Repair Your Mitochondria with Immune Modulation Transcript

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Introduction and Guest Background

Welcome back to another episode of the Restore Your Mitochondrial Matrix Summit. I'm your host, Laura, from Ontario. I'm bringing you experts to help you boost your energy and fix your health so you can build the life you love.

And today, my special guest is Doctor Kent Holthaus. Hi, Kent. Welcome to the summit. Hey. How are you doing? Good. Okay, this is going to be. I'm so excited to have you on the summit.

I've wanted to do this interview. You're the founder of Integrated Peptides, and you're a total mitochondria. Especially. You're a complete science geek, and I'm super excited to have you here because you know everything.

You're the medical director of the whole medical group with 22 centers and nine franchises. You do things big, I've noticed. Can you really go big with everything you do?

Yeah, a lot of mistakes. I'll tell you how not to do that. Yes, but you just keep going. I mean, you're the founder and medical director of the nonprofit National Academy of Hypothyroidism.

You're also the founder of Integrated Peptides. Like I mentioned in you bring doctors and patients truly the highest quality natural bioidentical peptides as supplements.

We're going to get into that today and talk about those peptides. You're an internationally known lecturer, author and innovator in cutting edge research and treatments, and you've lectured at almost a hundred CME approved Medical Society conferences and summits.

So nice to have an authority here with us. Everything you say we can take is gospel. Obviously, if you've proven that we know I won't doubt you. And you know you are on the steering committee.

And a lecture for a forum. And the International Peptide Society, that's actually where we met was a forum, and that's the first time we met. And, you've published a whole bunch of peer reviewed under review articles.

And here's the thing I find really fascinating about you. You know, the endocrine system is this multi-system, poorly understood. And, there's a lot of, as you say, long held dogma in endocrinology and infectious disease, and it's inaccurate.

So you're here to break down the truth, and give us some accurate information. So thank you. Thank you for being here. And it all has to do with mitochondria.

It all fits. I know, I know. So we were talking just before we, jumped on this interview and of course, you said Laura, like this. Mitochondria is the foundation of everything.

I mean, if your mitochondria aren't working, you can't heal from any disease process. So we're going to get into that today. What. So so let's talk about how common is mitochondria dysfunction.

First off is it something that's happening to everyone. Is it rare. How common is it. Yeah basically it's anyone if they're not totally young, healthy, not stressed, not exposed to, toxic pesticides, plastics, emfs any chronic infections, have any chronic illness.

If they don't age, then their mitochondria are fine. Other than that, they got mitochondria dysfunction which is becomes a vicious cycle causing more and more problems.

So you pretty much just said everybody watching as well. Country had dysfunction because there's probably no children watching this. So pretty much older have a two.

They just had a baby with total congenital heart failure. And they basically cultured, mitochondria and just injected like billions and billions of mitochondria, the heart totally normal.

Well, so basically, we're all suffering some from some form of mitochondrial dysfunction because we live on planet Earth, and there's a lot of toxins here.

And, so what are the causes and stress too? Yeah, that's the killer. Yeah. We put that in the toxin bucket. Yep, yep. So what are all the causes of mitochondrial dysfunction?

And how is it possible that a baby is born with mitochondrial dysfunction? Yeah.

How Mitochondrial Dysfunction Drives Disease

So, well, this baby did have, some genetic defects, but if you look at it, kind of becomes a chicken or the egg, and, you know, like when I had chronic Lyme disease and obesity and Bartonella all that, and did three and a half years of the highest dose I. V.

antibiotics that would never give to anyone else that, you know, I didn't do anything. And why was that? Because I had no immune system. And, you know, you can't take enough antibiotics.

Your immune system has to take over. And it's oversimplified, but really, you can break it down 2 to 2 main side. So one gets stuff inside the cell to get stuff outside the cell along with THC 17.

Now as you get older, sick stress exposed to toxins. What happens is your T one goes down in year two goes up, which causes a lot of inflammation and a big contributor to that inflammation is the mitochondria, dysfunction.

