Introduction to Lyme and Bone Health

Hi, and welcome to another episode of the healing Lyme's summit. I'm your host, Dr. Myriah Hinchey. You know, most of us, when we're thinking about Lyme disease, don't think about it affecting the bones.

We know that arthritis. So pain and inflammation of the joints is one of the most common symptoms of Lyme. But we don't actually think about it affecting bone health.

You know, from the point of osteopenia and things like that. So obviously if someone is tired and their sedentary and they're not doing weight bearing exercise, we can have a decrease in bone density.

But there's a lot of other sophisticated mechanisms that can go on that are inflammatory, driven and, you know, caused by immune system dysfunction and even inflammation of the gut, like decreasing nutrient absorption that can lead to issues with bone health.

So we have a lot to talk about today, and I'm excited to have with us the bone coach Kevin Ellis. So welcome, Kevin. Tell our listeners more about yourself and how you became the go to guy for Bone Health.

Myriah, thanks so much for having me. This is going to be a great conversation. And for for me, it's usually not the younger male that you would think would talk about bone health.

It's usually somebody a little bit later in life. And when you think of your bones, you often think of your mother, your grandmother, or maybe somebody that you saw had a fracture or something like that, and how that significantly impacted the quality of their life later on.

but for me, my personal journey started with, an osteoporosis diagnosis in my early 30s, largely due to celiac disease after I came out of the Marine Corps.

And for those who are not familiar, celiac disease, autoimmune condition where when you ingest gluten, it damages the villi, these tiny little nutrient absorption centers I like to call them your roots in your soil damages these villi, which are responsible for absorbing nutrients from the food you eat and shuttling those nutrients into the bloodstream where they can go other places in your body.

Kevin Ellisu2019s Personal Bone Health Journey

But when you have celiac disease, those roots can become damaged and blunted, and then they can't do their job. And my roots, the roots in my soil were damaged and blunted, and I wasn't able to absorb nutrients, specifically calcium, which is the primary mineral constituent of your bones.

And every single day your body needs minerals and nutrients and calcium for, nerve impulses, muscle contractions. And if you aren't taking those nutrients in and you can't actually absorb those nutrients because of celiac disease or some gut health condition that we could talk about in a little bit, your body still needs the nutrients to execute its daily function.

So where is it going to go? It's going to go to the bones, your largest reserve of minerals that you have. And it's going to pull from there. And that's exactly what happened to me.

And I was subsequently diagnosed with osteoporosis. So, that led me down this path of, my father had passed away to really young age when I was two months old from cancer, and I was having this moment of, gosh, I'm just following in his footsteps to an early grave, like, what do I need to do to not be in that position and not be able to be there, to be the father mind and get a chance to be for me.

So I had a pretty strong impetus. So I started doing the reading, the research, making progress, improvement. And then I decided I wanted to help other people.

So I built out a coaching program, developed a team around this. And now we've got, you know, a couple hundred thousand people in our community. Thousands of people have come through these stronger bones programs.

and that's that's how I became the bone coach. And, we we do all that stuff. The bonecoach.com is the big place. We do all that. That's amazing. Thank you so much for sharing your story with us.

that's really impactful. That's definitely, a great purpose, right? Yeah. No. It's important. I mean, this is when most people think of their bones. They just think of these static structures, right?

That hold us up, that carry us through life, that help us move forward. And they do that. They do a really good job of it. But they're also living tissue.

They're they're endocrine organs. They they give us life. Your bones. They have bone marrow in them. Bone marrow is a soft, spongy material. It produces 95% of the blood cells in your body.

So if you need help with, preventing bleeding or clotting, platelets are going to help with that. If you need help with carrying oxygen to the body's tissues, carrying carbon dioxide away from the tissues, back to the lungs, red blood cells are going to help with that.

But if you need help with fighting infections, healing wounds, anything related to the immune system, that's where white blood cells come in. The cells that break down bone are a form of white blood cell.

