Treating Gastrointestinal Stromal Tumors

If you’ve been diagnosed with a gastrointestinal stromal tumor (GIST), 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.

Which treatments are used for GISTs?

Types of treatment for GIST include:

- Surgery for Gastrointestinal Stromal Tumors
- Targeted Drug Therapy for Gastrointestinal Stromal Tumors
- Ablation and Embolization to Treat Gastrointestinal Stromal Tumors
- Chemotherapy for Gastrointestinal Stromal Tumors
- Radiation Therapy for Gastrointestinal Stromal Tumors

Common treatment approaches

Not all GISTs need to be treated right away. But if treatment is needed, the main types used are surgery and targeted therapy. Other treatments, such as ablation, embolization, chemotherapy, and radiation, are used less often.

- Typical Treatment Options for Gastrointestinal Stromal Tumors

Who treats GISTs?

The treatment of GISTs can be complex, so it’s important to be evaluated and treated by a team of doctors who have experience with this type of cancer. You might have
different types of doctors on your treatment team, including:

- **A surgical oncologist**: a doctor who treats cancer with surgery
- **A medical oncologist**: a doctor who treats cancer with medicines
- **A gastroenterologist**: a doctor who specializes in treating diseases of the gastrointestinal (digestive) system
- **A radiation oncologist**: a doctor who treats cancer with radiation therapy

You might have many other specialists on your treatment team as well, including physician assistants (PAs), nurse practitioners (NPs), nurses, nutrition specialists, social workers, rehabilitation specialists, psychologists, and other health professionals.

- [Health Professionals Associated with Cancer Care](#)

**Making treatment decisions**

It's important to discuss all treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. Some important things to consider include:

- Your age and overall health
- The location and stage of your tumor
- The likelihood that treatment will cure your tumor (or help in some other way)
- Your feelings about the possible side effects from treatment

You may feel that you need to decide quickly, but it’s important to give yourself time to absorb the information you have learned. It’s also very important to ask questions if there is anything you’re not sure about.

If time permits, it is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

- [Questions to Ask About Gastrointestinal Stromal Tumors](#)
- [Seeking a Second Opinion](#)

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

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

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

- Clinical Trials

Considering complementary and alternative methods

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

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

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

- Complementary and 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 can be an important part of your care. These might include nursing or social work services,
financial aid, nutritional advice, rehab, or spiritual help.

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

- **Palliative Care**
- **Find Support Programs and Services in Your Area**

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

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

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

- **If Cancer Treatments Stop Working**

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

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**Surgery for Gastrointestinal Stromal Tumors**
Surgery is usually the main treatment for gastrointestinal stromal tumors (GISTs) that haven’t spread. The goal of the surgery is to remove all of the cancer.

The type of surgery needed depends on the location and size of the tumor.

**Surgery for small GISTs**

If the tumor is small, it often can be removed along with a small area of normal tissue around it. This is done through a cut (incision) in the skin. Unlike many other cancers, GISTs almost never spread to the lymph nodes, so removing nearby lymph nodes is usually not needed.

For some small cancers, “keyhole” (laparoscopic) surgery is an option. Instead of making a large incision in the skin to remove the tumor, several small ones are used. The surgeon inserts a thin, lighted tube with a tiny video camera on the end (a laparoscope) through one of them. This lets them see inside the belly. Long, thin surgical tools are then used through the other incisions to remove the tumor. Because the incisions are small, patients usually recover more quickly from this type of surgery than from traditional surgery that requires a longer incision.

**Surgery for larger GISTs**

If the tumor is large or growing into other organs, the surgeon might still be able to remove it entirely. To do this, parts of organs (such as a section of the intestines) might need to be removed. The surgeon might also remove tumors that have spread elsewhere in the abdomen, such as the liver.

Another option for tumors that are large or have grown into nearby areas might be to take the targeted drug imatinib (Gleevec) first, typically for at least several months. This is called neoadjuvant treatment and can often shrink the tumor, making it easier to remove with surgery.

