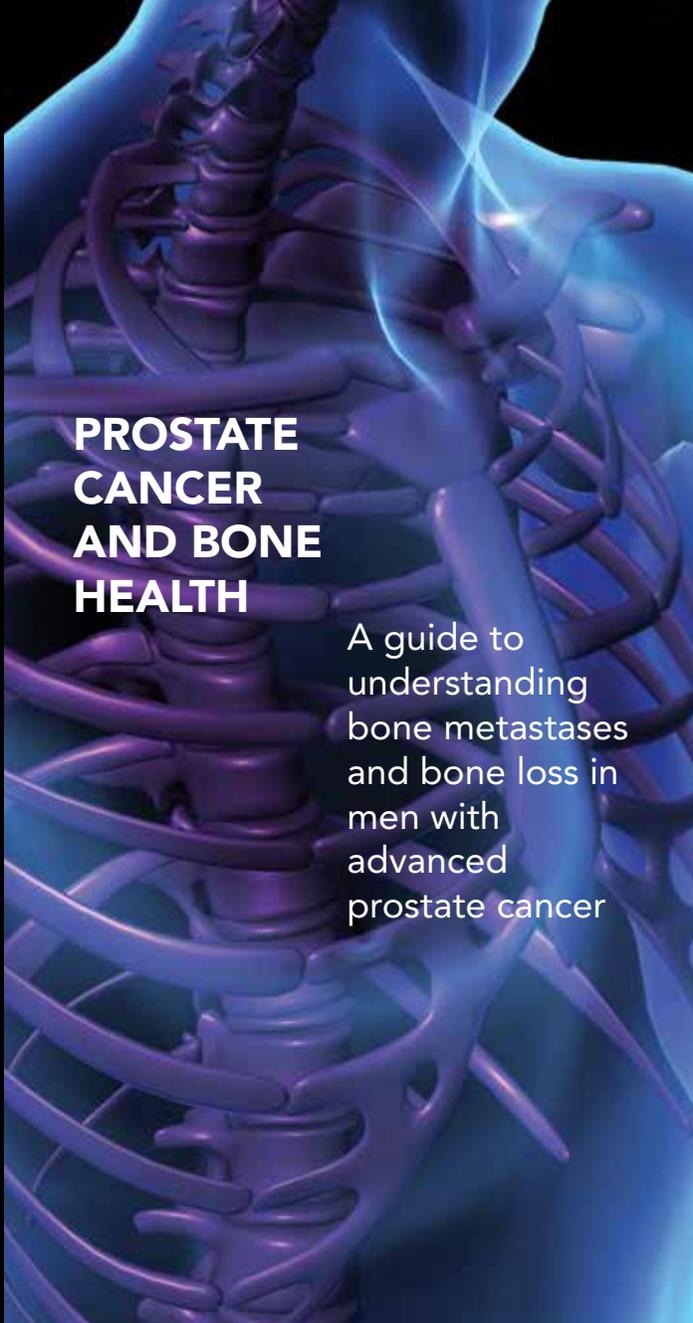




515 King Street, Suite 420
Alexandria, VA 22314
202-463-9455
Toll free 888-245-9455
info@zerocancer.org

facebook.com/zerocancer
twitter.com/zerocancer

ZEROCANCER.ORG



PROSTATE CANCER AND BONE HEALTH

A guide to
understanding
bone metastases
and bone loss in
men with
advanced
prostate cancer



WHY IS BONE HEALTH IMPORTANT TO MEN WITH ADVANCED PROSTATE CANCER?

Many men experience bone related complications as a result of prostate cancer or its treatment. When prostate cancer spreads, or metastasizes, it frequently travels to the bone. Hormonal therapy for prostate cancer can lead to bone loss by decreasing testosterone. Both conditions can weaken the bone and make a man at risk for fracture and pain.

Fortunately there are treatments available today to manage complications from bone metastases, prevent bone loss, and improve bone density.

The majority of men with advanced prostate cancer will develop bone metastases, also called 'bone mets,' at some point in their lives.

RESOURCES FOR SUPPORT

Living with advanced prostate cancer can be difficult and challenging, both physically and emotionally. At ZERO we are dedicated to helping you live your best life possible with prostate cancer. It is important for you to be informed and we have many resources available to you and your loved ones for support.

Managing Advanced Prostate Cancer

A brochure developed to address advanced prostate cancer, treatment options, and managing side effects.