So anything that is stimulating that immune system is speaking in the same language as these cells that break down bone. So when we're having chronic digestive issues and 70% of our immune system is in our gut, we're speaking in the same languages.

Those cells are breakdown bone. So very much living tissue. That plays a role in many, many of the things that we do. Yeah. And so specifically with tick borne diseases and Borrelia, the organism that causes Lyme disease.

You know, one of the primary things that this infection does is causes immune dysregulation and inflammation. You know, I would argue two of our bones biggest enemies.

Yeah. No, and there are some big connections between what if we're talking about Lyme, and its connection to bone health and osteoporosis. There are some major connections I'm going to point out right now.

So the first one is that we know that Borrelia infection in humans is associated with an increase in rates of osteopenia and osteoporosis, and that's going to increase the risk of fracture.

So osteoporosis it literally means porous bone. And that's a condition that's characterized by either not enough bone formation, excessive bone loss which is happening here.

or it's a combination of the two. Right. And osteoporosis, both your bone density and your bone quality are reduced. And that is going to increase your risk of fracture.

So that's an important connection at least starting out with Lyme. There's another one where in a mouse model we can see that if you were to infect the mouse with Lyme, and then you look at the bone in the long bones like the femur and the tibia, as well as the fifth lumbar.

So the base of the spine, those got infected with Lyme disease. And a few things happened. Number one, it led to a decrease in bone mineral density in those areas.

And number two, there was a really high level of inflammatory cytokines. And inflammatory cytokines are signaling

molecules that promote inflammation.

So when these were high it led to the suppression of osteoblasts being created in osteoblasts are the cells that build bone. So blast build so led to the suppression of these cells which build stronger, healthier new bone.

And that impacts not just bone density. It also impacts bone quality. So bone density is the actual mineral content of the bone.

How Lyme Affects Bones and Joints

Bone quality is the structural integrity, the microarchitecture, how the bone is organized. Those two things combine to create bone strength. So, both of those things are being affected in this picture.

and then one of the other big connections is that we know that lyme is a tissue organism, right? So you get bit goes your skin, goes through your blood, hides in the soft tissues, including our joints, and it can break down the cartilage.

Right. And that that's that cushion with your joints that's going to lead to arthritis too. So there are some major, major connections there, between lyme and bone health.

Yeah. So in addition to to that as well. Like, so the inflammation, the immune dysregulation, there's also being sudden artery. Right. If you're in pain and your joints are inflamed, what would be the other ways in which lyme would decrease the quality of the bone.

another one would be nutrients, nutrient depletion. So we talked about, yeah. In your gut. Right. If you have problems with absorbing nutrients, I always I liken our gut to soil.

Right. So we've got roots in our soil, those villi that we want to be able to be healthy and, and, and be able to absorb those nutrients. But you could have bad bugs in your soil, right?

You could have good bugs in the wrong place in your soil. You can have small intestinal bacterial overgrowth or some other connection there. the gut is a soft tissue, right.

So lyme can be affecting this as well. and the important nutrients that we may not actually be getting in to support our bones. Calcium. We talked about how that's the primary mineral constituent of your bones, vitamin D, which we know is really, really important for not just your overall, immune function, your overall health, but also your bone health specifically, it helps increase the intestinal absorption of calcium.

It plays a lot of other roles in our body. vitamin K2 which is also important for our bones that can be affected. Vitamin K2 helps activate us to your calcium and matrix GLA protein.

And that's making sure that the calcium goes to the bones to help to help build stronger, healthier bones and not to the soft tissues like the kidneys and the arteries where we don't want calcium to go.

And then another nutrient that can be depleted is magnesium. And most of us know and have heard magnesium is incredibly important. It's used for many, many things inside our body, and it's something that most people are deficient in and they need more of.

Right? Especially if you have some kind of chronic health condition or infection that you're working to overcome. Magnesium is really important. Well, as your as you start to intake more calcium or more vitamin D, your need for magnesium also increases.

There too. And another important connection between magnesium and the health of anything, or at least rebuilding things in our body, is you need magnesium to do that.

