



[cancer.org](https://www.cancer.org) | 1.800.227.2345

## Treating Stomach Cancer

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

### How is stomach cancer treated?

The main treatments for stomach cancer are:

- [Surgery for Stomach Cancer](#)
- [Chemotherapy for Stomach Cancer](#)
- [Targeted Drug Therapy for Stomach Cancer](#)
- [Immunotherapy for Stomach Cancer](#)
- [Radiation Therapy for Stomach Cancer](#)

### Common treatment approaches

Often the best approach uses 2 or more types of treatment. Your treatment options depend on many factors. The location and the [stage](#) (extent of spread) of the cancer are very important. In choosing your treatment plan, you and your cancer care team will also take your age, overall health, and personal preferences into account.

- [Treatment Choices Based on the Extent of Stomach Cancer](#)

### Who treats stomach cancer?

Stomach cancer is often treated by a team of doctors with different specialties. Most likely, your treatment team will include:

- A **gastroenterologist**: a doctor who specializes in treating diseases of the digestive system
- A **surgical oncologist**: a doctor who treats cancer with surgery
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy, targeted therapy, and immunotherapy
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy

You might have many other health care professionals on your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, psychologists,

asking your doctor if your clinic or hospital conducts clinical trials.

- [Clinical Trials](#)

## Considering complementary and alternative methods

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

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

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

- [Complementary and Integrative Medicine](#)

## Help getting through cancer treatment

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

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

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

The American Cancer Society also has programs and services - including rides to treatment, lodging, and more - to help you get through treatment. Call our Cancer Knowledge Hub at 1-800-227-2345 and speak with one of our caring, trained cancer helpline specialists. Or, if you prefer, you can use our chat feature on cancer.org to

connect with one of our specialists.

- [Palliative Care](#)
- [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 as 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 Stomach Cancer**

- [Surgery to remove the cancer](#)
- [Palliative surgery for unresectable cancer](#)
- [Possible complications and side effects of surgery](#)
- [More information about Surgery](#)

Surgery is often part of the treatment for stomach cancer (gastric cancer), if it can be done. If the cancer hasn't spread to other parts of the body, surgery (often along with

other treatments) offers the best chance to try to cure the cancer.

Surgery can be done for two main reasons:

- **Surgery to remove the cancer:** Surgery may be done to remove the cancer and part or all of the stomach, as well as some nearby lymph nodes and other structures, depending on the location and [stage](#)<sup>1</sup> (extent) of the cancer. The surgeon will try to leave behind as much normal stomach as possible. Sometimes other organs will need to be removed as well.
- **Palliative surgery:** If the cancer is too widespread to be removed completely, surgery might still be done to help prevent bleeding from the tumor or prevent the stomach from being blocked by tumor growth. This type of surgery can prevent or relieve symptoms, but it is not expected to cure the cancer.

## Surgery to remove the cancer

Different types of surgery can be used to try to remove stomach cancer. The type of operation used depends on what part of the stomach the cancer is in and how far it has grown into nearby areas.

Before your surgery, talk to your surgeon about how much of the stomach will need to be removed. Some surgeons try to leave behind as much of the stomach as they can, which might allow patients to eat more normally afterward. However, the main goal of surgery is to be sure all the cancer has been removed. The surgeon will try to achieve **negative surgical margins**

These operations are not done as often in the United States as they are in some East Asian countries (like Japan) where stomach cancer is more common and more often found at an early stage due to [screening](#)<sup>2</sup>. If you are going to have this kind of surgery, it should be done at a center that has experience with this technique.

### **Subtotal (partial) gastrectomy**

In this operation, only part of the stomach is removed. This is often recommended if the cancer is only in the lower part of the stomach (in which case it is known as a **distal gastrectomy**). It might also be used for cancers that are only in the upper part of the stomach (in which case it is known as a **proximal gastrectomy**).