**Surgery for metastatic GISTs**

Surgery is not a common treatment for a GIST that has spread (metastasized) to other parts of the body. Targeted therapy drugs are usually the first option for metastatic GISTs. But if there are no more than a few metastatic tumors and they respond well to targeted therapy, some doctors might advise surgery to remove them. No large studies have been done to show how helpful this is, but it might be an option. If your doctor offers this surgery, be sure you understand the goals and possible side effects.
If the tumors are in the liver and would be hard to remove, other options might include different types of local treatments, such as ablation or embolization.

**Choosing your surgeon**

No matter what type of surgery is done, it's very important that it is done by a surgeon experienced in treating GISTs. GISTs are often delicate tumors, and surgeons must be careful not to open the outer lining that surrounds them (known as the capsule), because it might increase the risk of spreading the cancer. GISTs also tend to have a lot of blood vessels, so your surgeon has to be careful to control any bleeding from the tumor.

For more information about finding a surgeon, see Where to Find Cancer Care¹.

**More information about Surgery**

For more general information about surgery as a treatment for cancer, see Cancer Surgery².

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects³.

**Hyperlinks**


**References**


Ablation and Embolization to Treat Gastrointestinal Stromal Tumors

If a gastrointestinal stromal tumor (GIST) has spread to the liver, treatments such as ablation and embolization might be used, especially if surgery can’t be done to remove the tumors.

Ablation

Ablation is the destruction of tumors using extreme heat or cold, or using chemicals. It can sometimes be used to destroy GISTs that have spread as no more than a few small tumors in the liver. Because ablation often destroys some of the normal tissue around the tumor, it might not be a good choice for treating tumors near important structures like major blood vessels, the diaphragm (the thin breathing muscle above the liver), or major ducts in the liver.

There are several types of ablation:

- **Radiofrequency ablation (RFA)**, which uses high-energy radio waves to heat the tumor and destroy cancer cells
- **Ethanol (alcohol) ablation**, where concentrated alcohol is injected directly into the tumor to kill cancer cells
- **Microwave thermotherapy**, where microwaves transmitted through a probe placed in the tumor are used to heat and destroy the cancer cells
- **Cryosurgery (cryotherapy)**, which destroys a tumor by freezing it using a thin metal probe. This method sometimes requires general anesthesia (you are in a deep sleep and not able to feel pain)

**What to expect**

Usually, you don’t need to stay overnight in the hospital for this type of treatment. Ablation can often be done without surgery by inserting a needle or probe into the tumor through the skin. The needle or probe is guided into place with ultrasound or CT scanning. This might be done with general anesthesia (you are in a deep sleep) or with conscious sedation (you are awake but sleepy and should not feel any pain). Sometimes, though, to be sure the treatment is aimed at the right place, it is done during surgery.

**Possible side effects of ablation**

Possible side effects after ablation therapy include abdominal (belly) pain, infection in the liver, and bleeding into the chest cavity or abdomen. Serious complications are uncommon, but they can happen.

**Embolization**

Embolization is a procedure in which the doctor injects substances 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 are fed by branches of the portal vein, whereas cancer cells in the liver are usually fed by 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 because they get their blood supply from the portal vein.

Embolization does reduce some of the blood supply to the normal liver tissue, so it might not be a good option for some patients whose liver has already been damaged by diseases such as hepatitis or cirrhosis.

**What to expect**
The main type of embolization used to treat GISTs that have spread to the liver is arterial embolization (also known as **trans-arterial embolization or TAE**). 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 bloodstream at this time to help the doctor see the path of the catheter via angiography, a special type of x-ray. Once the catheter is in place, small particles are injected into the artery to plug it up.

Embolization can also be done by injecting tiny radioactive spheres into the hepatic artery (**radioembolization**), or by giving chemo directly into the artery just before plugging it up (**chemoembolization**). But it’s not clear that either of these techniques is better than TAE.

This procedure might be done with general anesthesia (where you are in a deep sleep) or with conscious sedation (where you are awake but sleepy and should not feel any pain). Typically, you won't have to stay overnight in the hospital for an embolization procedure.

