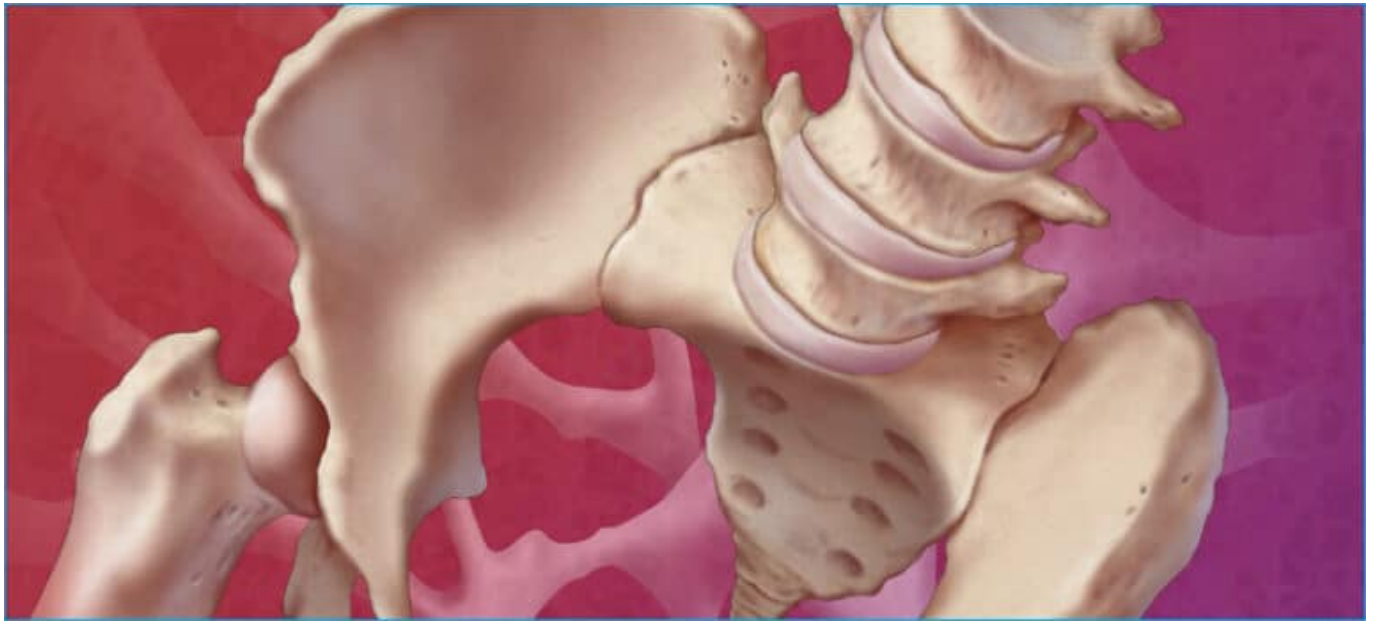


Bone health



Osteoporosis is more common in people with MS.

by **Lori De Milto**

Osteoporosis, a disease that makes bones fragile and more likely to break, is about three times as common in people with multiple sclerosis than in other people, according to results of a study funded by the National Multiple Sclerosis Society.

“Of people with MS, 17.3 percent had osteoporosis, compared with 6.5 percent of people without MS. This is a big problem, particularly since the rate of falls is much higher in people with MS than in people without MS,” says Marcia Finlayson, PhD, principal investigator of the study and a professor and director of the School of Rehabilitation Therapy at Queen’s University in Canada. A broken bone in the hip, spine or wrist—usually due to a fall—is often the first sign of osteoporosis. “The findings emphasize the need to pay more attention to bone health in people with MS,” Finlayson says.

Finlayson and colleagues at Queen’s University and the University of Manitoba in Canada used health records for people living in Manitoba to compare 5,729 people with MS with 3,915 people without MS who were similar in age and gender in their study, “Bone Mineral Density Screening and Fracture Risks in People with MS.”

What’s the link between bone health and MS?

Researchers are exploring how common low bone mineral density (BMD) and osteoporosis are in people with MS. Low BMD, called osteopenia, means the bones have less than the normal amount of minerals and strength, but not yet osteoporosis. Studies where people with MS provided information suggest that up to 73 percent have osteopenia and up to 29 percent

have osteoporosis.

