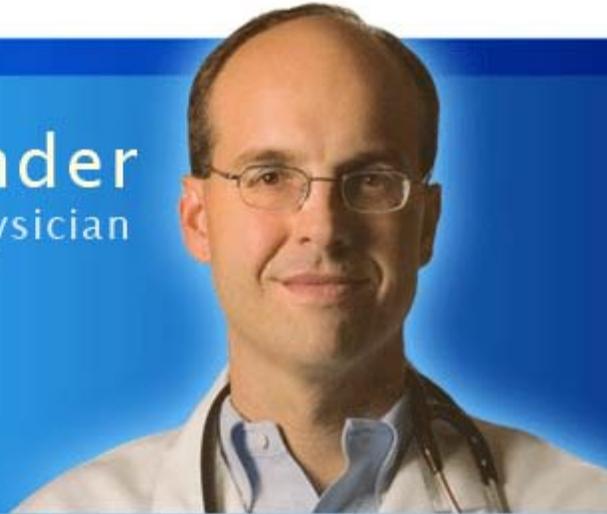


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TOPIC: OSTEOPOROSIS

Osteoporosis is a disease that is manifested by thinning of the bones. It is the most common bone disease in humans and typically occurs in women older than 65 or men older than 70. Approximately 10 million Americans have osteoporosis and 33.6 million have low bone density (osteopenia) of the hip.

As you grow bone is continually absorbed and rebuilt. This leads to a strong healthy skeleton. Peak bone mass generally occurs by age 30 and then begins declining over time. There are many factors that may affect this decline:

1. Loss of sex hormones (menopause).
2. Family history of bone loss (osteoporosis).
3. Excess alcohol intake (three or more drinks a day).
4. Smoking.
5. Lack of exercise.
6. Vitamin D insufficiency.
7. Use of certain drugs (Coumadin, steroids, anticonvulsants).
8. Other medical diseases (i.e. celiac disease, inflammatory bowel disease, and thyroid disease).

As a doctor we begin to think about osteoporosis in people older than 50 and order an assessment of bone density in women older than 65 or men over 70. To test this we order a simple x-ray called a DEXA to assess the bone thickness at the hip and spine. We usually refer to a T-score which is a standard deviation away from normal bone density. A T-score of greater than -2.5 is considered osteoporosis. Between -1 and -2.49 is considered osteopenia. All other T-scores are considered normal.

You may also be informed of a FRAX score. This is a World Health Organization tool that can estimate your ten year fracture risk. This tool is available at www.nof.org.

If you have osteoporosis and sometimes osteopenia you will probably be treated. First we will check labs to assess thyroid function, vitamin D level and parathyroid hormone levels. If these are normal we will begin with calcium and vitamin D. Adequate calcium should be at least 1200mg a day. Bone is made of calcium so your body requires adequate dietary intake. Vitamin D is required for calcium absorption along with a host of other functions. Current vitamin D recommendations are 800-1000 units of vitamin D daily. Be prepared for

the recommendations for adequate vitamin D to increase soon. I feel Citracal plus D gives the best and easiest to absorb calcium and D combination.

I also recommend exercise that is weight bearing. Exercise will strengthen bones and also muscles. Muscle strength is essential to prevent falls. If your balance is poor I may also recommend physical therapy to improve upon this. Weak bones and poor balance are a recipe for disaster.

The drugs used to treat osteoporosis are very effective and generally are safe. The most common drugs are the bisphosphonates(Fosamax, Boniva, Actonel, Reclast). These drugs are the gold standard of treatment and work to slow bone reabsorption. They can cause esophageal irritation and thus need to be taken on an empty stomach. You need to remain upright for 30 minutes after taking the medication.

Hormone therapy such as estrogen can be effective for bone loss. There are, however, many risks and benefits to this therapy that need to be discussed at a visit before initiating this therapy. Understand that initiation of hormone therapy is not recommended to treat osteoporosis by the FDA, however, we sometimes do it. Another class of drugs, the selective estrogen receptor modifiers (Evista) also increase spinal bone density but again have many side effects. This drug may be recommended in women who do not tolerate a bisphosphonate. The drug has only been shown to help fractures in the spine.

A new class of drugs, the RANK inhibitors have recently been released and also show great promise. The new drug Prolia acts to slow bone reabsorption by a different mechanism than Fosamax. The drug is given by shots two times a year and should be considered in patients who have not tolerated drugs such as Fosamax. One last class of drugs helps to form new bones by mimicking parathyroid hormone. Forteo, although a potent producer of bone has many side effects including increased risk of cancer and should only be given after a full and thorough discussion of the risks and benefits of this drug at a visit.

There are always concerns regarding medicine and recently a few concerns regarding bisphosphonates and calcium have occurred. Osteonecrosis of the jaw and subtrochanteric hip fractures have been noted in many articles. The data does show that these are rare but serious side effects of Fosamax and drugs like it. Remember that the risk of these events is exceedingly low and does not warrant stopping the medication. Before you do stop the medication please talk to me so we can truly consider what the true risks are. There has also been a recent review article concerning calcium and the risk of heart attacks. I have read the study and the study was not conclusive. More studies need to be done. Of note, people who had osteoporosis were excluded from the study giving me concern as to the validity in patients who have bone loss.

No matter what, your bones are important and fractures are painful. People who suffer fractures are at increased risk of death and long term pain after the fractures. Exercise, calcium, and vitamin D are keys for everyone. Bone health is very important. Please feel free to discuss any questions you have about your bones with me at any visit.