What to expect when you are having a DXA scan

Objectives

1. Define DXA bone density scan and its purpose.
2. Identify who should have a bone density scan.
3. Explain what to expect during a DXA scan.

What is a bone density scan?

- A bone density scan, also known as a DXA scan, is a simple, painless medical test used to help assess your bone strength and fracture risk.

- DXA scans are used to diagnose osteoporosis and identify low bone mass and to monitor **B**one **M**ineral **D**ensity (BMD) changes over time.

What is the purpose of bone density scans?

- To measure how much calcium is inside of the bones.
- To help assess whether your bones are as strong as they should be.
- To evaluate if you are at higher risk for breaking bones.
  - The medical term for any broken bone is a “fracture”.
- There is more that can be done these days to help treat low bone density before major fractures occur.

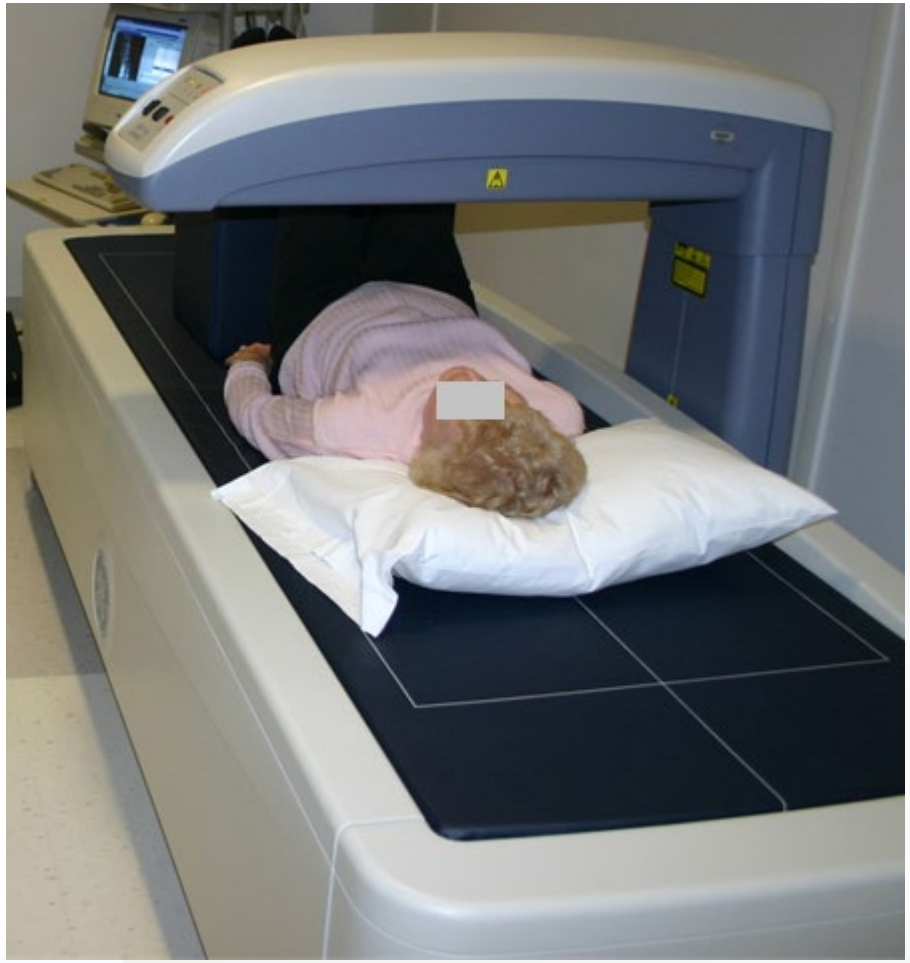
Why are bone density scans also called DXA scans?

- Most bone density tests utilize a device called a DXA scanner.
  - This is not the same as a nuclear medicine "bone scan", which uses a different technology for different purposes.

- Why DXA vs. other technologies?
  - DXA is quick, painless, and safe. It is the type of technology that was used to calculate scores for the diagnosis of osteoporosis and the technology that was used in all of the pharmaceutical drug trials.

"DXA" stands for Dual-energy X-ray Absorption

- DXA uses a very tiny amount of x-ray energy. Less than any other x-ray-based imaging of the same body sites.
- The effective dose is approximately *5-7 micro*Sv.
- For comparison, regular x-rays of the spine and hips would be many hundreds of µSv.



Who should have a bone density test?

- **Women aged 65 and older, and**
- Women younger than 65 who are post-menopausal or in the menopausal transition if they have a risk factor for low bone mass such as:
  - Low body weight
  - Prior fracture
  - High risk medication use
  - Disease or condition associated with low bone mass

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Who should have a bone density test?

- **Men aged 70 and older, and**
- Men younger than 70 if they have a risk factor for low bone mass

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- **Any adult with the following:**
  - Fragility fracture
  - Disease or condition associated with low bone mass or bone loss
  - Adults taking medications associated with low bone mass or bone loss
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Preparation for your DXA Scan

- You may be asked to avoid calcium supplements before the test (especially the extended-release version), so that undissolved tablets don't create an artifact on the image.

