

## How will I get results and what do they mean?

All exams are interpreted by a staff radiologist with specialized training and certification in DXA. The completed interpretation is immediately available to your primary care or referring physician, who will contact you to discuss the test results. As a Dartmouth-Hitchcock patient, you can also directly access the written report at [myD-H.org](http://myD-H.org).

In addition to providing a comparison with earlier DXA scans you may have had, your results will include two key numbers. The "T score" provides an estimate of how much a patient's bone density has changed since early adulthood, and is used to establish a diagnosis based on World Health Organization criteria, as follows:

- 1 and higher = normal bone mass
- 1 to -2.5 = low bone mass (osteopenia)
- 2.5 and less = osteoporosis

The other result, called the "Z score," compares your bone density with other people of your age and gender. If unusually high or low, it may indicate a need for further medical tests.

The numerical scores are based on averages, and their meaning can vary from person to person—your physician will help you understand what they mean for you.

## Can DXA predict broken bones?

The risk of fracture is affected by a variety of other conditions in addition to bone mineral density—things like body weight, personal and family history of prior fractures, cigarette smoking, and excessive alcohol consumption. These factors must also be considered when determining what kind of lifestyle changes or therapy are appropriate for patients diagnosed with osteoporosis.

## Information Resources



The National Osteoporosis Foundation is dedicated to the prevention of osteoporosis and broken bones. The NOF website offers good explanations of bone disorders and the steps you can take to help protect bone health.  
[www.nof.org](http://www.nof.org)

The NIH Osteoporosis Resource Center offers excellent online materials for people with osteoporosis and other bone disorders.  
[www.osteoo.org](http://www.osteoo.org)



## RadiologyInfo.org

With clear explanations and useful illustrations, RadiologyInfo is a comprehensive guide to medical imaging, and is an excellent source of information on bone density testing and what it means for your health.  
[www.radiologyinfo.org](http://www.radiologyinfo.org)

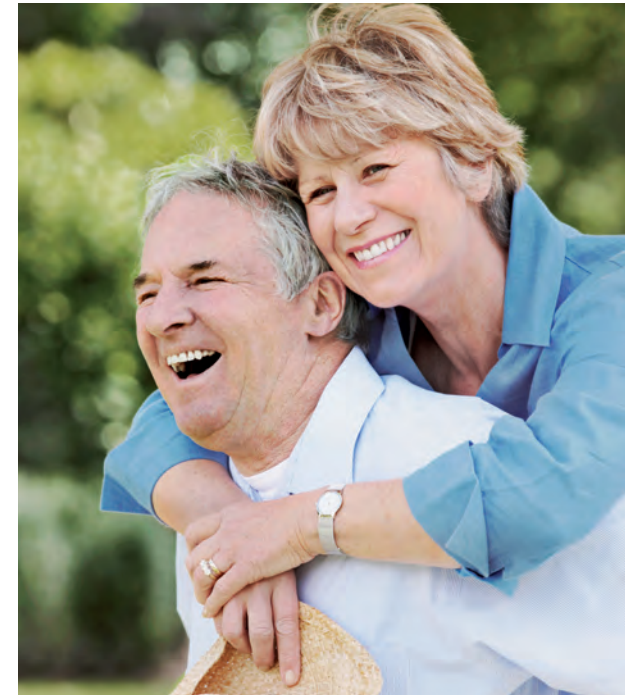


Dartmouth-Hitchcock has been performing bone density exams since 1996. The DXA team, guided by team leader Mary Derosier (center), has built a reputation for technical and patient-care excellence. In 2010 we were selected as a DXA showcase and training center for Hologic, Inc., a leading manufacturer of medical imaging devices.

**DXA info and scheduling: 603-653-9388**

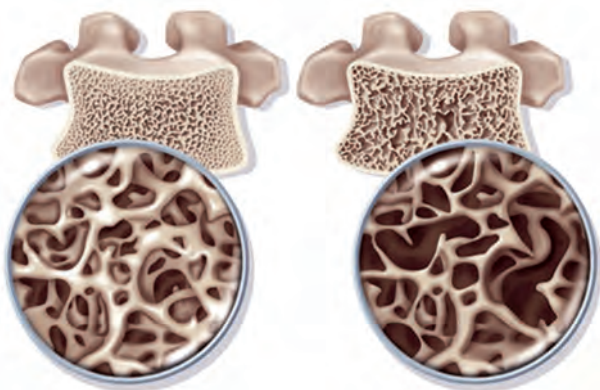
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The D-H Commitment to Imaging Safety

# Bone Density and the DXA Exam



As we grow older our bones lose mineral density and weaken. If this loss becomes severe—a condition called osteoporosis—we can be at risk of serious fractures without even knowing it. The DXA bone density exam is the best and easiest way to assess our bone health, information that can help us stay safe and active for years to come.

 **Dartmouth-Hitchcock**



Internal structure of normal vertebra (left) and vertebra weakened by osteoporosis (right)

### What is DXA?

Bone density testing (also known as "bone densitometry") is done with a special process called dual-energy x-ray absorptometry, or "DXA" for short. By measuring bone mineral density DXA offers a safe, painless and reliable way to help evaluate bone strength and the likelihood of fractures—and especially, to detect the presence or extent of osteoporosis.

### What happens during a DXA exam?

Your DXA appointment should take no longer than 30 minutes. It begins with a simple questionnaire. Your responses are used by the DXA technologist to select the best scanning options and by the radiologist in preparing the interpretation of results. The exam itself is painless and requires no injections, and takes place on a soft table, where you will be asked to lie quietly while the x-ray device moves above you. Two or three scans will be done, each lasting just a few minutes.

### What is osteoporosis?

Bone is living tissue, made strong by calcium and other minerals which the body is always replenishing. As we grow older, natural bone removal can outpace the body's ability to replace it. Over time, bone's outer "shell" weakens and the inner "honeycomb" lattices lose density.

Osteoporosis is the name for mineral loss resulting in bones that have become fragile, and easily broken. Because changes to bone density are not always apparent, the first sign of this "silent disease" may unfortunately be a broken wrist, hip, or spine.

While anyone can develop the condition—there are now ten million Americans with diagnosed osteoporosis—the likelihood increases with age, and post-menopausal women are most at risk. For several years around the time of menopause, women may lose bone at a rapid rate, which thereafter becomes more gradual. In men, the loss of bone mass is slower—but by age 65 or 70, men and women lose bone at the same rate. Special risk factors for osteoporosis include:

- family history of fractures or osteoporosis
- bone fractures suffered after age 40
- pre-menopausal surgery to remove ovaries
- history of steroid use
- early menopause
- long-term calcium deficiency
- extended bed rest
- small body frame

### Is radiation used in the DXA scan?

State-of-the-art DXA systems such as that used at DHMC involve very little radiation—much less than a chest x-ray, and roughly equivalent to what you'd received on a coast-to-coast airline flight. Still, DXA of the hip and spine is not performed on pregnant women as a matter of institutional health policy.

### What should I do to prepare?

On the day of the exam you may eat normally and take all prescribed medications. You should wear loose, comfortable clothing, avoiding garments that have zippers, belts, snaps or buttons. Women should always inform their physician and x-ray technologist if there is any possibility that they are pregnant, as x-ray imaging is not usually performed during pregnancy.



Radiologic technologist Kristin Jodoin preparing a patient for a bone density exam on the Discovery™ DXA Scanner.