# Bones of Steel: Secrets to Stronger Bones and a Longer Life Transcript

(Transcripts are generated by AI and may contain errors)

## Introduction to Bone Health and Immunity

Cells that break down bone are a form of white blood cell. Anything that's talking to the immune system, stimulating the immune system is speaking in the same language as the cells that break down.

But a lot of these other health issues, that we talked about autoimmune conditions, anything contributing to inflammation, anything relating to our gut health because 70% of the immune system is in the gut.

Anything that is speaking in the same language, as the cells that break down bone is going to affect that bone structure. Your bones are more connected to most of the things in your health journey than you would.

And that's a big part of what we're going to talk about here. This is doctor talks. Welcome everyone. This is Doctor Rudy Mueller and I'm joined today by Kevin Ellis.

It's great to have you here Kevin. He is better known as the bone coach. Is a Forbes featured integrative health coach, podcaster and founder of bonecoach.com.

So through his unique three step process and a world class coaching program called the Stronger Bones Solution, he and his credentialed team have helped thousands of people with osteopenia and osteoporosis in over 1500 cities around the world, helping them gain confidence in their stronger bones.

Today, the Bone Coach community has grown to over 250,000 people focused on osteoporosis reversal and achieving their stronger bone goals. So his mission is really to help millions of people with osteoporosis, build stronger bones, and to help our children and grandchildren create a strong and healthy foundation so they can lead a long, healthy, active life.

So welcome, Kevin. I greatly appreciate your time today. Doctor Rudy, thanks so much for having me here. This is going to be a great chat because our bones are really important for leading a long, active life.

Yeah, and I'll tell you, it's something that's often overlooked. You know when it's osteoporosis is not COPD. It seems that most of the time it's a reactive approach instead of a proactive approach.

So I really look forward to diving in to hearing more about how you're helping people and how we can potentially, as listeners, learn more about how to implement solid plans, research backed plans to to address these issues before they become real issues.

Absolutely. And I would agree with you that that when we think of our bones, most of the time, we actually don't think of our bones. Usually it's a little too late, when somebody already has a fracture and they're thinking about their mother or their grand, their grandmother or somebody like that who had a fracture.

And then they saw how that impacted their quality of life. And then it becomes a reactive situation. And I will also say that the conventional medical model, the way it's set up, is also established in a way that makes it more of a reactive problem to address versus being more proactive.

## Meet Kevin Ellis, the Bone Coach

So, I would say for, for most people, I can even just touch on why this is important, why your bones are important for if you want to lead a long, healthy, active life.

If you're looking for longevity, not just living longer, but also having good quality years, you have to preserve and strengthen the structure that's going to get you there.

Your bones. A lot of times when people think of their bones, they just think of them as the static structures that hold you upright and carry you through life.

And they do that, and they do a really good job of it. But they're also living tissue. They're endocrine organs. They they give you life essentially. Your bones actually contain, bone marrow, the soft, spongy material that produces stem cells, blood cells, 95% of the blood cells in your body produced in the bone marrow.

So if you need help with preventing bleeding and 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 help with that.

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

So anything that's talking to the immune system, stimulating the immune system is speaking in the same language as the cells that break down bone. So a lot of times, a lot of these other health issues, that we talk about autoimmune conditions, anything contributing to inflammation, anything relating to our gut health because 70% of the immune system is in the gut.

Right? Anything that is speaking in the same language, as the cells that break down bone is going to affect that bone structure. So your bones are more connected to most of the things in your health journey than you would think.

And that's a big part of what we're going to talk about here. Yeah. Amen to that. Great points all around. And so when we think, you know, as, as clinicians, we think and, and people that may be dealing with this or have family history of it, we think about osteoporosis, osteopenia.

So I think just starting with the basics of maybe defining what they are. What's the difference. Could be a nice beginning point. And then maybe getting into why bone health is so connected to to longevity.

Absolutely. So osteoporosis literally means porous bone. And it's a condition is characterized by either not enough bone formation, excessive bone loss, or it's a combination of the two of those things.

And in osteoporosis, both your bone density and your bone quality are reduced. And that's going to increase your risk of fracture. Now, the way you find out you have osteopenia or osteoporosis is through what's called a Dexa scan or a bone density scan, dual energy X-ray absorbed geometry, painless tests, kind of like an X-ray.

Very low levels of radiation. You lay down on a machine, it does the scan. It, tells you your bone mineral density, the actual mineral content of your bone, and then it generates a score.

And if that score is plus 1 or -1 or somewhere in there that's considered normal and healthy, if it's -1 to -2.5, that's considered osteopenia, which is like a precursor to osteoporosis.

And if it's -2.5 or lower, so -2.6, -2.7, so on and so forth, that's considered osteoporosis. And the greater the negative number becomes, the more severe the osteoporosis.