Part of the stomach is removed, sometimes along with part of the esophagus (in a proximal gastrectomy) or the first part of the small intestine (in a distal gastrectomy). The remaining section of stomach is then reattached. Some of the omentum (an apron-like layer of fatty tissue that covers the stomach and intestines) is removed as well, along with nearby lymph nodes. If the cancer has reached the spleen or parts of other nearby organs, these are removed as well.

Eating is much easier after surgery if only part of the stomach is removed instead of the entire stomach.

### **Total gastrectomy**

This operation is done if the cancer has spread widely in the stomach. It is also often advised if the cancer is in the upper part of the stomach, near the esophagus.

The surgeon removes the entire stomach, nearby lymph nodes, and the omentum, and

inserted into the abdomen through several small cuts. Some surgeons do these operations using **robotic-assisted laparoscopic surgery** (sometimes just called **robotic surgery**). In this technique, the surgeon sits at a control panel and moves robotic arms that have laparoscopic instruments on the ends. (For more on this, see [What's New in Stomach Cancer Research?](#)<sup>3</sup>)

Although the laparoscopic approach (including robotic surgery) might result in a shorter hospital stay, less pain after the operation, and a shorter recovery time (because of the smaller incisions), many doctors feel that this technique needs to be studied further before it can be considered a standard treatment for stomach cancer.

No matter which approach is used, it's important that your surgeon is skilled and experienced with the technique.

### **Lymph node removal**

In either a subtotal or total gastrectomy, the nearby [lymph nodes](#)<sup>4</sup> are removed. This is known as a **lymph node dissection** or **lymphadenectomy**, and it's a very important part of the operation. Many doctors feel that the success of the surgery is directly related to how many lymph nodes the surgeon removes.

In the United States, it is recommended that at least 16 lymph nodes be removed (called a **D1 lymphadenectomy**) when a gastrectomy is done. Surgeons in some East Asian countries (such as Japan and South Korea) have had very high success rates by removing even more lymph nodes near the cancer (called a **D2 lymphadenectomy**).

Surgeons in Europe and the United States have not been able to equal the results of the East Asian surgeons. It is not clear if this is because East Asian surgeons are more experienced (stomach cancer is much more common in these countries), because their patients tend to have earlier stage disease (because they screen for stomach cancer) and are healthier, or if other factors play a role.

In any event, it takes a skilled surgeon who is experienced in stomach cancer surgery to remove as many lymph nodes as possible. Ask your surgeon about their experience in operating on stomach cancer. Studies have shown that the results are better when both the surgeon and the hospital have had extensive experience in treating patients with stomach cancer.

### **Palliative surgery for unresectable cancer**

For people with stomach cancer that can't be removed completely, surgery can often

still be used to help control the cancer or to help prevent or relieve [symptoms](#)<sup>5</sup> or complications.

### **Gastric bypass (gastrojejunostomy)**

Tumors in the lower part of the stomach may eventually grow large enough to block food from leaving the stomach. For people healthy enough for surgery, one option to help prevent or treat this is to bypass the lower part of the stomach. This is done by attaching part of the small intestine (the jejunum) to the upper part of the stomach, which allows food to leave the stomach through the new connection.

### **Subtotal gastrectomy**

For some people who are healthy enough for surgery, removing the part of the stomach with the tumor can help treat problems such as bleeding, pain, or the tumor blocking the passage of food through the stomach, even if the surgery does not cure the cancer. Because the goal is not to cure the cancer, nearby lymph nodes and parts of other organs usually do not need to be removed.

### **Feeding tube placement**

Some people with stomach cancer aren't able to eat or drink enough to get adequate nutrition. A minor operation can be done to place a feeding tube through the skin of the abdomen and into the lower part of the stomach (known as a **gastrostomy tube** or **G tube**) or into the small intestine (**jejunostomy tube** or **J tube**). Liquid nutrition can then be put directly into the tube.

