



Treating Colorectal Cancer

If you've been diagnosed with colorectal cancer, your cancer care team will discuss your treatment options with you. It's important that you think carefully about each of your choices. You will want to weigh the benefits of each treatment option against the possible risks and side effects.

How is colorectal cancer treated?

There are several ways to treat colorectal cancer, depending on its type and stage.

Local treatments: Some treatments are called *local therapies*, meaning they treat the tumor without affecting the rest of the body. Types of local therapy used for colorectal cancer include:

- Surgery (the type of surgery will depend on whether it is for [colon](#) or [rectal cancer](#))
- [Radiation therapy](#)
- [Ablation or embolization](#)

These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations.

Systemic treatments: Colorectal cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called *systemic therapies* because they can reach cancer cells anywhere in the body. Depending on the type of colorectal cancer, several different types of drugs might be used, including:

- [Chemotherapy](#)
- [Targeted therapy](#)
- [Immunotherapy](#)

Depending on the stage of the cancer and other factors, different types of treatment may be combined at the same time or used after one another. To learn about the most common approaches to treating these cancers, see [Treatment of colon cancer, by stage](#)

or [Treatment of rectal cancer, by stage](#).

Which doctors treat colorectal cancer?

Based on your treatment options, you might have different types of doctors on your treatment team. These doctors could include:

- A **gastroenterologist**: a doctor who treats disorders of the gastrointestinal (digestive) tract
- A **surgical oncologist (oncologic surgeon)**: a doctor who uses surgery to treat cancer
- A **colorectal surgeon**: a doctor who uses surgery to treat diseases of the colon and rectum
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy or targeted therapy

You might have many other specialists on your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, psychologists, nutritionists, social workers, and other health professionals. See [Health Professionals Associated With Cancer Care](#) for more on this.

Making treatment decisions

It's important to discuss all of your treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. It's also very important to ask questions if there is anything you're not sure about. See [What Should You Ask Your Doctor About Colorectal Cancer?](#) for ideas.

Getting a second opinion

You might also want to get a [second opinion](#). This can give you more information and help you feel more certain about the treatment plan you choose. If you aren't sure where to go for a second opinion, ask your doctor for help.

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 are 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. See [Clinical Trials](#) to learn more.

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 dangerous.

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. See [Complementary and Alternative Medicine](#) to learn more.

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. Learn more in [If Cancer Treatments Are No Longer Working](#).

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.

Help getting through colorectal cancer treatment

Your cancer care team will be your first source of information and support, but there are other resources for help when you need it. Hospital- or clinic-based support services are 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.

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.

Surgery for Colon Cancer

Surgery is often the main treatment for earlier-stage colon cancers. The type of surgery used depends on the [stage](#) (extent) of the cancer, where it is, and the goal of the surgery.

Polypectomy and local excision

Some early colon cancers (stage 0 and some early stage I tumors) or polyps can be removed during a colonoscopy, where a long flexible tube with a small video camera on the end is inserted through the person's rectum and into the colon. When done this way, the doctor does not have to cut into the abdomen.

- For a **polypectomy**, the cancer is removed as part of the polyp, which is cut at its stalk (the area that resembles the stem of a mushroom). This is usually done by passing a wire loop through the colonoscope to cut the polyp from the wall of the colon with an electric current.
- A **local excision** is a slightly more extensive procedure that can be used to remove superficial cancers and a small amount of nearby tissue from the wall of colon.

Colectomy

A colectomy is surgery to remove all or part of the colon. Nearby lymph nodes are removed as well.

- If only part of the colon is removed, it is called a **hemicolectomy**, **partial colectomy**, or **segmental resection**. The surgeon removes the part of the colon with the cancer and a small segment of normal colon on either side of the cancer. Usually, about one-fourth to one-third of your colon is removed, but this depends on the size and location of the cancer. The remaining sections of your colon are then reattached. Nearby lymph nodes are removed at this time as well. Typically, at least 12 are removed.
- If the entire colon is removed, it is called a **total colectomy**. Total colectomy is not often needed to treat colon cancer. It is generally used only if there is disease in the part of the colon without the cancer, such as hundreds of polyps (in someone with [familial adenomatous polyposis](#)) or, sometimes, inflammatory bowel disease.

A colectomy can be done in 2 ways:

- **Open colectomy:** The surgery is done through a single long incision (cut) in the abdomen.
- **Laparoscopic-assisted colectomy:** The surgery uses several smaller incisions and a laparoscope, a thin lighted tube with a small video camera on the end that lets the surgeon see inside the abdomen. Special long instruments are inserted through the other incisions to remove part of the colon and lymph nodes.

Because the incisions are smaller in a laparoscopic-assisted colectomy than in an open colectomy, patients often recover faster and may be able to leave the hospital sooner than they would after an open colectomy. But this type of surgery requires special expertise, and it might not be the best approach for everyone. If you are considering this type of surgery, be sure to look for a skilled surgeon who has done many of these operations.

Overall survival rates and the chance of the cancer returning are thought to be similar between an open colectomy and a laparoscopic-assisted colectomy.

Any type of colectomy is major surgery, so it's important for you to be as healthy as possible if you are having it. If the tumor is large and has blocked your colon, the doctor may use a colonoscope to put a **stent** (a hollow metal or plastic tube) inside the colon to keep it open and relieve the blockage for a short time to help prepare for surgery a few days later.

If a stent can't be placed for a blocked colon or if the tumor has caused a hole in the colon, surgery may be needed right away. This usually is the same type of colectomy that's done to remove the cancer, but instead of reconnecting the segments of the colon, the top end of the colon is attached to an opening (stoma) in the skin of the abdomen to allow stool to come out. This is known as a **colostomy** and is usually temporary. Sometimes the end of the small intestine (the ileum) instead of the colon is connected to a stoma in the skin. This is called an **ileostomy**. Either way, a removable collecting bag is attached to the stoma to hold the waste.

Once you are healthier, another operation (known as a *colostomy reversal* or *ileostomy reversal*) can be done to attach the ends of the colon back together or to attach the ileum to the colon. Rarely, if a tumor can't be removed or a stent placed, the colostomy or ileostomy may need to be permanent. For more information, see [Colostomy Guide](#) and [Ileostomy Guide](#).

Diverting colostomy

Some patients have colon cancers that have spread but also have tumors blocking the colon. For patients with this problem, sometimes surgery is done to relieve the blockage without removing the part of the colon containing the cancer. Instead, the colon is cut above the tumor and attached to a stoma (an opening in the skin of the abdomen) to allow stool out. This is known as a *diverting colostomy*. It can often help the patient recover enough to start other treatments (such as chemotherapy).