Primary care doctor Janet Piehl, MD, believes that just having MS doesn't increase the risk of osteoporosis and broken bones. "Many people with MS do not have risk factors for low bone mineral density. The risk is not specific to MS per se, but due to high-dose, long-term steroid use as well as inactivity," says Dr. Piehl, who is also the associate medical director for clinical quality at the UW Neighborhood Clinics and an associate clinical professor of family medicine at the University of Washington. Spending most of the day seated or lying down increases risk because lack of weight-bearing activity weakens the bones.

Finlayson also studied anticonvulsants (used to fight seizures) and antidepressants (used to treat depression), which increase the risk of osteoporosis and broken bones, as well. Of the people with MS in Finlayson's study:

- Fewer than 4 percent were long-term steroid users (more than 90 days in one year);
- 12 percent used antidepressants; and
- 3.7 percent used anticonvulsants long-term (more than 180 days in one year).

So far, there's no evidence about whether MS disease-modifying therapies affect the bones.

Both MS and osteoporosis are more common in women than in men. However, even people with MS who have little disability may have general risk factors. Along with being female, other general risk factors for osteoporosis include being Caucasian or of Asian descent, a history of broken bones, smoking cigarettes, heavy alcohol consumption, having small bones, being thin, family history of osteoporosis, early menopause and older age.

Who gets screened for osteoporosis?

Dual-energy X-ray absorptiometry (DXA) is a common test for low BMD and osteoporosis. Researchers found that doctors sent people with MS for these screens more often if they were older, female, living in an urban area, or had a recent fracture, prolonged steroid use or breast cancer. While many people who have MS as well as risk factors for osteoporosis are being screened, some are slipping through the cracks, says Finlayson, who argues that screening guidelines are needed.



(From left) Nicole, diagnosed in 1995, Melanie, diagnosed in 1997, and Autumn, diagnosed in 2013, of Memphis, Tennessee, enjoy Zumba together regularly for the social connection as well as the physical exercise. Zumba can help build muscle and endurance and support bone mass. Zumba, without adaptations, can be risky for osteoporotic spines because of the quick moves and twists and some spinal flexions.

How can you strengthen your bones?

“There are many things under your control,” Dr. Piehl says. “Taking charge of those things is very important.”

Regular, weight-bearing exercise and strength training help strengthen bones, and balance exercises help prevent falls. “Keep moving. Exercise most days, doing whatever weight-bearing exercise you are able to do,” Dr. Piehl says. Some people with MS may be able to walk or run, while others may need to use a recumbent bicycle that simulates weight bearing, or do chair exercises. Even if you use a wheelchair, you can do strength and resistance training. A physical therapist can help you design an appropriate exercise program.



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Take steps to reduce the risk of falls, adds Finlayson, like removing clutter and throw rugs, and adding grab bars or handrails on stairs and in bathrooms. Programs like the Society's "Free From Falls" are helpful.

Other ways to help prevent osteoporosis include:

- Not smoking
- Having no more than two alcoholic drinks per day
- Maintaining good nutrition, especially enough calcium or vitamin D (through diet and/or supplements)
- Talking to your primary care doctor or neurologist about how to strengthen your bones and whether you should be screened for osteoporosis.

How well can broken bones be predicted?

The researchers also studied how well a fracture-risk assessment tool called FRAX worked in predicting broken bones in people with MS. FRAX calculates the probability of a broken bone within 10 years based on risk factors like age, gender, use of steroids, secondary osteoporosis (caused by certain medical conditions or treatments) and BMD score at a part of the hip called the femoral neck. People with MS were 3 to 4 percent more likely to break bones than FRAX predicted, and the tool worked best when BMD was included or when MS was considered a secondary cause of osteoporosis. The researchers believe that adding MS as a risk factor would increase FRAX's accuracy and that these results also highlight the need for screening guidelines for people with MS.

Changes to bone mass can start soon after being diagnosed with MS. Finlayson and her colleagues recommend using FRAX along with DXA scans to screen people with MS who have risk factors such as being female, a recent fracture, prolonged steroid use and breast cancer. If results show osteoporosis, discuss taking an osteoporosis medication with your doctor to help maintain bone density and decrease the risk of broken bones.

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