

Osteoporosis Guidelines Updated **CME/CE**

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Disclosures

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June 5, 2006 — The North American Menopause Society (NAMS) has updated its 2002 evidence-based position statement on the diagnosis, prevention, and treatment of postmenopausal osteoporosis and has published the new guidelines in the May/June issue of *Menopause*.

"This Position Statement is an update of a similar paper published in 2002," NAMS Executive Director Wulf H. Utian, MD, PhD, said in a news release. "Since then, the publication of additional scientific evidence has created a need to update the paper. The 2006 Position Statement is a valuable source of information that will no doubt assist healthcare providers in reducing fracture risk and achieving improved health and quality of life for their patients."

To create these updated recommendations, NAMS followed the general principles established for evidence-based guidelines. A panel of clinicians and researchers who were expert in metabolic bone diseases and/or women's health reviewed the 2002 osteoporosis statement, compiled supporting statements, and

made consensus recommendations, which were reviewed and approved by the NAMS Board of Trustees.

"Osteoporosis, whose prevalence is especially high among elderly postmenopausal women, increases the risk of fractures," the panel writes. "Hip and spine fractures are associated with particularly high morbidity and mortality in this population. Given the health implications of osteoporotic fractures, the primary goal of osteoporosis therapy is to prevent fractures, which is accomplished by slowing or stopping bone loss, maintaining bone strength, and minimizing or eliminating factors that may contribute to fractures."

The recommended evaluation of postmenopausal women for osteoporosis includes a medical history, physical examination, and diagnostic tests to evaluate major risk factors, including advanced age, genetics, lifestyle factors (such as low calcium and vitamin D intake, smoking), thinness, and menopausal status. The most frequently occurring risk factors for osteoporotic fracture are advanced age, low bone mineral density, and previous fracture as an adult.

For management, the panel suggests attempting nonpharmacologic measures first, such as a balanced diet, adequate calcium and vitamin D intake, adequate exercise, smoking cessation, avoidance of excessive alcohol intake, and fall prevention. For women in whom pharmacologic therapy is indicated, government-approved options are bisphosphonates, a selective estrogen-receptor modulator, parathyroid hormone, estrogens, and calcitonin.

"A detailed list of recommendations can be found in the paper," says Position Statement Editorial Chair Michael R. McClung, MD, from the Oregon Osteoporosis Center in Portland. "In general, management strategies for postmenopausal women involve identifying those at risk for low bone density and fracture, followed by instituting measures that focus on reducing modifiable risk factors through lifestyle changes and, if indicated, drug therapy."

Specific recommendations for evaluation focus on assessment of risk factors for bone mineral density–defined osteoporosis and osteoporotic fracture are as follows:

- Lifestyle practices should be reviewed regularly, and those that reduce the risk for bone loss and osteoporotic fractures should be encouraged in all women. These include maintaining a healthy weight, eating a balanced diet, obtaining adequate calcium and vitamin D, participating in appropriate exercise, avoiding excessive alcohol consumption, not smoking, and using measures to prevent falls. Periodic reviews of calcium and vitamin D intake and lifestyle behaviors are useful in all adult women.

- A woman's risk for falls should be evaluated at least annually after menopause.
- The physical examination should include an annual measurement of height and weight, as well as an assessment for kyphosis and back pain.
- Bone mineral density testing is indicated for all postmenopausal women with medical causes of bone loss and for all postmenopausal women aged 65 years and older. The preferred technique is dual energy x-ray absorptiometry (DXA). The total hip, femoral neck, and posterior-anterior lumbar spine should be measured, using the lowest of the 3 bone mineral density scores.
- Bone mineral density testing should be considered for healthy postmenopausal women younger than age 65 years with at least one of the following risk factors: previous fracture (other than skull, facial bone, ankle, finger, and toe) after menopause; thinness (body weight < 127 lb [57.7 kg] or body mass index < 21 kg/m²); history of hip fracture in a parent; or current smoking.
- Routine use of biochemical markers of bone turnover is not generally recommended in clinical practice.
- If osteoporosis is diagnosed clinically or by bone mineral density, any secondary causes should be identified. However, there are limited data to define the most thorough or cost-effective workup.
- Vertebral fracture must be confirmed, either by a vertebral fracture assessment with DXA measurement of the spine or height loss greater than 20% (or 4 mm) of a vertebra on spinal radiograph.

