

# Rebellious Wellness<sup>over 50</sup>

## Why You Must Understand Metabolic Health to be Healthy



### Episode 84: Why You Must Understand Metabolic Health to be Healthy with Dr. Doug Lucas

**Gregory Anne:** Hey everybody. Welcome back. Today, Dr. Doug Lucas is gonna talk to us about different kinds of tests, different kinds of awarenesses, about what's going on, how to age healthfully, just a different point of view. Dr. Lucas is

a Dr. of Osteopathy and he used to be surgeon. Dr. Lucas, welcome and why don't you tell us from surgeon to working with people without in invasive surgeries .

**Doug Lucas:** Yeah. Thank you. So happy to be here. I really appreciate your time. Yeah, so as you mentioned I was an orthopedic surgeon by training.

I went through the full gamut of medical school, internship, residency, fellowship, did all of those things as any orthopedic surgeon would. Then went into traditional orthopedic surgery practice where I was a subspecialty in a foot and ankle and took trauma call and fixed hip fractures and did all, all those things.

Did that for about seven years, and during that time, I felt like I was just cleaning up the tail end of metabolic disease. I felt like I was there to try to put the pieces of Humpty Dumpty back together. And while that's needed and helpful, I felt like I was better serving patients with the knowledge that I had and that I wanted to have in the space of prevention, understanding metabolic disease, diabetes, understanding, now really the, the roots of osteoporosis, helping people reverse that.

And my family life was at a position and condition where they really needed me at home. So it really drove this shift of, what's more important to us as a, as a family. So my family needed time. I wanted to make this shift.

And so we just sort of made that happen. That was a couple of years of additional training and doing a fellowship in anti-aging and regenerative medicine. And just learning a lot to be able to sit in the place where I am now, which is running this company. It's called Optimal Human Health or Optimal Bone Health.

We kind of have two unfortunately. And yeah. And so we have a, a telehealth practice where I can help people to, to do these things and to educate them in the way that I feel is really needed, which we just can't do in the traditional system.

**Gregory Anne:** Yeah, I like the fact that you try to educate people.

I feel like one of the pieces that's missing mostly because of the way the Western medical model is set up where it's like seven minutes, 10 minutes in and out the door. Right? Doctors don't have a chance really to discuss things with you and or they may not have the knowledge to discuss. I'm one of those people that will go in

with myself or my husband with all my research done and when they talk about a certain medication or something, I'm like, but what about this?

What about the side effect? Yeah. It's not really what they're looking forward to, most docs, but some appreciate it. I think like anything else, if you have an educated consumer in front of you, it doesn't mean you're gonna lose the sale necessarily, but you might have a different kind of relationship with that person.

I think education's really important. Like why do I have diabetes? Why do I have osteoporosis? I think if people can get the why then maybe they feel more committed to the next level, the betterment.

What do you think about that?

**Doug Lucas:** Oh yeah. No, I love that. And, and so that was my experience is that most patients were not like you. They would not come in having done the research and having been educated, I really did welcome that, although the time constraints were an issue. So if every patient came in like that, there would be no way to get through the day.

And that was part of what drove me to make a change too, is that I was in a very busy practice, actually practiced in a couple different places, and, we're seeing 50, 60, even 70 people a day. When you're doing that, you just can't sit down and have a conversation with people.

You really have to just go in and you have this, you need this. Bye. And so when somebody like you would come in and with but what about these studies? You're like hmm. This is actually why I'm here and I can't have time. I'm already behind. So it is, it's just really tough in the traditional model and I never want to disparage the system as it is and the doctors that are in it.

Because I, I recognize that we can do amazing things in the system, but what we are not good at is treating the things that you and I are gonna discuss like diabetes, like osteoporosis, because the system just isn't designed to help deal with these things that have a broad cause. The why, the why of osteoporosis is a lot of factors.

The why of metabolic disease is a lot of factors. And the physicians. Most physicians don't even have the chops and the knowledge to actually have this

conversation cuz they don't understand it. in the pharmaceutical side isn't adapted well to it. You could actually throw dementia in there as well.

Pharmaceuticals for dementia are not very effective. Same thing for osteoporosis, same thing for diabetes. And so those conditions take what I now do is sitting down, putting people through a coaching program, understanding the foundations of their lifestyle, talking about details of nutrition, details of exercise, details of stress, stress mitigation, and sleep.

Going through all of those things is what's required to help put diabetes in remission to help send osteoporosis back in the right direction. You can put somebody on a drug, but it's just a bandaid. Yeah.

**Gregory Anne:** And there are side effects.

**Doug Lucas:** Oh yeah.

**Gregory Anne:** The bone drugs. As there are of or many medications.

I don't know that all medications have a side effect.

**Doug Lucas:** I I would say pretty much all medications have potential side effects. That's true. Yeah. It's just the, the inevitable reality of making something potent enough to be able to study it and have an impact, it's going to have side effects.

It's just that's how the body reacts.

I'm sure there isn't a person listening unless they don't watch

**Gregory Anne (2):** television that hasn't heard those commercials for everything. We get a lot of psoriasis and mm-hmm. , you know, all these different things. But at the end, even on the radio, I guess they do this, they go through this litany quickly, usually pretty quickly.

Of what might happen.

**Doug Lucas:** Yeah.

**Gregory Anne (2):** And then I heard one the other day and there's a slight chance of death and I thought, wow. I was reading this was about cholesterol about statins. Yeah. And somebody was interviewing somebody that I used to study with Johnny Bowden.

He said that the study was talking about how many needed to treat to get the result. I forget the term, lingo.

**Doug Lucas:** Yeah, that's right.

**Gregory Anne:** It said that in, in this certain case of statins, you would have minus five days or plus five days added to your life, take five days taken away, or five days added.

**Doug Lucas:** Right.

**Gregory Anne:** Yeah. And I'm thinking five days, that's like a blink of an eye. And do I want less five D five less? No, I don't want five less. But those, that's the minutia of a lot of the studies that don't get reported. Of course the marketing messages that reach us are the ones with a lot of dollars behind them, and oftentimes, your message doesn't necessarily have the space per dollar, or you don't have the dollars to get into that space?

**Doug Lucas:** I don't, I don't have the dollars. .

**Gregory Anne:** Right. Which is why we're having these conversations on this podcast. Cause I want people to know about them. But let's talk about diabetes since it is such a hot button and it's such a mm-hmm. tragic common situation these days.

You say that diabetes is not a blood sugar problem, it's an insulin problem. Can you explain that?

**Doug Lucas:** Oh yeah. God, I love that statement. So absolutely it is, it is. Arguably it's both. I'll just take a few steps back and talk about blood sugar and insulin. Okay. So you're right, diabetes is not it.

It is no longer uncommon. I have a talk I give on diabetes and putting diabetes in remission and I love the first slide goes back to when the first, it was first studied

back, I think it was 1890. And it was, they looked at in an inpatient setting, so you know, the sickest people in the city, what was the rate of diabetes?

