



Health & Medicine



Bone Health – Prevention Of Osteoporosis



Dr. Kate Thomsen and Silky

Osteoporosis is the thinning of bone: osteo = bone and porosis = porous. It used to be a condition of advanced age in women (and some men). Currently, like many other chronic conditions, it seems to be diagnosed in younger (early menopausal) women much more commonly. Is it that we are discovering the condition more frequently because we are now screening women starting at menopause? Or is it our lifestyle that has made the condition more prevalent and diagnosed earlier in life? Or is it a little of both?

I'll describe some fundamentals about bone/your skeleton. First, understand that the body makes a "scaffolding" of collagen onto which it will hang the minerals like calcium and magnesium. Second, appreciate that the bone is in a constant state of remodeling. At various places in your skeleton, bone is being torn down. Osteoclasts are cells that remove old and damaged bone. Both the minerals and the collagen are resorbed into the blood. This process is under the control of the parathyroid hormones. These little glands on the back of your thyroid are monitoring the pH of your blood. When the pH is too

acid (too much meat/ too little greens), the parathyroid glands send out parathyroid hormone. This hormone asks the bone to give up some calcium to buffer the pH of the blood and return it to neutral. The osteoclasts go to work tearing down bone and giving up minerals (the desired calcium) and collagen. When the blood pH is neutral, the parathyroid glands send out calcitonin. This hormone stimulates osteoblasts and osteocytes. These cells create new bone scaffolding and bring back the minerals to hang back on the bone – making it dense and hard.

Building bone is most important in early life. Peak bone density is reached at about 25 years old. (Young women – take care of your bones early!!!) After the age of 25, more bone is being degraded and removed than is being replaced. Average bone loss is about 0.1-0.5% per year. At menopause (after your last period), bone loss becomes faster for a period of 5-8 years. Average bone loss in these years is 1-5% (a 10% increase!!). The major reason is the decline in estrogen and the increase in inflammation that occurs after menopause. This is the time that we monitor bone density with a DEXA scan every two years. Every woman will have a starting bone density at menopause that reflects what her peak bone density was (calcium, exercise in youth??) as well as other risk factors that may have increased her rate of degrading bone in her adult years. Many women are surprised that their first DEXA scan shows osteopenia (weakening bone). It is amazingly common.

The newest drug for osteoporosis is denosumab. It is an anti-inflammatory drug that is unique in that its message tells cells not to make inflammation signals. Our common anti-inflammatory medications like ibuprofen have never been shown to increase bone density. But denosumab has a more powerful effect and seems to have a positive effect on bone density. But, ibuprofen and the new drug, denosumab, have many undesirable side effects and so the dilemma of what to do to prevent osteoporosis continues.

So, what are you doing in your life that is giving your bones a message of inflammation? Start with diet: is your sugar consumption high? Do you eat the wrong types of fats? Are you skipping meals and making your body send out emergency signals that increase inflammation? Do you have excessive abdominal fat that sends out these same emergency signals? What about your stress? Chronic stress sends out emergency signals as well. Seems to me these lifestyle factors are also far too common in the 21st century. Shouldn't we start with these interventions to decrease the inflammation signals to our bones? And guess what? Inflammation is at the root of all chronic disease from cancer to heart disease to arthritis. So decreasing inflammation signals will be of benefit in the prevention of all the conditions of aging. Last tip: fish oil and Vitamin D are anti-inflammatory.

Next month, I'll discuss more about osteoporosis tests and treatments. Stay tuned.

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Dr. Kate Thomsen has a holistic health practice in Pennington, NJ. She is board certified in Family Medicine and Integrative/Holistic

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