### **Endoscopy procedures**

In some situations, [upper endoscopy](#)<sup>6</sup> procedures can be done to help prevent or relieve symptoms, without the need for more extensive surgery:

- **Endoscopic tumor ablation:** In some cases, such as in people who are not healthy enough for surgery, an endoscope (a long, flexible tube passed down the throat) with a laser on the end can be used to vaporize parts of the tumor. This can be done to stop bleeding or help relieve a blockage without surgery.
- **Stent placement:** Another non-surgical option to keep a tumor from blocking the opening at the beginning or end of the stomach is to use an endoscope to place a stent (a hollow metal tube) into the opening. This helps keep it open and allows food to pass through it. For tumors in the upper (proximal) stomach, the stent is



placed where the esophagus and stomach meet. For tumors in the lower (distal) part of the stomach, the stent is placed at the junction of the stomach and the small intestine.

## Possible complications and side effects of surgery

Surgery for stomach cancer is complex and can have complications. These can include bleeding from the surgery, blood clots, and damage to nearby organs during the operation. Rarely, the new connections made between the ends of the stomach, esophagus, and small intestine may leak.

Surgical techniques have improved in recent years, so only a very small percentage of people die from surgery for stomach cancer. The chance of this happening is higher when the operation is more extensive, such as when other organs are removed, but it is lower in the hands of highly skilled surgeons.

You will not be allowed to eat or drink anything for at least a few days after a total or subtotal gastrectomy. This is to give the digestive tract time to heal and to make sure there are no leaks in parts that have been connected together during the operation.

Side effects after surgery can include nausea, heartburn, abdominal (belly) pain, and diarrhea, particularly after eating. These side effects result from the fact that once part or all of the stomach is removed, food enters the intestines much more quickly after eating. These side effects might get better over time, but for some people they might not. Your doctor might prescribe medicines to help with them.

Changes in your diet will be needed after a partial or total gastrectomy. The biggest change is that you will need to eat smaller, more frequent meals. The amount of stomach removed will affect how much you need to change the way you eat.

Some people might have trouble taking in enough nutrition after surgery for stomach cancer. Further treatment like chemotherapy and radiation after surgery can make this problem worse. To help with this, a tube is sometimes placed into the intestine, either at the time of the surgery or afterward. The other end of this tube, called a **jejunostomy tube** or **J tube**, remains outside of the skin on the abdomen. Liquid nutrition can be put directly through this tube into the intestine to help prevent or treat malnutrition.

The stomach helps the body absorb some vitamins, so people who have had a subtotal or total gastrectomy might develop vitamin deficiencies. If certain parts of the stomach are removed, doctors routinely prescribe vitamin supplements, some of which can only

be injected.

It cannot be stressed enough that you should make sure your surgeon is experienced in treating stomach cancer and able to perform the most up-to-date operations to reduce your risk of complications.

## More information about Surgery

For more general information about surgery as a treatment for cancer, see [Cancer Surgery](#)<sup>7</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>8</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html)
2. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/detection.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/detection.html)
3. [www.cancer.org/cancer/types/stomach-cancer/about/new-research.html](http://www.cancer.org/cancer/types/stomach-cancer/about/new-research.html)
4. [www.cancer.org/cancer/diagnosis-staging/lymph-nodes-and-cancer.html](http://www.cancer.org/cancer/diagnosis-staging/lymph-nodes-and-cancer.html)
5. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/signs-symptoms.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/signs-symptoms.html)
6. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html)
7. [www.cancer.org/cancer/managing-cancer/treatment-types/surgery.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/surgery.html)
8. [www.cancer.org/cancer/managing-cancer/side-effects.html](http://www.cancer.org/cancer/managing-cancer/side-effects.html)

## References

Ku GY, Ilson DH. Chapter 72: Cancer of the Stomach. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

Mansfield PF. Surgical management of invasive gastric cancer. UpToDate. 2020.

Accessed at <https://www.uptodate.com/contents/surgical-management-of-invasive-gastric-cancer>

National Cancer Institute. Physician Data Query (PDQ). Gastric Cancer Treatment. 2020. Accessed at <https://www.cancer.gov/types/stomach/hp/stomach-treatment-pdq> on July 10, 2020.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Gastric Cancer. v.2.2020. Accessed at [https://www.nccn.org/professionals/physician\\_gls/pdf/gastric.pdf](https://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf) on July 10, 2020.