And it was less than 1%. It was just amazing. Now you are actually in the minority if you don't have diabetes or pre-diabetes as an adult in our country. That's happened in the last a hundred plus years. And so diabetes is a problem we think of as a sugar problem. I hear, the patients, they come in and they say, you know, I got the sugar, right?

Yeah. Like I got the sugar and I know what they mean. They have the sugar because their sugar is high cuz they have diabetes. But really, It predates that by usually decades in most people. And the genesis of diabetes is, I feel usually, not always, but usually coming from an intolerance to carbohydrates and processed food that results in or the way we're consuming them.

But it results in chronic elevation of a naturally occurring hormone called insulin. So insulin, your body makes it from the pancreas, and insulin is critical to life. If you don't have insulin, you're a type one diabetic, which we know is fatal unless you give insulin. So insulin is required, but insulin, like all hormones should be pulsed.

Meaning you eat a meal that contains carbohydrates and your insulin level goes up and it helps push the sugar that your body is breaking down the carbohydrates into the cells. So you have to have insulin to do that. What happens is when we eat a Western diet, which is high fat, high carbohydrate and highly processed foods, and we're told to eat, you know, between meals, don't get hungry, and you're always eating, you are always pushing insulin, and you end up with chronically elevated levels of insulin.

What happens when you have a chronically elevated hormone is that the receptors of the cell for the hormone end up, we don't really know what happens, but they end up becoming not sensitive to the hormone. So you get insulin resistance. And so you see that kind of term like insulin resistance. It ends up causing all of the things of metabolic dysfunction, which then result in pre-diabetes and diabetes.

So there is a, a long path that gets to diabetes and pre-diabetes, it takes usually years, although now of course, we're seeing it in children and so it's, it has been shortened in some timeframes, but generally it takes a long time. And so now we

have diabetes with people that now have elevated blood glucose, but they have had for a long time elevated insulin.

And so once you get to the point where the glucose is elevated, now people say, oh my gosh, I'm diabetic. I have to do something. The traditional pharmacologic model, this is changing a little bit, but the traditional pharmacology and the drugs that are built around this are based off of the concept of type one diabetes, which is backwards.

So the drugs mostly treat bringing blood sugar down by increasing insulin, but you already have high insulin, right? So now we're actually making the problem worse by increasing the levels of insulin. Now it works, it'll bring your blood sugar down, but it's at the cost of adding more insulin. And you could say, well, who cares?

My blood sugar's lower, so I'm not gonna get retinopathy and I'm not gonna get my leg cut off. But the reality is, is that blood sugar is responsible for the small vessel disease. So the retinopathy, the eye problems, the kidney problems and the kind of small vessel stuff and the feet. But it's the insulin that's responsible for the big vessel problems.

So you're talking about dementia, stroke, cardiovascular disease, and heart attack. So you are, it causes you to gain weight. So you're making yourself heavier, you're making your diabetes worse, and you're gonna eventually cause heart attack and diabetes, number one, cause of heart attack.

So the insulin, it is an insulin problem, not a blood sugar problem. So then to do something about it, you have to understand that and then fix the insulin problem. But that's where we run into issues because there's no drug for that. , .

**Gregory Anne (2):** And without the drugs we are lost. Dr.

**Doug Lucas:** What, what will we do ?

Yeah.

**Gregory Anne:** So that was the best explanation I've heard of that insulin blood sugar thing.

Thank you. I know that there's a test for insulin resistance that is almost never prescribed. Is it becoming more popular? Do you hear more docs talking about it?

**Doug Lucas:** Yeah. So the way that I manage that is to just measure a fasting insulin, you know? And so you just measure the actual hormone, and if it's chronically elevated it's gonna be high. Right? And, and we see it really high in people that have normal blood sugar. So we know we can tell them, Hey, look, you know, you're on your path of diabetes. We have to do something about this. And so that's what I, I do. And it, no, it is not normally done.

And it's one of those questions where like, why, why not? I mean, it's a \$7 test. So easy, but

**Gregory Anne (2):** maybe many docs don't know what you just said, that it isn't, maybe they're in the old school, that it's a blood sugar problem.

**Doug Lucas:** Well, it, it comes down to the treatment paradigm. So if you look at the treatment ladder for diabetes the first level is always lifestyle.

But as a doctor who's looked at these things, you just sort of glanced past that, right? You're like, well, I don't have time to talk about that. So what's next? And so if you talk about somebody that has insulin resistance and hyperinsulinemia or high levels of insulin the answer for that is not a drug.

So then what's a primary care doc to do who doesn't have the time to talk about lifestyle? Who doesn't have an integrated practice with a registered dietician that understands that it's a, an insulin problem, not a sugar problem. It's just, it's really tough and they don't have the, the tools to manage it, so why would they get the test?

And I think that's the argument of why would I order the test if I don't have the tools to treat it.

Yeah,

**Gregory Anne (2):** actually it's a good rationale. why give people information and then send them home? Right. Like .

Okay. Cause what you, and then they have to, you're probably gonna Diabetes Dr. Google, go home, right?

Yeah.

**Gregory Anne:** Dr. Google our best friend. Let's talk about testing in general, because I know that in your practice you do lots and lots of testing.

What would you say if most people are used to getting a blood test every year? They have their cholesterol, they have their white blood cells or red blood cells, all that stuff. That's pretty much what people get unless they have a thyroid problem. What would you recommend

**Doug Lucas:** Maybe?

Maybe as a next?

**Gregory Anne:** Yeah, maybe. Exactly. Yeah. Maybe.

Yeah. What do you think for women that are post-menopause? So we don't have any of those issues that came before with the hormone, the estrogen pro on. Maybe we're on bioidenticals. I've done a number of conversations with people. I'm a big fan.

I know you recommend them.

**Doug Lucas:** Big fan.

**Gregory Anne:** Outside of those after menopause, what would you say would be the one thing you would suggest women to ask their docs to look at?

**Doug Lucas:** Yeah. I mean, I think it's so easy to understand that what, you know, the principles of what I just said is so getting a fasting insulin is great.

You know? So if you were to say one test, I mean, maybe that's the one, you know, I think the thyroid two, I'm sure you've, you just kind of said it, you know, you need to know more about the thyroid. Even if you have a normal T S H, you can still have thyroid dysfunction. I see it. Everywhere.

Really. I see it everywhere. The thyroid's so sensitive. And so T s H and normal free T3 is in the toilet. And so for your listeners who don't know what that is, that's the active form of thyroid. And if you don't test it, you don't know. And so I see a lot of times people will come to me with symptoms of low thyroid.

Oh, I went to my doctor and he checked my thyroid and it was fine. No, he actually didn't check your thyroid. He checked your ts h which is not your thyroid. And so, yeah, I think it's important to get a full panel of thyroid if you have symptoms of thyroid. Gosh, we should talk about bone health and all the things you should get with bone health, which is more complex.

You know, the, the challenge with some of these things is to know what then, what do you do with it? And that's the same reason why your doctor isn't ordering it is, okay, what do I do with it? But I think something as simple as a fasting insulin, you know, if it's over eight, you have high levels of insulin and you need to adjust your lifestyle.