So the, basically, let's say you get an infection, the, it goes into the cells, the mitochondria, a sense that and those turn off the energy production and start producing oxidative stress instead.

And so and then what happens? So as you get and then if the T cells, the T one doesn't have enough mitochondria, function, they're not strong enough to kill those cells off.

That's what's normally supposed to happen. So so many people will check with the become kind of an immune monitoring clinic. And because everyone's immune system is so screwed up, their T one is way too low and their too is way too high.

So real quick, can't for people who are not practitioners watching right now, explain a little bit more about 22. Why did they why should they care about that?

What's important about that? So that the T one, your body is the side that gets stuff inside the cell and they still get stuff outside the cell. And and so usually they're balanced.

But as you get older sicker, you know, more stressed, it starts going like this. So you can really look at someone's physiologic age by that T12 ratio.

Anyone who's sick, they all have that high to low T one inflammation associated with atherosclerosis. They get cancer or chronic infections, you know, basically, insulin resistance, you name it, it's associated with it.

So it becomes, again, the immune system causes the mitochondrial dysfunction, but then the mitochondria dysfunction causes immune dysfunction. And which then also causes, pineal hypothalamic pituitary hormone dysfunction.

You get, you know, basic gastrointestinal dysfunction, the gut brain access that you get. So it all goes to a vicious cycle. You say, well, well, what's the cause?

And then, like when you're one is low, you can't fight really. Cancer is very well new infections but also reactivating infections. And so let's say someone with Lyme we you know, say Lyme is that they end up having a, you know, Lyme.

Other things. They also get reactivating Epstein-Barr, which, you know, everyone has an CMV but your immune system that that gets intercellular infections is too low.

So now they reactivate, they suppress the immune system or they cause mitochondrial dysfunction. Then it keeps going. It sounds like a terrible cycle that you can't get out.

Yeah. So you have to address certain parts of that, including the mitochondria or you're just never going to get better. All right. So, what are the causes what gets us into that dysfunction in the first place?

Yeah. So kind of the classic when it was kind of really looked at was chronic fatigue syndrome, you know, and you look at they did muscle biopsies and people with chronic fatigue syndrome and 90 plus percent, you could visibly see their mitochondria were screwed up.

But well, you know, there's no, great tests for mitochondria. What we test is basically when people come in, we'll check their basal metabolic rate. So how much how many calories they burn over ten minutes and extrapolate for the day because your mitochondria basically, you know, basically produce the energy in the body.

So if your mitochondrial are low it will show that. So you get not only, you know, weight gain. Inability to lose weight or even dieting significantly for three cycles causes the mitochondria to drop and they don't go back to normal even when you eat normal.

So when people say, I've wrecked my metabolism, they have. So unless you intervene, you're going to have low metabolism. What would the intervention be?

So you can now, if they're not really that sick, let's say they just dieted. Thyroid. So thyroid rule is kind of the gas pedal for the body. So it will boost mitochondria.

T3 or boost mitochondria, T2 will stimulate mitochondria to basically divide and and get more of those. But if they're sick now you have to do a couple things.

You have to erase that one to get rid of those cells that have dysfunctional mitochondria. Okay. And or boost the mitochondria, which are number ways to do that.

But if you have a bunch of cells that have dysfunctional mitochondria, they're making basically, instead of making energy ATP, they're causing oxidation.

Now you're stimulating oxidation. So what you really want to do is get rid of those cells first and then boost the mitochondria. Okay. So let's talk about getting rid of those cells.

Yeah. So there are a number of things. And this is now becoming I think you're going to hear more and more about this in for the anti-aging realm. Where basically immuno senescence, which meaning, you know, that your immune system basically ages or even cellular senescence, the rest of your body.

So, you know, your body normally gets rid of those cells, but they're not doing it now because our immune systems are so suppressed from all these toxins, emfs chronic infections.