**Possible side effects of embolization**

Possible complications after embolization include abdominal (belly) pain, fever, nausea, infection in the liver, gallbladder inflammation, and 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 treatment. This risk is higher if a large branch of the hepatic artery is embolized. Serious complications are not common, but they are possible.

**References**


National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines
Targeted Drug Therapy for Gastrointestinal Stromal Tumors

Some drugs can target certain proteins in gastrointestinal stromal tumor (GIST) cells that help them divide and grow. These targeted drugs (sometimes called precision drugs) are often very helpful in treating GISTs. They work differently from standard chemotherapy (chemo) drugs, which are usually not helpful.

The targeted drugs used to treat GISTs are called tyrosine kinase inhibitors (TKIs), because they target proteins that are tyrosine kinases, such as KIT and PDGFRA.

All of these targeted drugs are taken as pills, typically once a day.

Imatinib (Gleevec)

This drug is used to treat most people with GISTs at some point. Tumors can be tested for certain mutations in the KIT and PDGFRA genes before treatment, which can help tell how likely it is that imatinib will be helpful. This drug targets both the KIT and PDGFRA proteins, blocking their ability to help tumor cells grow and divide. In most GISTs, the cells have too much of one of these proteins.

Most GISTs shrink when treated with imatinib. Some other tumors at least stop growing for a time. A small number of tumors are not helped by this treatment.

Imatinib can be helpful in different situations:

- If a GIST has been removed completely by surgery, doctors typically recommend taking imatinib for at least a year afterward (unless the risk of the cancer coming back is low). This is known as adjuvant therapy. Many doctors now recommend at least 3 years of imatinib after surgery for patients who have a higher risk of their
tumors returning (based on the tumor’s size, location, and mitotic rate).
- For larger tumors that may be hard to remove, imatinib may be used first to try to shrink the tumor and make surgery easier. This is known as neoadjuvant therapy. Imatinib is often given again after surgery as well, typically for at least 2 years.
- Imatinib is usually the treatment of choice for advanced GISTs that have spread too far to be removed by surgery. While it’s unlikely to cure these tumors, it can often shrink or slow their growth for several years, helping people live longer and feel better. If the drug stops working and the tumor starts growing again, raising the dose of imatinib may help slow the growth for some time, but higher doses can also have more side effects.

**Side effects of imatinib** can include mild stomach upset, diarrhea, muscle pain, and skin rashes. The stomach upset is lessened if the drug is taken with food. Imatinib can also make people retain fluid. Often this causes some swelling in the face (around the eyes) or in the ankles. The drug rarely can cause more severe problems, such as fluid building up in the lungs or in the abdomen. It can also affect heart function in some people.

One other concern when using this drug to treat large GISTs is that these tumors often have a lot of fragile blood vessels. If imatinib causes the tumor to shrink quickly, it could lead to internal bleeding. For this reason, doctors watch patients carefully when they first start taking this drug.

**Sunitinib (Sutent)**

This drug can be useful in treating GISTs if imatinib is no longer working or if a person can’t take imatinib for some reason.

Sunitinib targets the KIT and PDGFRA proteins, as well as several other proteins that imatinib does not target.

Sunitinib helps some people, usually by shrinking or slowing the growth of the tumor. This may help some people live longer.

Common **side effects of sunitinib** include fatigue, nausea, diarrhea, mouth irritation, and skin and hair color changes. More serious side effects can include high blood pressure, increased risk of bleeding, swelling, heart problems, and serious liver problems.

**Regorafenib (Stivarga)**
Regorafenib can be used to treat advanced GISTs if imatinib and sunitinib stop working, or if a person can’t take these drugs for some reason. This drug targets many proteins, including KIT and PDGFRα.

Regorafenib can slow tumor growth and even shrink some tumors, although it’s not clear if it can help people live longer.