You need to adjust your carbohydrate consumption or timing or you know, one of them. And so I think that's an easy one that you can easily manage generally without a lot of guidance.

**Gregory Anne:** Now, is there a, I don't wanna say body type, genetic body type, but is there a type of lifestyle that leads to insulin resistance that may not be evident, because you said they might have normal blood sugar, but they could still have

Sure.

**Doug Lucas:** Yeah. I mean, so if you are not actively trying not to consume the foods that are broadly available to us, then you are at risk for insulin resistance. Right. I just, okay. Well there is 95% across the board. Yeah. It just that our, you know, the food supply has been so adulterated with highly processed foods, unless you're the person like I am, except for when I'm shopping for my kids.

But you know, like when I go grocery shopping, I don't go into the middle of the grocery store at all if it's for me. Right. Like, I need fruit, vegetables, and meat. That's it. Yep. Now when I'm shopping for my kids, you know, they don't quite live that way and that's Okay. But if you're eating anything from the middle of the grocery store, if you have a desire to eat grains, if you're eating pasta, I'm not

saying those things are necessarily bad, but the way that, the way that they're made in our country are, they're inflammatory by nature.

Most people don't tolerate them. The levels of stress destroy our gut, makes them even less tolerable. So unless you're actively trying not to be on the road to diabetes, you're probably on the road to diabetes. That's a very negative picture for you.

**Gregory Anne:** Thank you for that. . I do wanna s harken back to something you said a minute ago about diabetes, the relationship between heart health and diabetes.

Mm-hmm.

**Gregory Anne:** the heart is not healthy. It's been, as you said, it takes many years to get to a diabetic state versus the pre-diabetic, the high insulin, and the heart is swimming around in a bunch of rusty old sugar, inflammation kind of things, right? Did you say that it's the number one cause of a heart attack in diabetes?

**Doug Lucas:** Yeah. Debatable statistic there. But if you think about, if you look at the top 10 causes of death in the US pre covid, then you can see coronary artery disease, heart attack is number one. And then number two, well, I'm gonna get these wrong off the top of my head, but I think number two in there, they separate strokes.

I think cancer is number three. Diabetes all the way down at number seven. It's actually interesting that it's even up there at all because diabetes doesn't really kill you. Right? It's the effects of diabetes that kills you. I don't even know what they consider a death from diabetes.

But if you look at the scenario that causes cholesterol to get oxidized and inflamed and cause a plaque that causes a heart attack, diabetes is the number one risk factor for that. So that's why I say diabetes is the biggest cause of heart attack.

**Gregory Anne:** Mm-hmm. . .

Well, the takeaway here is it

It's not to be messed with, our heart. Right. , I was talking to this doctor the other day who was recommending a statin for somebody that I know, and I said you know, what about, he said, well, the side effects, you know, there's muscle weakness and muscle pain, and I said, the heart's a muscle. He's like, well, not that muscle,

**Doug Lucas:** not that one.

**Gregory Anne:** It circumvents all of the, everything around the heart and just goes into the extremities anyway.

**Doug Lucas:** That's right.

**Gregory Anne:** Again, not to say I'm not, I don't have an issue. It's just the training of the western practitioners is at best hurried. Therefore, there's not a lot of depth or certain kinds of conversations.

They can't, they just can't do it. Anyway. Let's talk about bone health, because I know that that is something that you are passionate about and working very hard to help us all with. what makes an unhealthy

set of bones?

**Doug Lucas:** Oh, man. So that's, that's the challenge. We kind of talked about it before where the things like diabetes, things like osteoporosis, they take decades to occur.

By the time, I don't wanna say it's too late, but the horse is well out of the barn. And so the problem with bone health is that not only does it take decades to occur, the starting point is a big unknown. And I'll talk about that in a second, but we're also not really testing for it.

The testing rates for osteoporosis just keep falling, falling, falling. And it's because Medicare and therefore other insurance companies aren't reimbursing for doctors doing the test. So, I hate to think that it's a money-driven system, but it's a money-driven system.

And so if the only way to get it done is to have your doctor who has a machine, then it's, if they're not getting paid to do the test, they're not gonna run the test. And

it's just unfortunate, but it's true. And then a lot of women are just, they're not being warned about getting tested early.

They talk about the risk factors, and I'd love to get into that. You don't need to test before 65 unless you have these risk factors. But they don't talk about the risk factors. And the reality is, if you look at the risk factors that we all have, those risk factors, , it's like that's all of us. And so so we're not really getting tested until too late.

And even then, people aren't getting tested. So when I was practicing as an orthopedic surgeon, I would've patients, you know, we would take call and they would've hip fractures or spine fractures or all the fragility fractures that come along with it. And most of them didn't know they had osteoporosis.

Hmm. And that's a problem , you know, because once you've had a hip fracture, the mortality rate the rate of dying from a hip fracture can be up to 25% in the first year. That's terrible. Right? Like there isn't actually, there aren't many diseases that have that terrible of an outcome.

One third, only one third of patients after a hip fracture will regain independence of any kind. I mean, talk about a lifestyle changer, right? And so the fact that they don't know that they have this disease and now they've had this hip fracture and you have these potentially catastrophic outcomes, it's just really terrible.

And so I watched this sort of unfold at my practice, and you would try to refer these osteoporosis patients to someone. And the reality is, is that no one wants it. You know, there are these fracture liaison clinics, which will help you to get put on pharmaceuticals. But they don't, again, it's, it's in the Western model, right?

So they don't have time to talk about the lifestyle. They don't understand, and they wouldn't prescribe hormones if, even if they knew that it was important. And so they're just, people were getting referred to these places that just, you know, are you a candidate for this drug? Here's this drug.

Mm-hmm. And that was it. So I saw this as, as something that initially, it wasn't even on my radar, but as I started to practice in this space, I realized what I'm doing is perfect for osteoporosis because we're capturing all of the potential causes. Shouldn't say all, all the ones that I know of.

Potential causes, helping people to reverse those causes and seeing improvements in bone density, like, poof, where this is a no-brainer, we should do this.

**Gregory Anne (2):** Wow.

**Doug Lucas:** Yeah.

**Gregory Anne:** Well, let me ask you about the DEXA versus trabecular bone score. I've heard of one other, I can't remember the name of some other kind of bone test, but what do you do?

Are those the right tests? Should people be getting those?

**Doug Lucas:** Yeah, it's a challenge with testing is, is not only is it not really happening, but there isn't a great test. So DEXA is the standard of care. And it's basically just like an x-ray that you x-ray machine that you lay down on and this little wand goes over your body if you haven't had one.

Doesn't hurt tiny bit of radiation. It is, there is some, but it's very little. And it tells you what your bone density is. . The problem with the dexa is that it is very sensitive to using the same machine. So if you wanna get good back to back apples to apples comparison year to year you have to go to the same machine, which we know is silly because people move and machines move.

And not only is it sensitive to that, but it's also sensitive to needing to use the same operator . So the same person who did your scan before how, how unlikely is it that you're going to get the same machine and the same operator? So DEXA has weaknesses that way and also it's only telling us about bone quantity and it has nothing to do with bone quality and they are different metrics.

