Welcome back to Health Quest. My guest this morning is Lara Pizzorno. She's written a very interesting book called *Your Bones: How You Can Prevent Osteoporosis and Have Strong Bones for Life Naturally*. This is an important topic for a lot of women and she knows what she speaks of, because she's actually improved her own bone health using the techniques that she describes in her book. It's in that capacity that I've invited Lara to be our guest today. Lara, good morning and welcome.

Good morning. Thank you so much for interviewing me about this. I really hope the information will help many people avoid osteoporosis.

Well I'm sure it will because it's an important topic. A lot of women are interested in it. A lot of women are actually confused about what they can do. I've talked to a lot of women who have gone out and taken a bunch of calcium and found that it didn't make a difference in their bone density. There has to be more to the picture, and that's what I think you've done for us in this book. That's what we're going to talk about today. Before we get into the topic of your book, tell us a little bit about yourself, your history, and how it is that you came to write this book.

Well, most important for the book, every woman in my family has died of an osteoporotic related fracture, everyone I know about. When I was in my early 40s, well before menopause, I was diagnosed with osteopenia which is when you start losing bone at a rate that's accelerating. It's bone thinning, it's not frank osteoporosis, but it's the prelude to that. My husband and doctor, Dell Pizzorno, he's the president of Bastyr University. We started Bastyr University out in Seattle; it's a big medical school out here.

Yes, and I'm aware of it and very impressed with what that university ... that college has done for bringing people into the natural products field. Lots of renowned experts have come out of that school.
Lara Pizzorno: We're happy that it's doing good and well. At any rate, because he was my husband I was fortunate they had genetic tests that were coming out, and he ran a panel on me. That was one of the very first genetic panels that was available. I'm 62 now. This was 20 years ago. We discovered that my vitamin D receptors don't work very well. It's a genetically inherited issue. Actually, probably 15-20 percent of the population have the same problem that I do. I need a lot of vitamin D. Vitamin D helps your body absorb calcium. If you don't have sufficient levels of vitamin D, even if you're taking a lot of calcium like those ladies that you were mentioning, it's not going to do very much for you if it's not getting absorbed into your body. That's what vitamin D does; it increases your ability to absorb calcium. Without it you absorb very little.

We live in Seattle, which, they joke here, is the rainiest area of the world. We have a rain festival here that runs about eleven months a year. We don't get a lot of sun. You need exposure to the sunshine to make vitamin D in your skin. People who live in Seattle already need more vitamin D from food or supplements than average. I really need a lot. Once we discovered that, and we corrected that for me, and I also took not just calcium but vitamin D, vitamin K, magnesium, boron, strontium. There's probably twenty-five or thirty nutrients that are involved in bone formation. I started building bone and now I have really healthy bone. If I can beat this anybody can beat it. It runs in my family, I'm little, I weigh 105 pounds, I'm 5’ 3”, I'm Caucasian. People who are African tend to have heavier, stronger bones than white people. I have lots of risk factors and I managed to beat it. I wanted to share that with other women and men. Men are also at risk of osteoporosis and they are not checked for it.

Steve Lankford: Can you tell us a little bit about how long it took you? Did you start this twenty years ago and improve things over a certain period of time? Tell us a little bit about what it took you to rebuild your bones.

Lara Pizzorno: It took us awhile to figure it out. Like I said, the genetic panels were just coming out. First we tried, I just took more calcium. We didn't know that much about vitamin D twenty years ago. So I was taking the recommended amount of vitamin D, which is 600 IUs is the absolute maximum that people used to think you could take. And we tried everything; I exercised and ate a really healthy diet and I kept losing bone. It was pretty scary for a while. Then, when we figured out with the vitamin D ... I would estimate it took us two or three years after my initial diagnosis to figure it out. Then bone builds slowly. What initially happened was I stopped losing bone. It's easy to check that. You can do that with just a blood test. It's called an enteral peptide test. Once I stopped losing bone we took a deep breath; this is good. Slowly I started building and building. Now I have healthy bones. It probably took six, seven years for that to happen, but the main thing is, you want to stop losing bone then your body will begin to remodel.