Common side effects of regorafenib include belly pain, diarrhea, feeling tired or weak, mouth or throat irritation, fever, loss of appetite, and weight loss. Less common but more serious side effects can include infections, high blood pressure, heart problems, serious bleeding, trouble with wound healing, holes forming in the wall of the stomach or intestines, severe rashes, and problems with redness, pain, or even blistering of the palms of the hands and soles of the feet (called hand-foot syndrome).

Ripretinib (Qinlock)

Ripretinib is typically used to treat advanced GISTs if other TKIs such as imatinib, sunitinib, and regorafenib are no longer helpful, or if a person can’t take these drugs for some reason. This drug targets many kinase proteins, including KIT and PDGFRα.

Ripretinib can slow tumor growth and even shrink some tumors, although it’s not yet clear if it can help people live longer.

Common side effects of ripretinib can include hair loss, nausea and vomiting, loss of appetite, diarrhea or constipation, feeling tired, and muscle or belly pain. Less common but more serious side effects can include high blood pressure, an increased risk of new skin cancers, heart problems, trouble with wound healing, and problems with redness, pain, or even blistering of the palms of the hands and soles of the feet (called hand-foot syndrome).

Avapritinib (Ayvakit)

This is another TKI that targets PDGFRα and KIT, as well as several other proteins.

Avapritinib is used mainly to treat advanced GISTs whose cells have a change in the PDGFRα gene known as an exon 18 mutation. These cancers typically don’t respond well to treatment with the TKIs above.

Common side effects of avapritinib can include swelling or fluid retention, fatigue, nausea and vomiting, loss of appetite, diarrhea or constipation, increased tears in the eyes, hair color changes, belly pain, rash, and dizziness.
More serious side effects can include bleeding in the brain, as well as central nervous system (CNS) effects, such as:

- Forgetfulness
- Confusion
- Trouble thinking
- Drowsiness
- Trouble sleeping
- Hallucinations
- Changes in mood or behavior

Other tyrosine kinase inhibitors

Several other TKIs are now being studied for use against GISTs as well. While there is limited evidence on how useful they are, some of the TKIs that might be options if those listed above are no longer working include:

- Sorafenib (Nexavar)
- Nilotinib (Tasigna)
- Dasatinib (Sprycel)
- Pazopanib (Votrient)

Because it’s not exactly clear how well these and other TKIs work against GISTs, taking part in a clinical trial1 studying them might be a good option.

More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see Targeted Cancer Therapy2.

To learn about some of the side effects listed here and how to manage them, seeManaging Cancer-related Side Effects3.

Hyperlinks

2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html
Chemotherapy for Gastrointestinal Stromal Tumors

Chemotherapy (chemo) is the use of drugs to treat cancer. Often, these drugs are injected into a vein (IV) or given by mouth. They enter the bloodstream and reach throughout the body, making this treatment potentially useful for cancers that have spread beyond the organ they started in.
Any drug used to treat cancer can be considered chemo, even the targeted therapy drugs like imatinib (Gleevec) that are now commonly used to treat gastrointestinal stromal tumors (GISTs). But the term chemo is generally used to describe certain drugs that work by attacking quickly growing cells anywhere in the body, which includes cancer cells.

Before targeted therapy drugs were found to be helpful in treating GISTs, traditional chemo drugs were often tried. But GISTs rarely shrink in response to these drugs, so traditional chemo is rarely used today. People considering chemo may want to think about taking part in a clinical trial.

**Possible side effects**

Chemo drugs can cause side effects. These depend on the specific drugs used, their doses, and how long they are taken. Common side effects of chemo include:

- Nausea and vomiting
- Loss of appetite
- Mouth sores
- Diarrhea
- Hair loss
- An increased chance of infection (from a shortage of white blood cells)
- Problems with bleeding or bruising (from a shortage of blood platelets)
- Fatigue or shortness of breath (from a shortage of red blood cells)

Along with the risks above, some chemo drugs can cause other side effects.

Ask your health care team what side effects you can expect based on the specific drugs you will get. Be sure to tell your doctor or nurse if you do have side effects, as there are often ways to help with them. For example, drugs can be given to help prevent or reduce nausea and vomiting.