Last Revised: January 22, 2021

## Chemotherapy for Stomach Cancer

- [When is chemo used for stomach cancer?](#)
- [Which chemo drugs are used for stomach cancer?](#)
- [More information about chemotherapy](#)

Chemotherapy (chemo) uses anti-cancer drugs that are injected into a vein (through an IV line or [central venous catheter](#)<sup>1</sup>) or given by mouth as pills. These drugs enter the bloodstream and reach all areas of the body, making this treatment useful for cancer that has spread to organs beyond where it started.

### When is chemo used for stomach cancer?

Chemo might be used at different times to help treat stomach cancer:

- Chemo can be given **before surgery** for stomach cancer. This is known as **neoadjuvant treatment**. (Sometimes chemo is given along with [radiation therapy](#), which is known as **chemoradiation**.) Neoadjuvant treatment can often shrink the tumor and possibly make surgery easier. It may also help keep the cancer from coming back and help patients live longer. For some stages of stomach cancer, neoadjuvant chemo is one of the standard treatment options. Often, chemo is then given again after surgery.
- Chemo may be given **after surgery** has been done to remove the cancer. This is called **adjuvant treatment**. The goal of adjuvant chemo is to kill any areas of cancer that may have been left behind but are too small to see. This can help keep

the cancer from coming back. Often, for stomach cancer, chemo is given with radiation therapy after surgery. This may be especially helpful for cancers that could not be removed completely by surgery.

- Chemo may be given as the primary (main) treatment if the cancer has spread (metastasized) to distant parts of the body, or if it can't be removed for some other reason. Chemo may help shrink the cancer or slow its growth, which can relieve symptoms and help people live longer.

Doctors give chemo in cycles, with each period of treatment followed by a rest period to allow the body time to recover. Each cycle typically lasts for a few weeks.

## Which chemo drugs are used for stomach cancer?

Many different chemo drugs can be used to treat stomach cancer, including:

- 5-FU (fluorouracil), often given along with leucovorin (folinic acid)
- Capecitabine
- Carboplatin
- Cisplatin
- Docetaxel
- Epirubicin
- Irinotecan
- Oxaliplatin
- Paclitaxel
- Trifluridine and tipiracil (Lonsurf), a combination drug in pill form

Most often, 2 or 3 of these drugs are combined (sometimes along with a [targeted drug](#) as well). But this depends on factors such as the [stage of the cancer](#)<sup>2</sup>, the person's overall health, and whether chemo is combined with radiation therapy. Three-drug combinations can have more side effects, so they are usually reserved for people who are in very good health and who can be followed closely by their doctor.

For **earlier stage cancers**, some common drug combinations used before and/or after surgery include:

- Oxaliplatin plus 5-FU/leucovorin (FOLFOX), or oxaliplatin plus capecitabine (CAPOX)
- FLOT (5-FU/leucovorin, oxaliplatin, and docetaxel)

- Docetaxel or paclitaxel plus either 5-FU or capecitabine
- Cisplatin plus either 5-FU or capecitabine
- Paclitaxel and carboplatin

When chemo is given with radiation after surgery, a single drug such as 5-FU or capecitabine may be used.

For **advanced stomach cancer**, many of the same combinations of drugs can be used, although doctors often prefer combinations of 2 drugs rather than 3 to try to reduce side effects. Some of the most commonly used combinations include:



For more general information about how chemotherapy is used to treat cancer, see [Chemotherapy](#)<sup>3</sup>.

To learn about some of the side effects listed here and how to manage them, see [Managing Cancer-related Side Effects](#)<sup>4</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/making-treatment-decisions/tubes-lines-ports-catheters.html](http://www.cancer.org/cancer/managing-cancer/making-treatment-decisions/tubes-lines-ports-catheters.html)
2. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html)
3. [www.cancer.org/cancer/managing-cancer/treatment-types/chemotherapy.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/chemotherapy.html)
4. [www.cancer.org/cancer/managing-cancer/side-effects.html](http://www.cancer.org/cancer/managing-cancer/side-effects.html)

## References

Bendell J, Yoon HH. Initial systemic therapy for locally advanced unresectable and metastatic esophageal and gastric cancer. UpToDate. 2020. Accessed at <https://www.uptodate.com/contents/initial-systemic-therapy-for-locally-advanced-unresectable-and-metastatic-esophageal-and-gastric-cancer> on July 13, 2020.