Steve Lankford: You have this genetic component which would, I think, make this story even more compelling, because you're fighting something that, genetically, your family history certainly tells you this; that this was your future. You were going to continue to lose bone. To actually begin to rebuild bone under those circumstances seems extraordinary. Did you have a doctor that was looking at this, apart from your husband, who gave you any confidence that these nutrients would be helpful or were you on your own?

Lara Pizzorno: My husband is probably one of the leading naturopathic doctors in the world, and there's nobody I'd rather have for my doctor. We weren't working with anyone else.
Steve Lankford: Okay. That's a problem that a lot of women have. They go to talk to their doctors and one of the first things they want to recommend to women are these bone building drugs. I know you have an opinion on that. Tell us, what's your take on using these bone building drugs which are becoming so popular?

Lara Pizzorno: That is the absolute last thing that I would ever do for a variety of reasons. I've written about it extensively in my book—all the medical studies and the medical papers about the horrific, adverse side effects of these drugs, but Fosamax and Boniva. It's a class of drug called bisphosphonate. The way that they work is they destroy, they poison, the normal cells in your body whose job it is to clear out crumby bone. You stop taking out the bone trash. When you do that you shut down the whole process of bone remodeling. Your body cannot make new bone for you unless you clear out old brittle bone. What the bisphosphonates do is prevent you from doing that. You have more bone sticking around but it's garbage, it's very fragile. That's why even the FDA has now come out with a warning to doctors, this was October of 2010, that no woman should be on one of these drugs for longer than five years.

What happens is when you take these drugs you begin to accumulate very poor quality bone. Within, some people, as little as four months, they see fractures. But by five years your risk of having a fracture, a thigh bone fracture, is the most often one caused by the bisphosphonate drugs is the most common. They get these "atypical", unusual, except it keeps repeating in people that take bisphosphonate, these kinds of fractures where the thigh bone just breaks in half, up towards the top of the thigh bone. In some women both bones break at once. People have also had hip fractures. Another common side effect of bisphosphonate is, it's called, osteonecrosis of the jaw which basically means jaw bone death. Your jaw bone rots and they have not found a way to fix that. Even when people stop taking the drugs they can't get rid of it.

This is not something that you want to have. The jaw bone develops the problems first, because we use our mouth to chew and there's constant stress on your jaw bone. There's constant mini fractures happening in your jaw that your body has to repair. Normally it does it very happily and we don't notice this, but if you prevent your body from removing damaged bone, which is what bisphosphonates do by shutting down the osteoclast, then you can't repair. So your jaw bone just dies.

Steve Lankford: It sounds like a very profound problem. It's one of the problems that people like us, that believe in natural healing and natural health, can hardly understand how it is that we can put these kinds of drugs in our body. It's unfortunate that women are so easily recommended these drugs, so easily put on them, and without understanding what the long-term implications are until something happens to them. That seems like a real disservice to me, to the women who really could stand to use the information that you have in your book on how to do that naturally and healthfully.

Lara Pizzorno: Yes, I hope people will read the book and get informed. The book goes through all the different things you need to have healthy bones. For each of us it's slightly different. For me the main issue was vitamin D, but for, well, Steve, you might also be at risk. Men start losing bone around age 50. It doesn't really escalate until around age 70.
Steve Lankford: Fortunately I had my bone density done not too long ago and I was okay, but you're right. It is something that affects ten percent of men, is the statistic that I've read. Men are not immune to that. You have a section in your book on what increases your risk for osteoporosis. Let's talk about that. It's not just age necessarily because we can't do anything about getting older, but what are some of the risk factors that we might be able to control?

Lara Pizzorno: People in the United States on average, the latest NHANES data, that's a big survey that's run, the NHANES, and they collect all kinds of data on Americans and then they analyze it for years. The most recent one which was just a couple of years ago found that people were eating really more protein than we need, the average person in the United States. If you eat a diet that's too high in protein it will cause you to lose bone, because it will give you a more acid balance in your bloodstream. And then your body will pull calcium out of the bones to buffer that. Calcium plays a lot of roles in the body. It's used for plenty of things, not just our bones. It's used for muscle contractions, like your heart muscle, nerves, cellular membranes, and many, many things. We really need to have a constant level of calcium in our bloodstream available for all these things. The bone serves as the bank, your body's bank. We make withdrawals when we don't have enough calcium in our bloodstream. If you have a diet that's too high in protein you're going to withdraw calcium to buffer that.