**More information about chemotherapy**

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

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

2. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)

References


Radiation Therapy for Gastrointestinal Stromal Tumors

Radiation therapy is the use of high-energy x-rays (or particles) to kill cancer cells. Radiation is not very helpful in treating gastrointestinal stromal tumors (GISTs), so it is not used often. But sometimes it can be used to relieve symptoms like bone pain.

Before your treatment starts, the radiation team will take careful measurements to find the correct angles for aiming the radiation beams and the proper dose of radiation. This
planning session, called simulation, usually includes getting imaging tests\(^1\) 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. It lasts only a few minutes, although the setup time – getting you into place for treatment – usually takes longer. You might get radiation treatment for several days in a row.

**Possible side effects of radiation**

Depending on where the radiation is aimed, side effects\(^2\) may include:

- Skin changes in areas getting radiation, ranging from redness to blistering and peeling
- Nausea and vomiting
- Diarrhea
- Fatigue
- Low blood counts

Most side effects go away a short while after treatment ends, although fatigue and skin changes may last longer. Talk with your doctor about the possible side effects and the ways to reduce or relieve them.

**More information about radiation therapy**

To learn more about how radiation is used to treat cancer, see Radiation Therapy\(^3\).

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects\(^4\).

**Hyperlinks**

2. [www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html](http://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html)
References


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Typical Treatment Options for Gastrointestinal Stromal Tumors

Treatment for gastrointestinal stromal tumors (GISTs) depends mainly on factors such as:

- If the tumor can be resected\(^1\) (removed) with surgery, which is based on the size of the tumor, where it is, and how far it has spread
- How quickly the tumor is growing (its mitotic rate\(^2\))
- If the tumor cells have certain gene mutations\(^3\)
- The risk of the tumor coming back after treatment

Other factors, such as a person’s age and overall health, can be important as well.
Localized, smaller (resectable) tumors

Most small GISTs need to be treated. But some very small tumors (less than 2 centimeters across) that are not causing any symptoms might never grow enough to cause any problems. One option for such a tumor might be to just watch it carefully, checking it with endoscopy at regular intervals, such as once or twice a year. As long as it is not growing, you might not need further treatment.

**Surgery** is the main treatment for most other small tumors. The need for further treatment after surgery depends on the risk of the GIST coming back.

Tumors that are small and are not growing quickly typically have a low risk of coming back, so often no further treatment is needed.

The risk of a GIST coming back after surgery is higher if:

- The tumor is larger
- It did not start in the stomach
- The cancer cells are dividing quickly (have a high mitotic rate)

If the doctor thinks that the cancer has an intermediate or high risk of coming back based on these factors, adjuvant treatment with the targeted drug imatinib (Gleevec) is typically recommended for at least a year after surgery. For tumors that are highly likely to come back, many doctors now recommend at least 3 years of imatinib.

The doctor will likely test the tumor cells for certain changes in the *KIT* and *PDGFRA* genes before prescribing imatinib. This is because imatinib isn’t likely to be helpful for tumors that don’t have one of these gene changes.

Localized, larger (marginally resectable) tumors

Tumors that are larger or in places that make them harder to remove (resect) completely might require more extensive surgery, which could cause health problems both in the short term and later on. Because of this, surgery is not typically the first treatment.

Treatment with the targeted drug imatinib (Gleevec) is usually done first to try to shrink the tumor. But before starting treatment, it’s important to be sure that the tumor is in fact a GIST, so a biopsy is needed. As part of the testing of the biopsy sample, the tumor cells are typically checked for certain changes in the *KIT* and *PDGFRA* genes. This is
because imatinib isn’t likely to be helpful for tumors that don’t have one of these gene changes. If imatinib is given, it is continued at least until the tumor stops shrinking.

If the tumor shrinks enough, surgery might be done if the doctor thinks it can be removed safely. Imatinib will likely be continued after surgery to help lower the chance that the cancer will come back.