So for example, when you take in protein and you break it down into its smallest form, amino acids, those amino acids get absorbed, they come into your body.

And in order to be rebuilt into anything your muscles, your bones, your tissues, whatever, you have to have magnesium to do that. So we have to be aware that there is a mineral and nutrient picture here that we also want to pay attention to.

Right? So to recap for our listeners we need to have magnesium. We need to have vitamin D. We need to have vitamin K to be able to adequately absorb the calcium and then direct it into the bone.

And then also I think the higher your protein intake, the more minerals you need to buffer the acidity of the protein. And then on top of that, like if we don't have adequate hydrochloric acid or we have hypo or hydro, low stomach acid, it's actually really hard to absorb our minerals, specifically calcium.

So that can be an issue to do. You want to talk a little bit more about that and how that can impact bone health? I'm so glad you brought that up. This is a major, major thing that I see with a lot of people.

they think they have too much stomach acid because they're having some acid reflux or some heartburn or something like that, and they think that it's because they have too much stomach acid.

So they go to their doctor and their doctor gives them an antacid, a proton pump inhibitor, or an H2 receptor antagonist drug. So these would be like Omap resour, Nexium remitting Zantac.

Nutrient Depletion, Stomach Acid, and the Gut

And these medications, number one, the majority of the time when people think they have too much stomach acid, it's actually they have too little okay.

But once they have once they go to their doctor, their doctor is going to recommend one of these drugs to, reduce the production of or increase the suppression of your stomach acid.

The reason that's a problem is exactly what you just said. you need stomach acid to properly break down and extract nutrients from your food. Like amino acids, the building blocks of protein, your bones are 50% protein by volume.

They need amino acids, calcium, magnesium, iron, B12. If you do not have adequate stomach acid, your body and your bones will be starved of these nutrients.

So really, really important to make sure you have good stomach acid production. Absolutely. And then what about the microbiome? Because that plays an important role as well, right?

Not only in the immune system and our body's ability to deal with inflammation but also with bone health. Yeah absolutely. So I as I was let's even go back to what I was talking about, where it's soil and roots and you could have you want to have healthy soil and a healthy garden environment, right.

if you have certain infections or you have parasites or bad bugs in your soil, or maybe you have maybe they are good bugs, but they're just in the wrong place.

Small intestinal bacterial overgrowth, small intestinal fungal overgrowth. You need to be able to know so that you can address those. So getting a good gut health test a good functional gut health test can be really, really helpful.

So you can look at the markers C do you have some kind of gut infection that needs to be addressed, that needs to have some protocol developed around it?

and you work with whoever you're working with, whether it's your functional provider or, you know, Dr. Bray or

whoever, you're figuring out what it is at the root of all that.

So you can actually address it. Yeah, that's a great point. Definitely finding, a provider that knows what tests to order because there's just so many different things out there.

And a lot of them, you know, I have a lot of patients. They're like, oh, you know, I had my stool, excuse me checked. And it's like, you know, they had to know in pain.

And it's like, whoa, like that. That's not what we're talking about. You need something that's evaluating, you know, like your full DG of abilities and analysis and the microbiome looking to see if there is an overgrowth of opportunistic bacteria or fungi.

And do you have enough of the various strains of healthy probiotics, you know, much less parasites and things like that. That's kind of like the tip of the iceberg when it comes to, you know, doing like a stool test.

So that's a really good point. Yeah. And I would say too, I would say too, if you go to your conventional physicians, it's they're not trained in the functional tests. Right.

I have actually taken in the past, a long time ago, I've taken functional tests in and they, they poo pooed on, the actual test, like it wasn't actually a valid or legitimate thing.

But we know when you get more into the naturopathic functional side and you can do some of these tests, there is some valuable data that can come from them.

So, yeah, definitely worth exploring. There definitely is. And you know just how you started this whole, discussion here, you know, like your issues with your bones came from your gut.

And it's funny because we keep coming back to the gut. And even with all of these tick borne diseases, they affect the gut and a lot of people don't realize that.