And if you have a chronic infection for an extended period of time, whatever that means, month to month, let's say it's, mold, for instance. And mold toxins also suppress the mitochondria.

And the basically the T cells will just shut off.

Clearing Senescent Cells and Supporting Immunity

So now your t h1 just goes, we can't do anything about it. And also for the cancers. So they're around a long time before, you know, but if you look at the T cells around the cancer, they're not doing anything.

They're actually protecting the cancer. So if you either get rid of those if they're called senescent, which is very similar to C to like job exhaustion but T cell exhaustion, you can reverse that.

Like a senescent, like senile. Yeah. So there's they're not working anymore. They're not they're done. They've they've given up pretty much. But they're still unfortunately there.

And they're working but they're making oxidation instead of energy. Okay. If they're, exhausted, you can give them, you know, mitochondrial booster, mitochondrial juice, whatever.

And and then get those going again. But timing is important, right? So because if you have someone let's say they show like diabetes or congestive heart failure, they may have up to 50% of their cells are senescent okay.

So if you try to boost those people's mitochondria, you'll probably make them worse. And but if you get rid of those cells at the body shed of in the first place, and if you look at all these chronically ill patients, again with diabetics and, atherosclerosis and, and we just have heart failure, is that their immune system or T1 is very, very low, totally consistent.

So if you look at their natural killer cells function, super low. In fact that's a marker for chronic fatigue syndrome, which is, you know, what does that mean?

I really think we did a disservice because it gave doctors the license to say, oh, you got you got fatigued, you can't sleep. And, you know, Bowser's fatigue or you got chronic fatigue syndrome.

Here's an antidepressant. Instead of looking at the cause, which the cause is usually a chronic infection, which then causes all these things. And so then you get, you know, senescence, you get mitochondrial dysfunction, you get.

And then it just causes all these systems to basically not work. So you mentioned you have to clear out the senescent cells before you can boost mitochondria.

So what would you suggest to help clear them out. What. So how can we do that. So the first thing you want to do is boost that one. And there's some herbs that can do it and modulate the immune system.

If you look at most treatments that work well for chronically ill ozone, you know, even IVIg, a lot of the herbs there are immune modulators, even vitamin D immune modulator.

But a lot of the peptides, thymic peptides. See also your thymus controls that. So your thymus basically you're born with it. It's raising your T one.

And they're at about age, you know eight it starts in ballooning and starts basically going away. Then by about age 30 it's about 5 to 10%. And if you notice, you know, about ten years later, that's what all those diseases of aging start occurring.

Yeah. So really what this anti-aging. If you can get rid of those cells or boost the thymic function. And how do you do that. It's very simple. You get thymic peptides and it brings those that one now back up.

It now can kill those cells that have terrible mitochondria. It sounds like aging in reverse. Yes. Exactly. Okay. Yeah. So people go on to kill micelles.

Yes. Your body want you want to get rid of bad cells. It's very important to rid of bad cells in for you. But your body doesn't do it very well with low teeth when you can't do it.

So what about all those, you know, all those things we can do naturally to help with autophagy? Like, like cold plunges and heat therapy and exercise and intermittent fasting.

What say you about all those, like, all those work? Definitely. It just to what extent? And I'm pretty lazy. I'll, I'll just take a pill or a shot. So basically you're saying you've you've you've created a magic pill here.

Yeah. And then I have a machine to that. You lay on and it basically works. You put the electrodes on and it pushes pumps blood back into your heart when it relaxes.

So it's like jogging for two hours and 15 minutes. You're laying there, you can drink a beer, watch TV, you know, and then, my gosh, and we're not endorsing we're not endorsing this.

Can or not telling people not to work our lazy person I like that. And then you take the peptides, make your body think it's exercising. Or, you know, really what you want to do is immune modulation lower that inflammation?

And, I won't get into this or to add something to that, but. And you're really anti-aging with diet and exercise, but it makes it so much better. In fact, we couldn't I got allergic to one peptide that it was like doing five workouts and with one.

