

[Home](#) > [Types of Cancer](#) > [Osteosarcoma - Childhood](#) > [Osteosarcoma - Childhood - Treatment Options](#)

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[Osteosarcoma - Childhood - Treatment Options](#) [1]

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ON THIS PAGE: You will learn about the different ways doctors use to treat children and teens with this type of cancer. To see other pages, use the menu on the side of your screen.

In general, cancer in children is uncommon, so it can be hard for doctors to plan treatments unless they know what has been most effective in other children. That is why more than 60% of children with cancer are treated as part of a clinical trial. [Clinical trials](#) [3] are research studies that compare the standard treatments (the best treatments available) with newer approaches to treatments that may be more effective. Clinical trials may test such approaches as a new drug, a new combination of standard treatments, or new doses of current therapies. Studying new treatments involves careful monitoring using scientific methods, and all participants are followed closely to track their health and progress.

To take advantage of these newer treatments, all children with cancer should be treated at a specialized cancer center. Doctors at these centers have extensive experience in treating children with cancer and have access to the latest research. A doctor who specializes in treating children with cancer is called a pediatric oncologist.

In many cases, a team of doctors works with a child and the family to provide care; this is called a [multidisciplinary team](#) [4]. Pediatric cancer centers often have extra support services for children and their families, such as child life specialists, nutritionists, physical and occupational therapists, social workers, and counselors. Special activities and programs to help your child and family cope may also be available.

Descriptions of the most common treatment options for osteosarcoma are listed below. The three most common types of treatment for osteosarcoma are surgery, chemotherapy, and

radiation therapy.

Treatment options and recommendations depend on several factors, including the type and stage of cancer, possible side effects, the child's overall health, and the child's and family's preferences. Your child's care plan may also include treatment for symptoms and side effects, an important part of cancer care.

Take time to learn about your child's treatment options and be sure to ask questions about things that are unclear. Also, talk about the goals of each treatment with your child's doctor and what your child can expect while receiving the treatment. [Learn more about making treatment decisions](#) [5].

Surgery

Surgery is the removal of the tumor and some surrounding tissue during an operation. An orthopedic oncologist is a doctor who specializes in surgery when cancer affects the bone.

Chemotherapy and occasionally radiation therapy may be used with surgery, particularly with limb-sparing surgery. In limb-sparing surgery, doctors use surgical techniques to help the child keep the use of the arm or leg and to give the limb a more normal appearance. Surgical techniques include bone grafting and reconstructive surgery.

Limb-sparing surgery is used whenever possible. Sometimes, the operation that results in the most useful and strongest limb is different from the one that gives the most normal appearance. Learn more about [the basics of cancer surgery](#) [6].

Occasionally, doctors will need to remove a limb to ensure that the entire tumor has been eliminated. This is called amputation. If amputation is needed, rehabilitation can help the child maximize his or her physical functioning. Rehabilitation can also help a child cope with the social and emotional effects of losing a limb. Learn more about [rehabilitation](#) [7].

Chemotherapy

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

Systemic chemotherapy gets to the bloodstream to reach tumor 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 that is swallowed (orally). Chemotherapy for osteosarcoma is usually given intravenously. Occasionally, medications are taken by mouth or injected under the skin. This may be done to limit the side effects of treatment.

A chemotherapy regimen (schedule) usually consists of a specific number of cycles given over a set period of time. Your child may receive one drug at a time or a combination of different drugs

at the same time.

Chemotherapy is often given before surgery to reduce the tumor size and avoid amputation of the arm or leg. Also, it is almost always given after surgery to destroy any tumor cells that may still be in the body.

The side effects of chemotherapy depend on the individual and the dose used. They can include fatigue, risk of infection, nausea and vomiting, hair loss, loss of appetite, and diarrhea. The health care team will manage these immediate side effects during treatment. And these side effects usually go away once treatment is finished. Other side effects may continue after treatment, so be sure to let them know of new side effects or a change in side effects. These may include decreased strength of the heart muscle, hearing loss, or decreased kidney function. The severity of the side effects depends on the type of drug given and the length of treatment. Learn more about long-term side effects in the [Follow-Up Care](#) [8] section.

Learn more about [chemotherapy](#) [9] and [preparing for treatment](#) [10]. The medications used to treat cancer are continually being evaluated. Talking with your child's doctor is often the best way to learn about the medications prescribed for your child, their purpose, and their potential side effects or interactions with other medications. Learn more about your child's prescriptions by using [searchable drug databases](#) [11].

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. The most common type of radiation treatment for osteosarcoma is called external-beam radiation therapy. This is radiation therapy given from a machine outside the body. A radiation therapy regimen usually consists of a specific number of treatments given over a set period of time.

