

RADIATION THERAPY FOR METASTASES TO THE BONE

Facts to Help Patients Make an Informed Decision



ASTRO

TARGETING CANCER CARE

AMERICAN SOCIETY FOR RADIATION ONCOLOGY

WHAT ARE BONE METASTASES?

Cancer that starts in one part of the body can sometimes spread to other areas of the body. If a tumor spreads to the bone, this new cancer deposit is called a bone metastasis.

- When bone metastases occur, they are sometimes called “bone cancer”. However, in nearly all cases, bone metastases are a result of the spread of the original cancer to the bone. So instead of having both bone cancer and breast cancer, for example, a person usually has breast cancer that has spread to the bone.
- Cancers that may spread to the bone include, but are not limited to, cancers of the breast, kidney, lung, prostate and thyroid. Multiple myeloma, a disease characterized by uncontrolled growth of white blood cells called plasma cells, can also involve the bones.
- Cancer treatments have improved in recent years, allowing many patients to live longer with cancer than ever before. Unfortunately, bone metastases may still occur sometimes months or even years after an original cancer diagnosis. There are many options available for patients with bone metastases to try to provide relief and to suppress local disease.

SYMPTOMS AND SIGNS OF BONE METASTASES

Pain is the most common symptom of bone metastases. Pain from bone metastases may be made worse by movement during normal daytime activities, but sometimes can be worse at night or at rest.

Bone metastases can weaken bones, putting them at risk for breaking (fracture). In some cases, a fracture is the first sign of bone metastases. Bones of the arms and legs as well as those in the spine are the most common ones to break or fracture.

If cancer spreads to the bones that make up the spine, occasionally it may push on the spinal cord causing a spinal cord compression. Signs of this include back pain, numbness or weakness, trouble urinating or having a bowel movement. If any of these symptoms develop, you should call your cancer doctors and **seek emergency care** right away.

Bone metastases may cause calcium to be released from the bones into the bloodstream. The increased calcium can cause loss of appetite, nausea, thirst, constipation, tiredness or confusion. If you notice these symptoms, you should talk to your doctor right away.

In some cases, you have no noticeable symptoms or signs that the cancer has spread to the bone. Rather, you may come in for a routine follow-up visit and the cancer is found during your exam or on imaging scans.

GENERAL TREATMENT FOR BONE METASTASES

The goal of treatment for bone metastases is to control pain and other symptoms and to improve your quality of life. In some cases, these treatments can also help you live longer with your cancer.

- Your doctor may prescribe medicines called bisphosphonates. These drugs slow the bone loss caused by cancer to reduce the risk of bone fracture and pain.
- Your doctors may also prescribe chemotherapy or endocrine therapy. This is a term that refers to several different medications that kill cancer cells or stops them from growing. These types of treatment can be given when you are first diagnosed with cancer and also if cancer spreads to another part of the body. Talk with your **medical oncologist** (chemotherapy doctor) about these types of treatments.
- In most cases, treatment for bone metastases will not “cure” your cancer. However, modern treatments allow doctors to control the bone metastases, allowing many patients to improve their quality of life and to live months or years longer.

USING RADIATION THERAPY FOR BONE METASTASES

- Radiation therapy uses high-energy X-rays to kill cancer cells. This type of treatment is given by a **radiation oncologist** (doctor who specializes in treating cancer with different types of radiation).
- A very common use of radiation therapy is to treat cancer that has spread to the bone. In general, radiation is very effective at reducing symptoms caused by cancer that has spread to a bone.
- Radiation therapy takes time to work. You may experience relief from your symptoms during treatment, but usually the peak effect of radiation is several days to weeks after it has been given.
- Radiation therapy is usually given from outside the body and targeted to be delivered to a specific area where cancer is known to be located and causing symptoms. In selected circumstances, your doctor will place a radioactive substance into your bloodstream. This is called a radiopharmaceutical and it works to attack cancer cells in all bones by floating in the blood stream and being delivered to cancer cells inside the bones.



THE ROLE OF SURGERY OR INTERVENTIONAL PROCEDURES FOR BONE METASTASES

In the case of a tumor that has broken outside of a vertebral body (the individual bones that make up the spine), your doctor may recommend surgery to remove as much of the tumor as possible before beginning radiation. This is typically performed by a **surgeon** who specializes in surgery for the spine or bone.

- If surgery is performed, radiation typically starts several weeks after surgery to allow your body to heal.
- For tumors that have not broken outside of the vertebral body or that have caused collapse of the vertebral body (sometimes called a compression fracture), your doctor may recommend seeing a specialist (**interventional radiologist or spine surgeon**) that can insert a type of bone cement to stabilize the bone, which will reduce pain.

WHAT IS RADIATION THERAPY?