Now there are other scans that you can get to tell you your bone density. There's also something called a REM scan. This is like an ultrasound technology that will also look at your bone density.

## Why Bone Health Matters for Longevity

But a lot of times when people get this bone density, they don't have the full picture right then. And oftentimes the doctor is making a recommendation for a medication or for just taking a bunch of calcium and vitamin D and doing some walking and not lifting heavy, but they don't have the other part of the information.

So what are the other things that we need to know when we get told we have osteopenia or osteoporosis? You need to understand that bone quality also plays a role in this.

So bone density is the mineral content of the bone. Bone quality is the structural integrity of the bone, the microarchitecture, how the bone is organized.

Those two things combine to create bone strength. So in order to get the bone quality part of that picture with your bone density, scan your Dexa. You would want to ask the facility if they have what's called TBS capability trabecular bone score.

If they do, you can get bone density and bone quality at the same time. So now you have a more complete picture of your actual bone strength. If you're doing a REM scan.

Rems also has bone density and bone quality that will come with that scan. So now you have two different ways, two different types of scans that can give you density and quality.

So now you have a more complete picture of your bone strength. But what you still don't have, especially if you only have one of these scans, is you don't understand.

If you're actively losing bone right now, present day, and that that is one of the most important pieces to understand. Because if you do have bone loss that's taking place right now, something is causing it.

And we need to address that underlying issue. So the tests that you would look at to know if you're actively losing bone are called bone turnover markers.

These tests look at the activity level of cells that are breaking down and building up your bone present day right now. So if you get the most sensitive marker for bone resorption or breakdown is called CT or serum CT, it's a blood test.

It's a CT low peptide test, and it looks at the activity level of cells that are breaking down bone. And if that activity level is off or elevated or not, where it needs to be, that can be an indicator of active bone loss taking place right now.

And a root cause issue that needs to be addressed. And then if we're looking at bone resorption, you also want to look at bone formation at the same time.

So the most sensitive marker for bone formation would be p one and P Pro collagen type one N-terminal Pro peptide. These tests look at the activity level of cells that are building bone.

So instead of we talked about right at the beginning, Doctor Rudy brought this up. Is that a lot of times people are more reactive with osteoporosis. Part of the problem with the way the conventional medical model is set up is it's only looking at the bone density in the bone quality scans every one year, one and a half years, two years down the road.

Those are lagging indicators of what's going on with your bone health. But when we shift the focus to look at bone turnover markers, these are leading indicators that we're doing the right things.

## Osteopenia, Osteoporosis, and Bone Testing

So instead of waiting a year, year and a half, two years, hoping that you're doing the right things, we can look at bone turnover and see, are we actually bringing bone loss down or are we boosting bone formation?

Is the ratio between the two of those improving. And when you do that and you focus on those near term targets, you're more likely to achieve that lagging indicator outcome.

It's a more complete picture of what is occurring metabolically at the bone. Yeah. And then and then once you know if you're losing bone right now. So let's say that is often elevated or really high.

Then if there's that that means there's a root cause issue that needs to be addressed. It's not always just hormones. It can be hormones can be a contributor.

Most people will be told, oh, it's just hormones or it's a natural part of aging. Sure. But they're oftentimes other contributors to that. And I'm happy to explore each of those.

We can go, yeah, I think that would be great to get into some of the causes and contributing factors. But really, what this kind of reminds me of and, and so much of whether it's, you know, our conventional medicine and, you know, how functional medicine may differ is, you know, for a thyroid test will often just see a free T4 and a TSH, which gives a little bit of a picture of what's going on.

But when we're really wanting to understand the thyroid, we need to be looking at antibodies, for instance, nutrient levels, the conversion of T4 to T3, the development of reverse T3.

So it gives us a complete picture to now be able to take actionable results on and not just be reactive to the situation and to the symptoms, but proactive and knowing where you were at, I don't know, 20, 30, 40 years old and now at 60.

And so I guess coming off of this testing thing, I know my question would be when is the optimal time? Or are there potential indicators for a person that would may say, we should have these types of tests performed early so that we get some foundational baseline understanding, like is there an age, is there a symptom?

Is there some sort of metric that you would recommend for people to say, hey, you know what, you need to get this this done? Yeah, really, really great question. So I want to point out that about 90% of your bone mass is put on by the time you turn age 18.

The remaining 10% fills in by the time you turn 30. So by the time you turn 30, you're reaching around peak bone mass and what I would call a full bucket.

So if you are listening to this right now and you have kids or grandkids, then you need to just pay attention to making it. We want to make sure we're doing the right things for them at a young age in those great bone building years, because doing better things for them now is going to help add ten, 20, 30 years of good quality to the end of their life.

So we don't just want to think about, can we live longer? Most of us, when we have kids, we're thinking about how can I that's that's your primary focus.

