Who Should Undergo Bone Density Screening?

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SANTA BARBARA, CALIF. — While it's well known that bone mineral density testing should be routine for women over the age of 65, it can be difficult to decide whether to test other patients and difficult to know what to do with the results, Barbara P. Lukert, M.D., said at a symposium sponsored by the American College of Rheumatology.

The International Society for Clinical Densitometry and the National Osteoporosis Foundation list similar indications for testing bone mineral density (BMD), said Dr. Lukert of the University of Kansas Medical Center, Kansas City. While these guidelines appear straightforward, there are complexities.

The guidelines say that in addition to all women over 65, postmenopausal women under 65 should be tested if they have any risk factors. But studies have not succeeded in identifying all of those risk factors, so in Dr. Lukert's view it's probably prudent to measure BMD in all postmenopausal women.

Premenopausal women, on the other hand, should not have their BMD measured routinely.

The guidelines also call for BMD testing in men over 70. "We know very little about the development of osteoporosis in men, except that we do know that it's much more common than we had previously thought," Dr. Lukert said. "We aren't measuring bone density in men frequently enough."

Similarly, the guidelines call for BMD testing in any adult who has had a fragility fracture, but in practice this is done only about 15% of the time, an oversight that Dr. Lukert described as "appalling."

BMD testing should also be done in adults with any disease or condition associated with bone loss or low bone mass. The conditions include Cushing's disease, hyperthyroidism, hyperparathyroidism, and rheumatoid arthritis.

Some medications are associated with bone loss, most notably the glucocorticoids, and the guidelines say that any adult taking one of these medications should have BMD testing.

Any adult who's being considered for pharmacologic therapy for bone loss should have his or her BMD assessed, and anyone receiving that therapy should have BMD testing to monitor the treatment effect.

"If we follow these indications, we would greatly increase the number of patients who are having their bone density measured," Dr. Lukert said.

One complexity comes in interpreting the BMD results in some of these groups. For postmenopausal women one typically uses the T score, which compares the individual's BMD to that of a healthy young adult. The T score is expressed in terms of the number of standard deviations the individual's BMD falls above or below this norm. The World Health Organization defines osteoporosis as a T score of –2.5 or below, and osteopenia as a T score between –1 and –2.5.

But in premenopausal women, men aged 50-64 with no risk factors, and men aged 20-50 with risk factors, the use of T scores can be misleading. Instead, one should use the *z* score, which compares an individual's BMD with that of an age-matched sample. The use of T scores would imply a relationship with fracture risk that may not exist or may differ from group to group. A postmenopausal woman with a certain BMD would have many times the fracture risk of a premenopausal woman with the same BMD.

Once one has a T score or *z* score, the question becomes whether to treat the patient's osteoporosis or osteopenia. The National Osteoporosis Foundation recommends treating all women with a T score of –2 or below, and women with at least one additional risk factor and a T score of –1.5 or below.

On the other hand, a recent study determined that it was not cost effective to treat osteopenic women because treatment does not significantly reduce their fracture risk over a 5-year period (Ann. Intern. Med. 2005;142:734-41).

But Dr. Lukert pointed out that it's unknown whether pharmacotherapy would improve fracture risk more than 5 years down the road. "If we start treating the patient with a T score of –2 when she is 50 years old, maybe we won't change her fracture rate in the next 5 years, but at 65 will she have a reduced risk for fracture? That is a big unknown." ■