>> Okay. So, fluoride. Well, we. I don't know if any of you guys have heard the pros and the cons of fluoride. Most dentists and doctors will say yes, we need fluoride for our healthy teeth. Some bottled water contains it, many don't. We do naturally get some fluoride in things like seafood and seafood, but I really encourage you to Google fluoride, slide here, because yes, we, they do say we need some for our tooth enamel. But, Google fluoride and see if its, just Google is fluoride healthy because you'll see that fluoride actually was added to water years ago because it was an industrial waste product and they didn't know where to dispose of it. They started adding it to our water system and if you look and Google it, you'll see that it's quite toxic actually and has been linked to bone diseases and even cancer. Too much fluoride in a young child can decrease their IQ. That's why you see warnings on toothpaste, you know, everyone's hysterical if a child swallows some toothpaste because of the fluoride levels. It's quite toxic. So, Google it for yourself and see. I mean again, most dentists unless they're a holistic dentist will say no, you need fluoride. Many, many countries in Europe and the middle east have banned the use of fluoride in drinking water because it's so toxic. So, I'll just leave it at that and let you do your own research on that. Now, chromium is the 3rd mineral that we're talking about here than insulin needs in order to function and its efficiency can increase your risk for type 2 diabetes. So, again we got zinc, magnesium and chromium that insulin needs in order to function correctly and if you're deficient in these, it can increase your risk for type 2 diabetes. Like I mentioned earlier, type 2 diabetes can indeed be turned around. We've seen this with people undergoing gastric bypass surgery, after they've lost all the weight. They can, a lot of time they've turned around their diabetes. Changing your diet, exercising, losing weight, increasing your mineral intake, particularly these 3 we've talked about, can definitely help. And a deficiency, so not only a deficiency can impair your blood sugar control, but it can also increase cholesterol and triglyceride levels and it's more common than you think. We do see it quite a bit in both children and adults. It is naturally found in egg yolks, buts and other things. But, again most of us are deficient, really would be good to take it in a supplement form. Your book goes through all the different minerals and what they're needed for just like we did with vitamins. You can see how important they are which is why I really think everyone needs a multivitamin mineral supplement. Okay. Lastly, let's talk about osteoporosis. Most of you have probably heard of this. Basically, this is a bone disease develops, it starts when you're young and it manifests in older people. It's basically a loss of your bone density. So, here's normal bone. You can see how dense it is, and this is osteoporotic bone where you can see how there's a lot of missing material here. Here's your spine, your vertebral column here. Again, normal bone and this is where it's osteoporotic. Very loosened there and osteoporosis leads to a lot of fractures every year in the United States, about 1 and a half million because what happens is, you know, you fall and if you're osteoporotic, you tend to break something.

[Background noise]