Those are the you don't know, a stronger love until you bring a child into the world, right? So when you when you have that child, we want to make sure we set them up for a long, active, healthy future.

So, doing things like making sure we've got good diet, nutrition from a young age, getting enough vitamin D, vitamin K2, calcium, magnesium, vitamin C, all of those key nutrients for bone health.

We need to make sure we're getting enough of those for our kids at a young age. We need to make sure we're not having a ton of packaged, processed foods, that are in there.

And I know that's hard for parents. I know that is hard for parents, but making better swaps instead of the the, the candies and the popsicles and all that stuff, have them build their own organic berry bowls, get them a little spoon of honey, you know, let them let them build some of that stuff together.

And just how can we get more nutrients in there and, and swap out some of the more artificial process that in terms of activity from a young age, we want people we want these kids up and active, not just sitting on their tablets.

Get them outside, get them in sports, get them doing gymnastics, get them moving their bodies in their bones in the short, sharp, dynamic movements where you're stimulating that good quality, the good microarchitecture that's going to be built from a young age.

We want to just make sure that we're, we're, we're supporting them the best we can, because by the time they turn 30 and we reach peak bone mass, that's when we want to probably get our first.

Your original question was, when would we want to get some first initial measurements? Right around 30 years old. If you if you haven't had a Dexa scan or bone density scan yet, that's a great time to get one.

So you have a foundational measurement there from which to monitor future changes. Now, if you're listening to this and you're 50 or 60 or 70 and you're like, gosh, I haven't even had a bone density, go get one.

All right. It's not like you missed the window. Just get one now because that becomes your baseline. And then we monitor future changes from your baseline.

Same thing with the bone turnover markers. Get your foundational measurements now take a look at where they're at. And then we'll monitor future changes from there.

Doesn't matter where you are in your health journey. And you know, sometimes these the bone turnover markers specifically, and even the bone density scans for bone density, most doctors won't order those scans until 65 when it's covered by insurance.

So you have to ask for it and then have a reason for asking for it. Say, hey, I'm in, you know, menopausal woman. Or postmenopausal woman. I think it makes sense for me to have a bone density scan, because I know bone loss can take place around this time, or I've had chronic digestive issues or celiac disease or ulcerative colitis or Crohn's disease for a long time.

These could be issues affecting nutrient absorption, which can affect my bones. I think it makes sense for me to get a bone density scan bring the reason to your physician to justify why it makes sense, and then you can get these scans.

If you can't get them through your doctor, go to an external radiology group to get the scans done. And then the last note is on the bone turnover markers.

You can try to go through your physician to get them. Oftentimes a doctor won't order them unless they understand the interpretation of the test, because it can create a liability.

So you can try to go through your GP. They may try to refer you to a specialist like an endocrinologist or rheumatologist. You can also go outside to a functional practitioner or a natural pass to.

They may be more likely to order that if you can't get them through them, you can go to a place like osteo IQ, and you can just order the bone turnover test by themselves.

Right. And you can get them every three months or six months. And it just makes it really, really easy to do that. That's great when it comes to like different causes that you can bring to your physician.

You mentioned some hormonal causes or contributing factors to osteopenia, osteoporosis. You mentioned some absorption difficulties in the gastrointestinal tract that might lead to osteoporosis, osteopenia.

So what are some other causes?

## When to Get Baseline Bone Scans

Or if you wanted to expand on any of the, you know, digestive or hormonal changes that may occur, what are some

other things that can cause or contribute to the presence or development of osteoporosis?

Great question. And I think this is important for everybody listening, because you're probably going to hear something that I share here that applies to your current situation.

So pay attention to this part because there are different causes and contributors of bone loss and osteoporosis. And there are different types of osteoporosis too.

So there's primary osteoporosis that is typically related to a decrease in estrogen in postmenopausal women. Estrogen has a protective effect on bone.

When those levels decrease, as they do during menopause. That causes an increase in the activity level of cells that break down bone. But there's a whole nother cause of osteoporosis, and that's called secondary osteoporosis.

And that's where bone loss occurs as a result of behaviors, disorders, conditions, diseases and medications. So when you go to your doctor and you get told you have osteo, you get a bone density scan, the score comes back.

They say, hey, you've got osteoporosis. And in 15 minutes time you get told, take calcium, take vitamin D, go for a walk, don't lift anything heavy. We'll see you in two years for your next bone density scan.

It's just hormones. It's a natural part of aging. So we'll monitor it and if it gets worse, we'll we'll keep you on a medication or put you on a medication. Right.

That is the standard recommendation for most people. Over 90%. There's just so much more to it than that. And that's where we can't make assumptions. We need to make objective decisions.

We can't say it's just hormones, because there could be a secondary cause and contributor to that bone loss. So what are the secondary causes? Well, let's start with medications for one that people either are currently taking right now or have taken in the past.

