

[Osteosarcoma - Childhood - Latest Research](#) [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 11/2015

ON THIS PAGE: You will read about the scientific research being done now to learn more about this type of cancer and how to treat it. To see other pages, use the menu on the side of your screen.

Doctors are working to learn more about osteosarcoma, how to best treat it, and how to provide the best care to children and teens diagnosed with this disease. The following areas of research may include new options for patients through [clinical trials](#) [3]. Always talk with your child's doctor about the diagnostic and treatment options best for your child.

- **Improved detection.** Two types of imaging tests are being studied that may improve the detection of metastases: total body MRI and positron emission tomography (PET) scanning. These tests are described in the [Diagnosis](#) [4] section. These tests can suggest the presence of metastatic disease. However, other tests would be needed to confirm this suspicion. Specialists familiar with using these tests must interpret the results of the images. A biopsy may also be needed.
- **Supportive care.** Clinical trials are underway to find better ways of reducing symptoms and side effects of current osteosarcoma treatments in order to improve patients' comfort and quality of life.
- **Improved treatment.** In several studies, researchers are looking at adding different drugs to standard treatment that may improve the treatment's success without increasing the side effects.

- As part of the Children's Oncology Group AOST 0331 study, pegylated interferon alpha (multiple brand names) was added after 8 months of chemotherapy. This study was conducted with patients who have localized osteosarcoma or metastases to the lungs or bones that can be surgically removed and whose tumor was almost completely eliminated by the initial 10 to 12 weeks of chemotherapy treatment. The preliminary results of this study showed that the addition of pegylated interferon alpha caused no significant improvements compared with chemotherapy alone. More information will become available as patients are followed for a longer time.
- As part of the same recent study (AOST 0331), etoposide (Toposar, VePesid,) and ifosfamide (Ifex) were added to treatment after surgery for a total of 10 months of treatment instead of the standard 8 months for patients with osteosarcoma that did not respond as well to initial treatment. According to the results, the additional therapy caused more side effects and did not improve the outcome of treatment. Therefore, the more intensive chemotherapy is not recommended. The Children's Oncology Group considers the combination of cisplatin, doxorubicin, and high-dose methotrexate (multiple brand names) to be the standard treatment. Other combination therapies are similarly effective, but none of them is better.
- A study for patients with initially metastatic disease has also recently been completed. It included a bone-stabilizing drug called zoledronic acid (Zometa) added to standard chemotherapy. It showed that the combination did not increase general side effects, which was the goal of the study. A French group studied whether the addition of zoledronic acid to chemotherapy for newly diagnosed patients with osteosarcoma would improve the outcome of treatment. Half of the patients received a standard chemotherapy treatment and surgery. The other half received zoledronic acid, in addition to the standard treatment. No additional improvements were seen in the group who received zoledronic acid.
- Another drug that is currently being tested is the immunotherapy mifamurtide (liposomal muramyl tripeptide phosphatidyl ethanolamine [L-MTP-PE] or MEPACT). [Immunotherapy](#) [5], also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer. Mifamurtide is currently licensed in Europe by the European Medicines Association for the treatment of localized osteosarcoma that can be removed with surgery. However, it has not been approved by the FDA because the agency feels more research is needed to prove the drug's effectiveness.

For information about these and other studies, visit the [Children's Oncology Group website](#) [6] or the [U.S. National Institutes of Health website](#) [7]. There are clinical trials using new drugs for patients with recurrent osteosarcoma. These studies include cases in which cancer has come back a first, second, or subsequent time; cases of local or distant recurrence; and cases in which

the recurrence is located in the lungs, other bones, or both.

Talk with your child's doctor for more information about clinical trials. Your doctor can provide additional details concerning the availability of these diagnostic tests or treatments or others that are being studied. Also, your doctor can provide details on whether they are appropriate for your child.

Looking for More about the Latest Research?

If you would like additional information about the latest areas of research regarding osteosarcoma, explore these related items that will take you outside of this guide:

- To find clinical trials specific to your diagnosis, talk with your child's doctor or [search online clinical trial databases now](#) [8].
- Visit ASCO's [CancerProgress.Net](#) [9] website to learn more about the historical pace of research for Childhood Cancers (called Pediatric Cancers on this website). Please note this link takes you to a separate ASCO website.

The [next section in this guide is Coping with Side Effects](#) [10], and it offers some guidance in how to cope with the physical, emotional, and social changes that cancer and its treatment can bring. 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/latest-research>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/19475>

[4] <http://www.cancer.net/node/19472>

[5] <http://www.cancer.net/node/24726>

[6] <http://www.childrensoncologygroup.org/>

[7] <http://www.clinicaltrials.gov/>

[8] <http://www.cancer.net/node/24878>

[9] <http://www.cancerprogress.net/timeline/major-milestones-against-cancer>

[10] <http://www.cancer.net/node/19476>