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[Bone Cancer - Latest Research](#) [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 05/2016

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.

Doctors are working to learn more about bone cancer, ways to prevent it, how to best treat it, and how to provide the best care to people diagnosed with this disease. The following areas of research may include new options for patients through clinical trials. Always talk with your doctor about the diagnostic and treatment options best for you.

- **Immunotherapy.** Immunotherapy, also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer. Mifamurtide (Mepact) is a non-specific immune system stimulator approved as a bone cancer treatment in some countries but not in the United States.

Mifamurtide is not the only type of immunotherapy. Immunotherapy comes in many forms. There has been much recent excitement in the cancer research field about immune checkpoint inhibitors. These drugs are monoclonal antibodies (proteins) that block a specific molecule, which then takes the brakes off the immune system and allow it to fight the cancer cells. The molecules that are blocked have names such as CTLA4, PD1, OX40, LAG3, and TIM3. They have proved helpful in many cancers and in research studies for treating sarcomas.

[Vaccines](#) [3] against specific sarcoma proteins or other molecules are also being studied, often in addition to immune checkpoint inhibitors.

Learn more about the basics of [immunotherapy](#) [4].

- **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. This type of treatment blocks the growth and spread of cancer cells with greater specificity than regular chemotherapy, which damages the DNA of cancer cells and normal cells alike. As a result, targeted therapy helps limit damage to healthy cells. For example, PARP (poly ADP-ribose polymerase) inhibitors are 1 type of targeted therapy being studied in Ewing sarcoma. Learn more about [targeted treatments](#) [5].
- **Myeloablative therapy.** A supplement to the treatment options for Ewing sarcoma is known as “myeloablative therapy with stem cell support.” Myeloablative therapy is an intense regimen of very high doses of chemotherapy. It aims to destroy all cells that are dividing rapidly. This includes cancer cells but also some healthy cells. Stem cells may be given to the patient after myeloablative therapy to renew the blood cells more rapidly. Stem cells are cells that create all other types of cells in the body, in this case cells that will help new blood cells be made faster. Stem cells are typically taken from the bone marrow or blood of the patient or a blood relative before myeloablative therapy.
- **Intraoperative radiation therapy.** Clinical trials are evaluating the usefulness of radiation therapy given inside the body during surgery for some Ewing sarcoma tumors. This is called intraoperative radiation therapy or internal radiation therapy. Other techniques are being used when bone cancer recurs at a distant, or metastatic, location in the body. These include radiofrequency ablation (RFA) and stereotactic body radiotherapy (SBRT), which uses a small number of very focused, very intense radiation treatments to control or destroy a small area of tumor.
- **Palliative care.** Clinical trials are underway to find better ways of reducing symptoms and side effects of current bone cancer treatments in order to improve patients’ comfort and quality of life.

Looking for More About the Latest Research?

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

- To find clinical trials specific to your diagnosis, talk with your doctor or [search online clinical trial databases now](#) [6].
- Visit the website of the [Conquer Cancer Foundation](#) [7] to find out how to help support research for every cancer type. Please note that this link takes you to a separate ASCO website.

The [next section in this guide is Coping with Treatment](#) [8]. 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 to choose another section to continue reading this guide.

Links

[1] <http://www.cancer.net/cancer-types/bone-cancer/latest-research>

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

[3] <http://www.cancer.net/node/24721>

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

[5] <http://www.cancer.net/node/24729>

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

[7] <https://www.conquercancerfoundation.org/research-results>

[8] <http://www.cancer.net/node/18543>