

[Sarcoma, Soft Tissue - Treatment Options](#) [1]

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ON THIS PAGE: You will learn about the different ways doctors use to treat people with this type of cancer. To see other pages, use the menu.

This section tells you the treatments that are the standard of care for this type of cancer. “Standard of care” means the best treatments known. When making treatment plan decisions, patients are also encouraged to consider clinical trials as an option. A clinical trial is a research study that tests a new approach to treatment. Doctors want to learn if it is safe, effective, and possibly better than the standard treatment. Clinical trials can test a new drug, a new combination of standard treatments, or new doses of standard drugs or other treatments. Your doctor can help you consider all your treatment options. To learn more about clinical trials, see the [About Clinical Trials](#) [3] and [Latest Research](#) [4] sections.

Treatment overview

In cancer care, different types of doctors often work together to create a patient’s overall treatment plan that combines different types of treatments. This is called a [multidisciplinary team](#) [5]. Cancer care teams also include a variety of other health care professionals, including physician assistants, oncology nurses, social workers, pharmacists, counselors, dietitians, and others.

Descriptions of the most common treatment options for sarcoma are listed below. Treatment options and recommendations depend on several factors, including the type, stage, and grade of sarcoma, possible side effects, and the patient’s preferences and overall health. Your care plan may also include treatment for symptoms and side effects, an important part of cancer care. Take time to learn about all of your treatment options and be sure to ask questions about things

that are unclear. Also, talk about the goals of each treatment with your doctor and what you can expect while receiving the treatment. Learn more about [making treatment decisions](#) [6].

Surgery

Surgery is the removal of the tumor and some surrounding healthy tissue during an operation. Before surgery, it's important to have a biopsy to confirm the diagnosis (see [Diagnosis](#) [7]). After a biopsy, surgery is typically the first and main treatment for soft-tissue sarcoma that is small and located in only one area. Surgical oncologists and orthopedic oncologists are doctors who specialize in treating STS using surgery.

The surgeon's goal is to remove the tumor and enough normal tissue surrounding it to obtain a clean margin around the tumor. A "clean margin" means there are no tumor cells visible at the borders of the surgical specimen. This is currently the best method available to ensure that there are no tumor cells left in the area from which the tumor was removed. Small low-grade sarcomas can usually be effectively removed by surgery alone. Those that are high grade and larger than 2 inches (5 cm) are often treated with a combination of surgery and radiation therapy. Radiation therapy or chemotherapy may be used before surgery to shrink the tumor and make removal easier. They also may be used during and after surgery to destroy any remaining cancer cells. Learn more about the basics of [cancer surgery](#) [8].

Rarely, for patients with a very large tumor involving the major nerves and blood vessels of the arm or leg, surgical removal of the limb, called amputation, is necessary to control the tumor. This can also be necessary if the tumor grows back in the arm or leg after surgery, radiation therapy, and/or chemotherapy have been completed. It's important to remember that the operation that results in the most useful and strongest limb may be different from the one that gives the most normal appearance. If amputation is needed, [rehabilitation](#) [9], including physical therapy, can help maximize physical function. Rehabilitation can also help a person cope with the social and emotional effects of losing a limb.

Talk with your surgeon about what to expect with the specific type of surgery you'll be having, including the recovery period.

External-beam radiation therapy

Radiation therapy is the use of high-energy x-rays or other particles to destroy cancer cells. A doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. Since sarcoma is rare, it is very important to talk with a radiation oncologist who has experience treating sarcoma.

The most common type of radiation treatment is called external-beam radiation therapy, which is radiation given from a machine outside the body. When radiation treatment is given using implants, it is called internal radiation therapy or brachytherapy.

A radiation therapy regimen (schedule) usually consists of a specific number of treatments given

over a set period of time.

Radiation therapy may be done before surgery to shrink the tumor so that it may be more easily removed. Or it may be done after surgery to remove any cancer cells left behind. Radiation treatment may make it possible to do less surgery, often preserving critical structures in the arm or leg if the sarcoma is located in one of those places.

Radiation therapy can also damage normal cells, but because it is focused around the tumor, side effects are usually limited to those areas.

Newer radiation techniques, including proton therapy (see [Latest Research](#) [10]), may help control sarcoma and cause fewer short-term and long-term side effects.