Surgery for colon cancer spread

If the cancer has spread to only one or a few spots in the lungs or liver (and nowhere else), surgery may be used to remove it. This is generally done only if the cancer in the colon or rectum is being removed as well (or was already removed). Depending on the extent of the disease, this might help you live longer, or it could even cure you. Deciding if surgery is an effective option to remove areas of cancer spread depends on their size, number, and location.

Side effects of colon surgery

Possible risks and side effects of surgery depend on several factors, including the extent of the operation and your general health before surgery. Problems during or shortly after the operation can include bleeding from the surgery, infections at the surgery site, and blood clots in the legs.

When you wake up after surgery, you will have some [pain](#) and probably will need pain medicines for a few days. For the first couple of days, you may not be able to eat or you may be allowed limited liquids, as the colon needs some time to recover. Most patients are able to eat solid food again in a few days.

Rarely, the new connections between the ends of the intestine may not hold together completely and may leak, which can lead to infection and might require further surgery. It's also possible that the incision in the abdomen might open up, becoming an open wound.

After the surgery, you might develop scar tissue in your abdomen that can cause organs or tissues to stick together. These are called *adhesions*. Sometimes, adhesions can block the bowel, requiring further surgery.

Colostomy or ileostomy: Some people need a temporary or permanent colostomy (or ileostomy) after surgery. This can take some time to get used to and might require some lifestyle adjustments. If you have a colostomy or ileostomy, you will need help learning how to manage it. Specially trained ostomy nurses or enterostomal therapists can do this. They will usually see you in the hospital before your operation to discuss the ostomy and to mark a site for the opening. After the operation they may come to your house or an outpatient setting to give you more training. For more information, see [Colostomy Guide](#) and [Ileostomy Guide](#) .

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Surgery for Rectal Cancer

Surgery is usually the main treatment for rectal cancer, although [radiation](#) and [chemotherapy](#) will often be given before or after surgery. The type of surgery used depends on the [stage](#) (extent) of the cancer, where it is, and the goal of the surgery.

Polypectomy and local excision

These procedures can be used to remove superficial cancers or polyps. They are done with instruments inserted through the anus (often during a colonoscopy), without cutting into the skin of the abdomen.

- For a **polypectomy**, the cancer is removed as part of the polyp, which is cut at its stalk (the area that resembles the stem of a mushroom). This is usually done by passing a wire loop through the colonoscope to cut the polyp from the wall of the rectum with an electric current.
- A **local excision** is a slightly more extensive procedure that can be used to remove superficial cancers and a small amount of nearby tissue from the rectum wall.

Local transanal resection (full thickness resection)

As with polypectomy and local excision, local transanal resection (also known as *transanal excision*) is done with instruments inserted through the anus, without making

an opening in the skin of the abdomen.

In this operation, the surgeon cuts through all layers of the rectal wall to remove cancer as well as some surrounding normal rectal tissue, and then closes the hole in the rectal wall. This procedure can be used to remove some early stage I rectal cancers that are relatively small and not too far from the anus. It is usually done with local anesthesia (numbing medicine) – you are not asleep during the operation.

Since lymph nodes are not removed during this procedure, if the tumor has grown too deep, radiation with or without chemotherapy may be recommended after surgery.

Transanal endoscopic microsurgery (TEM)

This operation can sometimes be used for early stage I cancers that are higher in the rectum than could be reached using the standard transanal resection (see above). A specially designed magnifying scope is inserted through the anus and into the rectum, allowing the surgeon to do a transanal resection with great precision and accuracy. This operation requires special equipment and surgeons with special training and experience, so it is only done at certain centers.

Low anterior resection (LAR)

Some stage I rectal cancers and most stage II or III cancers in the upper part of the rectum (close to where it connects with the colon) can be removed by low anterior resection (LAR). In this operation, the part of the rectum containing the tumor is removed. The colon is then attached to the remaining part of the rectum (either right away or sometime later) so that you will move your bowels in the usual way.

A low anterior resection is done with general anesthesia, which puts you into a deep sleep. The surgeon makes an incision (or several small incisions) in the abdomen. Then the surgeon removes the cancer and a margin of normal tissue on either side of the cancer, along with nearby lymph nodes and other tissues around the rectum.

The colon is then reattached to the remaining rectum so that a permanent colostomy is not needed. If radiation and chemotherapy have been given before surgery, it is common for a temporary ileostomy to be made (where the end of the ileum, the last part of the small intestine, is connected to a hole in the abdominal wall). This gives the rectal area some time to heal from treatment before food matter moves through it again. Usually the ileostomy can be reversed (the intestines reconnected) about 8 weeks later.

You will probably spend several days in the hospital after a low anterior resection, depending on how the surgery was done and your overall health. You might need 3 to 6 weeks to recover at home.

Proctectomy with colo-anal anastomosis

Some stage I and most stage II and III rectal cancers in the middle and lower third of the rectum require removing the entire rectum (proctectomy). The rectum has to be removed to do a total mesorectal excision (TME), which is needed to remove all of the lymph nodes near the rectum. The colon is then connected to the anus (colo-anal anastomosis) so that you will still move your bowels in the usual way.

Sometimes when a colo-anal anastomosis is done, a small pouch is made by doubling back a short segment of colon (colonic J-pouch) or by enlarging a segment (colooplasty). This small reservoir of colon then functions as a storage space for fecal matter like the rectum did before surgery. When special techniques are needed to avoid a permanent colostomy, you may need to have a temporary ileostomy (where the end of the ileum, the last part of the small intestine, is connected to a hole in the abdominal wall) for about 8 weeks while the bowel heals. A second operation is then done to reconnect the intestines and close the ileostomy opening.

You will have general anesthesia (you are asleep) for this operation. You will probably spend several days in the hospital after surgery, depending on how it was done and your overall health. You might need 3 to 6 weeks recovery time at home.

Abdominoperineal resection (APR)

This operation is more extensive than a low anterior resection. It can be used to treat some stage I cancers and many stage II or III cancers in the lower part of the rectum (the part nearest to the anus), especially if the cancer is growing into the sphincter muscle (the muscle that keeps the anus closed and prevents stool leakage).

Here, the surgeon makes an incision (or several small incisions) in the abdomen, and another in the area around the anus. This incision allows the surgeon to remove the anus and the tissues surrounding it, including the sphincter muscle. Because the anus is removed, you will need a permanent colostomy (the end of the colon is connected to a hole in the abdominal wall) to allow stool to leave the body.

You will have general anesthesia (you are asleep) for this operation. You will probably spend several days in the hospital after an APR, depending on how the surgery is done

and your overall health. Recovery time at home may be 3 to 6 weeks.