One of the primary contributors of bone loss would be glucocorticoid medications. So this would be prednisone for example. People take this for different autoimmune conditions, lupus for example.

And these medications are steroid medications designed to suppress inflammation. If you have taken them or are currently taking them, you know that they will contribute to bone loss for a few reasons.

Number one, they will, they will kill Osteocytes. Osteocytes are these these bone cells that are orchestrators of bone remodeling? They're really, really important for making sure we're building stronger, healthier, new bone.

And these these medications are going to are going to hurt the osteocytes. It's also going to, decrease your, your GI absorption of calcium, and it's going to increase the urinary excretion of calcium.

So we're going to have a calcium deficit there too. So glucocorticoids will contribute to bone loss. PPIs proton pump inhibitors or H2 receptor antagonist drugs.

These are drugs that are designed to, reduce the production of or increase the suppression of your stomach acid. Stomach acid is really important for your bones.

Not not just for your bones, for your health in general. Because if you don't have proper stomach acid, you can't properly break down and extract nutrients from your food like amino acids.

The building blocks of protein, your bones are 50% protein by volume, so they need amino acids, calcium, magnesium, iron, B12. If you don't have proper stomach acid, your body, your bones are going to be starved of those nutrients.

So PPIs are meant as shorter term interventions, if you even use them ever at all. Right. And that would only be for a couple of weeks. I see people that have been on them decades, years, ten, 20, 30 years on PPIs.

And, that will reduce your bone density, your bone quality, your bone strength. So you got to be got to be aware of that. And those are a couple of the bigger medications.

Same thing with SSRI is there are some great a lot of studies that show those are not going to be helpful for your bones, either in terms of autoimmune conditions, which I know a lot of people are affected by, one of the autoimmune conditions that affects your bones pretty significantly is celiac disease.

So celiac disease for those who are not familiar, is an autoimmune condition where when you ingest gluten, it damages the villi in the small intestine.

So when somebody says they have celiac and they have to eat gluten free, or they're asking you to eat gluten free, it's not really because of choice, it's because of medical necessity.

So, what happens is when they ingest gluten, these tiny little nutrient absorption centers in your small intestine called villi, they start to get damaged and blunted to where they can't do their job, so they can't absorb the nutrients.

And your body still needs nutrients like calcium to execute its daily functions every single day. Muscle contractions, nerve impulses all require calcium.

So when these villi or blunted your, the roots in your soil are effectively damaged and your body is going to go to the largest reserve of minerals that it has and pull from there, which are your bones that will lead to bone loss, will lead to osteoporosis over time.

So, other autoimmune conditions certainly contribute, and there are tons of other factors, but those are some really big ones. Yeah, I find that really fascinating.

I mean, we we've got the hormones which tend to be a primary is what you're saying. And then we have all of these secondary causes that are completely overlooked at driving this, this process forward.

## Secondary Causes of Bone Loss

And so, getting with someone like yourself, working with someone like yourself that that's knowledgeable in this area can help kind of pull out and tease out some of those secondary issues that can drive this process.

I have a question that's a similar to causes, but I'm curious. Like one thing that we will see if doing like a heavy metal test, in a, in an individual who is postmenopausal osteopenia, maybe their osteoporotic is maybe higher levels of lead or cadmium.

Can you expand? Right. Like on on any of that, like how it potentially could come into the bone looking like calcium that we might get a release of lead or cadmium?

Yeah. So what's really important to know is that lead has an affinity for bone. Heavy metals have an affinity for bone. And what's going to happen is over time, those heavy metals, if we've taken them in, they're going to get stored in the bone.

And then if we have a period where bone loss is taking place, menopause, for example, or the five year period after menopause where we can have a, you know, 20% reduction in bone mass, if we're not proactive about it.

What can happen then is the bone when it's broken down, it's not just coming in and selectively plucking out the calcium, right? It's actually tearing down that entire protein matrix structure and everything that's a part of the bone in there.

So if the lead or other heavy metals are in that bone and that bone structure is torn down, those heavy metals are going to release and be released back into circulation.

So we're going to have an auto intoxication that takes place at that point in time. A lot of times, symptoms that may come up in menopause, for example, may not just be due to menopause, it may actually be due to you had heavy metals or lead or some other, some other factor that's taking place that then is contributing to, fatigue or loss of memory or, you know, it's really hard to think.

And I think it's important to keep in mind that, you are you are justified in thinking that there may be more to the picture than what you're being told in your doctor's office.

So it is good to explore those things deeper. Get with the functional practitioner who can help you do some of these other tests that Doctor Rudy just talked about, to really explore.

Is it a heavy metal issue that you're dealing with? Because if it is, you're going to need to address that to. Yeah. Wonderful. And so if a person has gone through the diagnostics they've looked at, the deck's, looked like the bone density, bone quality, they've looked at the, bone markers that we mentioned earlier, bone turnover markers.

