Osteoporosis and Osteopenia: What’s the Difference?

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Osteopenia vs Osteoporosis

My grandmother has osteoporosis. When her doctor got the results of her DEXA scan and informed her of her diagnosis, she was a bit nervous, but she got started moving — literally. At first, I thought that was silly. Her bones were fragile — didn’t that mean she should sit in her chair so she didn’t break a bone?

It turns out, I was mistaken.

After I did a little bit of research, I discussed things with her. It turns out she had osteopenia prior to osteoporosis; osteopenia is a precursor to osteoporosis. However, she didn’t get “into action” and her diagnosis progressed.

So, here’s what I know about osteoporosis and osteopenia.

Diagnosis

It is possible to detect osteopenia through an x-ray. However, it is more typical that osteopenia and osteoporosis are diagnosed through dual energy x-ray absorptiometry, or DEXA scans. A DEXA scan measures bone mineral density (BMD.)

DEXA scans use low-energy x-rays to assess the calcium level in bones. The scans use less radiation than standard x-rays. The results are compared to healthy individuals and given a "T-score." The T-score is "derived by comparing it to an average score for a healthy 30-year-old of the same sex and race. The difference between the "normal young" score and the patient's score is referred to as a standard deviation (SD.)"

Diagnostic criteria is as follows:

- T-score of 2.5 to -1 SD: normal bone density
- T-score of -1 to -2.5: osteopenia
- Below -2.5: osteoporosis

The Statistics

Harvard Health estimates that osteopenia affects 50% of Americans over the age of 50. That’s HALF of all people over 50, regardless of gender, who may go on to develop osteoporosis!

The Journal of the American Medical Association estimated in 2001 that a 50-year old Caucasian woman "with a T-score of -1 has a 16 percent chance of fracturing a hip, a 27 percent chance with a -2 score, and a 33 percent chance with a -2.5 score.” At the age of 50!

The *National Osteoporosis Foundation* estimates that osteoporosis is directly responsible for two million broken

bones yearly, which costs $19 billion annually. Expects expect that these fractures and costs will increase exponentially by the year 2025 – up to two million broken bones and $25.3 billion annually.

Prevention Is Key

With statistics like these, perhaps it is better to prevent osteopenia and osteoporosis from occurring in the first place, rather than treating it *after* it occurs.

One of the best things you can do? If you are a smoker, quit immediately – smoking doubles the chance of bone loss, thus increasing the chance of fractures. Smoking prevents estrogen from working effectively in the body.

Exercise is also extremely important in osteoporosis prevent. Weight-bearing exercise and strength training exercise are both recommended. Weight-bearing exercises build bone by forcing the body to work against gravity during movement. Strength training builds bone strength because the muscles pull on the bones during the movements.

Examples of weight-bearing exercise:

- Walking
- Yoga
- Aerobics
- Climbing stairs
- Dancing
- Tai chi

Examples of strength-training exercise:

- Lifting free weights
- Using resistance bands
- Using weight machines
- Doing body weight exercises, such as squats, lunges, and pushups

Bones require calcium and vitamin D to remain strong. However, if the body is deficient in calcium, it will pull what it needs from the bones, causing the bones to weaken. Ensuring an adequate intake of calcium and vitamin D can prevent this from happening.

Foods that are rich in calcium:

- Dairy products
- Fortified foods, such as cereal, orange juice and tofu
- Green leafy vegetables
- Sardines and salmon with bones

Vitamin D is not naturally found in many food sources, so many physicians will recommend a supplement. However, there are a few foods that do have vitamin D:

- Fortified foods, such as cereal, orange juice and milk
- Egg yolks
- Cheese
- Fatty fish (salmon, tuna and mackerel)

Recent studies show that colas could lead to bone loss. The research points to colas as opposed to other types of sodas. Researchers speculate that it may be because of the high phosphorus levels in cola – phosphorus may block calcium absorption. Another theory is that people are replacing calcium-rich beverages with cola.