Yeah. And I allergic to. So some like, I'm not working out anymore. I don't want to have to do five times a workout, you know. But now we have a new one for it.

But so so really the key is and you look at the studies on so we talked about the thymus. If you had a thymic peptide which is going to modulate that immune system along with a pineal peptide, a pineal gland, we think of, you know, producing melatonin.

But you control so many things. Now for instance, a study with patients over 65 with significant heart disease, they just gave them six doses and followed them for 15 years.

They found the ones that got the peptides their heart their cardiovascular function got better. Instead of worse on standard care they had dramatically like three fold less cardiovascular events.

Overall mortality in cancer you know. And so just think if you take and then the people who took more doses actually did even better. They were like five times less death morbidity cardiovascular mortality and cancer.

Like, okay, why are we doing this? Why isn't everybody taking peptides?

Peptides for Healing and Anti-Aging

And there's there's no, no, they can't find a toxic effect, you know, okay, this is a thousand times a dose. So we've gone down the peptide rabbit hole.

And I'm glad we did because I really have, you know, I really just want to pick your brain about this because you are the authority on peptides. And, peptides are relatively new to me in my practice.

And so I want to go down that peptide hole here. What is a peptide? Let's start with that. For people who don't know what a peptide is, what is it? Let's start with the basics.

What the heck is a is a peptide? And, when you think of when, not too long ago, we got, you know, hormones were controlling everything, right? Hormones are slow on, slow off peptide.

And then we go to the nucleus and they change protein synthesis. Now peptides work on the cell surface and

they're very poorly atrophic meaning they have lots of effects.

So more like a supplement in that respect. And they work through secondary messengers and they're quick on and quick off. But they also work up a genetically.

So they're kind of the fine tuners of, of the body. And they're very specific. So we can, you know, work on the amines with the thymic peptides. We can, work on actually fertility a battalion.

Now, this was a rat study, but we use it all the time. And in humans, they had 135 rats, menopausal. They gave them all at Battalion. They all started menstruating.

25% had normal live births. Oh my gosh, I'm not taking that peptide, am I? I don't want to have another baby right now. Only 50 this year. Watch out. But race people your age comes down.

The anti-malarial hormone goes up. But it's pretty cool stuff. And it will also check before and after, you know, now with the advances and looking at someone's biology age.

Yeah. And we'll see it just dramatically reduce. And they sleep better. You know melatonin levels go back to normal, hormone levels go back to normal.

They basically now, basically produce genes that suppress cancer instead of increasing cancer as we get older. So you will hear more about these soon.

Well, I want to keep talking about them. You game. Oh yeah. Yeah. Okay. So I want to know more about this guy BPC 157 so I got this I got this kind of, booklet from you that had a whole bunch of studies and it blew my mind all the different uses.

What this peptide can do. I specialize a lot in gut health and helping people detox. And it seems to me like this would be very helpful in a gut restoring protocol.

Oh, totally. So BBC 157 is probably the go to peptide kind of for everything. And when I give talks we have like hundreds of studies showing like helps traumatic brain injury helps Alzheimer's help.

Celiac disease helps. Irritable bowel helps leaky gut helps the liver cirrhosis helps. Basically nerve or cut a sciatic nerve if you don't get BPC doesn't grow together, you BPC it grows together.

Well, muscle joint pain, aches, autoimmunity. You, and so basically everything. And so it's like, I kind of like to bring it all up because it sounds like, what is this, like snake oil?

They're all these references, and they've been being used for 30 plus years in Europe. And so exceedingly safe. And they've given it a thousand times a dose IV and they can't find the toxic dose and like, well, we'll be at a conference.

And some of them, you see, I'm like, complain about their knee or something. And here take these. Oh yeah. Whatever. Next year they go, wait a minute.

My knee doesn't hurt anymore, you know, and or whatever it is, it tends to work now for the gut kind of the trio VPK will lower all the inflammation. Help heal it.