Pelvic exenteration

If the rectal cancer is growing into nearby organs, a pelvic exenteration may be recommended. This is an extensive operation. The surgeon will remove the rectum as well as nearby organs such as the bladder, prostate (in men), or uterus (in women) if the cancer has spread to these organs.

You will need a colostomy after pelvic exenteration. If the bladder is removed, you will also need a [urostomy](#) (an opening in the front of the abdomen where urine leaves the body and is held in a portable pouch).

Diverting colostomy

Some patients have rectal cancers that have spread but also have tumors blocking the rectum. For patients with this problem, sometimes surgery is done to relieve the blockage without removing the part of the rectum containing the cancer. Instead, the colon is cut above the tumor and attached to a stoma (an opening in the skin of the abdomen) to allow body wastes out. This is known as a *diverting colostomy*. It can often help the patient recover enough to start other treatments (such as [chemotherapy](#)).

Surgery for rectal cancer spread

If the cancer has spread to just one or a few spots in the lungs or liver (and nowhere else), surgery may be used to remove it. This is generally done only if the main cancer in the rectum is being removed as well (or was already removed). Depending on the extent of the disease, this might help you live longer, or it may even cure you. Deciding if surgery is an option to remove areas of cancer spread depends on their size, number, and location.

Side effects of rectal surgery

Possible risks and side effects of surgery depend on several factors, including the extent of the operation and a person's general health before surgery. Problems during or shortly after the operation can include bleeding from the surgery, infections at the surgery site, and blood clots in the legs.

When you wake up after surgery, you will have some [pain](#) and probably will need pain medicines for a few days. For the first couple of days, you may not be able to eat or you may be allowed limited liquids, as the colon needs some time to recover. Most patients are able to eat solid food again in a few days.

Rarely, the new connections between the ends of the intestine may not hold together completely and may leak, which can lead to infection and might require further surgery. It's also possible that the incision in the abdomen might become an open wound. After the surgery, you might develop scar tissue in the abdomen that can cause organs or tissues to stick together. These are called *adhesions*. In some cases, adhesions can block the bowel, and you will need further surgery.

Colostomy or ileostomy

Some people need a temporary or permanent colostomy (or ileostomy) after surgery. This may take some time to get used to and may require some lifestyle adjustments. If you have a colostomy or ileostomy, you will need to learn how to manage it. Specially trained ostomy nurses or enterostomal therapists can help you with this. They will usually see you in the hospital before your operation to discuss the ostomy and to mark a site for the opening. After your surgery they may come to your house or an outpatient setting to give you more training. For more information, see [Colostomy Guide](#) and [Ileostomy Guide](#) .

Sexual function and fertility

If you are a man, an AP resection (APR) may stop your erections or ability to reach orgasm. In other cases, your pleasure at orgasm may become less intense. Normal aging may cause some of these changes, but they may be made worse by the surgery.

An APR can also affect fertility. Talk with your doctor if you think you might want to father a child in the future, as there may still be ways to do this. For more on this topic, see [Fertility and Men With Cancer](#).

If you are a woman, rectal surgery (except pelvic exenteration) usually does not cause any loss of sexual function. Abdominal adhesions (scar tissue) may sometimes cause pain or discomfort during sex. If your uterus is removed, you will not be able to get pregnant.

A colostomy can have an impact on body image and sexual comfort level in both men and women. While it may require some adjustments, it should not keep you from having an enjoyable sex life.

For more on dealing with the sexual impact of cancer surgery, see [Sexuality for the Man With Cancer](#) and [Sexuality for the Woman With Cancer](#).

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Ablation and Embolization for Colorectal Cancer

When colorectal cancer has spread to other organs such as the liver, the metastases can sometimes be removed by surgery or destroyed by other techniques, such as ablation or embolization. This might help a person live longer.

Ablation and embolization can often be good options for people whose cancer can't be cured with surgery or who can't have surgery for other reasons. Typically, you will not need to stay in the hospital for these treatments.

Ablation

Ablation refers to treatments that destroy tumors without removing them. These are most often used to treat cancer spread in the liver, but they can be used to treat tumors in other places.

Radiofrequency ablation

Radiofrequency ablation (RFA) uses high-energy radio waves to kill tumors. A thin, needle-like probe is placed through the skin and into the tumor using CT or ultrasound guidance. An electric current is then run through the tip of the probe, releasing high-frequency radio waves that heat the tumor and destroy the cancer cells.

Ethanol (alcohol) ablation

In this procedure, also known as *percutaneous ethanol injection (PEI)*, concentrated alcohol is injected directly into the tumor to kill cancer cells. This is usually done through the skin using a needle, which is guided by ultrasound or CT scans.

Cryosurgery (cryotherapy)

Cryosurgery destroys the tumor by freezing it with a thin metal probe. The probe is guided through the skin and into the tumor using ultrasound. Then very cold gasses are passed through the probe to freeze the tumor, killing the cancer cells. This method can treat larger tumors than the other ablation techniques, but it sometimes requires general anesthesia (you are in a deep sleep).

Side effects of ablation therapy

Possible side effects after ablation therapy include:

- Abdominal (belly) pain
- Infection
- Bleeding into the chest cavity or abdomen

Serious complications are uncommon, but they are possible.

Embolization

During an embolization procedure, substances are injected to try to block or reduce the blood flow to cancer cells in the liver.

The liver is unusual in that it has 2 blood supplies. Most normal liver cells get blood from branches of the portal vein, whereas cancer cells in the liver usually get their blood supply from branches of the hepatic artery. Blocking the branch of the hepatic artery feeding the tumor helps kill off the cancer cells, but it leaves most of the healthy liver cells unharmed.

Embolization can be used for tumors that are too large to be treated with ablation – usually larger than 5 cm (about 2 inches) across. It can also be used with ablation. Embolization does reduce some of the blood supply to the normal liver tissue, so it may not be a good option for patients with liver damage from diseases such as hepatitis or cirrhosis.

There are 3 main types of embolization procedures used to treat cancer in the liver:

Arterial embolization

In this procedure a catheter (a thin, flexible tube) is put into an artery through a small cut in the inner thigh and threaded up into the hepatic artery in the liver. A dye is usually injected into the blood at this time to help the doctor monitor the path of the catheter with special x-ray pictures. Once the catheter is in place, small particles are injected into the artery to plug it up. Arterial embolization is also called trans-arterial embolization (or TAE).

Chemoembolization

This treatment, also called trans-arterial chemoembolization (or TACE), combines embolization with chemotherapy. Most often, this is done by using tiny beads that give off a chemotherapy drug for the embolization. TACE can also be done by giving chemotherapy through the catheter directly into the artery, then plugging up the artery.