And it's like, if your gut isn't functioning properly, it doesn't matter what supplement you're taking. It doesn't matter what herb you're taking. It doesn't matter what you're doing, because you're not going to be able to absorb and utilize that.

And you have increased toxicity, right, which is going to cause a whole host of other things because you're basically leaking your toxins back in through your gut, which is supposed to be able to get them out of the body.

So, you know, I, I was taught in school, like, you know, if if you don't know what to do, treat the gut. And I have to say, the longer and longer and longer I've been in practice, the more you know, that has rang true.

so what do you suggest people with? Because the majority of our listeners have some sort of tick borne disease or have a loved one who does or suspect that they do.

You know, in addition to treating the infections right, which is the the obvious piece and maybe even focusing on regaining gut health and things like that, how do you suggest that, that people look at bettering their bone health when they have these infections?

Well, I break it down into a couple different big steps. The first step that I break it down into is identify, identify and address root cause issues of bone loss and we can look at different markers to see the state of your bones even before or after or in between bone density scan.

So a bone density scan is a test that you go and get that will actually tell you your bone mineral density. And it'll help you understand if you have osteopenia or osteoporosis.

Right. So you get this test. But that only gives you one data point. It usually only gives you your bone density.

There are other tests you can look at to understand your bone quality, the structural integrity of the bone.

There's one technology called TBS trabecular bone score. This is like an add on software to the bone density scan. If you're going to get a bone density scan, call the facility ahead of time and ask them, hey, do you have this technology?

And they can do it at the same time as your scan? there's also something called rams more prevalent in Europe right now. Not surprising. It's, trying to make its way into the US.

but it is an ultrasound technology that tells you your bone density, your bone quality, and gives you a five year predictor of fracture. That's another tool that you could use to really start to understand, the picture of what your bones will look like, the total picture.

And then there are diagnostic or lab marker tests that you can look at, which are called bone turnover markers. And these tests can help you understand the activity level of cells that are breaking up and building, breaking down and building up your bone. So, the most sensitive marker for bone resorption or breakdown is serum CT or CT.

Low peptide test. This test looks at the activity level of cells that are breaking down bone, and if that activity level is elevated or really high, so on somebody that has Lyme or some other condition.

If you look at that, I would bet there's probably some elevation in that in those markers. we want to see that coming down. You can see improvements in these numbers in 3 to 6 month periods.

Right. So you would only get a bone density scan every 1 or 2 years. But if you're looking at these bone turnover markers, you can look at them every 3 to 6 months.

So that is those can be like leading indicators that you're moving in the right direction. And then if you're looking at bone resorption or breakdown, you also want to look at the other side of the picture.

We'll look at bone formation. What does that look like. So we have the most sensitive marker for bone formation that is p one and P Pro collagen type one N-terminal Pro peptide.

That is the most sensitive marker for bone formation. So you look at those and you want to see bone resorption coming down, bone formation coming up. The ratio between the two improving 3 to 6 month periods.

You want to see that happening. so those are some ways, those are like starting points for anybody. If you've got Lyme, you got something else. You want to understand the state of your bones.

That's where you start. And if that if that activity level is elevated, that bone resorption is high. Now we got to figure out what's the root cause of that and address that.

So let me let me interrupt you just real quick. Are these special t tests like that need to be done at an alternative lab, or are these tests that can be ordered through a conventional laboratory?

Great question. they can be done through conventional. Sometimes a GP will order them. A general practitioner will order them, but sometimes they won't if they don't understand the interpretation of the test.

Bones have a little bit of nuance to them, so they might try to refer you out to an endocrinologist or rheumatologist, right? Sometimes the endocrinologist will order them, sometimes they won't.

Testing Bone Density and Bone Turnover

If they won't, you know, we teach people how to go outside and get those tests. Or you can go to functional practitioners, get those tests ordered. so there are ways to get the answers, okay.

In a cost effective way to. A prospect I wanted, I want the listeners to be able to know that. Yeah, that's that's an important, important part of it.

