

David Roberts:

Hey, it's David Roberts here and today I'm with John Gildea, he's a PhD at the University of Virginia. And we are going to talk some about another topic in women's health, osteoporosis. And osteoporosis is found in both genders, but specifically it's a bit higher women due to menopause. And so John, once you dive in, I can pepper you with questions as they arise.

Dr. John Gildea:

Yeah, sure. So probably the biggest one for loss of estrogen is that estrogen affects the actual osteoblast, osteoclast ratios. So bone is deposited by osteoblasts and is removed by osteoclasts. And in order to add or subtract bone, it would be the ratio of those two to cell types. And so of course, and that makes this calcium. And so we have to talk about how your body regulates calcium and then also inflammation. So interleukin 6 has a lot to do with inflammation and the bone resorption that happens with estrogen loss. So there's a sort of the building blocks that in order to get a decent understanding of bone health. And then on top of that would be exercise. So you need weight-bearing exercise and relatively consistently. So I think the biggest issues there are, as you're losing estrogen, your interleukin 6 levels in your bone tends to go up, you get higher expression of osteoclast and you get bone resorption.

Dr. John Gildea:

And so clearly you should do something about inflammation. There's lots of things that regulated inflammation, general inflammation, blood sugars are important one as well as there are anti-inflammatory diets and avoiding the foods that are pro-inflammatory, obviously. They say omega-6 fatty acid tend to be pro-inflammatory.

David Roberts:

Corns high in omega-6, which is everywhere.

Dr. John Gildea:

And then omega-3s in general, the fish, flax, things like that. And then that inflammation also plays a role in the ratio of estrogens that are circulating the body. There's a number of estrogens three and there's pro-growth and pro-inflammation versions of that and anti-preparation versions of that. So ratios of estrogens have lot to do with it too. And of course, estrogen, progesterone are opposing factors as well. So in terms of-

David Roberts:

progesterone being another hormone in women.

Dr. John Gildea:

Yeah and so in state like PCOS in younger women who have estrogen dominance, you would tend to have estrogen, but in a ratio that's also not helpful. So along all those lines are sort of the answer is a holistic health program would tend to help you with all those aspects. That would also be helpful in many other aspects of health. And so we have to talk about calcium. Obviously, you don't want to be calcium deficient, so you need an adequate amount of calcium. But how your calcium is handled in your body is regulated by a number of factors. One is your vitamin D status.

David Roberts:

D3.

Dr. John Gildea:

Yeah. So the amount of D3. And the processed D3 actually has a lot to do with whether you mobilize or not calcium. And so in that case, you want your vitamin D levels high, but you also want to take a vitamin K2 supplement, which natural source of that would be grass-fed beef, chicken, eggs.

David Roberts:

High in vitamin K2 and K7.

Dr. John Gildea:

Yep. And so long fermented cheese is probably the number one source of it in the American diet.

David Roberts:

Okay.

Dr. John Gildea:

So that helps you put the calcium in the right place. You don't want calcium in your arteries, which is why you don't want to take too much calcium. Calcium in your arteries is part of the process of making atherosclerotic plaques which you don't want to do. Vitamin K2 works against that by keeping it from depositing in your arteries and making sure it's in your bones. So lower inflammation, the ratio of estrogens that you have, you're going through menopause and having a tough time with it. It's really good to get together with the holistic medical best docs. There's a lot of them out there that are specific for hormonal issues. They'll really be able to help in that respect and you have to start early. So this is something that accumulates over a lifetime.

David Roberts:

I read recently that you can lose five to 15% of your bone mass each decade.

Dr. John Gildea:

Wow.

David Roberts:

After 30.

Dr. John Gildea:

Yeah. It's a progressive thing. So get at it before you actually have it.

David Roberts:

So in terms of exercise, so I swim a lot, but that's not exact, it's not weight-bearing. Am I in trouble?

Dr. John Gildea:

As long as you're up on your feet with gravity. That's the issue in outer space, that loss of bone that happens really fast. So if you're on this earth, you're going to oppose it somewhat, but so repetitive motion, weight-bearing, lifting is also good. So running, walking, general movement would be great.

David Roberts:

Let's touch a bit about calcium supplementation. And before we start recording, we're talking about it and you said you're not big into taking calcium supplement but rather your foods. Talk some about that.

Dr. John Gildea:

Yeah. So some of the foods that are known to block absorption of calcium are foods that are high in oxalates. And so there's a whole list of foods that have high oxalates but they also tend to be foods that have high calcium. So I guess it would be the best foods in that case are balanced foods. And if you don't hold your diet you're probably going to be okay. If you're crazy about eating too much of one food that's very high in oxalates.

David Roberts:

Like spinach.

Dr. John Gildea:

Like spinach is one of them.

David Roberts:

People who just do spinach smoothies in the morning, they just throw tons of spinach there, like, wait a second.