Specific recommendations for treatment are as follows:

- The need for prescription osteoporosis therapy is determined based on a combination of bone mineral density and risk factors. Drug treatment of osteoporosis is recommended for all postmenopausal women who have had an osteoporotic vertebral fracture; who have bone mineral density values consistent with osteoporosis (ie, T-score worse than or equal to -2.5); who have a T-score from -2.0 to -2.5 plus at least one of the following risk factors for fracture: thinness, history of fragility fracture (other than skull, facial bone, ankle, finger, and toe) since menopause, and history of hip fracture in a parent.

- Treatment recommendations should be based on both efficacy data and clinical parameters. These include magnitude of fracture risk, adverse effect profile, tolerability of specific drugs, extraskeletal risks and potential benefits, confounding diseases, cost, and patient preference, including choice of dosing. Because head-to-head trials comparing the effectiveness of pharmacologic therapies to reduce fracture risk have not been conducted, selection of one therapy over another cannot be on the basis of clinical evidence.
- Bisphosphonates are the first-line drugs for treating postmenopausal women with osteoporosis. Alendronate and risedronate reduce the risk for both vertebral and nonvertebral fractures, but whether there are differences in fracture protection among the bisphosphonates is uncertain. It is probable that all bisphosphonates produce greater relative and absolute fracture risk reductions in women with more severe osteoporosis.
- The selective estrogen-receptor modulator raloxifene should be considered most often in postmenopausal women with low bone mass or in younger postmenopausal women with osteoporosis who are at greater risk for spine fracture than hip fracture. Although raloxifene prevents bone loss and reduces the risk for vertebral fractures, its effectiveness in reducing other fractures is uncertain. When considering raloxifene therapy, extraskeletal risks and benefits are important.
- Teriparatide (parathyroid hormone 1 - 34) should be reserved for treating women at high fracture risk, including those with very low bone mineral density (T-score worse than -3.0) with a previous vertebral fracture. Parathyroid hormone improves bone mineral density and reduces the risk for new vertebral and nonvertebral fractures, but dosage requirements of daily subcutaneous injections may limit use.
- The primary indication for systemic ET/EPT is to treat moderate to severe menopause symptoms, such as vasomotor symptoms. When these symptoms abate, continued hormone therapy can still be considered for bone effects, weighing its benefits and risks against those of other treatment options.
- Calcitonin is not a first-line drug for postmenopausal osteoporosis treatment because its fracture efficacy is not strong and its bone mineral density effects are less than those of other agents. However, it can be considered in women with osteoporosis who are more than 5 years beyond menopause. Although calcitonin may reduce vertebral fracture risk in women with osteoporosis, the evidence documenting fracture protection is

not strong. Calcitonin is not recommended for treating bone pain other than that resulting from acute vertebral compression fractures.

- At present, available data do not allow making definitive recommendations concerning combination or serial antiresorptive and anabolic drug therapy.
- Treatment goals and the choice of medication should be reevaluated on an ongoing basis through periodic medical examination and follow-up bone mineral density testing during therapy. Measuring bone mineral density has limited use in predicting the effectiveness of antiresorptive therapies for reducing fracture risk; an appropriate interval for repeat bone mineral density testing is 2 years. Adherence to the treatment plan should be encouraged, in part by providing clear information to women regarding their risk for fracture and the purpose of osteoporosis therapy.
- Drug-related adverse effects may require switching to another agent.
- In most women, treatment of osteoporosis needs to be long term.

"Decisions to discontinue or suspend therapy are based on the woman's risk of fracture and her response to treatment, as well as the likelihood of diminishing beneficial effects from the agent used," the panel concludes. "Given the uncertainties of long-term safety, careful monitoring is required. Fracture risk after discontinuing therapy has not been adequately evaluated."

