

Bone Density Test Interpretation

BMD is a measurement of your bone mineral density. The risk of fracture increases as your bone density decreases. Results are reported as a T-score, which is a value given in units of SD (standard deviation) from normal (as established by the World Health Organization). It compares your bone density to that of healthy, young women at approximately 30 years of age. Osteopenia is defined as a T-value of -1 to -2.5 and Osteoporosis is defined as a T-value of -2.5.

Bones go through a constant state of remodeling through bone loss (resorption) and bone formation. Estrogen protects against bone loss. The ratio of building bone (formation) to breakdown of bone (resorption) changes throughout your lifetime depending on the amount of estrogen in your system. As menopause occurs, the body produces less estrogen and breakdown of the bone occurs faster than the building process. Osteoporosis is a silent condition resulting from reduced bone density that may result in bone fractures. Calcium from the breakdown of bone is excreted. Ingesting calcium either through your diet or by supplements is necessary to continue normal bone formation. Calcium does not change the rate of bone formation or loss.

To help prevent osteoporosis, it is important to perform weight-bearing exercise, avoid alcohol in excess and smoking. Calcium 1000-1500 mg/day and vitamin D 400 IU/day are also helpful in prevention, but not effective alone for treating osteoporosis once it has occurred. Vitamin D can be obtained through fortified milk, sunlight (15 minutes a day) or supplements.

If you have osteopenia with risk factors for osteoporosis or osteoporosis, you should consider treatment with one of the following:

- Estrogen replacement: Though there is evidence of decreased bone resorption on estrogen hormones, they are FDA-approved only for the prevention, not the treatment of osteoporosis.
- Bisphosphonates (Fosamax, Actonel, Boniva): The anti-resorptive medications slow the bone-resorbing portion of the bone-remodeling cycle, but not the bone-forming portion of the cycle. As a result, new formation continues at a greater rate than bone resorption, and bone density may increase over time. Side effects include gastritis and esophagitis.
- Raloxifene (Evista): Raloxifene is a selective estrogen receptor modulator that increases bone density. Side effects include hot flashes (commonly) and blood clots (rarely).
- Calcitonin: Intranasal calcitonin inhibits bone breakdown.
- Parathyroid hormone: Daily injection given for patients who have failed other therapies, have very severe disease or for whom therapeutic alternatives are limited.