Also, if you have a diet that's too high in sugar, if you're really inflammatory. Many of us eat a lot of processed foods, and we eat foods high in sugars like high fructose corn syrup which they put in all the processed foods. If we drink soda pop it also has a lot of phosphates in it in addition to the sugar. All these things cause your body to be more acidic and, in response, you will withdraw calcium from your bones to buffer that. Those things put people at risk. People who smoke or are around secondhand smoke are also at high risk because cigarette smoke contains two chemicals—cadmium and nicotine. Both of them disrupt the bone building cells in your body and the whole remodeling process. They also interfere with your ability to activate vitamin D. When we take vitamin D it goes through a two-step process in the liver and then in the kidneys to become active. Only when it's active does it help us absorb calcium. You can be taking vitamin D and calcium and still not getting benefit from it if you're exposed to a lot of secondhand smoke or if you smoke yourself. Those are some of the risks.

Steve Lankford: It's the kinds of things that people can make some changes in their life if they wish.

Lara Pizzorno: Yes, but the smartest thing to do, just eat well. Eat the stuff that's around the perimeter of the grocery store that isn't in a box, and will spoil if it's not eaten within a reasonable amount of time, and that contains the leafy greens. People don't eat leafy greens. That's another huge reason why we have osteoporosis in this country. Leafy greens supply a nutrient called vitamin K1. Your body converts some of that into vitamin K2. If you don't have enough vitamin K in your system, then even if you're taking calcium and vitamin D, and you don't have enough vitamin K, the calcium might go into your arteries. You certainly don't want to calcify your arteries; you want to deposit that calcium into your bones. You won't be able to do that without vitamin K. There is probably fifteen or twenty nutrients you absolutely have to have that many Americans don't get because they're not eating properly. Also, they should supplement for some of these. And that's why people get osteoporosis. If we just give our bodies what they need, then they will set about happily restoring our bone health because we're programmed to do that.
Steve Lankford: In addition to avoiding the things that you mentioned that are not so good for us, so that we set up conditions where our bodies can use these nutrients most effectively. Let's talk about some of the most important nutrients. If you give somebody a list of, you mentioned fifteen or twenty, can there be five, six, or eight? What are the most important ones that women need to know about that maybe they haven't heard about?

Lara Pizzorno: Let's talk about calcium, vitamin K2, and strontium. The reason I want to talk about calcium is that most people take a form of calcium that your body basically can't absorb. It's called calcium carbonate. It is the cheapest form of calcium. It's what most of the supplements carry inside them. We take this thinking we're getting calcium. We can only absorb about four percent of that. For many people, also, something like fifty percent, or even sixty percent of women, over the age of fifty tend to have lower stomach acid. You cannot absorb calcium unless you have stomach acid present in your stomach. People take Tums thinking they're going to get calcium from popping an antacid. No, you will not be able to absorb calcium that way. You need to take a different form of calcium. It's called calcium citrate and that is much more bioavailable. You will absorb some even if your stomach acid is not good. Calcium citrate is much better. If you do have calcium carbonate, paid for a bottle of calcium carbonate and you want to take it, be sure to take it when you have a meal. Because that way your stomach will be creating some stomach acid to digest the food in the meal, and then you'll be much better at absorbing the calcium carbonate. You're still not going to absorb anywhere near as much calcium from calcium carbonate as from calcium citrate.

Steve Lankford: That also suggests that maybe people who are on these acid blocking medications may also need to pay extra attention to what's going on with their calcium?

Lara Pizzorno: Yeah it's a huge problem. I just read a new study that came out yesterday on all the drugs that cause osteoporosis, and they're listing the H2 blockers, the proton pump inhibitors, and things like the little purple pill. All of those drugs prevent you from making enough stomach acid to absorb calcium well.

Steve Lankford: Let's talk about some of those other nutrients a little bit more. You said the vitamin K and the strontium, what about those?

