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INFORMATION](#)

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& CLINICAL TRIALS](#)

[FOR HEALTH
PROFESSIONALS](#)

[NEWS
& EVENTS](#)

[Home](#) › [Health Information](#) › [Medical Reference Guide](#) › [Complementary and Alternative Medicine Guide](#) › [Condition](#) › [Bone cancer](#)

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Bone cancer

Introduction

Bone cancers are rare forms of cancer that can affect any bone in the body. Two types of bone cancer are multiple myeloma and bone sarcomas. About 2,000 primary bone cancers are diagnosed in the United States each year. Bone cancers can also happen when tumors that start in other organs, such as breasts, lung, and prostate, metastasize (spread) to the bone. Multiple myeloma is the most common type of bone cancer. The two most common bone sarcomas are osteosarcoma, which develops in new tissue in growing bones, and chondrosarcoma, which develops in cartilage. Osteosarcoma occurs more frequently in people ages 10 - 20, while chondrosarcoma occurs more often in adults.

Signs and Symptoms

Bone cancer is accompanied by the following signs and symptoms:

- Dull, aching pain in the bone or joint
- Swelling or tenderness of the joints
- Fractures
- Fatigue, fever, weight loss, anemia
- Stiffness
- Decreased appetite and nausea

Who's Most At Risk?

People with the following conditions or characteristics may be at risk for developing multiple myeloma:

- Radiation exposure
- Exposure to petroleum products, benzene, herbicides, and insecticides
- Genetic factors
- Advanced age (over 65)
- African American descent (twice the risk of Caucasians)

People with the following conditions or characteristics may be at risk for developing osteosarcoma:

- Benign tumors and other bone diseases
- Radiation exposure
- Genetic factors
- Children, adolescents
- Males more than females

Your risk of developing chondrosarcoma is higher if you are age 40 - 60.

What to Expect at Your Provider's Office

If you have symptoms associated with bone cancer, you should see your health care provider. It's helpful to remember that many symptoms of bone cancer are also associated with other, less serious health conditions. In addition to taking a personal and family medical history, your health care provider may suggest a blood test to measure the level of alkaline phosphate, an enzyme that increases when a tumor causes production of abnormal bone tissue. X-rays and other imaging procedures can show the location, size, and shape of a bone tumor. New research suggests that combination positron emission tomography (PET) and computed tomography (CT) may be the most sensitive technique for detecting bone cancers. Not all tumors are cancer. A biopsy -- the removal of a sample of tissue from the bone tumor -- will reveal whether cancer is present.

Treatment Options

Treatment Plan

The treatment plan depends on the type, size, location, and stage of the cancer, as well as the patient's age and general health.

Drug Therapies

Your health care provider may prescribe the following therapies:

- For multiple myeloma: chemotherapy drugs, radiation treatment, medication for pain relief, and bisphosphonates (to protect the bone)
- For osteosarcoma: cytotoxic drugs

Surgical and Other Procedures

Surgery is usually performed after chemotherapy to shrink the tumor and reduce the risk of recurrence. With multiple myeloma, a physician may perform a bone marrow transplant. With bone sarcomas, surgery is usually the main treatment. In most cases, chemotherapy has made limb sparing surgery possible and amputation unnecessary.

Complementary and Alternative Therapies

A comprehensive treatment plan for bone cancer may include a range of complementary and alternative therapies. Make sure to inform your health care provider about the herbs and supplements you are taking. Some supplements can interfere with conventional cancer therapies, so always work with a qualified health care professional, and tell all of your providers about every herb, supplement, medication, and treatment you are using.

Nutrition and Supplements

Following these nutritional tips may help reduce symptoms:

- Try to eliminate suspected food allergens, such as dairy (milk, cheese, and ice cream), wheat (gluten), soy, corn, preservatives, and chemical food additives. Your health care provider may want to test you for food allergies.
- Avoid refined foods, such as white breads, pastas, and sugar.
- Eat fewer red meats and more lean meats, cold water fish, tofu (soy, if no allergy is present) or beans for protein. Use quality protein sources, such as organic meat and eggs, whey, and vegetable protein shakes, as part of a balanced program aimed at gaining muscle mass and preventing wasting, a side effect of cancer therapies.
- Use healthy cooking oils, such as olive oil or coconut oil.
- Reduce or eliminate trans fatty acids, found in such commercially baked goods as cookies, crackers, cakes, French fries, onion rings, donuts, processed foods, and margarine.
- Avoid caffeine and other stimulants, alcohol, and tobacco.
- Exercise, if possible, 5 days a week. Discuss an appropriate regimen with your doctor.

You may address nutritional deficiencies with the following supplements. Consult your oncologist before adding any nutritional supplements or herbal medicines to your regimen.