So that's where TBS comes in. So you mentioned trabecular bone score. And so trabecular bone score is not as broadly available as dexa. It's really just a software algorithm on top of a DEXA. But not every system has it. Actually most systems don't have it cause we always try to find it. And so you can get a DEXA with tbs, which will tell you both.

Bone quantity density as well as bone quality. The challenge then it still has all the weakness of a dexa right? So is it the same machine, same person, blah, blah, blah.

So it's okay. It tells you something and it's good to know cuz if you have, if grossly positive dxa and you have severe osteoporosis, like you have a problem.

You know, if you're borderline, you may wanna know more information. And I had recently had a patient, she had a dxa, she was kind of a little over the border, osteoporosis, pretty big jump from the previous year. And so we had her get a, a rem, which I'll talk about next, and that showed that she really didn't have osteoporosis at all, you know, and so she was going down this pathway of oh my god pharmaceuticals and what am I gonna do?

And, you know, lots of fear and anxiety. And then she went back and got a different study and she was like, oh no, actually my bone's the same. , oops, . And so that basically been a rem. So REMS is an ultrasound. It's made by a company called Echo Light. , and unfortunately it's just not broadly available.

So there just aren't very many machines. We have a, I don't wanna call him a partner. He's a friend. He's an orthopedic surgeon who does a lot of bone health. And he has a practice in western North Carolina. So I'm in Asheville North Carolina, and I'm sorry, he's in Eastern North Carolina.

Apologize. And so I'm sending patients from all over the country have patients from Florida, from New Jersey that go to North Carolina to get this test done. The nice thing about it is it's ultrasound. There's no radiation. It is more reliable scan to scan and it tells you both bone

quantity, so your density as well as quality. So you kind of get it all in one package with no radiation and it can pick up changes more quickly. So if you're doing something to improve your bone you want to know if it's changing. And Dxa can take a year to two years, so that's a long time to do something.

Whereas a REMS is gonna pick things up quicker, six months, even sooner. So it's just if I would love to have, you know, if I could just run around to all my patients with a REMS and just do one every month, that'd be cool. , it's obviously not practical. .

**Gregory Anne:** Maybe they'll make a small portable version for you, Doug.

**Doug Lucas:** There is a portable version. But I have patients all over the country, so as fun as that travel would be, I, we can't quite do that yet. So much fun.

**Gregory Anne:** Really. Couple of things. Supplements and, yeah. Power plate, weighted vests. I mean, do you All of those good things.

Yeah, all those good things. Are all of things good is what I should say.

**Doug Lucas:** Yeah. So, you know, when we create a plan for people, the first thing we do is we do the testing. And so you know, as you mentioned, we do a lot of testing and we do a lot of testing. I'm actually creating a trimmed down program is one of the challenges I'm doing a lot of testing is that the testing is just expensive.

And so it's just, it's tough. It's a high price point to stomach. So while it's cool and I love to do that and we can find exactly what's wrong, we, so we're creating this sort of a scaled down version, which still has all the same, all the same components and access in our practice, but it's just has a lower threshold to get in.

And so I'm hoping to launch that in the next month or so. Maybe launched by the time this goes live. Yeah. So Anyway, to get to your point. So we create a program then that has lifestyle recommendations. You work with our coaches to help to figure out the sleep side, the nutrition side, and get really in depth on the nutrition side.

And then the movement part, we'll talk about that. And then the stress mitigation part, which can be a huge component for a lot of people. So there's a coaching component for the lifestyle. The nutrition part is huge. We can talk about that later. The supplement side is sort of the next layer. And so supplements we recommend essentially for everybody if you do all the testing and then we know exactly what you're deficient in, right?

So that makes, the supplements are very targeted. If you don't have that information, you can still be pretty smart about it. So it is hard to get enough calcium in your diet, particularly as we age, we tend to eat less overall less animal products and less dairy. Just, it's kind of inflammatory for a lot of people.

They don't tolerate it. And so you're generally not getting enough calcium, really hard to get through plants on their own. . And so adding a calcium supplement, a couple different versions to consider. There's the plant form from the company, Algaecal no relationship. So they have great research behind their products.

If you don't want to take an algae-based calcium or whatever is, and don't wanna work with that company then look for a what's called a calcium hydroxyapatite. So that's the form that comes, that's in the bones. And so usually it's an animal based product, but it's absorbed well and there's evidence to support that it's better than any of the other calcium forms out there.

So one of those two calciums. Some other things that I see just globally that everybody probably needs is vitamin D and vitamin K generally given together. I'm not gonna say dosages cuz that would be, that would be unethical. Magnesium we're almost globally deficient in, and you need magnesium to make bones.

That one I can tell you just orally, if you're taking it orally, it's kind of hard to take too much. Most people, I want to get them up to like a gram a day. So like a thousand milligrams of magnesium. It's a lot, you know, if you take too much cuz it'll give you diarrhea. So take, you know, take the amount that gives you diarrhea and then take just slightly less, and that's probably the right dose for you.

If you have any kidney disease, don't do that.

One quick

**Gregory Anne:** question about the mag. Do you do a MAG with many different kinds, all the different MEG components, or you just sort of

**Doug Lucas:** It depends on, the flavor of the day too. You know, we have a lot of different supplement companies that we work with and the reality is, is that most of the chelated magnesiums are absorbed really well.

So as long as it is some kind of a chelate, you're, you're gonna be fine. So that's the glycinate dis glycinate citrate. There's a few others in there. You know, there's, it is nice to have a combo because they are absorbed and then they go different places. So like the L threonate form is great for sleep and it's great for, you know, calming your brain.

So it's nice to take that at night and then take a different one during the day. I mean, if I had, if I could give unlimited supplements and just have them automatically go into my patients, then I would use multiple. But generally we just have them use one just to get the, the volume of magnesium up because most

people we test red blood cell magnesium and they're everybody's deficient unless they're on it.

And then, you know, some other things when you read the literature, you know, you can see that we are you mostly deficient in iodine. I'm not telling people to go out and take iodine, cuz that's a debatable and usually it needs to be testable thing. Boron is another one. What am I missing?

O b vitamins, particularly if you don't eat animal products really important. So yes, we use a lot of those things.

**Gregory Anne:** And do you? I had a friend who had a power plate which if people don't know what that is, it looks like a, it's a podium on a plate that shakes you. Yeah. Like the, was there cartoons or something where the women would go into a, a stand on a thing and a belt would

shimmy their tush

**Doug Lucas:** Yeah, the old, the old belt thing.

No, that was real. That was real.

**Gregory Anne:** Anyway, those are supposed to help build bone.

**Doug Lucas:** Mm-hmm. There's reasonable evidence, it's not great. But there's reasonable evidence to say that it will improve your Dexa scores.

Yeah. Mm-hmm. , so there's a company you're probably familiar with it Osteostrom, have you, I don't you know much about their, I don't.

