

The standard treatment for anal cancers that cannot be removed without harming the anal sphincter is external beam radiation therapy (EBRT) combined with chemo (called *chemoradiation*). In chemoradiation, the 2 treatments are given over the same time period. The chemo is usually 5-FU with mitomycin. This combination of chemo is typically given during the first week and around the fifth week of treatment. The EBRT is given daily, Monday through Friday, for 5 to 7 weeks.

If the cancer hasn't gone away completely after chemoradiation is done, more treatment might be needed. But it's important to know that it may take months to see the full effects of chemoradiation. Because of this, it is important to continue follow-up appointments with your doctors to monitor the cancer through digital rectal examination and anoscopy. Your doctors may watch any remaining cancer for up to 6 months. It may continue to shrink and even go away without more treatment.

At 6 months, if cancer is still found, more treatment is often needed. Most of the time, a surgery called an [abdominoperineal resection](#) (APR) might be recommended. In certain cases, only a local resection might be needed.

Stages IIIA, IIIB, and IIIC

These cancers have grown into nearby organs or spread to nearby [lymph nodes](#)⁴, but they have not spread to distant parts of the body.

In most cases, the first treatment will be [radiation therapy](#) combined with [chemo](#) (chemoradiation). In chemoradiation, both treatments are given over the same time period. The chemo is usually 5-FU with mitomycin. This combination of chemo is

typically given during the first week and then around the fifth week of treatment. The radiation is given daily, Monday through Friday, for 5 to 7 weeks.

If some cancer remains after the chemoradiation, it may be watched closely for up to 6 months because it can take months to see the full effects of treatment.

If more treatment is needed because all of the cancer has not gone away by 6 months, most often a surgery called an *abdominoperineal resection* (APR) might be recommended. If the cancer has spread to or is still present in nearby lymph nodes, they may be removed with [surgery](#) or treated with radiation therapy.

Stage IV

In this stage, the [cancer has spread](#)⁵ to distant organs. Most often, anal cancer first spreads to the liver, but it can also spread to places such as the lungs, bones, and far away lymph nodes.

Treatment is very unlikely to cure these cancers. Instead, treatment is aimed at controlling the disease for as long as possible and [relieving symptoms](#)⁶ as much as possible. **Chemotherapy, sometimes along with radiation, is usually the standard treatment.**

Radiation might be used alone for cancer that has spread to the bones, brain or spinal cord. It might also be used for cancer that has spread to far away lymph nodes.

For some advanced anal cancers that have grown on chemotherapy, [immunotherapy](#) might be an option.

Because these cancers can be hard to treat, you might also want to think about taking part in a [clinical trial](#)⁷ of newer treatments.

Recurrent anal cancer

Cancer is called *recurrent* when it comes back after treatment. [Recurrence](#)⁸ can be local (in or near the same place it started) or distant (spread to organs like the lungs or liver).

If cancer returns in the anus or nearby lymph nodes after treatment, **treatment depends on what treatment you had the first time.** For example, if you had surgery alone, you may get [radiation therapy](#) and [chemo](#) (chemoradiation). If you first had chemoradiation, then you might be treated with surgery and/or chemo. Treating recurrent anal cancer often requires a surgery called an *abdominoperineal resection*

(APR).

For some people, the cancer will come back in distant sites or organs in the body. The most common sites are the liver and lungs. The main treatment for this is usually chemo. Chemo might not cure the cancer, but it can often help control it and reduce any symptoms it's causing. In other cases, surgery or radiation therapy might be options to help treat these cancers. But as with chemo, they are unlikely to cure these cancers, so be sure you understand the goal of any treatments offered.

[Clinical trials](#)⁹ of newer treatments might also be useful for people with recurrent anal cancer.

Treating HIV-infected patients

Most people with [HIV infection](#)¹⁰ can be given the same treatment as others with anal cancer, and they can have a good outcome. People with advanced HIV disease and weakened immune systems might need to have less intensive chemotherapy.

Anal melanoma

Melanoma doesn't respond well to chemotherapy or radiation, so surgery to remove the cancer is the main treatment when possible. Early stage anal melanomas are treated with surgery to remove the tumor and a rim of surrounding normal tissue (local excision). If the tumor is large or has grown into deeper tissues (such as the sphincter muscle) a bigger operation, such as an abdominoperineal resection (APR) might be needed.

If the melanoma has spread to other organs, it's treated like skin melanoma that has spread, often with immunotherapy or targeted therapy drugs. For more information about the treatment of advanced melanoma, see [Treating Melanoma Skin Cancer](#)¹¹.

Hyperlinks

1. www.cancer.org/cancer/anal-cancer/about/what-is-anal-cancer.html
2. www.cancer.org/cancer/anal-cancer/detection-diagnosis-staging/staging.html
3. www.cancer.org/treatment/understanding-your-diagnosis/lymph-nodes-and-cancer.html
4. www.cancer.org/treatment/understanding-your-diagnosis/lymph-nodes-and-cancer.html
5. www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer.html

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11. www.cancer.org/cancer/melanoma-skin-cancer/treating.html

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