What You Need to Know for Better Bone Health
A quick lesson about bones:  
Why healthy bones matter

The healthier your bones

The more active you can be

Bone health has a major effect on your quality of life and on the quality of life of those who care for you.

The better your bone health, the more independent you can be—a benefit for everyone.
Prostate Cancer & Bone Health: What is the Connection?

Bone health may be affected by prostate cancer & its treatment.
Two conditions that can arise and impact bone health are:

1. **Treatment-induced bone loss** — could be caused by the side effects of medications taken for prostate cancer

2. **Bone metastases** — a result of advancing prostate cancer, when the disease spreads to the bones
Background on Bones:

Did you know your bones perform these vital functions?

1. Bones provide the body’s framework
2. Bones act as the attachment point for muscles, allowing us movement
3. Bones protect our organs
4. Bones store and release minerals vital to bodily functions
5. Bones produce blood cells.
Bone is constantly changing, living tissue.

Bones are constantly renewing themselves through a process called REMODELING.
BONE REMODELING

Cells called osteoclasts break apart old areas of bone

Cells called osteoblasts create new bone and fill in old areas
It's never too early or too late to begin taking steps to maintain bone mass and prevent bone loss.

When the breakdown of old bone and the creation of new bone are equal, bone strength and bone health are maintained.
Bone loss is a condition in which bone mass and density are lost and the bones become weakened, thereby increasing the risk for fracture.

There are no warning signs, and most often it affects the bones of the hip, wrist, and spine. Bone loss occurs in men more often than commonly thought. It will cause a fracture in 1 of 4 men older than age 50.

It can be managed, and is preventable.
INSIDE YOUR BONES

A Healthy Bone
(Microscopic view)

Bone Loss
(Microscopic view)
The Relationship Between Prostate Cancer and Bone Loss

Some treatments for prostate cancer can increase bone loss risk
Men with decreased testosterone levels resulting from treatment for prostate cancer are at an increased risk for developing bone loss.

Radiation therapy to the bone and some kinds of chemotherapy also might decrease bone density and increase the risk for bone loss.
PCa meds that can cause bone loss

Examples of medications that decrease testosterone include:

Lupron® (leuprolide acetate)

Zoladex® (goserelin acetate implant)
Bone loss

RISK FACTOR #1

Age

The older you are, the greater the risk for bone loss
Family history
Men whose immediate relatives have or have had bone loss are at greater risk
Bone loss

RISK FACTOR #3

Lifestyle factors

Smoking, drinking too much alcohol, not consuming enough calcium, and not getting enough exercise
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Race/ethnicity

White males seem to be at greatest risk, although men from all racial and ethnic groups can develop bone loss.
Medications & medical conditions

Prolonged use of certain medications used to treat chronic medical problems, such as asthma, diabetes, hypothyroidism, liver disease, and rheumatoid arthritis, may have side effects that can damage bone and lead to bone loss.
What You Can Do to Maintain Healthy Bones As You Manage Your Prostate Cancer

- Manage your diet
- Take a calcium supplement
- Vitamin D
- Limit salt

- Limit protein
- Don’t smoke or drink alcohol
- Exercise

BONE LOSS CAN BE MANAGED AND IT IS PREVENTABLE
How Bone Loss Is Diagnosed

- Review of medical & family history, including a survey of your risk factors
- Complete physical exam
- Bone mineral density (BMD) test
Questions For Your Doctor

• Am I at increased risk for bone loss?

• How do prostate cancer and my past & current treatments affect my bones?

• Am I currently taking any medication or had any treatment in the past that increases my risk for bone loss?

• Is it safe for me to exercise? If so, what exercise is best for me?

• Are there any other steps I can take to slow bone loss or increase my bone density?
Get a bone density test (BMD) prior to and during hormone therapy (ADT) to establish a baseline value and monitor levels.

Have your physician monitor your urinary output of calcium and serum vitamin D.

BMD should be evaluated annually.

The best source of calcium intake is leafy green vegetables, followed by calcium supplements.
How bone loss is treated

Lifestyle

Diet, quit smoking, calcium, exercise, Vitamin D, limit protein, limit salt

Medications

1. anti-resorptives: slows bone breakdown
2. bisphosphonates: slows bone loss, in some cases increases bone mass
If you have low BMD, your doctor may prescribe a bisphosphonate to help improve your bone density. Two bisphosphonates are:

• Fosamax® (alendronate)
• Actonel® (risedronate)

NOTE:
Both are approved in the United States for bone loss in men, but have not been studied in men suffering from bone loss due to treatment for their prostate cancer.
Another option...

If you....
• do not like to take medications daily or weekly
• have a sensitive stomach
• have treatment-induced bone loss, you can take intravenous bisphosphonate once every 3 months.

Example: Zometa® (zoledronic acid)
• prevents bone loss
• increases BMD.

Note: While taking Zometa, patients should also be administered an oral calcium supplement of 500 mg and a multiple vitamin containing 400 IU of Vitamin D daily.
Bone Metastases & Advancing Prostate Cancer

- The most common place for the cancer to travel/spread is to the bone.
- The bones most commonly affected are the spine, hips, and ribs.
- Bone metastases cause damage that may make the bone more susceptible to complications such as pain and fractures.
- Bone metastases result in areas of weak, unstable bone that could cause debilitating pain and fractures.
- Prostate cancer behaves differently in each individual.
  - In many men, prostate cancer never spreads to any other site.
  - When it does spread, bone metastases occur in 65% to 75% of all patients, and the bone is often the only site of metastases.
- Prostate cancer that spreads to the bones is still prostate cancer, not bone cancer.
Symptoms of Bone Metastases

- Pain in the bones, but not always. Sometimes bone metastases are “silent.”
- Arthritic pain can be confused with bone metastases.
- The pain usually not in the joints.
- The bone pain lingers; it won’t just go away by itself in a few days.
- History of fracture(s).
- Prior radiation to bone.
- Rising PSA.
How Bone Metastases Are Diagnosed

- Radionuclide bone scans
- X-rays
- MRI scans
- CT scans
- Blood tests
How Bone Metastases Are Treated

- Hormone therapy: ADT, androgen deprivation
- Intravenous (IV) bisphosphonate therapy: Zometa®
- Radiation therapy
- Immunotherapy
- Surgery
- Chemotherapy
Questions For Your Doctor About Bone Metastases

• What are my treatment options for relieving bone pain?
• What are my treatment options for preventing bone fractures?
• Which of the available treatments do you recommend for me, and why?
• What is the goal of the treatment you’re recommending?
• What side effects might result from treatment, and what can I do to minimize them?
• What does this mean to me?
Suggestions

1. All patients with advanced prostate cancer should get an annual bone scan.
2. It is best to have all your dental problems taken care of before you start treatment, because treatment affects bone healing and recovery.
3. Keep a copy of all reports in your files.
THE BOTTOM LINE

An independent, successful, satisfying life is possible with prostate cancer. Because prostate cancer has an affinity for your bones, knowing about your bones is important.
Don’t let symptoms scare you. See them as a signal to get more information and take action.

Not all symptoms represent recurrence of prostate cancer.
PAY ATTENTION AND ACT

• If you have symptoms that concern you, quickly tell your health care provider.
• The sooner your symptoms are diagnosed, the more that can be done to help.
YOU ARE THE EXPERT...

• Maintaining your bone health will help maintain your quality of life.

You are the expert on you. Know yourself...and trust yourself.
Thank You!

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