And they're wanting to say, okay, let's what are some like lifestyle or nutritional advice that I can take in? And we've all heard drink milk right. For that's calcium.

So, is that something that you recommend number one. And number two, what are some other things that maybe would be more beneficial than drinking your milk every day?

Yeah. No, that's a great question. This is actually this is actually one of the most common questions I get. Yeah I know should I drink a lot of milk for my bones.

Right. Here's what I'll say I am I don't think drinking a bunch of milk is not the solution to osteoporosis and stronger bones. I am not anti dairy, but I don't think dairy is for everyone.

And if you are going to incorporate dairy, number one, you need to make sure that you're not intolerant to it or you actually don't have reactions to it or it's not creating inflammation in your body.

That's that's probably most important because if it creates inflammation in your body, it's not going to be a health food for you. I think that's really important.

If you are incorporating dairy, it should be cultured and fermented dairy. So 24 hour yogurt, where you're getting protein, you're getting beneficial, probiotics in there.

And you're getting other nutrients too. Or it could be a kefir. Could be a, an A2 kefir, could be, sheep's milk or camel milk or something like that. Right? That it comes from.

But getting that kefir can also be a great source. It does have calcium. It does have protein. So there are great nutrients in there if you tolerate it.

Now, if you're someone who has an autoimmune condition that you're trying to put into remission and dairy is not a part of your plan, right? Or you just don't tolerate it.

Now what we need to do is find what are some nondairy sources of calcium that I can actually incorporate into my plan. That's not supplementation. We can look at sardines and mackerel with the bones in.

So stick with me as I make the case for these, because I know these are not the most appetizing things for most people. I can eat them right out of the can.

Most people I know cannot do that or don't want to do that. So you'll look for a BPA free can that has sardines and

mackerel that have the bones, and the bones aren't going to poke your mouth or hurt your mouth.

They're really soft. And the reason I like these is because they have protein. Talked about how important protein is for your bones and your muscles. Very important.

It has omega threes which are dampeners of inflammation. Remember I said anything that contributes to inflammation especially chronic and long term that's going to contribute to bone loss.

So when we get those omega threes that can help dampen that inflammation. And it also has all the minerals that your own bones need in the right ratios that nature put them in.

Right. So this can be a great way if you eat a can of sardines or mackerel that have the bones in. Not all of them do that. Have the bones in. You can get 300mg of calcium and in one sitting just right there.

So that's great, right? Another nondairy source of calcium would be arugula. It's a plant based source of calcium. Arugula is great because it's a low oxalate bitter green.

Low oxalates are anti nutrients that can bind up bone healthy minerals like calcium, and prevent you from taking them in. Spinach is a high oxalate grain.

Arugula is a low oxalate grain. So if you are somebody who has chronic digestive issues, chronic joint pain, if you, are trying to make a better swap, arugula could be a better swap.

There too. So and it's really easy to incorporate. You saw it with a little bit of, olive oil, sea salt or Himalayan salt or whatever you want to use.

And, or you could just add it as a side salad and it's just easy, so easy to incorporate.

## Heavy Metals and Bone Loss

So those are some nondairy sources of calcium and, other nutritional pieces of advice. Getting enough protein is important. If you can aim for even 30g a meal, sometimes even greater than that.

That's a good foundational target to just roughly estimate that you're there. You don't need to obsess and weigh everything and get it perfect 100% of the time.

But just get it to good enough and keep moving forward. And then the other one is making sure we get those foundational nutrients. There are lots of them.

I won't go through all of them right now, but, calcium is important. If you look at your diet nutrition, you're still falling short because you're not incorporating dairy, you're not eating sardines, mackerel.

And you, maybe you have some absorption issues and you need to supplement when you're supplementing. I would not supplement more than 500mg a day because it will increase the risk of kidney stones and, and arterial calcification.

We don't want that. Right. And then if you are supplementing and even if you're not, you want to incorporate the other key minerals, nutrients and cofactors to magnesium, vitamin D, vitamin C, vitamin K2, vitamin K2.

I'll say specifically for bone is important because what it does is it activates osteo Coulson and matrix GLA protein. And that's going to make sure that the calcium goes to the bones to help build bone strength, not to the soft tissues like the kidneys and the arteries, which are going to going to contribute to, calcification.

So it's a really important nutrient to make sure we incorporate. Yeah, a little bit. And what you'll see is that a lot of the vitamin D supplements that are sold are now including vitamin K2 for that sole reason, so that it goes to the

target that we want it and not to the arteries to then potentially increase atherosclerosis or plaque in the arteries, calcification arteries.

And so that's great. So I mean that's very comprehensive. I love it when we touched on nutrition. So if we want to get it in through our nutrition, here's how we do it.

We touch on supplements. If we have to go outside of of just getting it in from our diet, here's where to go. What about other lifestyle factors that we would want to be focusing in on?