So Kevin, jump right back in to what you were saying. I'm so sorry. I didn't want to interrupt you. Oh, I understand, so, that's the first part. Identify figure out what are the root causes of bone loss.

Address those things. Sometimes it's not just Lyme or or other infections that you have. It could be something else too. So figure out what that is and address that.

At the same time, you can be focusing on the second step that I like people to focus on, which is nourishing the body. Right. So you don't have to do one and then do the other.

You can do some of these things together at the same time. So nourishing the body. That would be, taking in the right nutrients, taking in the right amounts of those nutrients.

We talked about some of those nutrients earlier, making sure you're actually absorbing those nutrients and making sure those nutrients are making it to the cell level.

That's part of that's all part of what I would call nourishing the body and the bones. And we talked about some of the important ones calcium, magnesium, vitamin D, vitamin K2.

I would say vitamin C is another really important one for, not just your immune health, but also your bone health too. If you remember, I said that your bones are 50% protein by volume.

Well, that that protein is it's a collagen protein matrix structure that has minerals kind of laced into it. Vitamin C stimulates pro collagen, it enhances collagen synthesis, and it stimulates something called alkaline phosphatase activity, which is a marker for bone building cell formation, which is pretty cool.

so that is vitamin C is great if we don't have enough, especially long term, that's going to increase our risk of fracture too. So vitamin C really, really important to make sure you have incorporate it into your plan.

and then we talked about nutrient absorption already. If you have chronic digestive issues bloating, belching, burping, gas, constipation, diarrhea, IBS, loose stools, there's a good chance something's going on with absorption, right?

That has to be addressed. So let's figure out what that is and address it. I talked about celiac disease for me specifically, the only reason I even knew to get a bone density scan was not because of the medical doctors that I had met with at the time.

It was actually a physician's assistant who who like kind of just in passing by, was like, hey, you have celiac disease. So anybody done bone density scan on you before me?

I'm just thinking I'm a tough marine, you know, my bones are fine, like I don't. And it didn't even register. And I was like, yeah, I'll do the test. And we went and we did the test and it came back that I had osteoporosis and I.

And now I didn't get a formal plan. I didn't even get a phone call. Actually, I got a letter in the mail that said, you have osteoporosis, go on a gluten free diet.

That was the extent of my plan. And it's like that is woefully inadequate. So, I would say one of the first things you have to do is figure out if you have celiac disease too, or Crohn's or colitis for celiac disease, the test that you want to look at are minimum TTG IGA test total serum IGA, and look at the IgG and IGA antibodies.

you can also ask for a complete celiac profile. That's one way. And that's going to help you understand, if some of those markers for celiac disease are elevated and if you need to go get what's called an upper endoscopy, where they they put a scope down and they take a little sample of the villi, the roots, they take a little sample to see if

they're blunted.

And if they are, they'll confirm and they'll say, you got celiac C. So the only solution for that is a 100% strict gluten free diet. No cheating ever again.

But you get to eat just like our ancestors eight which is great. I, I don't feel bad at all for eating the way that celiac similar of celiac disease that.

So, making sure you understand that. And then the last part, let's move now to the third most important phase of this, which is build. We got to build that bone strength up so you can figure out the root cause.

You can stop losing bone. That's the first step. You can't start going up and improving if you're still going down and losing. Then the second step is nourish.

You got to get the nutrients. The building blocks there, make them available, be able to absorb them. And then the third step is now it's time to build.

Now we got to get the stimulus that the bones need to become stronger. Because even if you take all the right nutrients and you're actually absorbing it, if you don't provide the stimulus, the bones can't become stronger.

So we need to have weight bearing exercise and resistance training. we need impact. We need muscle pulling on bone. Okay, so when we have muscle pulling on bone, we got a mechanical signal that sends a chemical signal to tell the bones to become stronger.

Okay. And most of the people are only told, hey, go for a walk, do some walking. That's that's good enough. It's not. Walking is not enough. You have to have more.

So you want to have weight bearing exercise where your body, your bones are working against gravity to keep you up right there. Things you're doing on your feet.