The way external-beam radiation is used has changed over the past 20 years. It is now possible to give many small beams of radiation that turn on and off as the radiation machine rotates around the body. This is called intensity modulated radiation therapy (IMRT) and is now typically used for sarcomas. IMRT focuses more radiation on the tumor site and less on the normal tissues. As a result, there are fewer side effects than there were in the past.

Side effects from radiation therapy may include fatigue, mild skin reactions, upset stomach, and loose bowel movements. In the short term, radiation can cause injury to the skin that looks like a sunburn and is usually treated with creams that keep the skin soft and helps relieve discomfort. Radiation therapy can also affect wound healing. In the long term, radiation can cause scarring that limits the function of an arm or a leg. In rare cases, radiation can cause a sarcoma or other cancer. In the unlikely event that this happens, it takes an average of about 10 years after radiation for a second cancer to develop. Each person is encouraged to talk with his or her doctor about the possible risks and benefits of a specific treatment such as radiation therapy. Most side effects go away soon after treatment is finished.

Brachytherapy

Brachytherapy is the insertion of radiation seeds through thin tubes called catheters directly into the affected area of the body. Brachytherapy usually requires specialized skills and special training. It is only used in certain hospitals. The setup for brachytherapy usually starts in the operating room, where the catheters are placed. Tiny seeds of radioactive material are then slid into the tubes on wires for a period of time. At the end of the treatment, which lasts several days, both the radiation seeds and catheters are removed. People usually have to stay in the hospital to make sure the seeds do not move and incorrectly irradiate an area of the body.

In some hospitals, people can receive brachytherapy as an outpatient. Instead of keeping the radiation seeds in place for a week or so, high-dose radiation seeds can be placed in the catheters using specialized equipment. The seeds are placed near the treatment site for about 15 minutes and then removed. This is done once or twice a day. This process may allow some patients to go home between radiation treatments.

Intraoperative radiation

In some hospitals, part of the planned radiation therapy can be given during surgery. This approach can decrease the need to irradiate normal tissue with external-beam radiation or with brachytherapy.

Learn more about [radiation therapy](#) [11].

Chemotherapy

Chemotherapy is the use of drugs to destroy cancer cells, usually by stopping the cancer's ability to grow and divide. Chemotherapy is given by a medical oncologist, a doctor who specializes in treating cancer with medication.

Systemic chemotherapy gets into the bloodstream to reach cancer cells throughout the body. Common ways to give chemotherapy include an intravenous (IV) tube placed into a vein using a needle or in a pill or capsule that is swallowed (orally).

A chemotherapy regimen (schedule) usually consists of a specific number of cycles given over a set period of time. A patient may receive 1 drug at a time or combinations of different drugs at the same time. Chemotherapy for sarcoma can usually be given as an outpatient treatment.

Different drugs are used to treat different types and subtypes of sarcoma. Some types of chemotherapy that might be used alone or in combination for STS include:

- Dacarbazine (DTIC-Dome)
- Docetaxel (Taxotere)
- Doxorubicin (Adriamycin)
- Epirubicin (Ellence)
- Gemcitabine (Gemzar)
- Ifosfamide (Cyfos, Ifex, Ifosfamidum)
- Liposomal doxorubicin (multiple brands)

- Temozolomide (Methazolastone, Temodar)
- Trabectedin (Yondelis)
- Eribulin (Halaven)

In some cases, a specific drug or drugs are used for a particular type of sarcoma. Since there are over 50 types of STS, it is not possible to list them all here. Here are 2 examples:

For [rhabdomyosarcoma](#) [12] and [Ewing sarcoma](#) [13] of soft tissue or bone:

- Cyclophosphamide (Cytoxan, Clafen, Neosar)
- Dactinomycin (Cosmegen)
- Etoposide (VePesid, Toposar)
- Irinotecan (Camptosar)
- Topotecan (Hycamtin, Brakiva)
- Vincristine (Oncovin, Vincasar)

For angiosarcoma:

- Bevacizumab (Avastin)
- Docetaxel (Docefrez, Taxotere)
- Paclitaxel (Taxol)
- Pazopanib (Votrient) or related oral medicines

Chemotherapy is often used when a sarcoma has already spread. It may be given alone or in combination with surgery, radiation therapy, or both.

