

Osteoporosis— not just for women

Osteoporosis in men is a silent disease that needs your voice. Talk to male patients about risk factors and prevention.

By Deborah A. Brown, MSN, APRN, BC, ONP-C

WHEN WE HEAR OSTEOPOROSIS, we usually picture a postmenopausal woman. But 2 million American men have osteoporosis, and another 12 million are at risk.

According to the International Osteoporosis Foundation, in men over age 50, the risk of osteoporosis is greater than the risk of prostate cancer. Around age 70, men, like women, experience a precipitous drop in hormone levels, creating a similar risk profile for fragility fractures.

Yet many clinicians don't counsel men about osteoporosis or screen them for risk factors. And most elderly men have no idea they are at risk for osteoporosis and disabling osteoporotic fractures.

Peaks and risks

A metabolic bone disease, osteoporosis causes a loss of bone density, producing bone fragility and increasing the risk of osteoporotic fractures. For men and women, bone mass peaks between ages 25 and 30. At skeletal maturity, men have 10% to 15% more bone mass than women, and men lose bone mass more slowly.

The incidence of osteoporotic fractures in men has two peaks. The first comes before age 50 and results

from secondary causes. The incidence peaks again in the elderly.

Primary male osteoporosis is idiopathic or related to aging or hypogonadism. Secondary osteoporosis in men, which is more common, results from conditions that contribute to accelerated bone loss. The American College of Physicians recommends that clinicians periodically assess older men for the risk factors of osteoporosis and obtain

dual-energy X-ray absorptiometry (DXA) results for those who are at increased risk and are candidates for drug therapy. (See *Risk factors for men.*)

Detecting osteoporosis in men

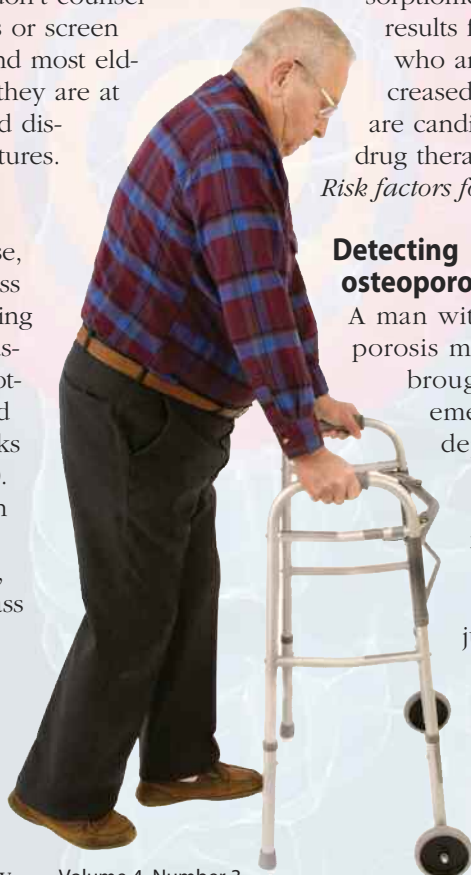
A man with osteoporosis may be brought to the emergency department with a fragility fracture after a low force injury to a hip, distal radius, or vertebra. Or during a primary

care visit, a man may complain of back pain and have an X-ray that reveals a vertebral compression fracture.

Keep in mind that an X-ray can detect osteoporosis only if the patient has bone loss of 30% or more. The gold standard test is DXA, which is used to diagnose osteoporosis, predict fractures, and monitor osteoporosis therapy. A low-radiation tool, DXA measures the central bone mineral density (BMD) of the spine and hip. In obese patients, the distal radius is measured instead of the spine and hip because of the machine's weight limitations. The distal radius also yields a more sensitive measure in patients with hyperparathyroidism. (See *Who needs DXA?*)

DXA expresses BMD measurements in standard deviations above or below the mean value in a comparative reference population of young adults versus age-matched adults. BMD is expressed in two scores. The young adult value is called the T score, and the age-matched value is called the Z score.

Today, all DXA manufacturers use gender-specific reference databases; originally, scores were based on data from postmenopausal women. Most clinicians base a diagnosis of male osteoporosis on a combination of DXA scores and the patient's risk factors. The





Risk factors for men

When assessing a man for risk factors of osteoporosis and fractures, explain that some risk factors can be modified.

