

# Common Asked Questions about Bone Density

## Why are you having this test?

Bone mineral density testing is used to screen for osteoporosis and to follow the response of the bones to treatment. DXA scanning is a way of measuring bone mass, which is the thickness of bone or the amount of calcium and other minerals in the bone. We routinely measure bone density at two sites: the hip and spine. We will obtain bone density measurements at the wrist if your medical condition warrants this test.

If possible, you should have your bone density performed on the same machine each time and preferably by the same technician. This will allow for the most accurate comparison studies.

## What will the results of this test show?

This test compares your bone density to the peak bone density for a healthy 25 year old (the T-score) and to the average bone density for a person in your age group (the Z-score). The numbers reported are positive or negative and reflect your degree of deviation from the average (standard deviation from the mean). The results are interpreted as follows:

Normal	T-score > -1.0
Osteopenia (or low bone mass)	T-score between -1.0 and -2.5
Osteoporosis	T-score > -2.5

## What might increase my risk of having low bone density?

Many medications, medical problems, life style choices, aging, and family history may increase your risk of having a low bone density. The following table highlights a few of the most common:

Risk factors	Medical problems	Medications
Cigarette smoking	Parathyroid disease	Steroid use
Weight <127 lbs	Rheumatoid arthritis	Thyroid medication use
Age >65	alcoholism	Seizure medication use
Post menopause state	Treatment for prostate cancer	heparin
Low calcium/vit D diets	Celiac disease	
Family history of osteoporosis or fracture		

## **What does it mean to be diagnosed with low bone density (osteopenia or osteoporosis)?**

Low bone density is associated with an increase risk of bone fracture. We are most concern with preventing vertebral (back) and hip fractures. Bone density is not the only predictor of fracture risk, balance and agility and risk for fall also play a role. If you are diagnosed with low bone density it is important to look at the big picture of your general health and balance the risks and benefits of certain treatment options. You may be prescribed supplements, medications, or asked to see a osteoporosis specialist. You may need to undergo further testing (blood, urine or X-rays to determine the cause or extent of your problem).

If you have a high risk of falling and low bone density, you may be prescribed **hip protectors** to wear.

## **If I am found to have bone loss, what are my treatment options?**

### **Current Treatment Options:**

- Exercise:** aerobic, with weights, 40 minutes four times/week
- Calcium:** 1,200 mg a day (in divided doses). See calcium information
- Vitamin D:** 400 – 800 IU daily. More if you are deficient.
- Estrogen:** very helpful for bone density but use may be associated with other health risks. If are suffering from other symptoms of estrogen deprivation like hot flashes, your gynecologist (this is for women only) may recommend this for you!
- Bisphosphonates:** these drugs interfere with the re-absorption of bone  
Alendronate (Fosamax either as 5 mg – 10 mg daily or 70 mg weekly)  
Risedronate (Actonel 5mg daily or 35 mg weekly)  
Didronel (dosing schedules vary)

- Raloxifen:** a selective estrogen receptor modulator. (Evista 60mg daily)
- Calcitonin:** nasal spray (200IU intranasally daily) -
- PTH:** parathyroid hormone. This is usually prescribed by an endocrinologist for extreme cases of bone loss or bone loss associated with chronic steroid use.
- Hip protectors:** for patients with gait instability and high risk for falling. Will reduce hip fracture risk by 50% but must be worn at all times.

## **Information about Radiation Safety for Patients Undergoing Bone Densitometry Testing (DXA scan)**

Bone density testing with a DXA scanner involves minimal exposure to radiation. This is because the beam of radiation is focused, involves low energy and lasts for a very short period of time.

No shielding is required for this test. If you suspect that you might be pregnant, please inform the technologist prior to beginning the test.

Examples of typical radiation doses:

Bone Density test (DXA scan)	1-5 $\mu\text{Sv}$
Natural Background radiation	5-8 $\mu\text{Sv}$ per day
Mammography	450 $\mu\text{Sv}$
Chest X-ray	50 – 150 $\mu\text{Sv}$ (depends on technique)
Lumbar X-ray (one view)	700 $\mu\text{Sv}$
Round trip flight NY - LA	60 $\mu\text{Sv}$
Average Annual dose	2,400 $\mu\text{Sv}$ per year at sea level
Max dose for general public, excluding dental and medical tests	5,000 $\mu\text{Sv}$ per year

10  $\mu\text{Sv}$  = 1 milliRem

If you have any concerns or questions about the safety of this test, please do not hesitate to ask.