So this a company they have a product out there that is, that uses the science, what's called osteogenic loading. And so the, the concept is if you, if you go back and look at, you know, what women have the best bone density as as young women. So who gets the best you know, peak bone mass it's gymnasts just by far, gymnasts have the best bone mass.

Even though they probably have eating disorders, they still have the best bone mass of anybody. And it's because of the way that they're, they're impacting. Right.

So they're pounding. And if you, if you figure out what the difference is between like why is a runner who's pounding, pounding, pounding versus a gymnast, you know, they're both lean, they both have, you know, potentially eating challenges.

But the gymnast has incredibly higher bone density and it's the, the rate at which the, the body is loaded. So you're talking about, you know, eight, 10 multiples of their body weight cuz they're coming down from such height. Yeah. You know, versus a runner, it's, you know, this, it's the same level over and over and over again, which your body can accommodate too.

So it's that concept of osteogenic loading and lifting multiples of your body weight. And so what the guy that created the machines, his name's John Jaque, I don't know if that's how you say his last name, but something like that. He created these machines actually for his mom.

It's a fun backstory, but he created these machines for his mom, and so you can actually sort of increase and gain multiples of your body weight on these machines. So they created a franchise. It's all over the country. You have some in New Jersey. And you can go in once a week and you do this thing, it takes about 10 minutes.

The reason why I bring it up is that yes, that works. But also one of the companies that they partner with has a vibration plate. So the research was good enough for them to bring that in as another modality. So, yeah, I think it's great.

**Gregory Anne:** Oh, I gotta take a look at that. Okay. So we're looking at independent parts of the body, independent diseases, or whatever you wanna call them.

Bad things happening. Basically we're a one whole body, right, . And the things that lead to one thing very often lead to another. Right. It's not like I can say I have osteoporosis. Maybe osteoporosis seems slightly removed from metabolic health, but it's not. Right. So what would you explain metabolic health for people?

Because the word metabolism, I think makes people think about weight gain, weight loss, that kind of thing. But metabolic, it's our whole body.

**Doug Lucas:** It's the whole body. Yeah. And so we use the word metabolic in a lot of ways, but really metabolic just means processing whatever you're consuming. So when I think of metabolic disease, I am thinking of that trajectory from

metabolically healthy, which is about 10% of the adult US population all the way to diabetes, so I do look at it as this spectrum, but it has little offshoots, and so that where, say, osteoporosis and metabolic disease comes in is, if we look at metabolic disease and the impact of muscle mass on metabolic disease, this is something, there's a whole principle around this called , oh, muscle centric medicine.

So muscle centric medicine was I think actually trademarked by Dr. Gabrielle Lyon. She's close to you. She's in New York. And so she has this big principle around the fact that the muscles, the hormones of the muscles, the ability of the muscles to communicate with the metabolism really drives a lot of disease.

Certainly there's a connection there with diabetes because the muscles are the biggest store of carbohydrates. Right? And if you don't have a lot of muscle, and a lot of people, especially overweight people who have a lot of body mass, but actually don't have a lot of muscle mass they have nowhere to put carbohydrates.

And that's one of the reasons why they're so carbohydrate intolerant. Same thing happens with bone health. If you don't have muscle mass, then , those muscles aren't pulling on the bones as hard. The bones don't have the stress to respond to, so the bones get weaker. all of that's driven by your metabolism, right?

Are you consuming the right foods that are gonna help feed your muscle? Are you giving it enough energy? Are you consuming enough protein, which is woefully under consumed in our culture most cultures. And all of that has to do with how good is your metabolism? How good is your GI tract? How good is your gut function?

So you're right, as you said earlier, we are all one big ball of wax. It's all connected. And even though something like osteoporosis may seem, oh, it's just this independent, unique thing, it's not, it's not true. It's all connected. And people, I see it a lot of time people that are overweight under muscled with osteoporosis, which is really bad combo, right?

Because if they have a fracture, they really struggle because they can't, they just don't have enough reserve to recover.

**Gregory Anne:** This is a total sidebar, but going back to when you were a surgeon and you talked about the hip fractures, can they not put in a new hip? or somebody that's had a hip fracture or is it that the other parts of the body won't sustain a new

**Doug Lucas:** Yeah, it depends on the, it depends on the fracture.

So the most common place for hips to fracture is sort of at the junction. So I use this weird analogy. So, at the junction of the ball of the hip and the femur, the whole thing's, the femur, but the shaft, the femur, sort of where it like makes the corner, if you break it there, generally you preserve, you preserve the hip and you just fix the bone.

That's a much smaller surgery, small incisions. And it's a faster recovery, a hip replacement, especially in a fracture scenario. It's a pretty big surgery, you know, hip, relatively big surgery anyway. But in a fracture scenario, you're generally doing it, not the minimally invasive way you're doing it

the traditional big, big surgery way. And it's a big incision. You're cutting muscles, you're moving stuff around. There's a lot of blood loss. So just the, the metabolic impact. The trauma from the surgery is a lot for people to come through and they generally have if they're to the point where they have an osteoporotic fracture, if they've broken a hip, they're not metabolically well to begin with.

And it goes back to principle. So that big of a surgery is really hard to recover from. They spend more time in bed, the more time you spend in bed, the weaker you get. Right. And it's just this downward spiral. And that's what we see. And that's why people very rarely do thrive after a hip fracture.

I've seen it, but they're usually younger and you can almost question like, was that really a fragility fracture or did they really just kind of fall in the right way and break their hip?. Cuz you see that even in, in healthy bone in the right circumstance. But yeah, it's, it's really tough to see these patients struggle.

Hmm.

**Gregory Anne:** Whatever reason Immunity just came up talking about who's, you know, able to withstand surgeries and metabolic health and things. Mm-hmm. and I've never been able to find convincing evidence that we can boost our immune system by this vitamin or this practice or this. Is it true that we boost our immune system or is it that we stay healthy enough for the immune system to do its job?

**Doug Lucas:** Yeah. I mean, really pertinent question with the, the pandemic over the last few years and everybody's and sort season and Yeah. Yeah. Terrible flu

season this year. Right. Terrible r SV season this year too. Yeah. Shut down my daughter's school for a while. Yeah. Just all, everybody was sick, so.

Yeah. It's interesting, you know, we talk a lot about the immune system now, certainly more than we ever did. It is probably one of the least understood areas of the body. It just, there are so many parts to it there. It is so complex, and we hear a lot of conversation about antibodies and vaccines, but that is such a small sliver of the immune system.

And so, can you boost your immune system with a supplement? Yeah, I think you can. Right? You're just basically giving it the, the tools that it needs. I think a lot of times what's happening is that when you're depleted from something, so a lot of people were taking zinc during the pandemic, right?

Or you take a zinc lozenge when you get a cold. I think a lot of times that's because we're depleted in zinc to begin with. It's another thing that we test. And most people don't have enough zinc, so then you're just, you're just kind of giving your body what it needs. You could argue, same thing with magnesium, same thing with vitamin C, right?