Dr. John Gildea:

Yeah. It's one of those topics that it's hard to bring up if someone's been doing things like that. But it's true. It's like water, water absolutely essential for you too. Little, you're going to be in big trouble. Too much, you can get hyponatremia, which is very serious condition. So don't drink your gallons and gallons of water. You'll dilute your bloodstream and you can get into kind of big trouble. And then oxalates are like that too, there's an actual LD50, lethal dose of spinach. I think it's in the courts, number of cases but it's still hard to imagine that you can kill yourself from being expectant to it is possible.

David Roberts:

Yeah. And it's more easily approached too. Actually you said, as you take out that pulp, get a lot more the greens in there.

Dr. John Gildea:

And traditionally with a lot of people ate those leafy ingredients was cooked. Oxalates are destroyed by heat.

David Roberts:

Okay. It's good to know. So John, let's go back to a bit with menopause. The reason, and I read a statistic. A hundred percent of women, they live long enough to have menopause but 50% of women have osteoporosis at some point. That's a huge number. Let's talk about what can women going through

menopause or even premenopause, what can they do? You mentioned exercise, supplementation, anything else?

Dr. John Gildea:

Yes, because of inflammation. So fasting. Fasting mimic diets. Ketogenic diet are all really helpful. So those are all inflammation related. So the opposite, anything that's pro-inflammatory, we're talking about omega-6, omega-3 ratios, the processed sugar. So those all would all be bad. So besides that, I would say that those are big ones. And you hear about groups online that are discussing those issues. And so the biggest things that people are doing is avoiding stress. So that's one, stresses we know is related to inflammation. It's also related to regulation of sugar. You see that if you take corticosteroids, you massively increase your circulating blood glucose.

David Roberts:

Yeah.

Dr. John Gildea:

And a lot of model systems where people are studying research, that is the way that you get sodium retention, your blood pressure going up. So they're all sort of related. So measuring blood pressure is a good way to know that you have a number of systems right. I would say whatever your stress levels are, is to do things to counteract stress, sleep is huge one. Make sure you're getting good sleep as best you can. There are a number of remedies for menopause symptoms. A lot of people get a lot of relief from the other half of our favorite supplement. Sulforaphane works together with indole-3C. Three C has some anti-menopausal symptomology.

David Roberts:

We wrote about them in IGC last week. So I'll put a link in the notes or in the transcript. But you can look on our blog about them in IGC, but both very good with especially them with estrogen balancing.

Dr. John Gildea:

Yeah. So I guess the only thing that I have some understanding about the bone resorption issue is from people who have multiple myeloma. People don't know that one of the big side effects of multiple myeloma is that those cells proliferating in your bone marrow produces a lot of interleukin 6 and is the reason why there's a lot of bone fractures and things like that. And one of the best things that you can do to counteract that in multiple myeloma and probably also in general is the oleocanthal, the active ingredient in olive oil. So yes, oleocanthal, oleuropein, there's tyrosine hydroxytyrosol. There's multiple things that works synergistically in olive oil.

David Roberts:

And it's not just any olive oil, it's the peppery olive oil that has the oleocanthal. So you have to go into the olive oil store, ask for their peppery olive oil. Everybody who works there will know what you mean. And then you just ask for a little swig, kind of gargle it, swish it and it needs to make your back of your throat tingle and that's the chemical.

Dr. John Gildea:

Yeah. It's not the one with added peppery.

David Roberts:

No. No added pepper.

Dr. John Gildea:

We've made that mistake. This one's super peppery. Different.

David Roberts:

Yeah. I mean just on oleocanthal. So that's good in terms of how?

Dr. John Gildea:

So it is known to block that effect in multiple myeloma, but that's known to go through IL-6 also. So it's the same pathway.

David Roberts:

Okay. Great. And we touched some last week about sulforaphane. Does sulforaphane have anything to play in bone and women's health as far as estrogen. Want to touch that again? Maybe the bone is new but we touched a little bit about last week.

Dr. John Gildea:

I remember the big points but I do remember that inflammation angle. It inhibits NF kappa B, sulforaphane does. And then curcumin is an even better inhibitor of NF kappa B. So that would be a good combination. In general, toxins again are another one that sulforaphane is really good at opposing, turns on detox.

David Roberts:

And that we're talking some about the estrogen balancing and again, I'll put a link on that. But in terms of bone health, there are 39 different pro-health mechanisms that sulforaphane has in the peer review science and the bone health is one of them. And I'm having to think that it has lot to do with what we just talked about.

Dr. John Gildea:

Yeah.

David Roberts:

The IL-6 information. So we'll put a couple papers hopefully on the linking to this. And, but it's super important. And so exercise, eating, so foods that are high in calcium naturally cheese. I think even canned fish like the sardines, you get the calcium. You also get the omega-3s there, which are anti-inflammatory. So you can look it up online, there are a lot of different options as far as getting calcium-rich foods that aren't high in the oxalates. So, John, thank you for talking some today about this.

Dr. John Gildea:

Sure.

David Roberts:

And thanks so much, guys. We'll be back next week.

Dr. John Gildea:

Bye.