Radioembolization

This treatment is a combination of embolization and radiation therapy. In the United States, this is done by injecting small beads (called *microspheres*) coated with radioactive yttrium-90 into the hepatic artery. Brand names for these beads include TheraSphere[®] and SIR-Spheres[®]. The beads lodge in the blood vessels near the tumor, where they give off small amounts of radiation to the tumor site for several days. The radiation travels a very short distance, so its effects are limited mainly to the tumor.

Side effects of embolization

Possible complications after embolization include:

- Belly (abdominal) [pain](#)
- Fever
- Nausea
- Infection in the liver
- Gallbladder inflammation
- Blood clots in the main blood vessels of the liver

Because healthy liver tissue can be affected, there is a risk that liver function will get worse after embolization. This risk is higher if a large branch of the hepatic artery is used. Serious complications don't happen often, but they are possible.

- [References](#)

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Radiation Therapy for Colorectal Cancer

Radiation therapy uses high-energy rays (such as x-rays) or particles to destroy cancer cells. [Chemotherapy](#) can make radiation therapy more effective against some colon and rectal cancers. Using these 2 treatments together is called **chemoradiation** or **chemoradiotherapy**.

When is radiation therapy used for colorectal cancer?

It is not common to use radiation therapy to treat **colon cancer**, but it may be used in certain instances:

- After [surgery](#), if the cancer has attached to an internal organ or the lining of the abdomen. If this occurs, the surgeon can't be certain that all the cancer has been removed. Radiation therapy may be used to try to kill any cancer cells that may have been left behind.
- To help control cancers in people who are not healthy enough for surgery or to ease (palliate) symptoms in people with advanced cancer causing intestinal blockage, bleeding, or pain.
- To help treat cancer that has spread to other areas, such as the bones or brain.

For **rectal cancer**, radiation therapy may be used:

- Either before or after [surgery](#) to help prevent the cancer from coming back. In this case, it is often given along with [chemotherapy](#). Many doctors now favor giving radiation therapy before surgery, as it may make it easier to remove the cancer, especially if the cancer's size and/or location might make surgery difficult.
- To help control rectal cancers in people who are not healthy enough for surgery or to ease (palliate) symptoms in people with advanced cancer causing intestinal blockage, bleeding, or pain.
- To help treat cancer that has spread to other areas, such as the bones or brain.

Types of radiation therapy

Different types of radiation therapy can be used to treat colon and rectal cancers.

External-beam radiation therapy

This is the type of radiation therapy used most often for people with colorectal cancer. The radiation is focused on the cancer from a machine outside the body. It is much like getting an x-ray, but the radiation is more intense. How often and how long the radiation treatments are delivered depends on the reason the radiation is being given and other factors. It can last anywhere from a few days to weeks.

Internal radiation therapy (brachytherapy)

This type of radiation therapy can be used to treat some rectal cancers. For this treatment, a radioactive source is put inside your rectum next to or into the tumor. The advantage of this approach is that the radiation reaches the rectum without passing through the skin and other tissues of the abdomen, which means it is less likely to cause side effects.

Endocavitary radiation therapy: For this treatment, a small device is placed through the anus and into the rectum to deliver high-intensity radiation for a few minutes. This is typically done in 4 treatments (or less), with about 2 weeks between each treatment. This can let some patients, particularly elderly patients, avoid major surgery and a colostomy. This type of treatment is used for some small rectal cancers. Sometimes external-beam radiation therapy is also given.

Interstitial brachytherapy: For this treatment, a tube is placed into the rectum and directly into the cancer. Small pellets of radioactive material are then put into the tube for several minutes. The radiation travels only a short distance, limiting the harmful

effects on surrounding healthy tissues. It is sometimes used to treat people with rectal cancer, particularly people who are not healthy enough for surgery. This can be done a few times a week for a couple of weeks, but it can also be just a one-time procedure.

Radioembolization

Radiation can also be given during an embolization procedure. This is covered in more detail in [Ablation and Embolization to Treat Colorectal Cancer.](#)"

Side effects of radiation therapy

If you are going to get radiation therapy, it's important to ask your doctor beforehand about the possible side effects so that you know what to expect. Possible side effects of radiation therapy for colon and rectal cancer can include:

- Skin irritation at the site where radiation beams were aimed, which can range from redness to blistering and peeling
- [Nausea](#)
- Rectal irritation, which can cause diarrhea, painful bowel movements, or blood in the stool
- Bowel incontinence (stool leakage)
- Bladder irritation, which can cause problems like feeling like you have to go often (called frequency), burning or pain while urinating, or blood in the urine
- [Fatigue/tiredness](#)
- Sexual problems (erection issues in [men](#) and vaginal irritation in [women](#))

Most side effects should lessen after treatments are completed, but some problems may not go away completely. If you notice any side effects, talk to your doctor right away so steps can be taken to reduce or relieve them.

You can learn more about radiation treatments in the [Radiation Therapy](#) section of our website, or in [A Guide to Radiation Therapy](#).

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Chemotherapy for Colorectal Cancer

Chemotherapy (chemo) is treatment with anti-cancer drugs.

How is chemotherapy given?

You can get chemotherapy in different ways.

Systemic chemotherapy: Drugs are injected into your vein or you take them by mouth. These drugs enter your bloodstream and reach all areas of your body.

Regional chemotherapy: Drugs are injected directly into an artery that leads to a part

of the body with a tumor. This method concentrates the dose of chemo reaching the cancer cells in that area. It reduces side effects by limiting the amount of drug reaching the rest of your body. **Hepatic artery infusion**, or chemo given directly into the hepatic artery, is an example of regional chemotherapy sometimes used for cancer that has spread to the liver.

Doctors give chemo in cycles, with each period of treatment followed by a rest period to give the body time to recover. Chemotherapy cycles generally last about 2 to 4 weeks, and people usually get at least several cycles of treatment.

When is chemotherapy used for colorectal cancer?

Chemo may be used at different times during treatment for colorectal cancer.

Adjuvant chemo: Chemo can be given after surgery. The goal is to kill any cancer cells that may have been left behind at surgery because they were too small to see, as well as cancer cells that might have escaped from the main tumor and settled in other parts of the body (but are too small to see on imaging tests). This helps lower the chance that the cancer will come back.

Neoadjuvant chemo: For some cancers, chemo is given (sometimes with radiation) before surgery to try to shrink the cancer and make surgery easier. This is often used in treating rectal cancer.

Chemo for advanced cancers: For cancers that have spread to other organs, such as the liver, chemo can also be used to help shrink tumors and relieve symptoms. Although it is not likely to cure the cancer, it often helps people live longer.