You're just sort of giving it what it needs, and in the overdrive of the immune response, it just needs more of those things. So yeah, you can support your immune system in that way. The reality is that, and then we really tried to make this point, With my patients and my wife's clients is that if you're worried about

like Covid, for example, if you're worried about this viral infection, if you look at the statistics, you know, the number one risk factor was being diabetic and obese, right? For hospitalization and a bad course. So we were saying, you know, people were doing all these things to, be like vaccination after vaccination and do this and do that.

But what they weren't focusing on was improving their metabolic health. And so if you think about what the condition of obesity is, it is an inflammatory condition by default. You have this visceral fat, which secretes inflammatory cytokines. It's these messengers to the body to keep it inflamed. If you're chronically inflamed, your immune system is not working and they counteract each other, right?

Same thing with chronic stress. If you are chronically stressed with elevated levels of cortisol, epinephrine, and norepinephrine, your immune system will be

suppressed. So if you're in a, a stressed out obese state, you're gonna have a terrible immune system. And guess what? We saw that just, you know, how many thousands of people, right?

Millions of people, yeah. That had a bad course of this virus because they were in that condition. And yet now, when we're looking at, okay, what do we do? What do we do now? How do we plan for the next pandemic? I hear very little talk about, Hey, let's everybody focus on getting metabolically well, yeah.

Right. So I think you can make a, you can make a dent in your immune system, but it is a much bigger picture thing.

**Gregory Anne:** I wanna get your take on the idea of obesity now that we're talking about obesity. Mm-hmm. being a lifestyle, it's an inflammatory condition. Yes. But I feel like people that have o that are obese or tend towards that, that do everything in their power for years and years and years to change their physiology mm-hmm.

and it doesn't work. What do you think's left out of that conversation? Because I know a lot of times they blame themselves and they get blamed.

**Doug Lucas:** Yeah, no, we see it all the time. You might not know this about me, but my wife runs a, a weight loss program. So she has a company called PhD, weight Loss and Nutrition.

And so she is a nationwide program very heavy in behavioral change cognitive behavioral therapy and then obviously the nutrition component. one of the principles of that program is, this is not your fault, okay? Because we hear it all the time. People come in, I've done everything right? Like over and over again.

I've done everything. How is this gonna be any different? I'm gonna go have bariatric surgery, right? Like, I haven't done that yet. Or actually, people that have done that too. And guess what? Their recurrence rates really high. . And so yeah. Yeah, I think that there is always something missing in that, and it's different for every person.

People eat for various reasons. We eat for so many reasons in our culture, and most of us don't just eat to fuel our bodies. Most of us eat because it's a cultural event or we eat out of depression or anxiety, or outta fear, out of happiness outta joy.

It's kind of like alcohol and that, it's like both the cure and the cause of all evil things. And so there's usually some component in there's maladaptive eating behaviors in there. And that's really hard to tease out because a lot of times they're eating a healthy diet or I love, you know, I eat clean , it can mean so many things.

And so you really have to start tracking things over time and start figuring out what those behaviors are. And then when you see that thing rear its head, then you have to grab it and figure out, okay, what happened? You know, and that's why these things take time. Also, I feel like the metabolic function keep coming back to that term.

It really shifts at some point. And a lot of people have seen this where, you know, they didn't change the way they eat, they didn't change their activity level, and all of a sudden they're just like, boom. They're like, how did I get this overweight in no time. You know, I put on like 20 pounds this year, what happened?

And I think there's a metabolic switch that, that gets flipped and you lose the ability to burn with that for, so for a lot of people that's probably elevated insulin levels and they don't know it. For some people it could be toxic exposure, you know, people that have heavy metals or environmental toxins or chronic Lyme.

I mean, there's just so many things that that can be uncovered that can be the root cause of that. But ultimately you have to get, you have to go back to that switch and flip it back the other way so that you can burn fat. And that's the principle of my wife's program is let's turn you into a fat burning machine and then give you the behaviors that can then support the habits that can become long-term habits.

And so I, I've never met anybody who hasn't had, we haven't been able to serve in some way because there's always something that is, there's something that's off. You know, and that's actually really the, the reason I, I left this out, but that's the reason why I started my practice, was to be able to help people that were struggling in maintenance that had gone through her program.

Because the system, they would go to their doctor and their doctor was like, man, your labs are fine. You know, and then they would bring me this stuff and I'm like, well, your labs are not fine. I need to be in a practice where I can help you with this. And so that's, and that's what I did.

That's

**Gregory Anne:** awesome. Tell 'em the name of your practice again on your website.

**Doug Lucas:** So, my practice is optimal human health. And the website is optimal human health.com. We have specifically, if you're looking for the bone health stuff that we talked about, we have a sister company called Optimal Bone Health.

And we just, we separated them just from a marketing perspective.

**Gregory Anne:** What haven't we talked about? Gosh, there are so many questions I want to ask, but you tell me what we've left out from your perspective.

I know you talk about hormones a lot, so we don't need to go there.

I It's something we didn't Go ahead. Go ahead. No, no. Yeah. No, you ahead, I was just gonna say, we didn't talk about genetic testing and I know you did.

**Doug Lucas:** Oh yeah, yeah. We can talk about genetics. Super fun.

**Gregory Anne:** So talk about genetics. Why is it important all of a sudden, everybody's getting their genes tested. Myself included.

**Doug Lucas:** And, well, because we, because we can , right? So the human genome wasn't fully sequenced until about 20 years ago. So, this is really new stuff. You know, we've been talking about little genes here and there for a long time, but now you can inexpensively sequence your entire genome.

So we do this for all of our patients that run through our optimal human health program. And what's interesting about it is you can run it through a company like 23 and me with these direct to consumer facing companies, but they leave a lot of stuff out. because there are a lot of stuff that just, it takes interpretation and it's really the algorithm that is driven by the research that you need to understand to be able to look at the things that you're looking at to know what to do with 'em.

So like while it's cool to look at 23 and me, like it's kinda made some interesting stuff in there, you really have to get it done in a way where you have somebody

who's interpreting it for you to say, okay, this is how you read this information and this is how you put this into your meal plan.

And some good examples of that would be like saturated fat tolerance. There are people, a minority of the population, but a lot of people that aren't tolerant to saturated fat, and they don't, it's hard to know. You don't feel bad when you eat it necessarily, but it's inflammatory for those people. It makes their cholesterol go up, and that's where you get this like, oh my gosh, you have to cut out the fat.

Well, no, no, no dietary fat's really good for you. But for people that are intolerant to saturated fat, which you can totally determine genetically you just have to restrict your saturated fat. You can continue to eat even animal products and you can eat dietary fat. In fact, I want people to eat a lot of dietary fat.

, you just have to know what, like what is that composed of? And so that's a great one. Knowing your apoe, which is a really famous we call 'em SNPs polymorphisms that has a, a strong association with cardiovascular disease and dementia. So knowing if you have the risk version of that really helpful because then you can do the lifestyle thing that can essentially make that risk go away.

And that's the important thing to understand is that we're talking about the world of epigenetics, not, do you have this mutation and you're gonna have this disease? That's not what we're looking at. What we're looking at is, do you have this predisposition to have an association with something that we can then reverse with lifestyle, nutrition, supplementation, whatever.