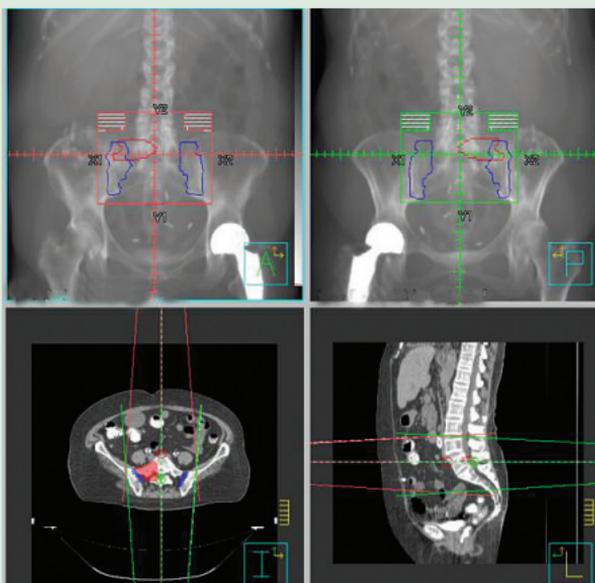
Radiation Therapy works by damaging the genetic material or other critical components of cancer cells. This limits their ability to reproduce. Radiation can sometimes stop the blood supply to cancers, which also kills the cancer cells.

- After the radiation treatment ends, your body is still at work getting rid of the cells damaged by radiation. This is why it often takes a few weeks for you to have the full benefit of the treatment.
- Normal cells are also affected by radiation, but they are better able to repair the damage caused by radiation therapy than can most cancer cells.
- Treatments are noninvasive and painless, much like receiving an X-ray. You should be able to go home after treatment.
- In the case of cancer that has spread to the bone, external beam radiation therapy involves a series of outpatient treatments directed to the bone area where the tumor was found.
- Treatments for cancer in a bone are usually given every day, Monday through Friday, for about one to three weeks depending upon what your doctor thinks will be most helpful.
- Sometimes treatments are delivered in large, highly focused doses. When treatment is completed in one day it is called stereotactic radiosurgery (SRS). If a few doses are needed it is called stereotactic body radiotherapy (SBRT). In selected situations, retreatment can be considered with specialized radiation techniques.

- Before starting radiation, you will undergo a radiation “planning” session (simulation) where the radiation treatment team creates a way to set your treatments up accurately on a day-to-day basis. Sometimes, devices to keep you in the same position are used to help with accuracy of daily set up. Images of the area affected by cancer will be obtained on this day to help plan the radiation treatment. This is usually a series of X-rays or a CT scan.
- A plan is then developed to allow radiation to be delivered to the tumor area while avoiding as much normal tissue as possible.

POSSIBLE SIDE EFFECTS

- Fatigue is the most common side effect you may notice, often described as an overall “blah” feeling. Feeling tired often starts in the middle of the treatment and may last for weeks after your last radiation session.
- It is normal for you to lose the hair on your body where the radiation beams were aimed. The hair will probably grow back, but it may feel a little different than it did before treatment. However, you will not lose the hair on your head unless your skull is the bone being treated.
- You may also notice some minor skin changes or tingling feeling where the radiation was aimed. This should fade over time.
- Side effects are different for everyone, and depend to some degree on which part of your body is being treated. Your radiation oncologist and nurse will follow you closely during treatment and ask you and your family members about any symptoms. Medications may be prescribed to make you more comfortable.



LEARNING ABOUT CLINICAL TRIALS

The radiation oncology team is constantly exploring new ways to treat cancer through studies called clinical trials. Today's treatment standards are the result of earlier clinical trials proving that radiation therapy kills cancer cells and is safe in the long-term. For more information on current **clinical trials**, please visit:

National Cancer Institute

www.cancer.gov/clinicaltrials

Radiation Therapy Answers

www.rtanswers.org

Radiation Therapy Oncology Group

www.rtog.org

Clinical Trials.gov

www.clinicaltrials.gov



CARING FOR YOURSELF DURING TREATMENT

It is important to care for yourself as well as possible during radiation therapy because the normal parts of your body that are near the tumor are also receiving some radiation, although not as much as the cancer. These normal parts of your body need time and support to heal. A balanced diet, mild amount of physical activity, and taking time to rest are all important parts of your cancer treatment. Make sure to tell your radiation oncologist about any vitamins or dietary supplements that you are currently taking to make sure they are safe to take during radiation therapy.

During and even after radiation therapy is over, you will need to take special care of your skin. Stay out of the sun, avoid hot or cold packs, and do not use lotions or ointments without checking with your doctor or nurse first. You should also be sure to clean the skin over the areas receiving radiation therapy with warm water and mild soap.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are the doctors who oversee the care of each person undergoing radiation treatment. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each of these professionals does or to locate a radiation oncologist near you, visit www.rtanswers.org.

ABOUT ASTRO

The American Society for Radiation Oncology is the premier radiation oncology society in the world with more than 10,000 members who specialize in treating cancer with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy. Visit www.astro.org for more information.

AMERICAN SOCIETY FOR RADIATION ONCOLOGY

8280 Willow Oaks Corporate Drive, Suite 500

Fairfax, VA 22031

Phone: 1-800-962-7876 • 703-502-1550

Fax: 703-502-7852

www.astro.org
www.rtanswers.org