Drugs used to treat colorectal cancer

Some common drugs used for colorectal cancer include:

- **5-Fluorouracil (5-FU)**, which is often given with the vitamin-like drug leucovorin (also called folinic acid) or a similar drug called levo-leucovorin, which helps it work better.
- **Capecitabine (Xeloda)**, which is in pill form. Once in the body, it is changed to 5-FU when it gets to the tumor site.
- **Irinotecan (Camptosar)**
- **Oxaliplatin (Eloxatin)**

- **Trifluridine and tipiracil (Lonsurf)**, a combination drug in pill form

Often, 2 or more of these drugs are combined to try to make them more effective. Sometimes, chemo drugs are given along with a [targeted therapy](#) drug.

Side effects of chemo

Chemo drugs attack cells that are dividing quickly, which is why they work against cancer cells. But other cells in the body, such as those in the bone marrow (where new blood cells are made), the lining of the mouth and intestines, and the hair follicles, are also dividing quickly. These cells can be affected by chemo too, which can lead to side effects.

The side effects of chemo depend on the type and dose of drugs given and how long you take them. Common side effects of chemo drugs can include:

- Hair loss
- Mouth sores
- Loss of appetite
- [Nausea and vomiting](#)
- Diarrhea
- Increased chance of [infections](#) (from having too few white blood cells)
- Easy bruising or bleeding (from having too few blood platelets)
- [Fatigue](#) (from having too few red blood cells)

Along with these, some side effects are specific to certain drugs. For example:

- **Hand-foot syndrome.** During treatment with capecitabine or 5-FU (when given as an infusion), this can start out as redness in the hands and feet, and then progress to pain and sensitivity in the palms and soles. If it worsens, blistering or skin peeling can occur, sometimes leading to painful sores. It's important to tell your doctor right away about any early symptoms, such as redness or sensitivity, so that steps can be taken to keep things from getting worse.
- [Neuropathy](#) (nerve damage). This is a common side effect of oxaliplatin. Symptoms include numbness, tingling, and even pain in the hands and feet. It can also cause intense sensitivity to hot and cold in your throat, esophagus (the tube connecting the throat to the stomach), and the palms of your hands. This can cause problems swallowing liquids or holding a cold glass. If you will be getting oxaliplatin, talk with your doctor about side effects beforehand, and let him or her know right away if you develop numbness and tingling or other side effects.

- **Allergic or sensitivity reactions.** Some people can have reactions while getting the drug oxaliplatin. Symptoms can include skin rash, chest tightness and trouble breathing, back pain, or feeling dizzy, lightheaded, or weak. Be sure to tell your nurse right away if you notice any of these symptoms while you are getting chemo.
- **Diarrhea.** This is a common side effect with many of these drugs, but can be particularly bad with irinotecan. It needs to be treated right away — at the first loose stool — to prevent severe dehydration. This often means taking drugs like loperamide (Imodium). If you are on a chemo drug that is likely to cause diarrhea, your doctor will give you instructions on what drugs to take and how often to take them to control this symptom.

Most of these side effects tend to go away after treatment is finished. Some, such as hand and foot numbness from oxaliplatin, may last for a long time. There are often ways to lessen these side effects. For example, you can be given drugs to help prevent or reduce nausea and vomiting.

Be sure to discuss any questions about side effects with your cancer care team, and report any side effects or changes you notice while getting chemo so that they can be treated promptly. In some cases, the doses of the chemo drugs may need to be reduced or treatment may need to be delayed or stopped to prevent the effects from getting worse.

Older people seem to be able to tolerate some types of chemo for colorectal cancer fairly well. Age is no reason to withhold treatment in otherwise healthy people.

To learn more about chemo, see the [Chemotherapy](#) section on our website.

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Targeted Therapy Drugs for Colorectal Cancer

As researchers have learned more about the gene and protein changes in cells that cause cancer, they have developed newer drugs to specifically target these changes. Targeted drugs work differently from standard [chemotherapy](#) (chemo) drugs. They sometimes work when standard chemo drugs don't, and they often have different (and less severe) side effects. They can be used either along with chemo or by themselves if chemo is no longer working.

Drugs that target blood vessel formation (VEGF)

Vascular endothelial growth factor (VEGF) is a protein that helps tumors form new blood vessels to get nutrients (a process known as *angiogenesis*). Drugs that stop VEGF from working can be used to treat some colon or rectal cancers. These include:

- **Bevacizumab (Avastin)**
- **Ramucirumab (Cyramza)**

- **Ziv-aflibercept (Zaltrap)**

These drugs are given as infusions into your vein (IV) every 2 or 3 weeks, typically along with [chemotherapy](#). When combined with chemo, these drugs can often help patients with advanced colon or rectal cancers live longer.

Possible side effects of drugs that target VEGF

Common side effects of these drugs include high blood pressure, [tiredness](#), bleeding, [low white blood cell counts](#) (with increased risk of infections), headaches, mouth sores, loss of appetite, and diarrhea.

Rare but possibly serious side effects include blood clots, severe bleeding, holes forming in the colon (called *perforations*), heart problems, kidney problems, and slow wound healing. If a hole forms in the colon it can lead to severe infection and may require surgery to correct.

Another rare but serious side effect of these drugs is an allergic reaction during the infusion, which could cause problems with breathing and low blood pressure.

Drugs that target cells with EGFR changes

Epidermal growth factor receptor (EGFR) is a protein that often appears in high amounts on the surface of cancer cells and helps them grow. Drugs that target EGFR can be used to treat some advanced colon or rectal cancers. These include:

- **Cetuximab (Erbix)**
- **Panitumumab (Vectibix)**

Both of these drugs are given by IV infusion, either once a week or every other week.

Some colorectal cancers have mutations (defects) in the *KRAS*, *NRAS* or *BRAF* gene, which make these drugs ineffective. Doctors now commonly test the tumor for these gene changes before treatment, and only use these drugs in people who do not have these mutations.

Possible side effects of drugs that target EGFR

The most common side effects of these drugs are skin problems such as an acne-like rash on the face and chest during treatment, which can sometimes lead to infections. A topical antibiotic may be prescribed to help limit the rash and related infections. The skin

problems with panitumumab can be more serious and might lead to the skin peeling off. Other side effects can include headache, tiredness, fever, and diarrhea.

A rare but serious side effect of these drugs is an allergic reaction during the infusion, which could cause problems with breathing and low blood pressure. You may be given medicine before treatment to help prevent this.

Other targeted therapy drugs

Regorafenib (Stivarga) is a type of targeted therapy known as a *kinase inhibitor*. Kinases are proteins on or near the surface of a cell that carry important signals to the cell's control center. Regorafenib blocks several kinase proteins that either help tumor cells grow or help form new blood vessels to feed the tumor. Blocking these proteins can help stop the growth of cancer cells.

