**WHAT ARE BONE METASTASES?**

When bone metastases occur, they are not a new “bone cancer.” Bone metastases are the spread of the original cancer to the bone. For example, instead of having both bone cancer and breast cancer, a person usually has breast cancer that has spread to the bone. Almost every cancer has the ability to spread to the bone, but cancers that commonly spread to the bone include breast, kidney, lung, prostate and thyroid cancers.

Cancer treatments have improved recently, allowing many patients to live longer than before. Unfortunately, cancer spreading to the bone may still occur months to years after an original cancer diagnosis.

**SYMPTOMS AND SIGNS OF BONE METASTASES**

Pain is the most common symptom of bone metastases. Bone metastases can weaken bones, putting them at risk for breaking. In some cases, a break in the bone is the first sign of bone disease. When you come in for a routine visit, disease spreading to the bone can be found on physical exam or on imaging scans.

**GENERAL TREATMENT FOR BONE METASTASES**

The goals of treatment for bone metastases are to control pain, improve quality of life and limit other symptoms from occurring.

- Your doctors may also prescribe chemotherapy, immunotherapy or endocrine therapy. These terms refer to different medications that kill cancer cells or stop them from growing. These treatments are taken by mouth or through a vein. These types of treatment may be given when you are first diagnosed with cancer or when cancer spreads to other parts of the body. Talk with your medical oncologist about these types of treatments.
- Focal radiation therapy can be targeted at one to a few bone metastases. It could also be given to any area that has been treated in the past, using a technique called stereotactic body radiation therapy (SBRT). In most cases, treatment for bone metastases will not “cure” your cancer. However, modern treatments allow doctors to control the spread of disease, which may improve your quality of life and sometimes allow you to live 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 and their team.
- Radiation therapy is commonly used to treat cancer that has spread to the bone. It 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. Usually, however, it takes several days to weeks after treatment to feel the greatest relief.
- Radiation therapy is usually given from outside the body to a specific area where cancer is causing symptoms.
- Sometimes your doctor will inject a radioactive substance into your bloodstream. This is called a radiopharmaceutical. It works by attacking cancer cells in all bones by moving in the bloodstream.

**THE ROLE OF SURGERY OR INTERVENTIONAL PROCEDURES FOR BONE METASTASES**

In the case of a tumor that has broken outside of a spine bone, 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 spine or bone surgery.

- For tumors that have not broken outside of the spine bone 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). The specialist can insert a type of bone cement to stabilize the bone, and reduce pain.

**COPING WITH CANCER**

Coping with cancer can be difficult. Be sure to ask friends, family, support groups and your radiation oncology team for help. Ask your doctor about what resources are available to you.

- Take care of your skin. Use sunscreen when in the sun. Avoid hot or cold packs. Do not use lotions or ointments without checking with your doctor or nurse first. Use warm water and mild soap when cleaning the area receiving radiation.
- Follow your doctor’s orders. Ask questions about your treatment, side effects or anything you are unsure of.
Radiation Therapy for Metastases to the Bone

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 site of cancer is called a bone metastasis.

ABOUT THE RADIATION ONCOLOGY TEAM
Radiation oncologists are doctors who specialize in the use of radiation therapy as a treatment for cancer. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each does or to find a radiation oncologist near you, visit www.rtanswers.org.

ABOUT ASTRO
The American Society for Radiation Oncology is the largest 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.

* Larger bubbles show higher likelihood of occurrence. This list does not represent all of the possible side effects. Please talk to your doctors about your specific diagnosis.
** Depending on area being treated
*** More common with SBRT

Bone pain***
Nausea/ Diarrhea**
Sore throat*
Swelling
Itching of skin
Sore throat*
Swelling
Low blood counts
Increased urinary frequency
Increased skin warmth
Increased skin firmness
Darkening of skin
Fracture***
Difficulty swallowing
Increased skin firmness
Mild electric sensations down spine
Swelling
Fracture***
Difficulty swallowing
Sore throat*
Itching of skin
Nausea/ Diarrhea**

short term
possible side effects
long term

more likely

less likely