Shown a lot of studies showing prevent side effects of let's say non-steroidal. And it's kind of a homeopathic peptide in that let's say you have hypertension.

If it was it down, if your blood pressure too low it brings it up. If you clot too much it brings it down. If you don't close, it brings it up. So it sounds adaptogenic.

Yeah. Yeah. And now so that and then the, the, tb4. So thymus and beta four is a, the most abundant peptide from the thymus. But the problem is it's very long and it has, it's a basically a multi domain peptide.

And that has parts that do different things. And one part of the tb4 stimulates mast cells, which doesn't mean it's good or bad depends on the situation.

But for a lot of our patients we don't want more inflammation. We don't want mast cell stimulation. But the fragment in the beginning, the only the four amino acid, the 43 amino acids which would absorb or anyways, is basically the immune modulator.

It's a workhorse for the immune modulation, and it lowers human transferrin growth factor beta, which causes fibrosis, which is a big problem. And, you know, with Seres and also, you know, essentially, a lot of lung diseases, congestive heart failure, and the T before will frag will selectively heal the tight junctions.

So, and then you add kp, so kp v is melanocytes stimulating hormone. Right. And a lot of it not a lot, but some line very knowledgeable Lyme doctors use monocyte stimulating hormone in their Lyme patients or PD 141 which is approved for libido and women which if it works out great or for women.

For men it works for erectile function. The biggest side effect is nausea. But they'll use it for the anti inflammatory. And also it's if you look at Milana Tan one and two it's been out for a while.

It's called the Barbie doll peptide because you lose weight you get can increase libido. Right. But then you get nausea with that and you think getting can is great, but as you get older you get blotchy, you know?

So yeah. But the k PV is the last three amino acids. It's, it's about ten times as potent as monocyte stiffening hormone does not have any of the side effects, tanning, which because of the blocking is nausea.

Hugely anti inflammatory and so that you add that into the gut and you basically, you know, we had people with, like we had a nine year old girl who was going to get a collect me because you know, from Crohn's.

And they tried everything and nothing worked. Within two weeks she was having bloody stools, and then two weeks it's like, oh, my God, she's so much better.

We just give her some supplements. And the mom just always. She wanted to start one thing in time. She started BPC. She's like, wait a minute. This is, this is working.

Like, okay, let's start dealing like, oh my gosh, you know, just change this kid's life.

BPC-157, Thymic Peptides, and Brain Support

And it's funny because she would actually, I didn't we didn't know it was a friend of one of the people worked at Integrated Peptides. And she's they went to their house for dinner and I go, do you know this doctor, how the all tough, And it's like, where is he?

Like Holdsworth. Yeah. That's it. Do you know. Yeah, I work for, you know. So, I was kind of cute, but she was going to get a collect me, you know, get her taken out, and it, you know, so many things were in, you know, like pots.

It's you give the peptides and we don't even think about it. Really. Ms.. We reverse so many Ms. patients which which peptide you're using to reverse them.

So you, you think about all the autoimmune neurodegenerative it's all immune modulation. So again you look at BPC to come back to and add the growth factors.

The tb4 frag raises the, the one and then the k PV does a number of other things but lowers that overall

inflammation. But then you know there's the and alpha one which is approved in 22 countries for infections and cancer.

But the people are using it for Covid effectively and safely. So they banned it. Right. So we can with the famous alpha one, we did metabolomics testing to show that it worked actually is even more potent.

But so that's going to raise that one. And and again then everything kind of follows through with that. Wow wow wow. Okay. Can you talk a little bit since, you know, this is this is so awesome to me.

I love I love talking about this. Can you talk about Cerebro Health? Yeah sure. Well pep we've it's basically brain neurotrophic factors. And we've probably had more like amazing testimonial reviews.

People with, you know, urgent Alzheimer's, traumatic brain injury. I probably should say like my girlfriend's, son was just started as being just a jerk, right?

