

Osteoporosis in Men

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When we consider osteoporosis, we almost always think of women. However, men also are at risk for osteoporosis. Common risk factors include age-associated hormone changes, alcoholism, smoking and some medications, including those used in the treatment of prostate cancer.

Few men are tested for osteoporosis during treatment for prostate cancer. Men with other risk factors for osteoporosis are even less likely to receive an evaluation or treatment. Recent studies have shown prostate cancer patients who received androgen-deprivation therapy (ADT) in general do not receive any osteoporosis prevention or treatment. This is very disturbing because men undergoing hormone therapy lose 4 percent to 13 percent of their bone density on an annual basis. This is compared to healthy men who lose 0.1 percent to 0.5 percent per year, beginning in middle age. Patients receiving ADT have a bone loss significantly higher than postmenopausal women. Unfortunately, this fact seems to be ignored all too often by clinicians managing male cancer patients.

Another interesting statistic is that 30 percent of hip fractures are in men. Because men have a greater peak bone mass than women, fractures generally occur 10 years later than in women. Possibly because of this, a greater percentage of men die of hip fractures than women. Morbidity for men is 31 percent, as opposed to 17 percent for women.¹

It's interesting to note no professional organization has published a consensus guideline for osteoporosis screening in men. Experts in the field of osteoporosis have made recommendations, however:

- Men with any of the major risk factors (see table below) should be considered for formal osteoporosis testing.
- Clinicians should consider routinely screening men age 70 or older, because this is the age when fracture rates increase most rapidly.
- Initial screening should include: CBC, calcium, phosphorus, alkaline phosphatase, kidney and liver function tests, vitamin D (25-hydroxyvitamin D), TSH levels and total testosterone.

A dual-energy X-ray absorptiometry (DEXA) of the hip and spine generally is the diagnostic modality of choice for determining loss in bone density. The World Health Organization's criterion for the densitometric diagnosis of osteoporosis strictly applies only to Caucasian postmenopausal women, but can be extrapolated for men. There is no uniformly agreed-on established T score to define the densitometric diagnosis of osteoporosis in men. Men with T scores that are 2 to 2.5 standard deviations below the reference mean are at substantial risk of fractures and should be treated.

Recent guidelines published in the *Annals of Internal Medicine* recommend the following:

- Clinicians should periodically assess older men for risk factors of osteoporosis.
- Clinicians should obtain DEXA tests for men at increased risk for osteoporosis and candidates

for medication treatment.

- More research is recommended to assess screening tests for osteoporosis in men.²

Treatment should include reviewing the patient's intake of calcium and vitamin D. Calcium intake should be 1,000 to 1,500 mg per day, and vitamin D intake should be 400 to 800 IU per day.¹ Calcium supplementation is important because a significant percentage of older adults do not have sufficient calcium intake, mainly due to poor diets. In general, vitamin D deficiency is a major problem in adults due to decreased skin synthesis, oral intake and gastrointestinal absorption. Many older adults have very little exposure to sunlight, so supplementation is necessary.

Osteoporosis Risk Factors
Major-Risk Causes
History of prostate cancer treatment (ADT)
History of nontraumatic fracture (hip, vertebrae or wrist).
Osteopenia seen on plain radiograph (30 percent to 50 percent of bone mass must be lost before demonstrated on a plain radiograph)
Glucocorticoid use of 5 mg or more per day for longer than six months
Hypogonadism (glucocorticoid-induced or following orchiectomy)
Hyperparathyroidism
Medium-Risk Causes
Anticonvulsant drug use (phenytoin or phenobarbital)
Excess alcohol consumption
Tobacco use
Rheumatoid or other inflammatory arthritis
Multiple myeloma or lymphoma
Hypothyroidism or hyperthyroidism
Conditions associated with increased risk of falling (nursing-home residence, prior fall, gait disorder, dementia or hemiparesis)
Family history of osteoporosis
Low-Risk/Infrequent Causes

Cushing's disease

Chronic liver or kidney disease

Low body mass index

Pernicious anemia

Gastric resection

Another treatment not emphasized is regular weight-bearing exercise. In fact, many cancer patients are not encouraged to exercise. However, studies suggest that prostate cancer patients (undergoing hormone therapy) who walked about five times a week for 30 minutes at a moderate pace maintained or gained bone density. Those who didn't exercise lost more than 2 percent of their bone density in eight to nine weeks. Regular exercise also has been shown to decrease the risk of falls by 25 percent.³

Avoiding tobacco and excess alcohol also are important in preventing osteoporosis. When conservative treatment does not result in the reduction of bone loss, more aggressive treatment is recommended, such as bisphosphonates.

Osteoporosis can be avoided if diagnosed and managed appropriately. We all need to pay attention to the risk factors. Most women are at least evaluated for osteoporosis, especially if they are menopausal or cancer patients. Men generally are not evaluated even when undergoing cancer treatment. With early treatment, most men can avoid osteoporosis and fractures. We have an obligation to our patients, both men and women, to help them avoid the unnecessary consequences of this disorder.

References

1. *American Family Physician*, 2003;67:1521-6.
2. *Annals of Internal Medicine*, May 6, 2008;148:680-4.
3. Klibanski A, Campbell-Adams L, Bassford T, et al. NIH Consensus Development Conference Statement: Osteoporosis Prevention, Diagnosis, and Therapy. March 27-29, 2000. www.consensus.nih.gov/cons/111/111_statement.htm.

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