They're placing a good, healthy stress on your bones walking, jogging, hiking, gardening, playing with the kids with the grandkids outside, yoga, Pilates, tai chi, qigong.

All of those things are weight bearing exercises. You want to incorporate those into your plan, okay? And notice they're not all formal exercise. They can still be fun things that you're doing.

you want to be aware of non weight bearing exercise, which are things that you're doing where you're not placing good healthy stress on the bones. And this could be a situation where somebody who has arthritis because those joints have been degraded a little bit.

they are maybe swimming in the pool as their only form of exercise, and they get out of the pool and they're like, gosh, I got my exercise in. That's all I need to do. I'm good to go.

It's great. If you enjoy doing that, do it right. If it brings you joy, makes you feel good, reduces your stress, keep doing it. But do not count that as your only form of exercise.

You have to bring in resistance training and muscle strengthening exercise. You have to have good healthy stress and that's where you bring in the whether it's the barbells, the dumbbells, the machines at the gym or the I.

I really like variable resistance bands too. Okay. So and some of the, the best exercises that you can incorporate for a bone building plan would be squats.

This next one sounds intimidating, but it doesn't have to be deadlifts, right? If you've never done those before, don't go look at videos and say, oh my gosh, I see this person deadlift in a ton of weight.

I can't do that. You don't have to start there, right? You start. You have somebody look at your body mechanics help you get the right form with lower weight, slowly progress your way up to where you're actually providing the stimulus and the right rep. Range 5 to 10 repetitions.

Great. to where you can actually, provide the stimulus your bones need to become stronger. And then another favorite is overhead presses. Right. So those are some great exercises that you can incorporate.

And again you don't have to start really heavy I would highly suggest you don't I would start with good form, look at your body mechanics and slowly progress your way up.

Yeah I think a lot of people think that they have to go out and start running or jogging.

Building Bone Strength with Nutrition and Exercise

And I want your opinion on this because I am I have patients that come in that are jogging, even though that they, you know, they have Lyme disease or another tick borne disease that's affecting, their joints and eating their collagen and breaking down their cartilage.

And so I'm always telling people like, look, pounding on inflamed joints in my opinion, is not a good idea. And so I think it's really important that people hear that they can do things like squats and deadlifts and overhead presses, you know, or they can be doing things to push their own body weight around, you know what I mean?

If they can't tolerate holding other weights and that is, you know, that is okay. That is still weight bearing exercise. And in my opinion, it's better than going out and trying to run or jog, which can then actually be depleting and increase cortisol levels, right, and cause adrenal stress and all of this other stuff that can actually further their immune dysfunction.

So I just think it's really important for the listeners to hear, you know, and I do want your opinion. I mean, what do you think about doing sort of like pounding exercises on inflamed joints?

Good idea. Bad idea. Yeah. I mean, if you've got inflammation and there's clear and obvious pain to that's not something you want to be doing. How can we how can we put together an exercise plan that helps you get provide the stimulus but doesn't aggravate the pain?

Sometimes pain prevents people from doing exercise altogether, which is not what we want. But it can also compromise your body mechanics and put you at greater risk of injury.

So if you have inflamed joints and you have pain when you're doing these activities, work with somebody. Figure out what's going to work for you where you can still get some exercise, still feel good, still provide the stimulus for your muscles and your bones.

Need because that just becomes more important as you get older and as you age. So you want to be more preventative now, let me talk specifically about running especially long distances to bone responds to, different stressors that are placed upon it.

So when we're younger and we're building, within the first 18 years of our life, 90% of our bone mass is put on. It's great when our kids and our grandkids.

So listen up if you've got kids and grandkids too. It's great if they're out playing sports, running around, doing gymnastics, moving their bodies in their, their bones in these short, sharp, dynamic movements, multiple directional, right.

Those different impacts providing different stimulus on the bones that helps build better quality, stronger, healthier bone from a young age. So if we get people doing these things the right way from a young age, we could add an extra ten, 20, 30 years on to their life.