This drug is used to treat advanced colorectal cancer, typically when other drugs are no longer helpful. It is taken in pill form.

Common side effects include fatigue, loss of appetite, hand-foot syndrome (redness and irritation of the hands and feet), diarrhea, high blood pressure, weight loss and abdominal pain.

Less common but more serious side effects can include severe bleeding or perforations (holes) in the stomach or intestines.

To learn more about targeted drugs, see [Targeted Therapy](#).

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Immunotherapy for Colorectal Cancer

Immunotherapy is the use of medicines to help a person's own immune system recognize and destroy cancer cells more effectively. Immunotherapy can be used to treat some people with advanced colorectal cancer.

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 "checkpoint" proteins on immune cells, which act like switches needing 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 hold a lot of promise as cancer treatments.

Pembrolizumab (Keytruda) and **Nivolumab (Opdivo)** are drugs that target PD-1, a protein on immune system 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.

These drugs can be used in people whose colorectal cancer cells have [tested positive for specific gene changes](#), such as a high level of microsatellite instability (MSI-H), or changes in one of the mismatch repair (MMR) genes. The drugs are used in people whose cancer is still growing after treatment with [chemotherapy](#).

Pembrolizumab (Keytruda) is given as an intravenous (IV) infusion, typically every 3 weeks. Nivolumab (Opdivo) is given as an (IV infusion) every 2 weeks.

Possible side effects

[Side effects](#) can include fatigue, fever, cough, shortness of breath, itching, skin rash, nausea, loss of appetite, diarrhea, constipation, and muscle or joint pain.

Other, more serious side effects occur less often. Checkpoint inhibitors work by basically removing the brakes on 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 promptly. 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.

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Treatment of Colon Cancer, by Stage

Treatment for colon cancer is based largely on the stage (extent) of the cancer, but other factors can also be important.

People with colon cancers that have not spread to distant sites usually have surgery as the main or first treatment. Adjuvant (additional) chemotherapy may also be used. Most adjuvant treatment is given for about 6 months.

Treating stage 0 colon cancer

Since stage 0 colon cancers have not grown beyond the inner lining of the colon, surgery to take out the cancer is typically all that is needed. This can be done in most cases by removing the polyp (polypectomy) or local excision through a colonoscope. Removing part of the colon (partial colectomy) may occasionally be needed if a tumor is too big to be removed by local excision.

Treating stage I colon cancer

Stage I colon cancers have grown into the layers of the colon wall, but they have not spread outside the colon wall itself (or into the nearby lymph nodes).

Stage I includes cancers that were part of a polyp. If the polyp is removed completely during colonoscopy, with no cancer cells at the edges (margins) of the removed sample, no other treatment may be needed.

If the cancer in the polyp is high grade (see Colorectal Cancer Stages) or there are cancer cells at the edges of the polyp, more surgery may be recommended. You may also be advised to have more surgery if the polyp couldn't be removed completely or if it had to be removed in many pieces, making it hard to see if cancer cells were at the edges.

For cancers not in a polyp, partial colectomy surgery to remove the section of colon that has cancer and nearby lymph nodes is the standard treatment. You typically will not need any additional treatment.

Treating stage II colon cancer

Many stage II colon cancers have grown through the wall of the colon, and possibly into nearby tissue, but they have not yet spread to the lymph nodes.

Surgery to remove the section of the colon containing the cancer along with nearby lymph nodes (partial colectomy) may be the only treatment needed. But your doctor may recommend adjuvant chemotherapy (chemo after surgery) if your cancer has a higher risk of coming back (recurring) because of certain factors, such as:

- The cancer looks very abnormal (is high grade) when viewed under a microscope.
- The cancer has grown into nearby blood or lymph vessels.
- The surgeon did not remove at least 12 lymph nodes.
- Cancer was found in or near the margin (edge) of the surgical specimen, meaning that some cancer may have been left behind.
- The cancer had blocked off (obstructed) the colon.
- The cancer caused a perforation (hole) in the wall of the colon.

Not all doctors agree on when chemo should be used for stage II colon cancers. It's important for you to discuss the pros and cons of chemo with your doctor, including how much it might reduce your risk of recurrence and what the likely side effects will be.

If chemo is used, the main options include 5-FU and leucovorin, oxaliplatin, or capecitabine, but other combinations may also be used.

Treating stage III colon cancer

Stage III colon cancers have spread to nearby lymph nodes, but they have not yet spread to other parts of the body.

Surgery to remove the section of the colon with the cancer along with nearby lymph nodes (partial colectomy) followed by adjuvant chemo is the standard treatment for this stage.

For chemo, either the **FOLFOX** (5-FU, leucovorin, and oxaliplatin) or **CapeOx** (capecitabine and oxaliplatin) regimens are used most often, but some patients may get 5-FU with leucovorin or capecitabine alone based on their age and health needs.

Radiation therapy and/or chemo may be options for people who aren't healthy enough for surgery.

Treating stage IV colon cancer

Stage IV colon cancers have spread from the colon to distant organs and tissues. Colon cancer most often spreads to the liver, but it can also spread to other places such as the lungs, brain, peritoneum (the lining of the abdominal cavity), or to distant lymph nodes.

In most cases surgery is unlikely to cure these cancers. However, if there are only a few small areas of cancer spread (metastases) in the liver or lungs and they can be removed along with the colon cancer, surgery may help you live longer and may even cure you. This would mean having surgery to remove the section of the colon containing the cancer along with nearby lymph nodes, plus surgery to remove the areas of cancer spread. Chemo is typically given as well, before and/or after surgery. In some cases, hepatic artery infusion may be used if the cancer has spread to the liver.

If the metastases cannot be removed because they are too large or there are too many of them, chemo may be given before any surgery (neoadjuvant chemo). Then, if the tumors shrink, surgery to remove them may be tried. Chemo would then be given again after surgery. For tumors in the liver, another option may be to destroy them with ablation or embolization.

If the cancer has spread too much to try to cure it with surgery, chemo is the main treatment. Surgery might still be needed if the cancer is blocking the colon (or is likely to do so). Sometimes, such surgery can be avoided by inserting a stent (a hollow metal or plastic tube) into the colon during a colonoscopy to keep it open. Otherwise, operations such as a colectomy or diverting colostomy (cutting the colon above the level of the cancer and attaching the end to an opening in the skin on the abdomen to allow waste out) may be used.

If you have stage IV cancer and your doctor recommends surgery, it's very important to understand the goal of the surgery whether it is to try to cure the cancer or to prevent or relieve symptoms of the disease.