Radiation therapy for osteosarcoma is uncommon. It is only used when trying to avoid amputating an arm or leg. This is because osteosarcoma is relatively resistant to radiation.

Surgery and chemotherapy are the most common types of treatment for osteosarcoma. However, this situation may change if researchers find ways to deliver higher doses of radiation safely to any part of body.

Side effects from radiation therapy may include fatigue, mild skin reactions, upset stomach, and loose bowel movements. Most side effects go away soon after treatment is finished. Learn more about [the basics of radiation therapy](#) [12].

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. 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, and other therapies. Your child may also receive palliative treatments similar to those meant to eliminate the cancer, such as chemotherapy, surgery, or radiation therapy. Talk with your child's doctor about the goals of each treatment in the treatment plan.

Before treatment begins, talk with your child's health care team about the possible side effects of the recommended treatment plan and palliative care options. And during and after treatment, be sure to tell your child's doctor or another health care team member if your child experiences a problem so it can be addressed as quickly as possible. Learn more about [the basics of palliative care](#) [13].

Remission and the chance of recurrence

A remission is when cancer cannot be detected in the body. This may also be called having "no evidence of disease" or being "NED."

A remission may be temporary or permanent. While many remissions are permanent, it is important to talk with your doctor about the possibility of the cancer returning. Understanding your child's risk of recurrence and the treatment options may help you and your child feel more prepared if the cancer does return. Learn more about [coping with the fear of recurrence](#) [14].

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).

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 child's doctor will talk about the treatment options. Often the treatment plan will include the treatments described above, such as surgery and chemotherapy. However, these treatments may be used in a different combination or given at a different pace. Your child's doctor may also suggest clinical trials that are studying new ways to treat this type of recurrent cancer.

Treatment for recurrent osteosarcoma depends on three factors:

- Where the cancer recurred
- The type of treatment your child received for the original tumor
- The overall health of your child

If the disease recurs in the lungs, surgery is often used to remove the nodules, or tumors, in the lung. In these situations, there is usually a better outcome for children who have the lung nodules completely removed. This is especially true if the disease has recurred after the initial treatment has been completed.

The doctor may use chemotherapy or other approaches, as well. If the cancer comes back elsewhere in the body, the doctor may use a combination of drugs. If the cancer has spread to another bone or to a small number of other bones, the doctor may perform surgery, particularly if chemotherapy has worked well.

When cancer recurs, patients and their families often experience emotions such as disbelief or fear. Families 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](#) [15].

If treatment fails

Although treatment is successful for the majority of children with cancer, sometimes it is not. If a child's cancer cannot be cured or controlled, this is called advanced or terminal cancer. This diagnosis is stressful, and it may be difficult to discuss. However, it is important to have open and honest conversations with your child's doctor and health care team to express your family's feelings, preferences, and concerns. The health care team is there to help. Many team members have special skills, experience, and knowledge to support patients and their families.

Parents or guardians are encouraged to think about where the child would be most comfortable. This could be at home, in a home-like setting elsewhere, in the hospital, or in a hospice environment.

Hospice care is a type of palliative care for people who are expected to live less than 6 months. It is designed to provide the best possible quality of life for people who are near the end of life. Most often, this care is provided in the home. Nursing care and special equipment can make staying at home a workable alternative for many families.

Some children and teens may be happier if they can arrange to attend school part-time or keep up other activities and social connections. The child's health care team can help parents or guardians decide on an appropriate level of activity.

Making sure a child is physically comfortable and free from pain is extremely important as part of end-of-life care. Learn more about [caring for a terminally ill child](#) [16] and [advanced cancer care planning](#) [17].

The death of a child is an enormous tragedy, and families may need support to help them cope with the loss. Pediatric cancer centers often have professional staff and support groups to help with the process of grieving. Learn more on [grieving the loss of a child](#) [18].

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

Links

- [1] <http://www.cancer.net/cancer-types/osteosarcoma-childhood/treatment-options>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/19475>
- [4] <http://www.cancer.net/node/25356>
- [5] <http://www.cancer.net/node/24582>
- [6] <http://www.cancer.net/node/24720>
- [7] <http://www.cancer.net/node/25397>
- [8] <http://www.cancer.net/node/19477>
- [9] <http://www.cancer.net/node/24723>
- [10] <http://www.cancer.net/node/24473>
- [11] <http://www.cancer.net/node/25369>
- [12] <http://www.cancer.net/node/24728>
- [13] <http://www.cancer.net/node/25282>
- [14] <http://www.cancer.net/node/25241>
- [15] <http://www.cancer.net/node/25042>
- [16] <http://www.cancer.net/node/25280>
- [17] <http://www.cancer.net/node/25113>
- [18] <http://www.cancer.net/node/25288>