If we do this, the right way when they're younger. So that's why we want kids to be not be sedentary. But as we get older, to a lot of people, they only do running as their only form of exercise.

That's not good either. Think about that. When you're running, you're running. And remember I said when you're younger, moving in short, sharp, dynamic, multi directional movements. When you're running same pipette for long, long distances, that's going to be hard on your joints.

And it's also not going to be an effective stimulus for your bones. You're only working your lower half. Think about where a lot of people fracture to their wrists, their forearms, what kind of stimulus is being provided for anyone when they're walking or jogging or running up here in their upper half?

None. None. So we have to be incorporating that resistance training and muscle strengthening exercise. So, yeah. Great. I'm glad we we brought that up because that's an important one.

And so are there adjunctive therapies that you would recommend like, you know, we've talked about in this summit like P of red light therapy, hyperbaric oxygen, I mean, are there are there any of these modalities out there that can actually help to improve bone health or increase bone density?

Great question. Yeah. So PMF could be something that's used most. Most of the time I see people they don't they don't even have the foundational stuff down before they start branching into the complementary or additional technologies.

But yeah, once you get the foundational stuff down, then you can start adding in other things. PMF can be helpful. rebounding, you know, it again, it just depends on the person's situation.

If they have vertebral fractures, right. Or they have they have. It's really painful. If you start to do something that's painful, discontinue. Right. Listen to your body.

Listen to your body. Don't just don't just push. Keep pushing. But, red light therapy. You know, I have a red light therapy device right there. I have another one right here. Right.

So it's helpful the studies on bone or not, you know, they're not really strong for bone specifically, but if you think about it, it's helping with mitochondrial function, and a variety of different other things there probably some other benefits that come with that too, relating to our bone health also. So, yeah, there are I think, Sorna I know there's not like, clear data on sauna, sauna and bone health specifically.

So I know I get I get a lot of questions about that. People are concerned about sweating out minerals and electrolytes and nutrients. If you are doing any kind of sauna, you have to be replacing those electrolytes and those nutrients.

You have to be doing that because those are minerals to. So again, your bones need the minerals. I'm really interested in things like heat shock proteins and maybe the impact that that would have on our bones too.

So I'm interested to see where the research goes with that. But there's nothing at least that I've seen so far that's really definitive. On the impact of that.

yeah, I, I, I would say those are and stem cells and and peptides potentially could be, could be helpful too. So those are different things you could discuss with different practitioners.

But I would say get the foundation in first and then, then we can branch into other complementary technologies. Right. I meant to ask you earlier, so speaking of nutrients and nutrient testing, because I have a lot of patients who come in and they're like, oh, you know, my, my chem panel shows that my calcium levels are absolutely fine.

And I want your opinion on using, like, a test, like a white blood cell analysis that's going to look at intracellular levels versus, you know, like our body strives very, very hard.

And there's such like a minute range that calcium you know, is going to go out in your serum because you would be at risk for having a heart attack or something.

So like what do you recommend to get levels of nutrients like calcium, magnesium, the 25 zero D3 or Cola Calcifer all through? You know, a conventional lab.

Conventional lab is pretty reliable. But getting like the K2, the magnesium, the calcium like on an intracellular level. What's your favorite way of looking at that?

And is that something that you look at with your clients? Yeah. So the first thing we typically try to do is if somebody is coming to us, we're trying to get them to do as much as they can.

If they're trying to get it covered by insurance, we're going to try to help them get as many of the things they possibly can covered by insurance, but there are other.

You can always go do a lot of functional testing, right, to get other things so we can recommend gut health testing. GI map is one. Genova GI is another test.

the, the Dutch hormone hormone test is another one. micronutrient panels can be helpful. Yeah. Looking at those different levels can be really beneficial.

food testing, food sensitivity testing, those are some other ones. red blood cell magnesium is, that's another one. And what was gosh, what was one of the other ones?