So I think that's the most important thing to understand about genetics. I have people that are even afraid to do it.

**Gregory Anne:** Well, I was,

**Doug Lucas:** God, I don't wanna know.

**Gregory Anne:** I was for a long time. I mean, aside from, you know, people think of it as fertility. Let's, let's get the thing tested and make sure we're not gonna have an unhealthy baby.

Or Yeah. BRCA testing. Yeah. Some tests, genetic tests are, Accepted and maybe even people that are referred to get a BRCA don't want to get it, but they figure it's

better than not knowing. But that's kind of where I was. But then I, there's a woman who I'm actually doing a live q and a with later who has a company called My Happy Genes and

I said, why would I wanna know, it's just looming out there. And she said, it's only looming if you don't pay attention to it. But if you

**Doug Lucas:** That's right.

**Gregory Anne:** Focus on the information and get of course interpreted by a practitioner or a physician of some kind to know what to do. And this is the thing.

People that you were saying eat clean or we may say, oh, I have such a healthy lifestyle. When you see your genetics, like you said, you can't feel saturated fat isn't good for me cuz it causes my inflammation. But once you know that you can eat less, you don't have to stop.

**Doug Lucas:** That's right.

**Gregory Anne:** But then it precludes you from worrying maybe about like, if you have a p o E.

Now I don't have to sit here and worry about it. I'm gonna do everything in my power. It doesn't guarantee me a perfect long life. You know, like live long, die fast. Not guaranteed, but it certainly makes the odds more in our favor, right? If we work with what's

there. .

**Doug Lucas:** Yeah, absolutely. I mean, that makes sense to me.

And they're the patients that I've heard that from. And I had actually a mother daughter combo recently, they had the low risk apoe their genetic profile looked great. I was like, wow.

A little jealous but that's kind of what , I pointed out to them is like, look, if you have, and they had a family history of dementia, they had a family history of heart disease. Like you, you want to know, you know this, how do we prevent these

things from happening? And knowing what your APOE status is, is really important.

Other, like big ones would be for me, I love the micronutrient SNPs. So the micronutrient SNPs would be like if you don't convert the plant form of vitamin A to the animal form of vitamin A, particularly if you're choosing to eat a plant-based diet and you think that you're getting all these great nutrients from plants, there's a lot of conversion that has to happen there.

And some people don't do those well. Do you methylate well or not? Do you need a methylated B vitamin or a regular B vitamin? You can't feel these things. , you can kind of test them secondarily, but knowing is really helpful. There's a cholesterol snip in there that I love cause it helps me to know, which drug do I recommend or not.

Yeah, there's just, there's so much information. So I get people that say like, I just don't wanna do it, you know, and I'm like, well, you're missing out . Yeah.

**Gregory Anne:** And for people I just thought that don't have their medical history of their parents' grand. My dad died right before I was born.

He was 27. My mom died at 49 with cancer. But aside from that, I have grandparents, that little heart disease here, little, but those two main gene contributors, I have no information. I've now decided, I'm gonna put on my big girl pants and get myself tested.

**Doug Lucas:** Yep. You should. Yeah. .

**Gregory Anne:** Do you I see you're wearing an Oura ring. I don't think we talked about sleep. Are you wearing an aura ring?

**Doug Lucas:** Yeah, I am. Yeah.

**Gregory Anne:** Tell people about the Oura ring.

**Doug Lucas:** Yeah, so the Aura Ring is one of many devices. I think it's the best for sleep. So Aura, o o u r A. And it is a device that will track your sleep quality, sleep quantity, sleep duration.

It'll track your oxygen saturation your heart rate and it just gives you a lot of biometric data and it's easy to wear. So compared to say like, I have a whoop strap sitting next to me was that an Apple watch?

**Gregory Anne:** It's a Fitbit.

**Doug Lucas:** A Fitbit. Yeah. Yeah. So there's a, a lot of things that people can wear that will give you some similar data.

But I just, I don't like sleeping with something on my wrist, and so I kind of stopped wearing my whoop for that reason. But I love the Oura because it, it helps me to understand am I getting enough sleep? And I hear this a lot when we always talk about sleep with our patients and you know, how much sleep are you getting?

Oh, I'm fine with five hours of sleep. No, you're not . You know, and, and once you start getting the data and you start realizing like, oh, like I'm not hitting these metrics. I'm not getting any REM sleep, or I'm not getting enough deep sleep, or my resting heart rate never actually comes down.

You know, all these things add up over time. And short sleeping is strongly associated with things like developing dementia, elevated cortisol, eating disorders and obesity. I mean, just like the list goes on and on and on. And so it was actually. The book that led me to do this, I don't know if you've read it is *Why We Sleep* by Matthew Walker.

It's like my favorite. I

**Gregory Anne:** have him on my Kindle. I have him on my audible.

Yeah. Yeah. So it was like, I mean, just like change, it changed my life.

Exactly.

**Doug Lucas:** Yeah, because I was in that traditional, I read it before I, made the conversion in my career and I was still like doing the orthopedic surgery thing, taking call and staying up all night burning the candle at like all three ends if there were three.

And, I remember telling my wife, I gotta get eight hours of sleep . She's like, how you gonna do that? And then we have this issue of the chronotype where she's kind of a night owl and I'm sort of a morning bird and Oh yeah. So I mean it. It took us three years once we committed to like, making this shift.

Wow. It took us three years to find the common ground where we can actually sleep in the same room, sleep in the same bed, and, and have an understanding of what bedtime is and what wake time. I still get up earlier than her. Yeah. But she just, she requires more sleep than me. And so we have the same bedtime and her sleep was so much better because of it, but it was a really hard transition.

But it's been, from my health, I feel better. I'm stronger. I'm in the best shape of my life. I think that's a big part of it.

**Gregory Anne:** You know, I, I was just thinking that I, I started wearing my Fitbit to bed just because I was like, wow, it'll track my sleep, after I read Matt's book and

I've always been an early bird. I go to bed early, I wake up early. I thought I had the perfect sleep. And then I started looking at the numbers, like 14 minutes of deep sleep. What ? 14 minutes. Oh, are you kidding? That's not good. How much ReMed, why was I getting REM at nine 30 instead of at five 30 in the morning?

But I would say that that is one of the harder lifestyles, maybe because I'm not addicted to junk food or something. I used to be, but I'm not. Maybe that would be harder for me if I still had that as a problem. But aside from giving up wine, changing your sleep patterns mm-hmm. to really maximize that proper amounts of all the different sleeps, I think that's gotta be the biggest challenge for people.

Especially with, we have electronics. And things keep us awake and stress and I would just as soon change my diet and

**Doug Lucas:** yeah, for us it was, it was the TV. . Oh yeah. Right. Like we'd gotten into this habit of watching, you know, whatever, an hour of, of TV at the end of the day, just as a way to just unwind.