Most patients with stage IV cancer will get chemo and/or targeted therapies to control the cancer. Some of the most commonly used regimens include:

- FOLFOX: leucovorin, 5-FU, and oxaliplatin (Eloxatin)
- FOLFIRI: leucovorin, 5-FU, and irinotecan (Camptosar)
- CapeOX: capecitabine (Xeloda) and oxaliplatin
- FOLFOXIRI: leucovorin, 5-FU, oxaliplatin, and irinotecan
- One of the above combinations plus either a drug that targets VEGF (bevacizumab [Avastin], ziv-aflibercept [Zaltrap], or ramucirumab [Cyramza]), or a drug that targets

- EGFR (cetuximab [Erbix] or panitumumab [Vectibix])
- 5-FU and leucovorin, with or without a targeted drug
 - Capecitabine, with or without a targeted drug
 - Irinotecan, with or without a targeted drug
 - Cetuximab alone
 - Panitumumab alone
 - Regorafenib (Stivarga) alone
 - Trifluridine and tipiracil (Lonsurf)

The choice of regimens depends on several factors, including any previous treatments you've had and your overall health.

If one of these regimens is no longer effective, another may be tried. For people with certain gene changes in their cancer cells, another option after initial chemotherapy might be treatment with an [immunotherapy drug](#) such as pembrolizumab (Keytruda).

For advanced cancers, radiation therapy can also be used to help prevent or relieve symptoms such as pain. It may shrink tumors for a time, but it is very unlikely to result in a cure. If your doctor recommends radiation therapy, it's important that you understand the goal of treatment.

Treating recurrent colon cancer

Recurrent cancer means that the cancer has returned after treatment. The recurrence may be local (near the area of the initial tumor), or it may be in distant organs.

Local recurrence

If the cancer comes back locally, surgery (often followed by chemo) can sometimes help you live longer and may even cure you. If the cancer can't be removed surgically, chemo may be tried first. If it shrinks the tumor enough, surgery may be an option. This would again be followed by more chemo.

Distant recurrence

If the cancer comes back in a distant site, it is most likely to appear first in the liver. Surgery may be an option for some patients. If not, chemo may be tried first to shrink the tumor(s), which may then be followed by surgery to remove them. Ablation or embolization techniques might also be an option to treat some liver tumors.

If the cancer has spread too much to be treated with surgery, chemo and/or targeted

therapies may be used. Possible regimens are the same as for stage IV disease.

For people whose cancers are found to have certain traits on lab tests, another option might be treatment with an [immune checkpoint inhibitor](#) such as pembrolizumab (Keytruda) or nivolumab (Opdivo).

Your options depend on which, if any, drugs you received before the cancer came back and how long ago you received them, as well as on your health. You may still need surgery at some point to relieve or prevent blockage of the colon or other local complications. Radiation therapy may be an option to relieve symptoms as well.

Recurrent cancers can often be hard to treat, so you might also want to ask your doctor if you might be eligible for clinical trials of newer treatments.

For more on recurrence, see Understanding Recurrence.

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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Treatment of Rectal Cancer, by Stage

Treatment for rectal cancer is based largely on the [stage](#) (extent) of the cancer, although other factors can also be important.

People with rectal cancers that have not spread to distant sites are usually treated with [surgery](#). Additional treatment with [radiation](#) and [chemotherapy](#) (chemo) may also be used before or after surgery.

Treating stage 0 rectal cancer

Stage 0 rectal cancers have not grown beyond the inner lining of the rectum. Removing or destroying the cancer is typically all that is needed. You can usually be treated with [surgery](#) such as a polypectomy (removing the polyp), local excision, or transanal resection and should need no further treatment.

Treating stage I rectal cancer

Stage I rectal cancers have grown into deeper layers of the rectal wall but have not spread outside the rectum itself.

This stage includes cancers that were part of a polyp. If the polyp is removed completely during colonoscopy, with no cancer in the edges, no other treatment may be

needed. If the cancer in the polyp was high grade (see [Colorectal Cancer Stages](#)) or if there were cancer cells at the edges of the polyp, you might be advised to have more surgery. More surgery may also be advised if the polyp couldn't be removed completely or if it had to be removed in many pieces, making it hard to see if there were cancer cells at the edges (margins).

For other stage I cancers, surgery is usually the main treatment. Some small stage I cancers can be removed through the anus without cutting the abdomen, using transanal resection or transanal endoscopic microsurgery (TEM). For other cancers, a low anterior resection (LAR), proctectomy with colo-anal anastomosis, or an abdominoperineal resection (APR) may be done, depending on exactly where the cancer is located within the rectum. (These operations are discussed in detail in the [surgery](#) section).

Additional therapy typically is not needed after these operations, unless the surgeon finds the cancer is more advanced than was thought before surgery. If it is more advanced, a combination of [chemo](#) and [radiation therapy](#) is usually given. 5-FU and capecitabine are the chemo drugs most often used.

If you are too sick to have surgery, you may be treated with radiation therapy, although this has not been proven to be as effective as surgery.

Treating stage II rectal cancer

Many stage II rectal cancers have grown through the wall of the rectum and might extend into nearby tissues. They have not yet spread to the lymph nodes.

Most people with stage II rectal cancer will be treated with [chemotherapy](#), [radiation therapy](#), and [surgery](#), although the order of these treatments might be different for some people. For example, here's a common approach to treating these cancers:

- Many people get both [chemo](#) and [radiation therapy](#) (called *chemoradiation*) as their first treatment. The chemo given with radiation is usually either 5-FU or capecitabine (Xeloda).
- This is usually followed by [surgery](#), such as a low anterior resection (LAR), proctectomy with colo-anal anastomosis, or abdominoperineal resection (APR), depending on where the cancer is in the rectum. If the chemo and radiation therapy shrink the tumor enough, sometimes a transanal resection can be done instead of a more invasive LAR or APR. This might avoid having to do a colostomy. But not all doctors agree with this method, as it doesn't let the surgeon check the nearby

lymph nodes for cancer.

- Additional [chemo](#) is then given after surgery, usually for a total of about 6 months. The chemo may be the FOLFOX regimen (oxaliplatin, 5-FU, and leucovorin), 5-FU and leucovorin, CapeOx (capecitabine plus oxaliplatin) or capecitabine alone, based on what's best suited to your health needs.

Another option might be to get chemotherapy alone first, followed by chemo plus radiation therapy, and then followed by surgery.

If someone can't have chemo plus radiation for some reason, surgery (such as an LAR, proctectomy with colo-anal anastomosis, or APR) might be done first. This might be followed by chemotherapy, and sometimes radiation therapy.

Treating stage III rectal cancer

Stage III rectal cancers have spread to nearby lymph nodes but not to other parts of the body.

Most people with stage III rectal cancer will be treated with [chemotherapy](#), [radiation therapy](#), and [surgery](#), although the order of these treatments might differ for some.