I would say when we were talking about calcium levels just a second ago. So even if somebody goes to their doctor and they get, a comprehensive metabolic panel, the CMP, and that has their, their blood calcium levels in it, that can actually be kind of telling for another condition, that is, associated with bone loss, which is hyperparathyroidism.

so if somebody has elevated calcium levels, even if you're going to your conventional doctor and you see this on your regular blood test, your calcium levels are persistently above ten.

that could be an indicator that you have a parathyroid tumor, typically benign.

Adjunct Therapies, Lab Testing, and Final Advice

But, you would go then confirm with a test parathyroid tumor, parathyroid hormone test, and also a vitamin D level. And that's going to really tell the picture if you have a parathyroid tumor.

So that's actually another cause of bone loss that you can spot in your bloodwork, even if you're just going to your conventional position. So that's a big one. Persistently above ten.

Look at your lab work. Go back and look at it over the years. That's something you want to investigate. Then go get your PTH and your vitamin D done at the same time with your calcium levels.

It's a really good tip. Thank you. Yeah. so, Kevin, before we end our interview, what would you say are your top three pieces of advice for listeners, specifically those that have Lyme or or a tick borne disease, regarding their bone health?

a couple other ones that we didn't talk about but are, are really important for your general health or any time that you're trying to heal from infections or chronic disease or anything like that is prioritizing stress.

And sleep, I think, are very, very important. If you've got high stress on an ongoing basis, your bones are going to be affected and depleted. if you're not sleeping, if you're not prioritizing your sleep, and it's really poor quality sleep, that's going to affect your bone quality, that's pretty well documented.

Okay. So those two things specifically, reduce your stress. And I don't mean just, you know, taking a sigh every now and again, cultivate a good, healthy practice of meditation.

I personally do eight minutes of breathwork every single morning, which I was kind of the next step. It took me a while to get to that, but, meditation is something that can be done at any time of day, and you can just take a deep breath in through your nose, long, slow exhale through pursed lips.

Even just doing that a couple times can really, really help, reduce that stress response and put you in what I would call the Green zone. The rest digest, relaxed kind of state.

So that's, that's really, really helpful to do. And then your sleep, just basic sleep hygiene stuff as you get closer in the evening. Don't be playing on your devices, even if you have the dimmers on these iPhones here.

And you, you put it on the the orange setting and just slide it down. Even looking at that is still communicating daylight to your your super charismatic nucleus inside your brain, your primary circadian pacemaker, and is saying, hey, it's time to be awake in time to be active.

You don't want that within an hour or two hours, three hours are going to bed, right? So how can we start to to slow that down at night and really set the stage for the environment, be dark, be cool and really get some restful sleep?

so those are some other big ones. And just be be patient with yourself. Be kind to yourself. it's it can be really challenging when you have a chronic health condition and you try a whole lot of different things and just hope that they they're going to help or they're going to work and they don't always work, not all of them do.

So you have to develop patience. And I always tell people approach things with curiosity instead of expectation. And if you do that, your disappointment will disappear.

So approach it with curiosity instead of expectation. Your disappointment will disappear. And just, just be kind to yourself. You'll get there. That's really great advice.

Thank you. why don't you tell our listeners how they can contact you or get helped by you if they would like to do so? Well, you can always find me at bonecoach.com.

That's the best place to find me. bonecoach.com. We've got a lot of free resources there, to help support stronger bones. We also have stronger bones programs that you can apply for there too.

and just again bonecoach.com is best place. But we also have a podcast which I should have you Dr. Myriah on love to. And, we've got a podcast, the bone coach podcast.

And then you can find us on places like Instagram and Facebook too. Okay. Wonderful. Anything you'd like to share before we conclude anything else? I'm just I appreciate the opportunity to share this.

It's an important topic and we get we got to preserve and strengthen the structure that's going to carry us to an active future. And we got to help. We got to become the shepherd for our kids and our grandkids, too, so they can live strong and healthy lives.

Absolutely. Thank you once again for joining us. And thank you everyone for listening. I hope that you have found this information helpful and it helps you on your journey to healing.

Lyme. Thank you. We'll see you next time.