You know, obviously, you know, we mentioned lifting or physical activity, you know, stress, sleep. If you could give give us some some info on those areas and what you found and in the research.

Absolutely. Okay. So I'll touch on all three of those. I'll touch on stress and sleep very briefly just because, you know, a lot of us, a lot of us, we all know it's important, right?

## Nutrition for Stronger Bones

We all know being stressed out and, not having a good practice in place for, for either meditation or prayer or gratitude or some healthy stress reduction practice every single day is I do think it's really important to have that.

And I'm not talking about just a short sigh. You know, when you're after after having a little road rage incident at the at the stoplight, right. You know, where it's a 32nd thing.

I mean, actually taking some time, being thoughtful, intentional about building that into your day, even if it is just for a couple minutes. What's manageable for you?

Focusing on that practice, I think, is going to be really important because stress is one of the major contributors to issues with not just your bones, but general health.

Right? So, you have to you have to be reducing your stress sleep. It's pretty well documented. Poor sleep is going to reduce your bone quality. That is and that's when your body repairs itself.

So if you want to build stronger muscles, you want to build stronger bones. You got to prioritize your sleep, get to bed at a reasonable hour. If you're in bed at 10:00, that's great.

Right. Getting getting that prime 10 to 2 window of sleep is fantastic. Obviously, you want to go longer than that. Make sure your room's dark, a little bit colder.

And then use use a tracking tool like, I love objective data, so I use an aura ring, but again, it's a tool that you don't need to obsess about. It doesn't need to become your primary focus of your everyday life, but it can.

It can help inform your decisions and may help you make better choices. And so sleeping is really important. And then exercise we talked about absorption and nutrients and getting the building blocks.

But if you don't provide the stimulus for those building blocks you're not going to have stronger, healthier bones. Actually going to be really hard to maintain your current bone structure.

So we need different types of exercise for our bones. So you need muscle pulling on bone, and you need impact when you have muscle pulling on bone, you've got this mechanical signal that sends a chemical signal to tell the bones to become stronger.

And then there are different types of exercise to incorporate. There's weight bearing exercise, and there's resistance training and muscle strengthening exercise.

Weight bearing exercise is where your body and your bones work against gravity to keep you upright. You do these

things on your feet. They place good, healthy stress on the bones.

This would be you're walking, jogging, hiking, gardening, playing pickleball, playing with the kids, with the grandkids out in the yard, yoga, Pilates, Tai chi, qigong.

All of those are weight bearing exercise. Walking by itself is not enough. Even though it's good for your health, you should do it. It is not enough. So you have to incorporate other forms of exercise, and you also need to be aware of what's non weight bearing.

So primarily cycling and swimming. Swimming mostly because when you're in the pool and you're swimming laps every day you can't just get out and say oh I've done my exercise for the week.

You haven't because we're not placing that good, healthy stress on the bones. So this is the same thing astronauts face when they go up into space. Because if you're not using it, you're not placing that stress on the bones.

You're going to lose it. So, really, really important to be aware of that. So you have to incorporate this last part of exercise, which is muscle strengthening and resistance training exercise.

And this is where we bring in variable resistance bands, kettlebells, barbells, dumbbells, machines at the gym if that's where your comfort level is at.

And then we start to layer in these different exercises that can be really helpful for building bone strength. I call them the biggest bang for the buck movements.

So squats, deadlifts, overhead presses. As long as you don't have a vertebral fracture or really poor quality bone, you know you'll be good to do these exercises.

And even if you have their modifications, our team specifically helps people with these. Like how do you modify for you to make sure you're doing the right thing safely?

That is important. But you would start at a weight that you can make sure we get the form and body mechanics down correctly first, and then slowly progress up to where you're doing your you're doing the movements in a way that's intense enough to provide the proper stimulus for bone growth, right?

So if you can't provide the stimulus safely, you should not provide the stimulus at all. And I think that's really, really important. But yeah, when you when you do those things, when you bring all that together in there more, there's more to it, of course, but that's kind of a high level overview of what that looks like.

That's going to help set you up for success in building bone strength and making sure you have a long, active future with the people you love most. Yeah, I think, you know, one of the biggest things that we see help with the the individuals that have osteoporosis or osteopenia is those variable resistance bands, especially if they have balance issues.

Right? Which is another maybe potential form of training that people need to be considering. I mean, if you are equilibrium is off. If your balance is off, then that increases a risk for a fall.

If we have softer or less porous bones or quality of bone is not great, increase for for a chance of fracture. Wrist, hip whatever. And that results in, you know, can result in death in many people over a short period of time.

But it can certainly for elderly and, you know, put them into a rehab facility for a significant, amount of time and then even more so now you're sitting around doing nothing.