If the tumor doesn’t shrink enough to make surgery possible, imatinib is often continued for as long as it seems to help. If it’s no longer working, sometimes upping the dose can be helpful. If not, or if the side effects are too severe, another targeted drug, sunitinib (Sutent), may be tried instead. If sunitinib is no longer working, regorafenib (Stivarga) may help some people. If this drug is no longer working, ripretinib (Qinlock) may be helpful.

**Tumors that are not removable or have spread to distant sites (unresectable tumors)**

Treatment options for unresectable GISTs depend on why they are unresectable and, if they have spread, how extensive the spread is.

**Surgery** is not typically the first treatment for these tumors, so before starting treatment, it’s important to confirm that the tumor is in fact a GIST with a biopsy.

The **targeted drug** imatinib (Gleevec) is typically the preferred first treatment for most advanced GISTs. (The targeted drug avapritinib (Ayvakit) might be used instead if the cancer cells have certain changes in the PDGFRA gene.) As part of the testing of the biopsy sample, the tumor cells might be checked for certain changes in the KIT and PDGFRA genes. This can give an idea of how likely it is that imatinib (or avapritinib) will be helpful.

If imatinib is used, it is continued for as long as the tumor doesn’t grow (and the side effects are tolerable). If the tumor starts to grow again, it may respond to increasing the dose of imatinib. If not, or if the side effects from imatinib are too severe, a switch to sunitinib (Sutent) may be helpful. If sunitinib is no longer working, regorafenib (Stivarga) may help some people. If regorafenib is no longer helpful, ripretinib (Qinlock) may be an option.

If the tumor shrinks enough with targeted therapy, surgery may then be an option for some people. This might be followed by more targeted therapy if it is still effective.

If the cancer has spread to only 1 or 2 sites in the abdomen (such as the liver), the
doctor may advise removing the main tumor and trying to remove these other tumors as well. If this is the case, be sure to talk with your doctor about what the goals of treatment are (whether it is to try to cure the cancer, to help you live longer, or to prevent or reduce symptoms), as well as its possible benefits and risks.

Other options to treat cancers that have spread to the liver include ablation and embolization to try to destroy these tumors.

Cancers that are no longer responding to the targeted drugs discussed above can be hard to treat. Some doctors may recommend trying other targeted drugs, such as sorafenib (Nexavar), dasatinib (Sprycel), nilotinib (Tasigna), or pazopanib (Votrient), although it’s not yet clear how helpful these drugs are.

Standard chemotherapy drugs are usually not very effective. Taking part in a clinical trial of a newer treatment may be a good option for some people.

**Recurrent tumors**

When a cancer comes back after treatment, it is called a recurrence. If the cancer comes back (recurs) in or near the place it started, it is called a local recurrence. If it recurs at other sites (like the lungs or liver), it is called a distant recurrence. Treatment options for recurrent GISTs depend on the location and extent of the recurrence.

For most recurrences, treatment with the targeted drug imatinib (Gleevec) is often the first option to try to shrink any tumors, as long as it is still effective and the patient can tolerate taking it. If the starting dose of imatinib doesn’t work, the dose can be increased. Another option is to try other targeted drugs, such as sunitinib (Sutent), regorafenib (Stivarga), or ripretinib (Qinlock).

If the cancer comes back as one or more well-defined tumors, removing or destroying the tumor may be an option. Doctors are still not certain if removing GISTs that come back after treatment helps people live longer, so it’s important to discuss the risks and benefits of this treatment with your doctor and family.

Radiation therapy might also be an option to help treat symptoms such as pain, especially in tumors in the bones.

If the targeted drugs mentioned above are no longer helpful, some doctors may recommend trying other targeted drugs, such as sorafenib (Nexavar), dasatinib (Sprycel), nilotinib (Tasigna), or pazopanib (Votrient), although it’s not yet clear how helpful these drugs are.
Because these cancers are often hard to treat, you may want to consider taking part in clinical trials\(^9\) of newer treatments as well.

**Hyperlinks**


**References**


Morgan J, Raut CP. Local treatment for gastrointestinal stromal tumors, leiomyomas,


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The American Cancer Society medical and editorial content team (www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

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