

Bone Metastasis ^[1]

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About bone metastasis

Cancer may spread from one part of the body (the primary site), to other parts of the body, including the bones. Different cancers spread more commonly to the bones, including breast cancer, lung cancer, prostate cancer and kidney cancer. Bones can also be affected by cancer that starts in the bones, such as multiple myeloma, which can spread to multiple sites in the bones.

When cancer spreads to the bones, it makes the bones weaker and easier to break.

Cancer cells that have spread to the bone disturb the balance between the activity of osteoclasts and osteoblasts, two types of cells that normally maintain the quality of the bone. Disrupted osteoclasts or osteoblasts can result in either weakened or excessively built-up bone. As the cancer cells damage the bones, calcium is released. High blood levels of calcium can lead to other problems such as loss of appetite, excessive thirst, nausea and constipation. As the cancer dissolves the bone, it breaks easily. In other cases the cancer causes the bones to become harder, but structurally weaker than normal bone. Regardless, bone metastases may be accompanied by significant pain.

Treatment of bone metastasis

- **Bisphosphonates.** Bisphosphonates are drugs that slow the bone damage caused by metastases. They are used to decrease the risk of bone complications like fractures and to lower abnormally high blood calcium levels. Studies suggest that treatment with bisphosphonates can also reduce the bone pain associated with bone metastasis.
- **Radiation therapy.** Radiation is useful in relieving pain and controlling the growth of tumor cells in the area of the bone metastasis. It may be used to prevent a fracture or as a treatment for spinal cord compression.
- **Surgery.** Surgical treatment for bone metastases is done to prevent or to treat a bone fracture. It usually involves removing the tumor and stabilizing the bone to prevent a fracture. Metal rods, plates, screws, wires, nails or pins may be surgically inserted to strengthen or provide structure to the bone damaged by metastasis.
- **Other therapies.** Other treatments for bone metastases and their symptoms include physical therapy, and drug and nondrug approaches to control pain. Effective treatment

of the primary cancer is the best way to manage bone metastases. In addition to the cancer treatment, there are a variety of treatment options available for bone metastasis. These include chemotherapy, hormonal therapies, targeted therapies and immunotherapies.

Questions to ask your doctor

When you are diagnosed with bone metastases, you may want to ask your doctor questions like these about your diagnosis and treatment plan:

- What type of bone metastases do I have?
- What stage is my bone metastasis?
- What are my treatment choices?
- What are the expected benefits of each kind of treatment?
- What are the risks of each treatment?
- What are the side effects of each treatment?
- How will we know if this is working?
- How will each treatment affect my daily life?
- Are there new treatments or clinical trials that I should consider?
- What are the chances of the cancer coming back again?
- What are my chances of being cured?

[Learn about our research & development efforts for advanced cancers involving bone](#)

Research & Development ^[3]

Precision oncology ^[4] evolves our understanding of how cancer develops on a genomic level, with potential for better patient outcomes. Novartis is committed to research and development of treatments that improve and extend the lives of patients living with cancer.

Learn how research & development works at Novartis Oncology. ^[4]

Lifecycle management programs

Novartis Oncology is conducting global development initiatives for key molecules encompassing a broad range of malignancies.

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