So the variable resistance bands I find very interesting. So I wonder if you can just expand upon like somebody is just getting started into this, like I the gym is just not something that stimulates me in a way that I want.

Like, what are some basic maybe like 2 or 3 exercises that you would recommend with a variable resistance band? Yeah, I, I would still go with those foundational movements.

Yeah. Okay. Squats the deadlifts, the overhead presses because you're, you're working so many muscle groups. There's an axial load there. There's just there are a lot of really great things when you do those movements versus just isolating, like, you know, a single bicep.

Yeah, right. The curls for the girls. One arm curls up and and look I when I was younger I followed Arnold Schwarzenegger's bodybuilding encyclopedia.

Right. I had bought that thing when I was a teenager. And it's funny, my mom actually texted me the other day and she goes, look at this blast from the past.

And she sent me these pictures of me when I was 17 years old, working out. And I remember at that time I was following that guidance. I still learned those foundational core movements then, but there was still some of that bodybuilding type isolation for me and stuff.

But when we're talking about building bone strength, the sculpting of the physique is not as much of a focus.

## Lifestyle: Stress, Sleep, and Exercise

It's more of like, can we move functionally and what's going to provide the stimulus with the greatest impact, with the least effort that that makes sense.

Still a higher intensity. But, we just want to do more of those types of movements. So cool. Cool. I think, you know, it kind of brings me to either any.

So I, I just don't want to put my, my thought in here, but like, like medications. Right. So somebody has osteoporosis, osteopenia. They get prescribed the, bisphosphonates as an example.

Talk to me about your opinion on them. What are they changing? What aren't they changing? And are there alternatives besides what we've already mentioned around a lifestyle perspective that may be in the future here or maybe more in the region?

Peptide, stem cell, that type of thing that that you would recommend looking into? Yeah. Yeah. So kind of like I talked about when somebody gets gets the diagnosis, they're going to be told take calcium, vitamin D, go for a walk, don't lift heavy, take this medication.

And I always encourage people in those situations. I know it may you may get some fearmongering or you may have, a situation that is made like where you feel like it's a dire situation.

You got to take it now. You got to go fill the prescription, do it right away. And a lot of times you have the ability to pause, take a breath and say, I'm not saying no, I'm just saying, can you help me get a little more information?

Right. That's how you open the dialog in those situations to where you don't put a wall between you and the person who can help you. You open a dialog and say, I'm not saying no, I'm just saying, can you help me get a little more information?

So now what that allows us to do is explore root causes, open the conversation for exercise and nutrition. Even though they can't, they're probably not going to help you with those pieces, right?

But at least it gives you time to do that. I always want the patient or the individual to be able to go to their physician and say, give me a year. That's the statement I want people to make.

Give me a year and let's see what progress we can make in that time. They're still going to tell you to take the

medication. So here are my thoughts on medication I'm not anti medication but I am pro do everything you possibly can naturally before you ever consider it as an option.

The reason I can't be anti medication is because I see a spectrum of people and some people come to us and they have bone density in the negative ones to the negative fives or no fractures to 15 or more fractures.

The person that has really poor quality bone that has 15 or more fractures, they likely need an immediate intervention. And that intervention is going to have to be a medication.

Right. But the person who has no fractures, who has okay bone quality or good bone quality, they likely do not need a medication and may never need one, but they're still going to be prescribed one.

So this is why I say that you have the power to say help me get more information. And then when if we're just understanding the medications, I'll give you a very high level overview of them.

There's anti resort tips. They're anabolic anti resort dose are designed to slow down the activity level of cells that break down bone. This would be your bisphosphonates and your rank ligand inhibitors.

Bisphosphonates would be fosamax. Re class act and Albany VA. The safety and efficacy of bisphosphonates is not really well known beyond five years and as you and I are going about our daily lives doing our daily activities, we're starting to get these tiny little micro cracks, micro fractures in our bones.

When you're in the gym working out, you're getting these little micro cracks, micro fractures in the bone. That's normal for everybody. This is how our bone remodels and turns over when we get a new skeleton every 7 or 10 years, which is amazing.

But if you take these medications, these anti resorption bisphosphonates for longer periods of time, multiple years, you can slow down this process of bone turnover too much, where you start to accumulate that old worn damaged weaken bone over time.

So even if your bone density score is showing as stable or even slightly improved, the bone quality may not be there. So your bone density could improve, but the strength of the bone may be going down.

Right. So this is that's a really important thing right there. The other type of anti resorption medication is a rank ligand inhibitor. Prolia. Prolia.

Is it. If you take this it's a it's a you get it every six months. If you take it you can't just come off of that medication cold turkey because it can increase the risk of vertebral fractures.

So you then have to relay with another medication to make sure those fractures don't happen. So most people are not told that when they start that medication.

The last category of medications are anabolic. These are designed to build bone, build better quality bone, build it faster. That would be for Teo Tim lost ability.