Most often, chemo is given along with radiation therapy (called chemoradiation) first. This may shrink the cancer, often making surgery more effective for larger tumors. It also lowers the chance that the cancer will come back in the pelvis. Giving radiation before surgery also tends to lead to fewer problems than giving it after surgery.

This is followed by surgery to remove the rectal tumor and nearby lymph nodes, usually by low anterior resection (LAR), proctectomy with colo-anal anastomosis, or abdominoperineal resection (APR), depending on where the cancer is in the rectum. If the cancer has reached nearby organs, a more extensive operation known as pelvic exenteration may be needed.

After surgery, chemo is given, usually for about 6 months. The most common regimens include FOLFOX (oxaliplatin, 5-FU, and leucovorin), 5-FU and leucovorin, CapeOx (capecitabine plus oxaliplatin), or capecitabine alone. Your doctor may recommend one of these if it is better suited to your health needs.

Another option might be to get chemotherapy alone first, followed by chemo plus radiation therapy, and then followed by surgery.

For people who can't have chemo plus radiation for some reason, surgery (such as an

LAR, proctectomy with colo-anal anastomosis, or APR) might be the first treatment. This might be followed by chemotherapy, sometimes along with radiation therapy.

Treating stage IV rectal cancer

Stage IV rectal cancers have spread to distant organs and tissues such as the liver or lungs. Treatment options for stage IV disease depend to some extent on how widespread the cancer is.

If there's a chance that all of the cancer can be removed (for example, there are only a few tumors in the liver or lungs), the most common treatment options include:

- [Surgery](#) to remove the rectal lesion and distant tumors, followed by [chemo](#) (and [radiation therapy](#) in some cases)
- Chemo, followed by surgery to remove the rectal lesion and distant tumors, usually followed by chemo and radiation therapy (chemoradiation)
- Chemo, followed by chemo and radiation therapy (chemoradiation), followed by surgery to remove the rectal lesion and distant tumors. This might be followed by more chemotherapy.
- Chemo and radiation therapy, followed by surgery to remove the rectal lesion and distant tumors. This might be followed by chemotherapy.

These approaches may help you live longer and in some cases may even cure you. Surgery to remove the rectal tumor would usually be a low anterior resection (LAR), proctectomy with colo-anal anastomosis, or abdominoperineal resection (APR), depending on where it's located.

If the only site of cancer spread is the liver, you may be treated with chemo given directly into the artery leading to the liver (hepatic artery infusion). This may shrink the cancers in the liver more effectively than if the chemo is given into a vein (IV) or by mouth.

If the cancer is more widespread and can't be removed completely by surgery, treatment options depend on whether the cancer is causing a blockage of the intestine. If it is, surgery may be needed right away. If not, the cancer will likely be treated with chemo and/or targeted therapy drugs (without surgery). Some of the options include:

- FOLFOX: leucovorin, 5-FU, and oxaliplatin (Eloxatin)
- FOLFIRI: leucovorin, 5-FU, and irinotecan (Camptosar)
- CapeOX: capecitabine (Xeloda) and oxaliplatin

- FOLFOXIRI: leucovorin, 5-FU, oxaliplatin, and irinotecan
- One of the above combinations, plus either a drug that targets VEGF (bevacizumab [Avastin], ziv-aflibercept [Zaltrap], or ramucirumab [Cyramza]), or a drug that targets EGFR (cetuximab [Erbix) or panitumumab [Vectibix])
- 5-FU and leucovorin, with or without a targeted drug
- Capecitabine, with or without a targeted drug
- Irinotecan, with or without a targeted drug
- Cetuximab alone
- Panitumumab alone
- Regorafenib (Stivarga) alone
- Trifluridine and tipiracil (Lonsurf)

The choice of regimens depends on several factors, including any previous treatments and your overall health and ability to withstand treatment.

If chemo shrinks the tumors, in some cases it may be possible to consider surgery to try to remove all of the cancer at this point. Chemo may then be given again after surgery.

If the cancer doesn't shrink, a different drug combination may be tried. For people with certain gene changes in their cancer cells, another option after initial chemotherapy might be treatment with an [immunotherapy drug](#) such as pembrolizumab (Keytruda).

For cancers that don't shrink with chemo and widespread cancers that are causing symptoms, treatment is done to relieve symptoms and avoid long-term complications such as bleeding or blockage of the intestines. Treatments may include one or more of the following:

- Removing the rectal tumor with surgery
- Surgery to create a colostomy and bypass the rectal tumor (a diverting colostomy)
- Using a special laser to destroy the tumor within the rectum
- Placing a stent (hollow plastic or metal tube) within the rectum to keep it open; this does not require surgery
- Chemoradiation therapy
- Chemo alone

If tumors in the liver can't be removed by surgery because they are too large or there are too many of them, it may be possible to destroy them (partially or completely) with [ablation or embolization](#).

Treating recurrent rectal cancer

Recurrent cancer means that the cancer has come back after treatment. It may come back near the area of the initial rectal tumor (locally) or in distant organs, like the lungs or liver. If the cancer does recur, it is usually in the first 2 to 3 years after surgery but it can also recur much later.

Local recurrence

If the cancer comes back in the pelvis (locally), it is treated with [surgery](#) to remove the cancer, if possible. This surgery is often more extensive than the initial surgery. In some cases [radiation therapy](#) may be given during the surgery (this is called intraoperative radiotherapy) or afterward. [Chemo](#) may also be given after surgery (as well as radiation therapy aimed at the tumor if it was not used before).

Distant recurrence

If the cancer comes back in a distant part of the body, the treatment will depend on whether it can be removed by surgery.

If the cancer can be removed, surgery is done. Chemo may be given **before** surgery (see Treating stage IV rectal cancer for a list of possible drug regimens). Chemo is given **after** surgery as well. When the cancer has spread to the liver, chemo may be given through the hepatic artery leading to the liver.

If the cancer can't be removed by surgery, chemo and/or [targeted therapy drugs](#) may be used. For people whose cancers are found to have certain traits on lab tests, another option might be treatment with an [immune checkpoint inhibitor](#) such as pembrolizumab (Keytruda) or nivolumab (Opdivo). The regimen used will depend on what a person has received previously and on their overall health. If the cancer doesn't shrink, a different drug combination may be tried.

As with stage IV rectal cancer, surgery, radiation therapy, or other approaches may be used at some point to relieve symptoms and avoid long-term complications such as bleeding or blockage of the intestines.

These cancers can often be hard to treat, so you might also want to ask your doctor if you are eligible for any [clinical trials](#) of newer treatments.

For more on recurrence, see [Understanding Recurrence](#).

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