Ku GY, Ilson DH. Chapter 72: Cancer of the Stomach. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

Mamon H, Enzinger PC. Adjuvant and neoadjuvant treatment of gastric cancer. UpToDate. 2020. Accessed at <https://www.uptodate.com/contents/adjuvant-and-neoadjuvant-treatment-of-gastric-cancer> on July 13, 2020.

National Cancer Institute. Physician Data Query (PDQ). Gastric Cancer Treatment. 2020. Accessed at: <https://www.cancer.gov/types/stomach/hp/stomach-treatment-pdq> on July 13, 2020.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Gastric Cancer. Version 2.2020. Accessed at [www.nccn.org/professionals/physician\\_gls/pdf/gastric.pdf](http://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf) on July 13, 2020.

Last Revised: January 22, 2021

# Targeted Drug Therapy for Stomach Cancer

- [Drugs that target HER2](#)
- [Drugs that target VEGF](#)
- [TRK inhibitors](#)
- [Drug that target CLDN18.2](#)
- [Other targeted drugs](#)
- [More information about targeted therapy](#)

As researchers have learned more about the changes in cells that cause cancer, they have developed newer drugs that 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 side effects.

Targeted drugs can sometimes be used to treat stomach cancer (gastric cancer), either alone or along with chemo, depending on the situation.

## Drugs that target HER2

In some people with stomach cancer, the cancer cells have too much of a growth-promoting protein called HER2 on their surface. Cancers with increased levels of HER2 are called **HER2-positive**. Drugs that target the HER2 protein can often be helpful in treating these cancers.

### Trastuzumab (Herceptin, others)

Trastuzumab is a [monoclonal antibody](#)<sup>1</sup>, a man-made version of an immune system protein, which targets HER2. Adding trastuzumab to chemo can help some people with advanced, HER2-positive stomach cancer live longer than just chemo alone.

This drug only works if the cancer cells have too much HER2, so samples of the cancer must be tested for HER2 before starting treatment (see [Tests for Stomach Cancer](#)<sup>2</sup>).

Trastuzumab is infused into a vein (through an IV line or [central venous catheter](#)<sup>3</sup>). For stomach cancer, it is typically given once every 2 or 3 weeks along with chemo.

Herceptin was the original brand name for trastuzumab, but several similar versions



(called [biosimilars](#)<sup>4</sup>) are now available as well, including Ogivri, Herzuma, Ontruzant, Trazimera, and Kanjinti.

### ***Side effects of trastuzumab***

The side effects of trastuzumab tend to be relatively mild. They can include fever and chills, weakness, nausea, vomiting, cough, diarrhea, and headache. These side effects occur less often after the first dose.

This drug can also rarely cause **heart damage**. The risk is higher if trastuzumab is given with certain chemo drugs called anthracyclines, such as epirubicin. Before starting treatment with this drug, your doctor may test your heart function with an echocardiogram or a MUGA scan.

### **Fam-trastuzumab deruxtecan (Enhertu)**

For tumors to grow, they need to make new blood vessels to get blood and nutrients. One of the proteins that tells cells in the body to make new blood vessels is called **VEGF**. The VEGF protein does this by attaching to cell surface proteins called VEGF receptors.

### **Ramucirumab (Cyramza)**

Ramucirumab is a monoclonal antibody that binds to a VEGF receptor. This keeps VEGF from binding to cells and telling them to make more blood vessels. This can help slow or stop the growth of some cancers.

Ramucirumab is used to treat advanced stomach cancer, most often after at least one chemo drug (or combination) stops working.

This drug is given as infusion into a vein (IV), typically once every 2 weeks. It can be given by itself or along with chemo.