His brothers are like, what's going on? You know, and just kind of nasty and, like, gave him a cerebral path and then probably four days later, his brother's like, oh my God, his old self is back, you know, and it it basically reduces all that inflammation.

And, and that brain on fire. Yeah. You know, it's, it's been used for again, 30 years. So bring us back now that we have a foundational knowledge of peptides and what they can do and what they can support in the body, bring it back around to mitochondria for us.

So what are these things doing in the mitochondria realm. How are they supported. So there are mitochondrial peptides certainly like coenzyme. See tons of trials going on for these things by the way.

SS 31 which is a it's essentially a intracellular mitochondrial antioxidant, very similar to might have Q peak. There's much stronger. But you know, with the support we get, you know, people said that traumatic brain injury for 20 years, I get lost and, you know, after, two weeks, oh, my gosh, my life is back, you know, that we can I can have a normal life.

I can converse that I couldn't before. I've just taken a supplement, you know, and so what, we, you know, we treat veterans for free. Works great. All these things work great for, post-traumatic stress syndrome, traumatic brain injury.

If you look at post-traumatic stress, it is if you look at their immune system, it's almost exactly the same as, with chronic Lyme, same with autism. And all the peptides work amazing for the autistic kids.

Like, we have a video of one autistic kid coming in, and she said his mother showed it here. Here's him playing basketball. Watch the basketball just goes by.

I mean, doesn't look at it. Comes in just on my on a brain and just throw an f bombs. You can't get near them. And it was just, Oh, my God, horrible deal.

Now he comes in and he goes, can I have a hug? And he's sarcastic. He gives himself a shot and and his mom sent over a picture of him playing basketball, doing gymnastics, doing flips like it's a whole different kid.

It's really incredible. It's really incredible. You know what it comes to mind is that man has created interesting ways to harm us. And there's got to be people on the other side creating interesting ways to get us out of it.

Seems like, that's what you've been doing. Yeah. It is. You know, these things that, hey, they're making money and you can't live without, you know, like emfs like it's.

People get upset when I talk about love. I would be in that electric car. But it's like, basically sitting next to a high tension wire, you know? Yeah.

And, and a lot of people, if, you know, Turner, EMF, turn your wife off at night, find you sleep so much better. Your melatonin levels go up. It's basically inflaming your brain.

And if you're prone to that, if you already have, you know, other reasons for inflamed brain, it's, it's problem. And and there's no one thing. It's everything.

You know, we're not made to have all the stress. You know, I remember when I was young and we didn't have computers, we'd we'd mail a letter and wait two weeks for the response.

Right now it's like, oh, I guess the person you know texted me back and, you know, and all the social media traffic. And so it's just people are just overwhelmed and the body is responding and breaking down.

So you got to do things to increase your tolerance to all these stressors. I'm really, really excited that you are working in this space and that you're creating, you know, peptides, formulations, and, you have your integrative peptides company.

If people want to work with you or know more about what you offer, how can they get Ahold of you? Can. Yeah. Well, if you email me, I get about 800 emails a day, so.

But, so, I mean, I got it. I got an assistant there, but she's lovely. She's lovely. Your assistant. Good. She puts up with me. Yeah. And we're actually going to start a training program.

Finally. We've been asked over and over and over which kind of work with other people, but, that way we can keep prices very low, do a very comprehensive, training program, start with some webinars.

Mitochondrial Recovery, EMFs, and Practitioner Access

We're going to have a big conference in October, and really go go through and really show how to use these because they change my life. I mean, I can just have heart failure that the, the cardiologists said, maybe you can get 10% better in ten years with intense cardiovascular rehab and like.

I'm going to kill myself. I couldn't stand up straight. I would take me two hours to go upstairs and just went around the world to do a lot of weird stuff, but a lot of stuff helped. Yeah.

Ozone and plasmapheresis, things like that. A lot of things help. High dose T3. But I tried peptides. I didn't think anything of it. And then like, four days later, I just said, oh, my God, I just walked up the stairs standing up, you know, and and I was just like before, sweating, anxious, walking one mile an hour trying to catch my plane, you know, but, they've changed my life.

