

Osteosarcoma - Childhood - Latest Research [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 08/2014

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, which are described in the [Diagnosis](#) [4] section. These tests can suggest the presence of metastatic disease, although other tests will 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 was added after eight months of chemotherapy for patients with 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 longer periods of time.

As part of a recent study, etoposide (VePesid, Toposar) and ifosfamide (Ifex) were added to treatment after surgery for a total of ten months of treatment instead of the standard eight 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. There are other combination therapies that are similarly effective, but none of them is superior.

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, and the other half received zoledronic acid as well. 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 U.S. Food and Drug Administration 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 \[6\]](#). There are clinical trials using new drugs for patients with recurrent osteosarcoma—whether the cancer has come back a first, second, or subsequent time; whether the recurrence is local or distant; and whether 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 \[7\]](#).
- Visit ASCO's [CancerProgress.Net \[8\]](#) 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 addresses how to cope with the symptoms of the disease or the side effects of its treatment. Use the menu on the side of your screen to select [Coping with Side Effects](#), or you can select 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.cancer.net/node/24878>
- [8] <http://www.cancerprogress.net/timeline/major-milestones-against-cancer>