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INTERPRETING YOUR BONE DENSITY REPORT

RISK FACTORS for OSTEOPOROSIS: Bone density loss risk factors include: personal history of fracture, first-degree relative with fracture, smoking, weight < 127 lb., Caucasian, advanced age, female, sedentary lifestyle, low calcium intake, alcoholism, poor health, estrogen deficiency. Many diseases and drug therapies increase risk of osteoporotic fracture.

PREVENTION: All women should be actively preventing bone density loss by receiving at least 1500 mg per day of elemental calcium (usual good diet provides 600, so a supplement is almost always essential), and 800 IU vitamin D (one quart of milk has 400 mg vitamin D, bowl of cereal contains 50, so supplement almost always needed). Weight bearing exercise such as walking briskly, jogging, stair-climbing, dancing, weightlifting and tennis for >30 minute sustained periods three times weekly all reduce bone density loss. Any tobacco, and alcohol use of more than one drink daily increase bone density loss and should be strictly avoided.

EARLY DETECTION of BONE LOSS: The Dual X-Ray Absorptiometry (DEXA) machine is the best method for measuring hip and spine bone density. Measurements are divided into normal, low (osteopenic), and very low (osteoporosis). Unless a woman is disabled or has taken steroid medication for a significant time, or has a family history of osteoporosis at a young age, it is not necessary to perform DEXA until the menopause, or when going off of estrogens. After that, density is measured every few years, depending on the risk. While some doctors have suggested that all women should take hormones to prevent osteoporosis, many women either have fine bone densities and don't need HRT, or need medication to halt bone density loss.

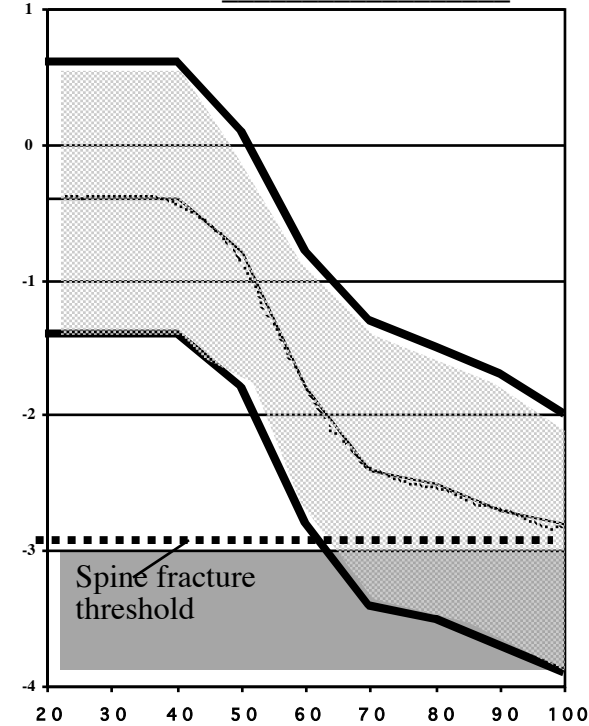
The average bone density for each age is the thin line in the middle of the normal range. None of the women who were used in the creation of this "normal" chart were advised to do all the measures that preserve bone maintenance, so their bone densities naturally decreased over time. Yours does not have to drop as you age, if you are doing the prevention steps above. However, some women still lose density and need medication to preserve bones and prevent fracture. **Dr. O'Hanlan is not a bone density specialist, but orders bone density testing to see which women need consultation with a specialist.**

The T-Score is a computerized comparison of your bone density with that of an average younger woman of your height and ethnicity to give you an idea of how much bone you have lost over the years, compared to a standard. This value is given in statistical language as a "standard deviation" from the average younger woman. No bone loss at all would give a standard deviation of 0.0 from the average younger woman's bone density. A mild bone loss with a score of -1.0 to -2.5 is called osteopenia. A large decrease in bone density would give a T-Score lower than -2.5, called osteoporosis. The fracture threshold T-score for the spine is -3.0, for the hip is -2.3. The big goal is to avoid fracture by keeping your T-Score well above fracture threshold all your life.