Lara Pizzorno: I think the most important thing to know about vitamin K is you really want to be taking vitamin K2 for your bones. Vitamin K1 is the form in which vitamin K is found in leafy greens. Your body will convert some of that to vitamin K2, but most of us need a little bit of extra vitamin K2. That is the form in which vitamin K helps your body put calcium, that is absorbed, into bones and it keeps it out of arteries. It activates a whole bunch of different proteins. They're called the GLA, G-L-A, proteins. These proteins are responsible for carrying calcium out of your arteries and also for carrying calcium into your bones. You need both. The other thing about vitamin K2 is it comes in two forms. There's a form called MK-7 which is found in the Japanese diet in high amounts. They eat a lot of a food called natto which is very high in MK-7, and they have a much lower rate of osteoporosis there.

Then you can also get some MK-7 from cheese, but we don't want to eat a ton of cheese because it's really high in fat. If you don't want to be overweight you don't want to eat a lot of cheese. It's best to take a supplement. If you're taking a supplement of MK-7, the MK-7 form of
vitamin K2, you only need probably 100-200 micrograms will be a big help. The latest research I've seen shows that taking even up to 800 micrograms is even better at activating these vitamin K proteins. The other form of vitamin K2 is MK-4 and that's a form that's been used by pharmaceutical companies have developed products containing MK-4. It's a synthetic form. If you take that you need 15 milligrams three times a day for a total of 45 milligrams. Which is hugely much more than just less than one milligram which is what you need for the MK-7 form. The MK-4 form has also been shown to be helpful.

Steve Lankford: Then what about the strontium? That's something that's novel. I think there's a lot of people who haven't heard about that as a nutrient.

Lara Pizzorno: Strontium is similar to calcium. It is absorbed similarly and in similar amounts. It really helps rebuild bone. It helps strengthen bone. It's really terrific. They've done a lot of studies on strontium now. Primarily in Europe, of course, not here yet in large amounts. There have been many, many studies showing that even women with osteoporosis who've taken strontium have been able to rebuild their bones. The key thing to remember about strontium, if you're going to take strontium, well, two things, one, you want to take strontium at a different time of day than when you're taking calcium because they compete for absorption. You want to have more calcium in your supplement regimen or in the foods that you're eating than strontium. There have been, it's probably twenty years ago, there were a couple of animal studies that showed if you had too much strontium and not enough calcium, some of the bone matrix didn't form as well.

To be safe, you really need to take more calcium than strontium. The other issue with strontium is what type of strontium you're going to take. Just like the calcium issue where you want to take calcium citrate and not calcium carbonate. The prescribed form, the patented form that the drug companies are making of strontium is called strontium ranelate. The reason that they created this ranelate is a new-to-nature molecule created by drug companies so that they could patent strontium. Strontium is a natural compound and you can't patent a natural compound. You can't make money, nearly as much money, off a natural compound as you can off a patented compound. They created strontium ranelate so they could have a form of strontium that was patented, and they could charge more money for it.

The claim to fame, supposedly, for ranelate is that it disassociates from strontium in your body, and you flush it out of your system and it doesn't do anything to you. That's what they're saying. However, there are now some studies coming out showing that maybe it causes thromboembolism, which means you get a stroke or a blood clot. Why take strontium ranelate and pay more for a patented medication when you can get strontium citrate which is a natural form of strontium, costs less, and is not going to cause you any problems? I would recommend, and I take myself, strontium citrate. I take my calcium in the morning and at night when I brush my teeth, and I take my strontium in the middle of the day when I have lunch.

Steve Lankford: That's one of the important things I've heard about that, is just take it at a separate time from your calcium. Lara you've covered so much more in your book than we're going to have time to cover here today. I'm going to certainly endorse this book for our listeners, if they're looking for this kind of information that can help them put together a positive program such as you have.
I'd like to give you the last word, and make sure you have a chance to mention anything to our listeners that you think they need to hear today.

Lara Pizzorno: I wrote this book because I lost my mother ten years ago to osteoporosis and I miss her every day. If I had had the information in the book that I wrote, I could've prevented her death. I think about that every day. I could not prevent her death, but I can prevent your mother's death, your sister's death, or your wife's death, if you're a man who's getting older, possibly your death, from this horrific disease. No one needs to have osteoporosis. It is completely preventable. I really wish you well.

Steve Lankford: That's a powerful message. Lara Pizzorno, the author of Your Bones, I'd like to thank you so much for being our guest today. It's been most interesting.

Lara Pizzorno: Thank you very much Steve. It was great to meet you.


Lara Pizzorno: Bye.