Modifiable risk factors

- Calcium deficiency
- Decreased activity or immobility
- Excessive alcohol consumption
- Excessive caffeine intake
- High-risk activity
- Tobacco consumption
- Vitamin D deficiency

Nonmodifiable risk factors

- Age over 70
- Caucasian race
- Conditions including arthritis, chronic lung disease, chronic hepatic and renal disease, Cushing's disease, HIV/AIDS, hyperparathyroidism, hyperthyroidism, hypogonadism, inflammatory bowel disease, multiple myeloma or lymphoma, pernicious anemia, renal calculi, and spinal cord injury
- Drugs including anticoagulants, anticonvulsants, glucocorticosteroids, immunosuppressants, prostate cancer drugs, proton pump inhibitors, and selective serotonin reuptake inhibitors
- Family history of osteoporosis
- Family history of osteoporotic fracture
- Gastric resection
- Previous fragility fracture
- Radiation therapy
- Weight loss of more than 10%

A body mass index of less than 20 kg/m² may be either a modifiable or nonmodifiable risk factor, depending on the patient's condition.

World Health Organization defines normal bone density, osteopenia, and osteoporosis as follows:

- Normal bone density—a T score greater than 1 standard deviation from healthy young adult
- Osteopenia—a T score of 1.5 to 2.0 standard deviations below healthy young adult
- Osteoporosis—a T score of 2.5 to 3.0 standard deviations below healthy young adult

Degenerative disc disease causes falsely elevated T scores and Z scores and can limit the accuracy of lumbar DXA scores. If a patient's Z score is below 1, consider secondary causes of osteoporosis.

Preventing osteoporosis in men

According to a study of 138 men age 65 and older, men don't know much about osteoporosis, don't think they are at risk, and don't engage in activities that may prevent osteoporosis. You can help change that profile. Using the nursing process, you can develop preventive strategies and teach male patients how diet, exercise, and behaviors such as tobacco and alcohol use can affect their risk of developing osteoporosis.

Nutrition

According to National Osteoporosis Foundation guidelines, men should ingest at least 1,000 mg of calcium and vitamin D a day. Men over age 65 should ingest 1,500 mg of calcium. Sources of calcium include dairy products and green, leafy vegetables. Calcium carbonate in products such as Tums is an inexpensive supplemental source, but elderly people appear to absorb calcium citrate more easily. If your patient is taking a diuretic, consider that loop diuretics may increase urinary calcium excretion, and thiazide diuretics may decrease it.

Vitamin D helps unlock the effects of calcium and has a beneficial effect on bone mineral density. Men can ingest the vitamin by eating fortified foods. The best food sources of vitamin D include cod liver oil and salmon. Most people may need 1,300 International Units a day to achieve optimal vitamin D levels. At least 10 minutes a day of sunlight exposure helps maintain vitamin D levels, though with aging, the skin becomes less able to process vitamin D.

Today, other substances, such

as vitamin K and protein, are receiving attention as ways to prevent osteoporosis.

Exercise

Teach men at risk that weight-bearing exercises increase bone formation. These exercises include walking, playing tennis, dancing, and weight training. Swimming and cycling are less effective. Consider a physical therapy consultation for patients who need to address strength, conditioning, and balance. (See *Assessing and teaching men at risk*.)

Treating osteoporosis in men

Treatment goals for male osteoporosis include preventing fractures, stabilizing or increasing bone mass, relieving symptoms, and maximizing physical function.

Currently, two types of drugs are approved for male osteoporosis. Antiresorptives such as raloxifene prevent the resorptive breakdown of bone. Teriparatide, an anabolic agent, promotes bone-building activity.

Administered nasally, calcitonin can be used to treat vertebral



Who needs DXA?

According to the International Society for Clinical Densitometry guidelines for men, dual-energy X-ray absorptiometry (DXA) is indicated for men:

- over age 70
- with a history of fragility fractures
- with risk factors for osteoporosis.

According to the National Osteoporosis Foundation, DXA is indicated for men:

- on long-term glucocorticoid therapy
- who have radiographic evidence of osteopenia
- with hyperparathyroidism
- with hypogonadism.



Assessing and teaching men at risk

Your assessment of male patients should include height monitoring, using a stadiometer. If an X-ray indicates that a man has osteopenia, explain the importance of a referral for a bone density examination.

Teach men at risk about home safety and fall prevention, too. Emphasize the need to correct poor lighting and get rid of clutter and slippery or scatter rugs. Make vision exams part of your assessment. And review the patient's medications to determine if any can cause adverse central nervous system effects.

fragility fractures and ease their pain. Testosterone may be used in younger men with osteoporosis secondary to hypogonadism; it isn't indicated for elderly men because of the risk of prostate cancer.

Stop the silence

Nurses at the front line of healthcare delivery can play a significant role in preventing, recognizing, and treating male osteoporosis. To address this silent disease, speak to male patients about the modifiable and nonmodifiable risk factors of osteoporosis and

osteoporotic fractures and explain the importance of changing certain behaviors. Also, teach men at risk how to make their homes safer to prevent fractures.

Because of demographic and life-expectancy changes, male osteoporosis is expected to become a serious public health issue. Fortunately, we have nurses who can teach men prevention, high-tech tools that can diagnose the disease, and evidence-based treatment options that can keep men healthy well into their senior years. ★

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