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Learning Objectives for This Educational Activity

Upon completion of this activity, participants will be able to:

- Describe the use of bone mineral density testing to diagnose osteoporosis.
- Identify first-line treatments of osteoporosis among postmenopausal women.

Clinical Context

Decreased bone density is a common problem in America, with 13% to 18% of white American women older than 50 years diagnosed as having osteoporosis. Another 50% of these women may have osteopenia. For the average American woman at age 50 years, the life risk for an osteoporotic fracture is 40%, and osteoporosis contributes to approximately 90% of all hip and spine fractures among older women.

Osteoporosis is primarily diagnosed through testing for bone mineral density, and the T-score is the most significant scoring system in postmenopausal women.

The T-score reflects patients' bone density compared with healthy, white women between the ages of 20 and 29 years, and T-scores less than or equal to -2.5 at the hip, femoral neck, or lumbar spine are diagnostic of osteoporosis. Z-scores, which reflect a comparison with healthy women of the same age, sex, and ethnicity as the patient, are not as widely used to diagnose osteoporosis in postmenopausal women.

In the current study, NAMS updates its recommendations for screening and treating osteoporosis in postmenopausal women.

Study Highlights

- The recommendations are derived from a 5-person editorial board composed of endocrinologists and gynecologists. They reviewed literature from 3 databases, including MEDLINE.
- Risk factors for osteoporotic fracture include a history of hip fracture in a parent, thinness (as defined by weight < 57.7 kg or body mass index < 21 kg/m²), more than 2 alcoholic drinks per day, current smoking, and the use of glucocorticoid medications for more than 3 months. Heredity is the strongest predictor of peak bone mass in women.
- Women should undergo an annual examination for bone loss after menopause. This examination should include measurement of height and weight as well as an evaluation for back pain and kyphosis.
- Women who should be evaluated for bone mineral density include all postmenopausal women with medical causes for possible bone loss and any woman older than the age of 65 years. Women with significant risk factors for osteoporotic fracture (noted above) may be screened at ages younger than 65 years.
- DXA is the best means to assess bone mineral density, and values for the total hip, femoral neck, and lumbar spine should be measured, with the lowest score among these sites used to define the T- and Z-scores.
- Measurement of biochemical markers of bone turnover is generally not required in clinical practice.
- Vertebral fracture may be confirmed with DXA or vertebral height loss higher than 20% (or 4 mm) on spinal radiographs.

- Medications to treat osteoporosis may be used for postmenopausal women with a diagnosis of osteoporosis per DXA, an osteoporotic vertebral fracture, or a T-score between -2.0 and -2.5 along with another risk factor for osteoporotic fracture.
- No studies to date have directly compared various agents for osteoporosis.
- Bisphosphonates are first-line therapy for postmenopausal women with osteoporosis. They reduce the risk for vertebral and nonvertebral fracture.
- Raloxifene may be considered in younger postmenopausal women. It has been demonstrated to reduce the risk for vertebral fracture, although its effects on other types of fracture are unclear. Raloxifene may reduce the risk for breast cancer, but it also increases the risk for thromboembolic events.
- Teriparatide, a recombinant human parathyroid hormone delivered via daily subcutaneous injections, can help postmenopausal women with severe osteoporosis. It has been demonstrated to reduce the risk for vertebral and nonvertebral fractures.
- Given its multiple systemic effects, estrogen therapy should not be used by women exclusively for its beneficial effect on bone.
- Calcitonin is not as strong as other agents in increasing the bone mineral density, and it has less evidence of fracture prevention.
- DXA screening may be repeated in women without osteoporosis every 3 to 5 years, while the earliest interval for repeat DXA among women receiving osteoporosis treatment is 2 years.
- Most women require long-term treatment of osteoporosis.

Pearls for Practice

- The T-score, which compares a patient's bone density with that of a young, white female, is considered positive for osteoporosis if it is less than or equal to -2.5. The Z-score is a comparison of the patient's bone density with a standard patient matched for age, race, and ethnicity.
- Bisphosphonates are first-line agents in the management of osteoporosis, while estrogens and calcitonin should be avoided if possible in favor of other medications.