Right. Then you read the book and you realize like, hmm, the blue light, it's stimulating, you know, I am gonna get less deep sleep and I now I know cuz I, I

know that the nights that we do it, I can look, I'll get an hour less deep sleep even if I go to it the same time. Wow. Wow. And it's, it's really, really impactful.

So having that good having that good evening routine for us, we're no screens, I think at least an hour before bed, no work two hours before bed, no work, no food. Three hours before bed. I got that from someone. Oh, I can't remember his name. But yeah, that was a huge one for us.

And then wine is, that was a big one for me too, cutting the wine out. And that was, that was two years ago. And all alcohol and that's another whole probably podcast worth of conversation.

**Gregory Anne:** I think we can have you back for that.

**Doug Lucas:** But that was a but that was a big one. Yeah.

**Gregory Anne:** Can I ask you one more question or do you have to run?

**Doug Lucas:** I don't think I have to run.

**Gregory Anne:** Okay. CGMs? Continuous glucose monitors a fan, or is the information valuable if we're looking not so much at blood sugar, but at insulin?

**Doug Lucas:** Yeah. I think you use it as a surrogate marker in some ways, and so it's definitely valuable.

I think you still don't know exactly what's happening with your insulin, but you can get a sense of your insulin sensitivity if you watch the curves. So we'll just take a step back and just tell your audience what a CGM is. You know, you mentioned continuous glucose monitor and basically it's these little devices.

If you've seen ads from them, the little disc that sits on your arm or your belly depending on the version. And it'll read to the, the app or depending on again, which version you're using to your phone in some way. What your glucose is continuously over time, usually every five minutes or something.

What's really helpful about that is when, when people say, you know, oh, I don't eat that much carbohydrate, , oh. I just have a bite of, of bread, or I just have a little

bit of a bagel . And I'm like, okay, so let's wear a CGM, let's see what happens. You know, or I love, I eat a really low carb diet.

And then you see in their food journal, you're like, oh, you had sushi. You know, so let's talk about how much carbohydrates in rice and how much rice is in sushi. And what you get is great feedback to say, okay, well I had what I thought was a great meal but yet I had this tremendous rise in glucose up to, over 140 and it stayed there for three hours, you know,

oh my gosh. Like, that is a terrible metabolic response. You don't want that metabolic response. So I think it is really powerful. Also, every time I've worn one, I've worn one, I don't know, half a dozen times. Every time I wear it. And I, I'll do all these little tests and I learned these lessons, and I think the last one actually for me was sushi.

Where I, I had, you know, like I had what, two roles of sushi, which is not an extraordinary high amount of food. And it is just a terrible glucose response, and I'm not insulin resistant. And so that was really interesting. I love, I did an oatmeal ice cream challenge, you know, which one Under the same surface

I did this for my, my wife's clients because she has her diabetic clients that are coming in saying, oh, I eat oatmeal every day because you know, I read all the studies that show that oatmeal will help reduce blood glucose we're like mm-hmm. true compared to what? , you know, and so I, I demonstrated with the cgm, the glucose response to ice cream is less than the glucose response to oatmeal. So if you think that you're eating this healthy thing. So you think you're eating this healthy thing.

Yeah. There are health benefits to oatmeal and I eat oatmeal but if I were a diabetic, I wouldn't eat oatmeal. Yeah. And, and so I, yeah, I think it's a really powerful tool. Now it's a sort of a pain in the butt and you have to change it a lot. And they're expensive. So, I mean, there's downsides. We don't use 'em on everybody, but I, I do use them intermittently.

**Gregory Anne:** Yeah. I just wanted to get one. I'm just curious, like you said, you don't know how everything affects your body and without having the genetic profile in front of me, I wouldn't know whether grapes were better than banana. I mean, depending how granular you get, but

**Doug Lucas:** yeah. Bananas, , bananas. Bananas are better than grapes.

The greener, the greener the better. Bananas. They have a lot of sugar, but grapes are just Wow. Just a bomb of, of glucose in fructose. Yeah.

**Gregory Anne:** I like the flavor of bananas, but I don't like to eat a banana. It's a texture.

**Doug Lucas:** I don't, I'm not a banana guy.

**Gregory Anne:** Okay. What do you wanna leave us with? What is, what's the takeaway from my audience who are interested in healthy aging?

**Doug Lucas:** Yeah. I think the, the biggest takeaway, and I, I say this whenever I get the chance to say it, is you have to be an advocate for your health. Our system will not do it for you. If you think that the base level of our healthcare system, which is, you know, the preventative tests and the cancer screening is like, they all have a, a role.

But that's not where you should be happy being, because that is such a low level of screening. It's a low level of expectation. And you don't have to look far to see that. That's absolutely true because the average health of an adult in our country is terrible. And yet the average adult goes into their doctor's office and they say, whoop, your labs look fine.

So you have to be an advocate. You have to be hungry for that knowledge. And you then you have to have a little bit of a, shell on your back as you searched, you know, to find out what's right for you, because it is a messy, messy space when it comes to nutrition and lifestyle and what's right for you.

So anyway, be an advocate. I would say number one, overall, be an advocate for your own health. .

I love it.

And I think that's great advice. And I will add to that, don't be bullied by a practitioner or a doctor to get a test or a procedure you don't want to do. I mean it, I wouldn't say docs. I'm not, and again, I'm not talking all docs, they don't mean to

bully, but when they believe really strongly in their way, but it doesn't feel like what you want, that's okay to disagree.

Absolutely.

**Gregory Anne:** Get a second opinion, you know?

**Doug Lucas:** Absolutely. Yeah. And recognize too, a lot of the motivation behind that. There are incentives for docs to follow protocols. So hospitals will create incentives for docs to have, you know, the percentage of patients with this diagnosis get this screening, test the percentage of patients, right?

The system is being created into a very standard operating procedure. How do we incentivize our docs to do what we want them to do? So our hospital system can create the metrics so that they can pass the whatever. So doctor gonna come in and they're gonna say, if I have to put 70% of my patients with L D L above 120 on a statin, then guess what?

You get a statin. Right? There's no room for, interpretation in that. They've taken, not completely, but there is a lot of autonomy has been taken out of, of healthcare. And that's how you create an efficient system. So I, I get that. But that is also then taking the people that go into it, the doctors that go into it because they wanna practice medicine.

It is taken the practice of medicine completely out of it. You're just following standard operating procedures.

Yeah. Stepford-

**Gregory Anne:** ish. Mm-hmm.

**Doug Lucas:** Yeah.

**Gregory Anne:** Dr. Doug, this has been one of the best conversations ever on all aspects of health and aging, and I appreciate you and appreciate your time too.

I know we went long and you said we. Oh, that'll take an hour. I said now we won't go an hour. Here we are. .

Yeah. Really. Thank you so much. I appreciate it. You're so generous with your time.

**Doug Lucas:** No, thank you so much. Yeah.

**Gregory Anne:** Maybe we'll have you back in the new year for hormones. We'll talk about

hormones.

**Doug Lucas:** Hormones. We talk about alcohol, we talk about a lot of stuff.

**Gregory Anne:** Well, January would be a great time to talk about it. Okay. Be well everybody. I'll be back next week.