- Probiotic supplement (containing *Lactobacillus acidophilus*), 5 - 10 billion CFUs (colony forming units) a day, for maintenance of gastrointestinal and immune health. Refrigerate probiotic supplements for best results. Speak with your doctor to determine if these supplements are right for you. In cases of severe immunosuppression more caution may be needed.
- Omega-3 fatty acids, such as fish oil, 1 - 2 capsules or 1 tablespoon of oil 1 - 2 times daily, to help decrease inflammation and help with immunity. Cold water fish, such as salmon or halibut, are good sources. Omega-3 fatty acids may increase the effects of blood-thinning medications. Speak to your doctor to determine if these are right for you. High doses of omega-3 fatty acids may increase the chance of bleeding and may interact with blood-thinning medications, such as warfarin (Coumadin) and others.
- Melatonin, 2 - 6 mg at bedtime, for immune support and sleep. Higher doses have been explored for some types of cancer. Consult your health care provider. Melatonin may interact with some antidepressants and/or sleep medications, pain medications, or psychiatric medications. Speak with your doctor to determine if melatonin is right for you and what the recommended dosage is.

Herbs

Herbs are generally a safe way to strengthen and tone the body's systems. As with any therapy, you should work with your health care provider to diagnose your problem before starting treatment.

You may use herbs as dried extracts (capsules, powders, teas), glycerites (glycerine extracts), or tinctures (alcohol extracts). Unless otherwise indicated, make teas with 1 tsp. herb per cup of hot water. Steep covered 5 - 10 minutes for leaf or flowers, and 10 - 20 minutes for roots. Drink 2 - 4 cups per day depending on your doctor's recommendation. You may use tinctures alone or in combination as noted.

The correct herbal therapy may be an important part of a cancer treatment plan, but should only be used under the supervision of an experienced provider knowledgeable in oncology. While some herbs may be supportive, others may actually interfere with medications or treatments for cancer. This practitioner should work in conjunction with your team of oncologists.

- Green tea (*Camellia sinensis*) standardized extract, 250 - 500 mg daily, for antioxidant, anticancer, and immune effects. Use caffeine free products. You may also prepare teas from the leaf of this herb.
- Reishi mushroom (*Ganoderma lucidum*) standardized extract, 150 - 300 mg 2 - 3 times daily, for anticancer and immune effects. You may also take a tincture of this mushroom extract, 30 - 60 drops 2 - 3 times a day. High doses of reishi may cause bleeding in people with thrombocytopenia.
- Cat's claw (*Uncaria tomentosa*) standardized extract, 20 mg 3 times a day, for anticancer, immune, and antibacterial or antifungal activity. Cat's claw may worsen leukemia.
- Milk thistle (*Silybum marianum*) seed standardized extract, 80 - 160 mg 2 - 3 times daily, for detoxification support. Milk thistle may interfere with certain medications; speak with your physician.
- Fermented wheat germ extract, 1 packet dissolved in a favorite beverage once daily, for anticancer and immune effects.

Homeopathy

Although few studies have examined the effectiveness of specific homeopathic therapies, professional homeopaths may consider the following remedies for the treatment of bone cancer based on their knowledge and experience. Before prescribing a remedy, homeopaths take into account a person's constitutional type -- a person's physical, emotional, and psychological makeup. An experienced homeopath assesses all of these factors when determining the most appropriate treatment for each individual. Homeopathic treatment, especially in the case of cancer, should only be used under the guidance of a licensed and certified homeopath.

- *Arnica Montana* -- for a bruised sensation and restlessness
- *Bryonia* -- for fractures with stitching pains that are worse with the slightest movement
- *Eupatorium* -- for excruciating, aching bone pain that worsens with motion and is often accompanied by stiffness and chills
- *Symphitum* -- for fractures that heal poorly and are accompanied by persistent pain

Acupuncture

While acupuncture does not treat for cancer, evidence suggests it can be a valuable therapy for cancer related symptoms, particularly the nausea and vomiting that often accompany chemotherapy treatment. Studies show that acupuncture may help reduce pain and shortness of breath. Acupressure (pressing on rather than needling acupuncture points) may also help control breathlessness. Patients treat themselves using this technique.

Some acupuncturists prefer to work with a patient only after the completion of conventional medical cancer therapy. Others provide acupuncture or herbal therapy during active chemotherapy or radiation. Acupuncturists treat cancer patients based on an individualized assessment of the excesses and deficiencies of qi (energy) located in various meridians. In many cancer-related cases, a qi deficiency is detected in the spleen or kidney meridians.

Chiropractic

Chiropractors will not perform spinal manipulation over areas of the body where bone cancer is present, but they may use this procedure over areas that are free of bone cancer in an attempt to relieve pain associated with the condition.

Prognosis/Possible Complications

Patients with multiple myeloma generally live for 15 months - 5 years. Complications may include heart attack, lung disease, diabetes, and stroke. With bone sarcomas, 65 - 75% of patients experience long term survival, and almost everyone who is treated with limb-sparing surgery ends up with an arm or leg that is painless and works well. Potential complications include those arising from surgery and possible spread of the cancer to the lungs.

Following Up

Your health care provider will see you regularly to check for complications and to make sure the cancer has not returned. You may have frequent CT scans of the lungs and bone scans and x-rays of the arm or leg to ensure that the tumor hasn't come back or spread to the lungs.

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Alternative Names

Cancer - bone

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