Online Resources

Visit ZERO's website, www.zerocancer.org, for more information and resources to understand your disease and treatment options. These include:

- Patient Education Video Library
- Educational Webinar Programs
- Patient and Caregiver Resources for Support

Patient Navigation

ZERO360: Comprehensive Patient Support is a free service to help patients make treatment decisions, access financial resources to cover treatment and other needs, and find emotional support. Contact us toll-free at **1-844-244-1309** or <https://zero.pafcareline.org>.

“ Bone health is a big concern for men with prostate cancer for several reasons. One of them is that the prostate cancer itself can metastasize or spread to the bone. ”

Alicia K. Morgans, M.D.
Assistant Professor of Medicine,
Hematology/Oncology
Vanderbilt-Ingram Cancer Center

BONE METASTASES

What are bone metastases?

When prostate cancer spreads outside of the prostate to another organ, it most frequently spreads to the bone. This process of spreading, called metastasis, means that the prostate cancer has now formed tumors, called metastases or 'mets,' in your bones.

If you have bone metastases it is important to talk with your doctor about treatment options available to you. Work with your physician to make a plan. Together you can manage and stop the spread of disease and pain.

How are bone metastases diagnosed?

Bone metastases are diagnosed with a bone scan. This is a nuclear medicine test, similar to a PET scan. Dye is injected into your body and lights up in areas of the bone where prostate cancer cells are growing. Other imaging tests can be used but the bone scan is often the most effective.

How can bone metastases affect me?

Prostate cancer in the bone can be very painful and make everyday activities difficult. Living with bone metastases also increases the risk of skeletal-related events which can cause harm and require additional treatments.

What are skeletal-related events?

Skeletal-related events are potential complications from cancer in the bone. These can include:

- Cord compression – when the cancer pushes on the spinal nerves causing numbness and tingling, weakness in arms and legs, or other problems
- Fracture – a break in the bone
- Need for surgery to stabilize the bone
- Need for radiation to treat pain in the bone

How can bone complications be reduced?

Strengthening the bone by using medicines such as bisphosphonates and denosumab can help to prevent skeletal-related events. Taking supplemental calcium (1200 mg) and vitamin D (800 -1000 iu) can also maintain bone health.

What treatments are available for bone metastases?

Treatment is available to stop pain from bone mets and extend life:

- Radiopharmaceuticals are radioactive drugs given through a vein that travel to where the cancer is in the bone and release a 'smart bomb' of radioactive material to destroy the cancer. *These only work on prostate cancer in the bone, not prostate cancer in other organs such as the liver.*
 - Strontium and samarium are radiopharmaceuticals given to reduce pain
 - Radium-223, Xofigo®, is a radiopharmaceutical given to reduce pain and prolong life
- External beam radiation therapy is the use of radiation directed to stop pain in one place. It does not make men live longer but can dramatically improve quality of life.



Illustration of areas where bone metastases may appear*

BONE LOSS

What causes bone loss in men with prostate cancer?

Treatment with androgen deprivation therapy (ADT) hormonal injections, particularly long term treatment, weakens the bones over time. ADT reduces a man's testosterone, which helps keep his bones strong. Without testosterone bones can become weak and break more easily. Radiation, chemotherapy, and some pain medications can decrease bone strength as well.

How is bone loss or low bone density diagnosed?

Although there are usually no symptoms of bone loss, there are tests that can be done to determine if you are losing bone. A DEXA scan or bone density scan are used to determine the thickness, or density, of the bone. This information is then compared to that of healthy individuals to determine if bone density is low. Other tests can include CT and MRI.

How can I strengthen and repair my bones?

You can prevent bone loss and improve bone density over time with medicines and lifestyle changes:

- Include weight bearing and muscle strengthening exercises with physical activity
- Medicines that work to stop the breakdown of bone and help to build bone back up
 - Bisphosphonates such as Zoledronic acid or Zometa®
 - Denosumab or Xgeva®
- Strive for a healthy diet and be sure to get enough calcium and vitamin D
- Avoid tobacco and excessive alcohol



It is asymptomatic when you are losing bone mass. You are never going to know or feel it until you develop a problem from losing bone mass.



*Alicia K. Morgans, M.D.
Assistant Professor of Medicine,
Hematology/Oncology
Vanderbilt-Ingram Cancer Center*

What are the possible side effects of bone loss treatments?

Potential side effects from bisphosphonates and denosumab include:

- Low calcium levels in the body
- Heart rhythm abnormalities
- Osteonecrosis of the jaw – let your doctor know if you have any dental problems or infections in your mouth