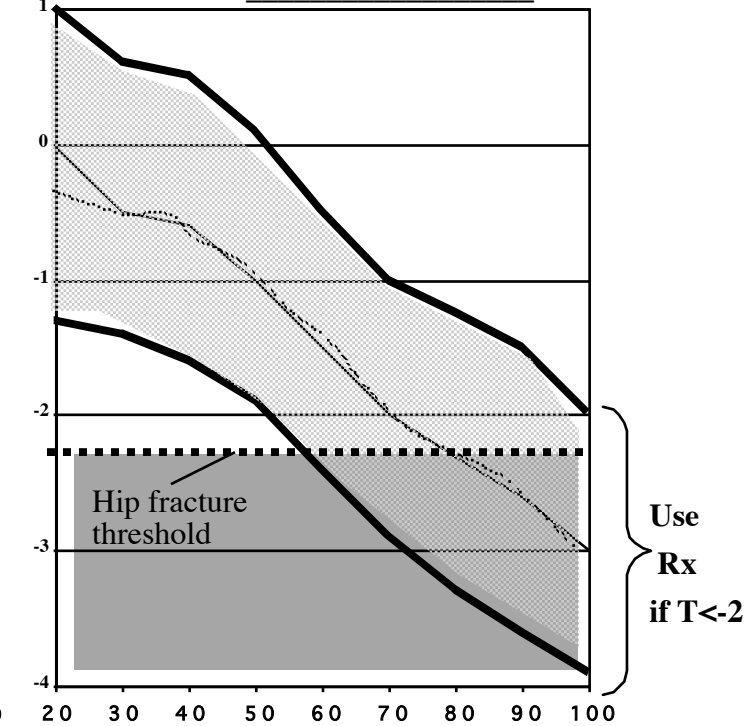
Your T-score enables you to predict the long-term effects of your lifestyle by the changes over the years. Without intervention, you will likely keep the same position in the normal range over time. Simply draw a line along the normal line that intercepts your T-Score at this current age and see at which later age it crosses the fracture threshold. If you have a bone density T-Score of -1.8 at age 60, you will likely cross into the fracture range by age 70...very undesirable! With this information, you can more rigorously do prevention, or you may need to consult an endocrinologist for testing and medication. The risk of dying during the year after osteoporotic fracture is 6-9 times higher than normal risk of dying. **Keep dem bones strong!**

Name _____ Age _____ Date _____

SPINE T-Score _____



FEMUR T-Score _____



Prevention and Treatment of low Bone Density: 1. Lifestyle. Just do it! **2. Medication.** Therapy to prevent fracture is indicated when the T-Score is < -2.0 without any risk factors (see above risk factors) or < -1.5 with any risk factors for osteoporosis. If therapy is needed, you should see a internist or bone mineral endocrinologist to investigate the possibility of other contributing factors, associated problems or diseases. (Dr. O'Hanlan screens for this problem in all her menopausal patients, but does not treat it.)

Generally, there are four approved therapies to arrest further loss of bone density, all reducing fracture risk equally, by 40-50%.

- Alendronate (Fosamax), 5mg/day or 35mg/week, to prevent and 10mg/day or 70mg/week to treat osteoporosis can cause stomach upset while reducing fracture risk by 40-50%. Actonel is in this group.
- Raloxifene (Evista) 60mg/day can cause hot flashes, but may also reduce breast cancer risk by 72%. If you've had a hysterectomy, Tamoxifen, 20mg/day or Raloxifene. Both reduce fracture risk by 40%.
- Estrogen is approved for prevention but not therapy of osteoporosis. It seems to be associated with an increased risk of breast cancer after five years use from 12 to 17%, and 20% risk in users of more than ten years duration. Start at .3 and check for effect, increasing to .625 if needed. Consider adding an androgen for further support of bone density maintenance.
- Calcitonin is for therapy (not prevention) and is delivered as a daily nasal spray providing 200 units, reducing fractures by 48%.

Your density report above shows:

_____ No current problem. Repeat bone density in _____ years. Prevent any further loss!

_____ Bone Density quite low. Please see your internist for evaluation and treatment.