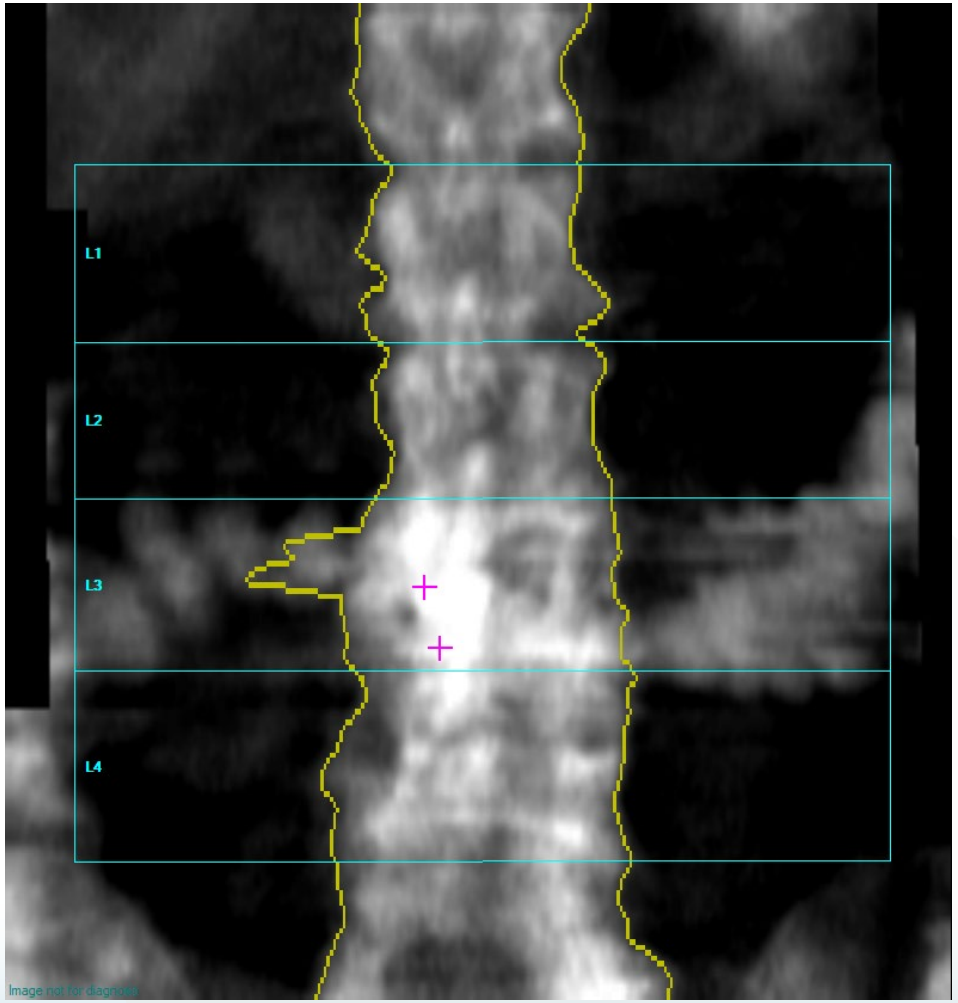
- You might also be asked to wear loose clothing without any hardware in the trunk region of the body (plastic or metal) such as zippers, buttons, or underwire bras.

Preparation for your DXA Scan

- You will not receive any "x-ray dye" for a DXA scan, but recent contrast media given for other imaging tests can interfere with the accuracy of the DXA measurements.
  - This includes barium, oral CT scan contrast, intravenous contrast for CT, PET, or MRI exams. It also includes radionuclides given for nuclear medicine tests.
  - The time needed for contrast to clear the body varies. A facility may ask for the DXA scan to be done a certain number of days/weeks after a contrast exam.

Preparation for your DXA Scan

- Substances like Pepto-Bismol or liquid aluminum antacids when ingested prior to a DXA scan, may appear similar to oral contrast. It's best to avoid these in the days leading up to your exam.



Shahnazarian V, et al. Pepto-Bismol Tablets Resembling Foreign Bodies on Abdominal Imaging. Cureus. 2018 Jan 23;10(1): PMID: 29581914

At the Bone Density Facility...

- You may be asked to complete a bone health history form that asks about factors which can be used to assist in determining your risk for future fractures.
- You may or may not need to change out of your street clothing or shift hardware out of the imaging area.
- The technologist may measure your height and weight. This information needs to be accurate as it is used to select the DXA scan settings and certain measurements account for it.

