

Shake, Rattle, and Roll



Moving to Make Bone Density a Health Focus

By Brian Justice

As awareness about osteoporosis and other age-related bone issues grows, bone density testing has become not just necessary but also commonplace. For many, it is as mundane a part of health care maintenance as the routine checking of blood pressure, height, and weight that kicks off every visit to the physician's practice.

Bone density research has prompted expanded testing recommendations, and it may well serve frontline health care professionals like medical assistants to keep their knowledge current.

The Straight and Marrow

"We continue to conduct research aimed at understanding all the factors that contribute to reducing fractures, including lifestyle," says Robert H. Carter, MD, deputy director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases.¹

In a study that found that fractures decreased as tobacco and alcohol use fell, data were collected from almost 11,000 men

and women, starting from the date of their first hip fractures and continuing over the next 40 years. During that period, smoking decreased among the participants by 30%, and during that same period, heavy drinking—defined as having three or more drinks a day—fell from 7% to 5%. The big takeaway was that the number of hip fractures for this group dropped by 4% every year for 40 years for both men and women.¹

"In addition to considering osteoporosis treatments in individuals at risk of hip fractures ... this study points to the continued need for public health interventions to target modifiable lifestyle factors such as smoking and drinking," says the study's leader, Timothy Bhattacharyya, MD.¹

Read the Spine Print

"Osteoporosis is more prevalent in women than men, but men experience it too," says Michael Green, MD, an ob-gyn in Wilmington, Delaware. "The statistics show that 3 out of 5 women over the age of 50

experience osteoporosis, compared to 1 in 5 men. And while men may be surprised to learn they have developed osteoporosis, that doesn't change the need for medical intervention and treatment."

A recently published study revealed that men with higher body fat levels have lower bone density and may be more likely to break a bone than men of average weight.² Researchers analyzed the bone mineral density and body composition of nearly 11,000 people under 60. They found that lean mass was associated with high bone mineral density in both men and women. However, fat mass had a notable adverse effect on men's bones in particular.²

"We found that higher fat mass was related to lower bone density, and these trends were stronger in men," says coauthor Rajesh K. Jain, MD, adding that health care providers should consider osteoporosis screening for men with high body weight, "especially if they have other risk factors like older age, previous fracture, family history, or steroid use."²

Fracture Factors

Recent studies and research have found certain conditions to be associated with bone density loss, suggesting that bone density testing may be a good idea for more and younger people than is currently considered the norm.

Five various studies found that lower bone density is associated with hearing loss.³ Osteoporosis causes a 76% higher likelihood of sudden onset hearing loss.³ The nerves that enable hearing are encased in hard bone, but osteoporotic bone metabolism changes the flow of calcium to those nerves. Researchers increasingly believe that the resulting disturbance correlates hearing loss with osteoporosis.³

Another study found that patients with advanced chronic kidney disease also have impaired bone quality and quantity. These patients' risk of nonvertebral fractures is as much as six times higher than average, but most of these patients currently do not receive osteoporosis therapy as part of their treatment.⁴

"Clinicians treating chronic kidney disease patients are often unsure about how to optimally manage bone health, resulting in inaction and a 'wait and see' approach," says the study's author, Pieter Evenepoel, MD. "It is time to foster a paradigm shift with regard to osteoporosis care in these patients."⁴

Osteoporosis also occurs with surprising frequency in children, adds Shevaun Doyle, MD. "Pediatric orthopedists have developed a growing awareness of this condition, so we are seeing more cases than formerly," she says. "The actual number of otherwise healthy children with low bone density is increasing for a variety of reasons."⁵

Those reasons include the following⁵:

- Less physical activity
- Poor nutrition
- Inadequate vitamin D, which helps the digestive tract absorb calcium
- Metabolic, gastrointestinal, and congenital disorders
- Conditions that require chronic use of medications that interfere with bone

production, such as those commonly prescribed for attention-deficit/hyperactivity disorder and thyroid disorders

- Renal and neuromuscular disease
- Anorexia
- Prolonged immobilization

Through Thick and Thin

Bone density testing elicits some ongoing questions, says Diann Jones, CMA (AAMA), a certified bone densitometry technologist at the Brody School of Medicine in Greenville, North Carolina.

Those questions could include, "Is it a closed machine? Do I have to drink anything, [will I] have an IV, and how long does it take?" says Jones. "My role is to explain the process of having a DXA [dual-energy X-ray absorptiometry] scan to the patient. I explain that it's an open machine, that they can eat and drink normally beforehand, though [they should] avoid excess calcium for 24 hours before the test, [and] that it is noninvasive and takes about 30 minutes. There is also very little radiation used when performing a DXA scan."

Like Jones, other medical assistants may often be the first health care professionals people see when they seek out medical care. Staying up to date on compromised bone health indicators will drive increased awareness among providers and better care and outcomes for all patients. ♦

References

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The Bare Bones

The prevalence of bone density issues drives a need for measures to address bone health. In 2010, nearly 100 million Americans over 50 years old had severely decreased bone density mass, and over 10 million people over 65 had osteoporosis. The rate at which the American population is aging means that by 2030 there will be an increase of almost 30% in the number of people with low bone density mass, and the number of fractures will grow proportionally.⁶

New forms of testing are on the horizon, though, and technology is driving their development. The U.S. Food and Drug Administration recently approved the use of new software that uses artificial intelligence (AI) to help providers evaluate and assess musculoskeletal disease in older adults.⁷

"The most recent developments in bone density testing are the ability of AI to diagnose osteoporosis via a hip X-ray," says Michael Green, MD. "AI is increasingly able to use deep learning to detect patterns associated with osteoporosis, and this is groundbreaking because traditional bone density scanners are costly to use, whereas X-rays are extremely commonplace."

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