#### ***Side effects of ramucirumab***

The most common side effects of this drug are high blood pressure, headache, and diarrhea.

Less common but possibly serious side effects can include blood clots, severe bleeding, holes forming in the stomach or intestines (perforations), and problems with wound healing. If a hole forms in the stomach or intestine, it can lead to severe infection and may require surgery to correct.

### **TRK inhibitors**

A very small number of stomach cancers have changes in one of the *NTRK* genes. This causes them to make abnormal TRK proteins, which can lead to abnormal cell growth and cancer.

**Larotrectinib (Vitrakvi)** and **entrectinib (Rozlytrek)** are drugs that target the TRK proteins. These drugs can be used to treat advanced cancers with *NTRK* gene changes that are still growing despite other treatments.

These drugs are taken as pills, once or twice daily.

#### ***Side effects of TRK inhibitors***

Common side effects of these drugs can include dizziness, fatigue, nausea, vomiting, constipation, weight gain, and diarrhea.

Less common but serious side effects can include abnormal liver tests, heart problems, and confusion.

## **Drug that target CLDN18.2**

Claudin 18.2 (CLDN18.2) is a protein that plays an important role in keeping healthy epithelial cells bound together. Epithelial cells are cells that are commonly found along the gastrointestinal tract. When an epithelial cell turns into a cancer cell, however, CLDN18.2 may move to the surface of the cancer cell. As a result, CLDN18.2 can serve as a target for therapy.

### **Zolbetuximab (Vyloy)**

Zolbetuximab is a monoclonal antibody that targets CLDN18.2. It is used to treat advanced stomach cancer that is HER2-negative and found to express high amounts of CLDN18.2 on their cell surface. For this type of stomach cancer, zolbetuximab can be given with chemo as the initial therapy.

Zolbetuximab is given into a vein (IV), typically once every 2 or 3 weeks, along with chemo.

### ***Side effects of zolbetuximab***

Common side effects are nausea, vomiting, diarrhea, fatigue, decreased appetite, stomach pain, weight loss, constipation, and decreased sensation in fingertips/toes (also called sensory neuropathy). Less common but serious side effects can include low blood cell counts, which can increase a person's risk of infections and bleeding; abnormal liver tests; and changes in electrolyte levels, such as sodium, phosphate, potassium, and magnesium.

## **Other targeted drugs**

Other targeted therapy drugs are now being tested against stomach cancer. Some of these target the HER2 protein, while others have different targets. Some of these drugs are discussed in more detail in [What's New in Stomach Cancer Research?](#)<sup>5</sup>



National Cancer Institute. Physician Data Query (PDQ). Gastric Cancer Treatment. 2020. Accessed at <https://www.cancer.gov/types/stomach/hp/stomach-treatment-pdq> on July 13, 2020.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Gastric Cancer. Version 2.2020. Accessed at [www.nccn.org/professionals/physician\\_gls/pdf/gastric.pdf](http://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf) on July 13, 2020.

Last Revised: October 30, 2024

## Immunotherapy for Stomach Cancer

- [Immune checkpoint inhibitors](#)
- [More information about immunotherapy](#)

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

### Immune checkpoint inhibitors

An important part of the immune system is its ability to prevent itself from attacking normal cells in the body. To do this, it uses “checkpoint” proteins on immune cells, which act like switches 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.

Drugs that target these checkpoints (called **immune checkpoint inhibitors**) can be used to treat some people with stomach cancer (also known as gastric cancer).

### PD-1 inhibitors

**Nivolumab (Opdivo)** and **pembrolizumab (Keytruda)** are drugs that target PD-1, a protein on immune system cells called T cells. The PD-1 protein normally helps keep T 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** can be used in people with advanced stomach cancer, typically along with [chemotherapy](#).

This drug is given as an intravenous (IV) infusion, usually once every 2 or 3 weeks.