Can they build bone? They absolutely can. Can they improve bone quality? They absolutely can. You can only use them for a certain period of time. And when you're done taking them, you have to follow them with an anti resort of medication just to not lose the bone you just gained okay.

So you just have to be aware that when you start one of these medications, you're not just committing to one medication. Now you may be committing to multiple medications for many years if not a lifetime.

So this is one of the reasons why I say you got to pause and say, let me get more information. And yes, there are other things that could play a role in your plan at some point in the future.

The stem cell, the peptides, incorporating some of these, these complementary technologies, power plates, vibration plates, PMF, those kinds of things.

You can add those into your plan. What I tell people to do is start with the foundational stuff first, which is what we teach. We teach people foundational, stronger bones plan, and we help you build that out.

Then once we get the foundation established and we get all the other the other stuff, figured out, then we can start layering in the complementary stuff that can get you to the next level.

Beautiful.

## Medications and Emerging Therapies

So I think the, final question that I have for you would be, is there any future area of research, whether that be around osteoporosis and its effects or bone loss and its effects or therapies, anything that you see as being intriguing coming down the pipeline?

I would say probably more in the, in the stem cell regenerative medicine area. Hopefully I would love to see regulations on that. I think all of us in the health space would love to see regulations on these things loosened up a little bit.

But at the same time, not just jumping into everything that that appears to be the next best bullet. I haven't found anything that is just a magic bullet for osteoporosis.

I wish there was, but there is not. So you still got to do the foundational stuff. And, But I am optimistic about the future. I greatly appreciate your time, Kevin.

I mean, I think this was a very comprehensive, oh, big overview, but we got into some great details as well around osteoporosis, osteopenia, the testing, the lifestyle interventions, nutrition supplements.

I mean, I'm very pleased with this interview, man. I think that a lot of people that are listening right now are going to be able to take something away from this.

And I'll tell you, the biggest thing that I'm taking away from it is maybe I, I need to start looking at these bone markers now as I'm coming into age 40.

Well, you know, where I was, you know, honestly was on the back burner in my thought, focusing in on other things. But it would be a good idea for me to have a bone quality test, Dexa and some of these bone turnover markers just to get a baseline.

Yeah, absolutely. Absolutely. No matter where anybody is at, get a baseline so you can monitor future changes from there. So for anyone that's interested in learning more about bone coach and, and your business, following you for more information, what are some places where there's social media, anything along those lines that you would want to share with them?

Yeah. Thanks so much. Yeah. So, bonecoach.com is always the best place to find me to find our team. We have over 250,000 people in that community, 43 people on our team.

A lot of those people are credentialed experts that have been in their field ten, 20, 30, 40 years. You know, we've got Women's Health, MD and educator at the Institute for Functional Medicine on our team, top osteoporosis exercise experts who have been doing this over 20 years, that really help people hone and create personalized, stronger bones plans, figure out the root cause issues, address those things, and just get to a point where they're making meaningful improvements in their health and their bones and I think the most important thing is moving from a place of fear and worry and overwhelm to a place of education, empowerment and confidence and feeling good that you know you're doing the right things for your future.

So bonecoach.com is a great place to go if you want to work with the team. You do have to submit an application to do that. It's very easy to do it. And then if you just want free resources, bone healthy recipes guide, stronger bones, masterclass, those kinds of things.

All that's at bonecoach.com to the other place I would tell you to go is if you want to get bone turnover markers done and you're not sure if your physician will order them and you have the budget to do it, which isn't it's not significant.

## Future Research and Where to Learn More

I think it's like one it's like 100 something dollars to do, like a CT test, a bone, a bone resorption test, and like $250 or two, 25 to do a bone formation and a bone resorption test.

You can do that at osteoiq.com. And there's an active monitoring test there that you can look at those and get them fast and easy and effective. So I highly recommend if you're trying to look at these leading indicators of bone health success or even just get a baseline, go to osteoiq.com, get the osteo IQ active monitoring test.

I think that'll be important. The last thing would be, got a bone coach podcast doctor Rudy, you should be on there at some point. That's awesome. Sure. So I'm sorry. We might have to do that.

And then on all the socials at bonecoach. At bonecoachkevin, find me on Instagram, Facebook, all over the place. So awesome. Well, thank you again, Kevin.

The bone coach. Appreciate your time and the quality and breadth of knowledge that you presented today. Will certainly impact a lot. So thank you so much.

Thank you everyone for taking the time to listen. This is Doctor Rudy Mueller live. Long live healthy talk to you soon. Thank you for tuning in to Doctor Talks.

We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices but empower your wellbeing.

For more insights and strategies, subscribe to our podcast and visit our website. WW dot doctor talks.com. Stay connected, stay healthy and join us next time on Doctor Talks.

Real talks from real doctors on the issues that matter to you most.