

Orthopedic Cancer

Orthopedic cancers are cancers that affect the bones. These are most often cancers that are secondary, meaning that the cancer starts elsewhere in the body such as in the breast, lung, or prostate, then spreads or metastasizes to the bones. Blood cancers such as multiple myeloma or lymphoma may arise in the bone marrow and also affect the bones. Primary bone tumors include sarcomas which usually begin in the limbs and may originate from bone, muscle, fat, blood vessels, connective tissues, deep skin tissues, nerves, or the cell of origin may be unknown. A tumor arising from bone cells is called an osteosarcoma. Other forms of primary bone sarcomas are chondrosarcoma, Ewing sarcoma, and chordoma.

Statistics

- In 2024, **approximately 3,970 new cases** of primary bone and joint cancer, which start directly in the bone, will be diagnosed in the U.S.
- Many more will be affected by cancer that started elsewhere and spread to the bones.
- **Approximately 2,050 deaths** are expected nationally for primary bone and joint cancer.

Risk Factors

There are certain factors that increase the risk of developing bone cancers. Some of these risk factors include:

- Previous radiation therapy, chemotherapy, or a class of anticancer drugs known as alkylating agents.
- Certain conditions such as hereditary retinoblastoma, Li-Fraumeni syndrome, Diamond-Blackfan anemia, Rothmund-Thomson syndrome, Paget disease, hereditary multiple exostoses, Bloom syndrome, and Werner syndrome.

Signs and Symptoms

The following may be symptoms of bone cancer due to the pressure of the tumor on healthy bone tissue but could also be linked to other health conditions.

The first and most common symptom of bone cancer is pain or tenderness near the cancer. Bone pain may be difficult to differentiate from regular pain or arthritis. It may be sporadic at first, and then becomes more constant and severe, even at night. It can be worse with movement or in different positions, such as standing. If the pain doesn't go away and is unlike other pain, it should be evaluated by a physician with experience in orthopedic cancers.

Swelling or lumps in the area of pain, stiff or tender joints, limping, fatigue, and weight loss can also be caused by bone cancer. Numbness, tingling, and weakness can be caused by the cancer pressing on a nerve. On rare occasions, patients may experience fever, anemia, or a feeling of being unwell.

A pathological fracture is a break in a bone not due to force or trauma, but to problems within the bone itself. Pathological fractures can occur when cancer destroys enough bone so that the bone can no longer support body weight sufficiently. This requires urgent medical attention, and precautions to reduce risk of falls and injuries.

Prevention

There are no lifestyle or medical interventions known to prevent primary bone cancers. There are many ways to reduce risk of cancers in other parts of the body that then spread to the bones, such as avoiding smoking, minimizing alcohol, maintaining a plant-forward diet and regular exercise, and avoiding obesity. The best way to diagnose bone cancer early is to be aware of the signs and symptoms of this disease.

Treatment Options

Treatment options depend on the stage, type, size, and location of the cancer, the patient's age and health, and whether the cancer started in the bone or spread from another area of the body. Many patients with bone cancer require a team

of physicians, called a multidisciplinary team, which may include an orthopedic surgeon, orthopedic oncologist, radiation oncologist, medical oncologist, and a physiatrist. Treatment options can include surgery, radiation, chemotherapy, targeted therapy, and palliative medicine. In the more common instance of the cancer spreading to the bone from somewhere else in the body, treatment depends on where the cancer originated. Limb-sparing surgery may be needed to reconstruct the skeleton to preserve function of the limb and control pain. Radiation therapy is also an option for targeting the affected area and relieving pain. If eligible, patients may also consider entering a clinical trial.

About Texas Oncology

With more than 530 physicians and 280 locations, Texas Oncology is an independent private practice, a member of The US Oncology Network, that sees more than 71,000 new cancer patients each year. Founded in 1986, Texas Oncology provides comprehensive, multidisciplinary care, and includes Texas Center for Proton Therapy, Texas Breast Specialists, Texas Colon & Rectal Specialists, Texas Oncology Surgical Specialists, Texas Urology Specialists and Texas Infusion and Imaging Center. Texas Oncology's robust community-based clinical trials and research program has contributed to the development of more than 100 FDA-approved cancer therapies. Learn more at [TexasOncology.com](https://www.texasoncology.com).

Sources: American Academy of Orthopedic Surgeons, American Cancer Society, American Society of Clinical Oncology, Centers for Disease Control and Prevention, Leukemia & Lymphoma Society, National Cancer Institute, and National Center for Advancing Translational Sciences



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