For example, certain types of sarcoma may be treated with chemotherapy before surgery to make the tumor easier to remove. Chemotherapy given before surgery may be called by different names, including preoperative chemotherapy, neoadjuvant chemotherapy, or induction chemotherapy.

If a patient has not received chemotherapy before surgery, chemotherapy may be given to destroy any microscopic tumor cells that remain after a patient has recovered from surgery. Chemotherapy given after surgery is called adjuvant chemotherapy or postoperative chemotherapy.

The side effects of chemotherapy depend on the individual and the dose used, but they can include fatigue, risk of infection, nausea and vomiting, hair loss, loss of appetite, and diarrhea. These side effects usually go away once treatment is finished.

Learn more about the basics of [chemotherapy](#) [14] and [preparing for treatment](#) [15]. The medications used to treat cancer are continually being evaluated. Talking with your doctor is often the best way to learn about the medications prescribed for you, their purpose, and their potential side effects or interactions with other medications. Learn more about your prescriptions by using [searchable drug databases](#) [16].

Targeted therapy

Targeted therapy is a treatment that targets the cancer's specific genes, proteins, or the tissue environment that contributes to cancer growth and survival, usually by blocking the action of proteins in cells called kinases. This type of treatment blocks the growth and spread of cancer cells while limiting damage to healthy cells.

Recent studies show that not all tumors have the same targets. To find the most effective treatment, your doctor may run tests to identify the genes, proteins, and other factors in your tumor. This helps doctors better match each patient with the most effective treatment whenever possible. In addition, many research studies are taking place now to find out more about specific molecular targets and new treatments directed at them. Learn more about the basics of [targeted treatments](#) [17].

Imatinib (Gleevec) is a type of targeted therapy called a tyrosine kinase inhibitor. It is the standard first-line treatment for [GIST](#) [18] worldwide. Two other targeted drugs, sunitinib (Sutent) and regorafenib (Stivarga), are approved for the treatment of GIST when imatinib doesn't work. Imatinib has also been approved for use for patients with GIST after initial surgery to try to prevent recurrence in patients who might have a high risk of recurrence. In addition, imatinib is approved for the treatment of patients with advanced-stage dermatofibrosarcoma protuberans (DFSP).

Getting care for symptoms and side effects

Cancer and its treatment often cause side effects. In addition to treatment to slow, stop, or eliminate the cancer, an important part of cancer care is relieving a person's symptoms and side effects. This approach is called palliative or supportive care, and it includes supporting the patient with his or her physical, emotional, and social needs.

Palliative care is any treatment that focuses on reducing symptoms, improving quality of life, and supporting patients and their families. Any person, regardless of age or type and stage of cancer, may receive palliative care. It works best when palliative care is started as early as needed in the cancer treatment process. People often receive treatment for the cancer and treatment to ease side effects at the same time. In fact, patients who receive both often have less severe symptoms, better quality of life, and report they are more satisfied with treatment.

Palliative treatments vary widely and often include medication, nutritional changes, relaxation techniques, emotional support, and other therapies. You may also receive palliative treatments similar to those meant to eliminate the cancer, such as chemotherapy, surgery, or radiation therapy. Talk with your doctor about the goals of each treatment in the treatment plan.

Before treatment begins, talk with your health care team about the possible side effects of your specific treatment plan and palliative care options. And during and after treatment, be sure to tell your doctor or another health care team member if you are experiencing a problem, so it can be addressed as quickly as possible. Learn more about [palliative care](#) [19].

Metastatic sarcoma

If cancer spreads to another part in the body from where it started, doctors call it metastatic cancer. If this happens, it is a good idea to talk with doctors who have experience in treating it. Doctors can have different opinions about the best standard treatment plan. Also, clinical trials might be an option. Learn more about getting a [second opinion](#) [20] before starting treatment, so you are comfortable with your chosen treatment plan.

Your treatment plan may include a combination of surgery alone, surgery plus radiation therapy, surgery plus chemotherapy, or chemotherapy alone. Rarely, when the tumor is not growing, a "watch and wait" approach, also called active surveillance, may be used. This means that the patient is closely monitored and active treatment begins only if the tumor begins to grow. Palliative care will also be important to help relieve symptoms and side effects.

For most patients, a diagnosis of metastatic cancer is very stressful and, at times, difficult to bear. Patients and their families are encouraged to talk about how they are feeling with doctors, nurses, social workers, or other members of the health care team. It may also be helpful to talk with other patients, possibly through a support group.