And the people that use it, change changed our practice. It's, it's allowed us to treat the sickest patients much easier and much faster. So I actually have, this, probably on Friday coming out the, updated, mold and, mold illness, peptide protocol for the rapid treatment of seres. So, so for the rapid treatment of what, seres or mold, illness, which cuts out all the stuff, I mean, shoemakers, brilliant and all that, but all these binders.

I was so tired of people coming in, binders for five years, and they're like, I know I'm going to get better. I'm like, oh my God, we got to fix this because that's not the problem.

You know, you gotta you fix the problem. And he even talks about that. It's the human destroying growth factor. Beat is the problem. But what does he do for it.

He indirectly just tries to pull out all the toxins. But you can directly affect that. Plus if you have low one, you know, detox. So fix that first. Then you can do that other stuff if you want.

But this will give you a yeah protocol to rapidly get better in months rather than years. So you're going to you're going to teach practitioners how to use the products.

If you are a practitioner and you want to get an account, and use integrative peptides, where do they do that. Yeah. So just go to integrative peptides.com.

And we got a whole slew of good people. And you can call and ask questions and that and we also talk about peptides that we don't carry. Or how to do that or talk about anything for that matter or any case studies.

I'll do that a lot to make some tough case. And we'll do that. So we're going to have that for the practitioners. Will do. You know, set lectures, but also a lot of question answers, a lot of case studies and, and actually get a very comprehensive program that you're not paying $2,500 every time you watch a lecture, you know?

Yeah, yeah. And then if you're a consumer, you know, you're a patient and you want to take these, can they buy directly from you or they need to work with a clinician.

Yeah. Well we find we give the same lectures for patients we do for doctors, but we dumb it down for doctors. You know, I'm kidding. Sometimes you would feel that way, but.

No. Yeah, you can buy, but you'll get it cheaper through your practitioner. Okay. Thank you so much, Kent. Any final words to share with our mitochondria crew?

Oh, I just want to say, I mean, I love the mitochondria. We didn't get to talk a lot directly about mitochondria because it is so important. And, that the mitochondria and I'm thinking of a graph that you can see it's like here's mitochondrial function.

And then, you know, basically it's it's indirectly to health and aging and and everything. And so you boost you fix the mitochondria, you'll fix your health.

But you can't do it quite directly yet. A little bit about the timing because you don't want you don't want to make the body worse, but, it's, it's a major key that, you know.

Wait, who's the mitochondria specialist? It's not endocrinologist. It's not hematologist. You know, they treat diabetes and their, you know, metabolism.

Doctors and even talk about the mitochondria. So yeah, it's, the exciting stuff is happening within integrative physicians like yourself and looking at, hey, what's the next avenue to get my patients better instead of just basically, you know, going and seeing every patient eight minutes I can't say hello in eight minutes.

And you know, and and our system is okay if you break a leg or of something standard. But if you have fit, don't fit in a box, you're in trouble. So, you better you find a practitioner that you, you know, can listen to you and if a practitioner says, I don't know, right.

Stick with them because they're usually very, very good. Because most doctors, the less they know, the more adamant the right. And I used to think that, you know, we get patients been sick for 20 years.

We've seen a doctor come to us. They get better. Send them back to their doctor, think a doctor, be happy. They know their best, you know. So it's a weird system.

Anyways, they're stuck in a bad system. I love what you just said. You find a practitioner that says, I don't know, keep them. Yeah, that's really good advice.

That's good advice. Well, thank you so much. I know we can do another interview and talk down, a whole nother wormhole of, mitochondrial energy. I'm looking forward to watching some with all your great speakers and, and, and so I think it's just such a key cornerstone of health.

So nice job doing it. And, really respect everything you're doing. You're doing such a great, service to doctors and patients. So thank you. Thank you.

You take good care now. Bye. Thanks a lot.