

Bone Health Workshop

Osteoporosis: Decreased Bone mineral density

Statistics:

Approximately 10 million Americans have osteoporosis, 8 million women and 2 million men.

About 18 million more have low bone mass, osteopenia.

1 out of every 2 women get a fracture and 1 out of every 4 men.

About 1.5 million fractures happen a year from Osteoporosis:

300,000 hip

700,000 vertebral

250,000 wrist

300,000 in other sites

Estimated costs related to osteoporosis: 14 billion per year.

Symptoms:

There are no early symptoms! Osteoporosis is actually a silent killer. As it advances you can experience joint and muscle aches.

More advanced bone weakness is shown as thin bones, brittle bones, weak bones, bones that fracture easily, backaches, tooth decay, tooth mobility and infection, loss of height and spine deformation. Gum disease is also a form of osteoporosis.

Bones are made up of these components:

Calcium, Magnesium, Potassium, Manganese, Zinc, Iron and silica

In order for these minerals to be absorbed, you need Vitamin D and you need an acidic environment in your stomach.

Bone Metabolism:

Breaking down and building up

In order for this to happen your body needs a matrix for these building blocks to attach too.

Similar to how studs in a house are used to attach everything. Collagen is that matrix.

One of the biggest **misconceptions** about bone health is that as long as your bones are dense they are fine, but like most things, quality is also extremely important, maybe even more so than quantity. On a bone scan you can see your bone density, but you aren't getting the full picture of the quality of that bone.

Things which contribute to decreased bone density typically include your age, menopause (meaning decreased estrogen and progesterone), and some other things you might not think would, but do affect bone density. Smoking, alcohol, corticosteroid use, (like asthma medications), or nasal sprays, (like nasocort, prednisone), antacids, (like Pepsid or Nexium), or increased cortisol (a natural steroid hormone), from long term stress or excessive exercise like marathon runners.

Bone Metabolism again

Your bones are in a constant state of being built up and broken down. Typically as we age, the rate at which we build bone decreases, and the rate at which we break down bone increases. So

the problem becomes, you are breaking down bone quicker and you're not building it fast enough to keep up, thereby creating weaker bones. Even though bones are constantly metabolizing when you're younger, you are staying in a solid state of bone longer than when you are older.

Think of making concrete; if you add too much water, it takes a longer time to set, it stays in that in between state longer. This is the state of weaker bones, not good quality strong bones.

Starting earlier to decrease the rate at which we break down bone is the best way to slow down a possible onset of osteoporosis. We all age, but controlling your risk factors is a bonus. So, by not smoking, exercising with weight bearing exercise in moderation, keeping your stress levels low, limiting your steroid use and managing your hormones in menopause, we are slowing down this breakdown. So how do we help the building side of this equation? By giving your body what it needs to do that; proper nutrition and supplementation as you get older.

Collagen Matrix:

Having collagen in your bones is what increases the calcium binding sites. As we age, our bodies also begin to slow down the building of collagen. So besides our bones breaking down quicker, we see other signs of aging in our hair, skin and nails, other places we have a lot of collagen. When we have less collagen in our bones, there are less places for calcium to attach to, this means less bone is being built. And what bone we do have will be weaker overall.

So supplementing with one of the basic building blocks, collagen is one of the important keys we have been missing all along, with bone health. Collagen is a difficult supplement to take though, you can take it, but your body doesn't easily absorb it and it is found in very small quantities in foods. A better way to build collagen is to get your body to grow more of its own. A way to do this is to take the building blocks of collagen. The best thing to use is silica, a mineral that is also in very small quantities in our diets. Silica comes from oats, barley and hops, sounds like beer is good for us! Maybe that is why men have less risk of osteoporosis. But once again, it is hard to absorb silica. Silica needs to be absorbed in an acid environment. As we get older our production of stomach acid goes down. We are a society that uses a lot of antacids, also decreasing stomach acid. Acidity is also needed to absorb calcium and other B vitamins.

So a small pharmaceutical company developed choline stabilized orthosilic acid or ch-OSA. This means that they found a way to stabilize the silica, by using a choline molecule. Choline is a nutrient from the B vitamin family. By binding the silica to a choline molecule it allows it to be more absorbable. Choline also has good antioxidant and anti-inflammatory properties. Choline is an ideal stabilizer for OSA, but it is also a good cell opener. So not only does it help move the OSA into cells, it helps open the cells before hand to leave the door open wider. This allows the OSA to be used in smaller quantities and still works really well increasing collagen production.

About 30% of our bodies are collagen.

Skin 75% Cartilage 70% Bone 30%

Other tissues with collagen are ligaments, tendons, trachea, bronchi, lungs and other internal organs.

The ch-OSA is found in the bone support formula, OSAPlex, by Xymogen. It is also found in Regenemax, a formula for skin, hair and nails

Ch-OSA, seems to work on the more quickly metabolized tissues first. Joints can notice changes in about 2 weeks, nails 4 weeks, hair 8 weeks and skin 4 months. Our bones metabolize the

slowest; they say we have a new set of bones every 7 years. So it takes 6-12 months to see real changes in bone mineral density.

Collagen starts to decrease in our bodies around 20-25 years of age. By 40 we decrease about 1% per year, by menopause we have about a 30% loss of collagen.

The typical form of treatment for osteoporosis is an antiresorptive drug, like Fosamax or Actonel.

These drugs slow down the process of your bones breaking down, or reabsorbing, but don't really do anything for the building side of it. These drugs have a lot of side effects.

The drug actually stops calcium from being absorbed. So your bone reabsorption is slowed down but you're not building back fast enough, this keeps around the weaker, more brittle bone longer. Your bones are not staying in that super solid state long enough. Studies are showing that these drugs do increase bone density over the first few years, but alarmingly studies are showing that using them over 5 years is associated with increased fractures and necrosis of the jaw.

Typical testing for Osteoporosis is a DEXA test; basically it's an x-ray. They test your wrist, hip and vertebra, giving a snapshot of how dense your bones are. A better easier way to test is a urine test called DPD. The DPD test actually tests what your bones shed when they break down. What a great way to see if you are breaking down too much. When your bones reabsorb, they shed a crosslink, called Deoxypyridinoline, or DPD. The more bone turnover, the more of these crosslinks you shed.

Ch-OSA has been tested in double blind clinical trials as well as 1000's of urine sample testings to show that people taking OSAPlex have better and better bone density by decreasing their bone reabsorption and increasing their bone building. When looking at DEXA test results if you have a high or normal bone density, yet you have a high amount of bone turnover in a DPD test, then your bones are not as strong as they should be, which will increase your risk of fracture. A score of 6.5 is just about equilibrium, so a score below 6.5 means you are building more than breaking down!

DPD testing is a great tool to monitor your bone density to really see what's going on and if you're out of balance. You do a base line DPD in the beginning, then test at 30 days, 90 days and 180 days.

Even if you test within normal ranges with the DEXA test and the DPD test, you should consider taking OSAPlex to decrease the chances of bone breakdown starting and to keep building more collagen to allow stronger bone building to take place. If your DPD is too high OSAPlex is strongly recommended to slow down the process of osteoporosis.