**Pembrolizumab** can be used as part of the first treatment for people with advanced stomach cancer, either:

- Along with [chemotherapy](#) if the cancer cells [test negative for HER2<sup>1</sup>](#), or
- Along with chemotherapy and the [targeted drug](#) trastuzumab, if the cancer cells test positive for both HER2 and for the PD-L1 protein

This drug can also be used after other treatments including chemotherapy have been tried, and if the cancer cells test positive for any of the following:

- A **high level of microsatellite instability (MSI-H)** or a **defect in a mismatch repair gene (dMMR)**
- A **high tumor mutational burden (TMB-H)**, meaning they have many gene mutations

This drug is given as an intravenous (IV) infusion, typically once every 3 or 6 weeks.

### ***Possible side effects***

Side effects of these drugs can include:

- Feeling tired or weak
  - Fever
  - Cough
  - Nausea
- I migs 1.5 6M0 druf/GS8 g ET Q



Ku GY, Ilson DH. Chapter 72: Cancer of the Stomach. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

National Cancer Institute. Physician Data Query (PDQ). Gastric Cancer Treatment. 2020. Accessed at: <https://www.cancer.gov/types/stomach/hp/stomach-treatment-pdq> on July 13, 2020.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Gastric Cancer. Version 2.2020. Accessed at [www.nccn.org/professionals/physician\\_gls/pdf/gastric.pdf](http://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf) on July 13, 2020.

Last Revised: November 21, 2023

## Radiation Therapy for Stomach Cancer

- [When is radiation therapy used?](#)
- [How is radiation therapy given?](#)
- [Possible side effects of radiation therapy](#)
- [More information about radiation therapy](#)

Radiation therapy uses high-energy rays or particles to kill cancer cells in a specific part of the body.

### When is radiation therapy used?

Radiation can be used in different ways to help treat stomach cancer (gastric cancer):

- For some earlier stage cancers, radiation can be used along with [chemotherapy](#) (chemo) **before surgery** to try to shrink the cancer and make it easier to remove. (This combination is known as *chemoradiation*.)
- **After surgery**, radiation therapy can be used along with chemo to try to kill any cancer cells that weren't removed during the surgery. This may help delay or prevent recurrence of the cancer.
- For **cancers that can't be removed by surgery**, radiation therapy can sometimes be used to help slow the growth of the cancer and ease symptoms, such as pain,



bleeding, or eating problems.

## How is radiation therapy given?

When radiation therapy is used to treat stomach cancer, the radiation is focused on the cancer from a machine outside the body. Often, special types of radiation therapy, such as **three-dimensional conformal radiation therapy (3D-CRT)** or **intensity modulated radiation therapy (IMRT)** are used. These approaches use computers to aim the radiation at the cancer from several angles (as well as other special techniques). This can help focus the radiation on the cancer and limit the damage to nearby normal tissues.

Before your treatments start, the radiation team will take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. This planning session, called **simulation**, usually includes getting [imaging tests](#)<sup>1</sup> such as CT or MRI scans.

Radiation therapy is much like getting an x-ray, but the radiation is much stronger. The treatment itself is painless. Each treatment lasts only a few minutes, although the setup time — getting you into place for treatment — usually takes longer. Treatments are usually given 5 days a week over at least several weeks, but the length of treatment depends on the reason it's being given.

## Possible side effects of radiation therapy

Side effects from radiation therapy for stomach cancer can include:

- Skin problems, ranging from redness to blistering and peeling, in areas the radiation passed through
- Nausea and vomiting
- Diarrhea
- Fatigue
- Low blood cell counts

These usually go away within a few weeks after the treatment is finished.

When radiation is given with chemotherapy, side effects are often worse.

Some people may have problems eating and getting enough fluids during and after treatment. Some might need to have fluids given into a vein (IV) or have a feeding tube placed to get nutrition during treatment. If the tube is only needed for a short time, one can be passed down the nose and throat and into the stomach or intestine. If the tube is needed for a longer time, it can be placed through the skin in the abdomen and into the intestine during a [surgical procedure](#). This is known as a **jejunostomy tube** or **J-tube**. Liquid nutrition can then be put directly into the tube.

Be sure to tell your doctor about any side effects you have, because there are often ways to relieve them.