Remission and the chance of recurrence

A remission is when cancer cannot be detected in the body and there are no symptoms. This may also be called having “no evidence of disease” or NED.

A remission may be temporary or permanent. This uncertainty causes many people to worry that the cancer will come back. While many remissions are permanent, it's important to talk with your doctor about the possibility of the cancer returning. Understanding your risk of recurrence and the treatment options may help you feel more prepared if the cancer does return. Learn more about [coping with the fear of recurrence](#) [21].

If the cancer does return after the original treatment, it is called recurrent cancer. It may come back in the same place (called a local recurrence), nearby (regional recurrence), or in another place (distant recurrence). If the sarcoma was originally in the arm or leg, the recurrence most commonly occurs in the lungs. Patients treated for sarcoma of the abdomen or torso are at risk for local, regional, or distant recurrence.

When this occurs, a cycle of testing will begin again to learn as much as possible about the recurrence. After testing is done, you and your doctor will talk about your treatment options. Often the treatment plan will include the treatments described above, such as surgery, chemotherapy, and radiation therapy, but they may be used in a different combination or given at a different pace. Your doctor may also suggest clinical trials that are studying new ways to treat this type of recurrent cancer. Whichever treatment plan you choose, palliative care will be important for relieving symptoms and side effects.

Local recurrences often can be successfully treated with additional surgery plus radiation therapy, but the risks of side effects from these treatments tends to increase. Treatment for a distant recurrence is most successful for patients who have a small number of tumors that have spread to the lung that can be completely removed surgically, destroyed with radiofrequency ablation, or destroyed with high-dose radiotherapy (also known as stereotactic body radiotherapy, SBRT, or gamma-knife radiotherapy):

- Radiofrequency ablation is a technique where a needle is inserted into the tumor to destroy the cancer with an electrical current. This burns the tumor from the inside out.
- SBRT is the use of pinpointed radiation at very high doses over a few treatments to attack a specific small area of tumor. This is a useful technique because it uses fewer treatments and can be more precise than external-beam radiation therapy.

People with recurrent cancer often experience emotions such as disbelief or fear. Patients are encouraged to talk with their health care team about these feelings and ask about support services to help them cope. Learn more about [dealing with cancer recurrence](#) [22].

If treatment fails

Recovery from cancer is not always possible. If the cancer cannot be cured, it can often still be controlled, at least for a period of time. It is important to understand that patients can live with cancer in their body as long as it does not affect the function of a major organ. Therefore, the goal of treatment is to control the cancer and preserve organ function.

If the cancer can no longer be controlled, it is called end-stage or terminal cancer. This diagnosis is stressful, and advanced cancer is difficult to discuss for many people. However, it is important to have open and honest conversations with your doctor and health care team to express your feelings, preferences, and concerns. The health care team is there to help, and many team members have special skills, experience, and knowledge to support patients and their families. Making sure a person is physically comfortable and free from pain is extremely important.

Patients who have advanced cancer and who are expected to live fewer than 6 months may want to consider a type of palliative care called hospice care. Hospice care is designed to provide the best possible quality of life for people who are near the end of life. You and your family are encouraged to think about where you would be most comfortable: at home, in the hospital, or in a hospice environment. Nursing care and special equipment can make staying at home a workable alternative for many families. Learn more about [advanced cancer care planning](#) [23].

After the death of a loved one, many people need support to help cope with the loss. Learn more about [grief and loss](#) [24].

The [next section in this guide is About Clinical Trials](#) [3]. It offers more information about research studies that are focused on finding better ways to care for people with cancer. Or, use the menu to choose another section to continue reading this guide.

Links

[1] <http://www.cancer.net/es/node/19611>

[2] <http://www.cancer.net/es/node/51>

[3] <http://www.cancer.net/node/19612>

[4] <http://www.cancer.net/cancer-types/sarcoma-soft-tissue/latest-research>

[5] <http://www.cancer.net/node/25356>

[6] <http://www.cancer.net/navigating-cancer-care/how-cancer-treated/making-decisions-about-cancer-treatment>

[7] <http://www.cancer.net/node/19609>

[8] <http://www.cancer.net/node/30689>

[9] <http://www.cancer.net/node/25397>

[10] <http://www.cancer.net/node/19615>

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