>> You fall and what do you do? You stretch out your arm and you break

your wrist or sometimes someone breaks a hip or even spinal fractures which creates a lot of pain and deformity. I'll show you what that looks like. The problem of hip fractures is 25% of people who have a hip fracture will die within the first year due to complications like being bedridden and not getting blood circulating well. They get blood clots. And so, you really want to try to prevent this, but prevention starts when they're a kid. And you see hip fracture due to osteoporosis, a lot of people think someone fell and broke their hip but actually what happens usually it is now believed is that this is osteoporotic, your hip, which snaps and causes you to then fall. Okay. Very painful. This is an x-ray of your spine and you can see how the vertebrae are nice and square, but you can see this one is kind of flattened, particularly in the front. That's because this person has osteoporosis. You can see it's not very dense and then because of the body weight, maybe they just bent over or whatever, but when these are very weak, bones are weak because of osteoporosis, they just simply bend over and snap, the vertebrae will now crush and that's irreversible. And you can see how people, as they get older, they start getting these vertebral fractures and on top of that, poor posture. It just, it exacerbates poor posture because now with the break you tend to stoop over more. So, the thing is, is that you want strong bones and strong bones starts when you're young. You reach what's called peak bone mass. The peak is like the peak of a mountain top, top of the mountain. The strongest bone mass you'll ever have is in your adolescent years. That's the time you want to strengthen your bones and calcify them and if you don't eat proper food and you miss this window of opportunity to strengthen your bone, you'll be more susceptible to osteoporosis later in life. So, people miss. Also depends on other things like your gender. Men tend to have stronger bones because they're more active. Different races have stronger bones and weaker bones. Genetics plays a little bit of role, but diet plays a huge role, not enough calcium and protein and all these minerals and vitamins that we've talked about throughout the chapter, throughout the term. Not enough vitamin D will prevent, not enough, will decrease your calcium absorption. Not enough vitamin K will prevent the calcium from being taken to the bone where it's needed. Too much phosphorous from soda, you know, causes bone loss. Too much soda and we've talked about causes bone loss and so forth. So, we call osteoporosis a pediatric disease with geriatric consequences. So, meaning that it starts when you're a kid, but you don't see the manifestations until you're older. Okay. So, when you're a kid, you know, and you're not eating well, later in life is when you're going to develop the osteoporosis. So, bone loss starts at age 30 and continues. Remember, age 30, a lot of things start happening, one of which is we start secreting less and less hydrochloric acid in our stomach which means we absorb less minerals and our food for that matter, but that's just, you know, part of aging. We do start losing bone density at the age of 30 and it increases as we get older. And then when you hit menopause, because of the decline in estrogen and estrogen helps bone density so when you hit menopause, you have less estrogen, estrogen is also helpful for bone density. So, after menopause, you also start losing some bone mass. We've talked about, you know, again vitamin D helps you absorb calcium, vitamin K gets it, calcium, into your

bones. Calcium deficiency, vitamin K, vitamin D deficiency all increase your risk of osteoporosis.

[Background noise]

>> It's not just calcium, you need the d and the k. Certain medications cause bone loss like prednisone and other steroids. Seizure medication. So, it's not to say don't take these, you just got to be careful that when you are on these, know you need to really be taking these supplements. Kids that are asthmatic, on inhalers, they have steroids in them. Some of them real important because the teeth have calcium, that after they use the inhaler that they rinse their mouth to get the prednisone out of the mouth, so it doesn't harm the teeth. Exercise. A lack of exercise also, with that lack of stress on the bones through exercise can lead to osteoporosis later in life. Dietary factors we talked about. Chapter 6, too much animal protein causes your blood to become acidic and then your bones will pull the calcium from your, your blood will pull the calcium from the bones to mutualize that acidity. So, again, too much animal protein does cause bone loss over your lifetime. Too much sodium, we talked about that. Over 2,000 milligrams a day causes your calcium to be excreted. Too much caffeine is a factor. Alcohol intake. Alcohol's a major toxin to bone cells. The more you drink, the more it's, the more damage to it. Please remember the phosphorous for the test and the for [inaudible]. Too much phosphorous that most of us get from soda, too much prosperous interferes with calcium absorption and remember you want that 1 to 1 ratio, calcium to phosphorous. Cigarette smoking. The cigarette smoking decreases your estrogen and estrogen is needed for bone health. So, here there's a lot of factors, in other words, look at all this. This means that we can prevent osteoporosis from occurring later in life if we take the proper steps, eating well, taking supplements, exercising and avoiding, you know, soda and alcohol and smoking and too much sodium. You can see another bunch of factors here. [inaudible]. This is, you can get a bone scan. Usually they don't start doing this until you hit the age of 50 to see your bone density. But, again it's totally preventable through a proper diet and exercise throughout your lifetime and I want to mention if you're not getting your menstrual cycle for whatever reason, you're too thin or you have an eating disorder or just some hormonal imbalance, please get that corrected because without a proper menstrual cycle, without that estrogen that you need, it can cause osteoporosis even in young girls. It doesn't even have to, I've seen it in 20-year old's, 30-year old's, that are anorexic. So, pay attention to that. So, that's the end of chapter 9. Thank you for your patience.