Radiation might also dw19.2 Tnse aearbynteganss is kncould leaget nems eatinsu inTj heart g 1 0 0 1

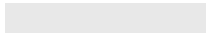
---

Ku GY, Ilson DH. Chapter 72: Cancer of the Stomach. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

---

## **Treatment Choices Based on the Extent of Stomach Cancer**

lungs, and bones, which can make it harder to treat.



stomach). Nearby lymph nodes are removed as well.

Some small stage 0 cancers can be treated by [endoscopic resection](#). In this procedure the cancer and some layers of the stomach wall are removed through an endoscope passed down the throat. This procedure is done more often in countries like Japan, where stomach cancer is often detected early during screening. It is rare to find stomach cancer so early in the United States, so this treatment has not been used as often here. If it is done, it should be at a cancer center that has experience with this technique.

If the results of surgery (or endoscopic resection) show that all of the cancer has been removed, the person can usually be followed closely, without needing any further treatment. If it's not clear that all of the cancer has been removed, chemotherapy and radiation are likely to be recommended. Another option might be a more extensive surgery to remove the cancer.

## Potentially resectable cancers

These cancers have grown deeper into the stomach wall and may have grown into nearby areas, but there are no signs they have spread to other parts of the body, so surgery might be an option to remove (resect) them.

It's very important that all of the needed tests are done to stage these cancers accurately before surgery is attempted, so the doctors know the true extent of the cancer in the body. Trying to remove the cancer isn't likely to be helpful if it has spread too far, and surgery can have serious side effects, so accurately staging these cancers helps ensure the potential benefits of surgery outweigh the potential downsides. Along with imaging tests like CT and PET scans, other tests such as endoscopic ultrasound (EUS) or staging laparoscopy might be done before trying to remove the cancer. (See [Tests for Stomach Cancer](#)<sup>2</sup> for more on these tests.)

Depending on the location and extent of the cancer, some people might get surgery as their first treatment, with either subtotal gastrectomy (removal of part of the stomach) or total gastrectomy (removal of the entire stomach). Nearby lymph nodes (and possibly parts of nearby organs) are removed as well. Other people might get chemotherapy alone or chemo plus radiation therapy (known as chemoradiation) first to try to shrink the cancer and make the surgery easier.

After surgery, chemo (or chemoradiation, if it wasn't used before surgery) might be given to try to kill any remaining cancer cells. This is especially true if it's not clear that all of the cancer was removed, or if too few lymph nodes were removed during surgery.





Cancer that comes back after initial treatment is known as [recurrent cancer](#)<sup>8</sup>. Treatment options for recurrent cancer depend on where the cancer recurs, what treatments a person has already had, and the person's overall health.

If the cancer comes back only in one area near where the original cancer was, surgery might be an option to try to remove it, if a person is health enough for the operation.

If the cancer recurrence is more widespread or is in a distant part of the body, or if a person isn't healthy enough for surgery, treatment is similar to that for metastatic cancer (described above), in which the main goals are to control the cancer growth for as long as possible and to prevent or relieve any problems it might cause.

For people who are interested, [clinical trials](#)<sup>9</sup> of newer treatments may be an option and could be considered.

## Hyperlinks

1. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/staging.html)
2. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html)
3. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html)
4. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html)
5. [www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/stomach-cancer/detection-diagnosis-staging/how-diagnosed.html)
6. [www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html](http://www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html)
7. [www.cancer.org/cancer/managing-cancer/side-effects.html](http://www.cancer.org/cancer/managing-cancer/side-effects.html)
8. [www.cancer.org/cancer/survivorship/long-term-health-concerns/recurrence.html](http://www.cancer.org/cancer/survivorship/long-term-health-concerns/recurrence.html)
9. [www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html](http://www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html)

## References

Bendell J. Local palliation for advanced gastric cancer. UpToDate. 2020. Accessed at <https://www.uptodate.com/contents/local-palliation-for-advanced-gastric-cancer> on July



14, 2020.

writing.

American Cancer Society medical information is copyrighted material. For reprint

---

---