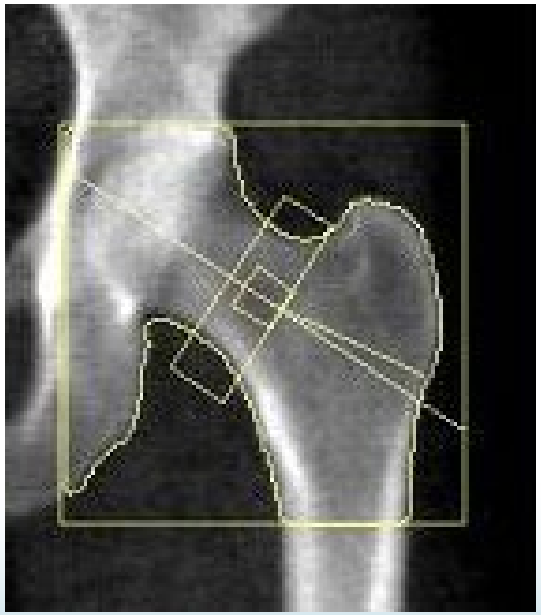
There are two primary DXA equipment manufacturers

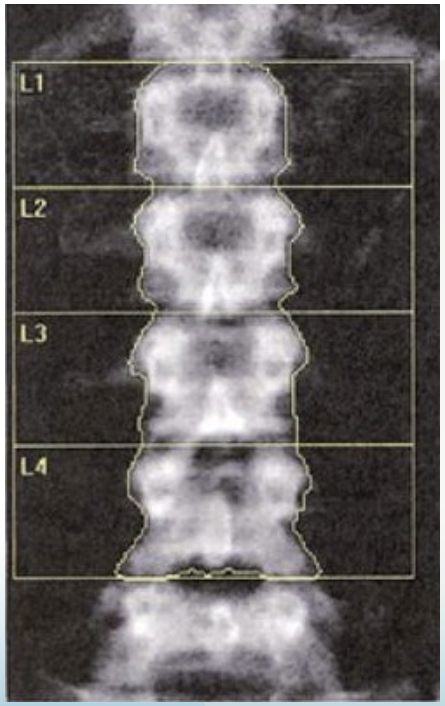
What to expect during your DXA test

- You will be lying on your back on a lightly padded imaging bed. A narrow scanning arm will move over you during the exam.

DXA scan measurement sites

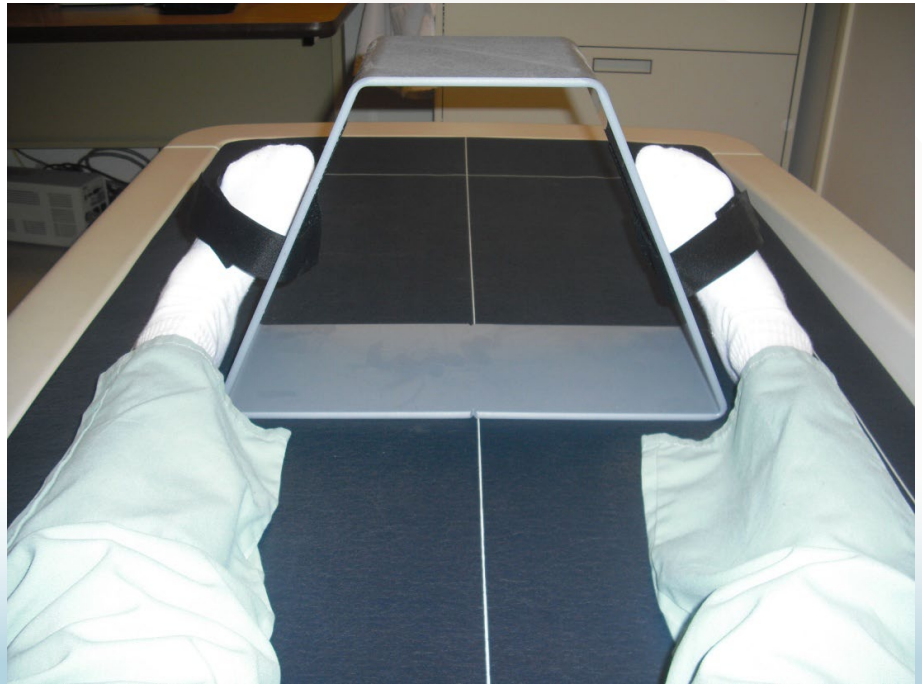
- The standard measurement sites are the lumbar spine and hips which include the tops of the thigh bones (femur) as they go into the pelvis at the hip joint.
  - Certain implants may limit the amount of bone that can be measured.





Exact positioning is needed

- During the scans, the DXA technologist will move your legs into specific positions.
- The tech may make positioning adjustments during the test.
- When we get you into that exact same alignment each time, it makes for a better comparison.



- Although the entire appointment is longer, the scanning time itself is approximately ten minutes. The tech also needs time to ensure proper placement of region-of-interest lines on the images.

- DXA results go by the numbers. The technologist prepares the measurements for the interpreting provider or radiology doctor.

Will I need to have another DXA scan?

There is more that can be done for your bone health these days.

- Your first DXA is also a baseline for future comparison. When you have a follow-up scan, your bone density can be assessed for stability, improvements or decreases over time.

- The ISCD's Adult Official Positions include a list for when a bone density test is recommended and when repeat scans should be performed.

In summary

- A DXA bone density scan is a simple medical test used to help evaluate your bone strength and risk for fracture.

- There is specific guidance available to your medical providers regarding when to have baseline and follow-up DXA scans.

Thank you.

ISCD
The International Society
For Clinical Densitometry