## Introduction and Dr. Holtorfu2019s Background

Welcome back to the conversation. Today we have Dr. Kent Holtorf. Hi, Kent. Hello. How are you? Good to be on again. I know you're so fun to have on Summit.

So you were with me last time on the mitochondria summit. I'm excited to have you back. Now, you're quite an extraordinary man. So for those of you viewing right now, I.

Say it is to this a centric and. You are eccentric. It's true. The first time I met you, it was like the mad scientist and the fun guy all wrapped up into one.

It was pretty fun. But where was that? It was. It was. We were at dinner after a medical conference. We were at a forum. Yeah. That's when my staff calls me.

I'm always mixing stuff and, you know. Yeah, try and stuff. I almost, like, kill myself every couple. Couple of months cause I tried to find that toxic level of stuff and like peptides, which is very hard to do and or just do crazy stuff and it's like, I can't breathe.

It's okay, don't worry. You know. You just use your own body as your lab. Yeah, because I don't want to give it to someone till I do it, even though the studies are all there.

But I'm, you know, mixing creams all together like a bathroom just full of different peptides and creams and all this stuff. I love it. I love it. This is what makes you so fun.

So let's introduce you to our audience. I mean, obviously you can tell that he's got a great personality and you're going to enjoy this talk very much.

But on the serious side, you're the director of the Hall Tour Medical Group, and you have 22 centers and nine franchises. You're the founder and medical director of the nonprofit National Academy of Hypothyroidism.

You're also the founder of Integrative Peptides, which are peptide supplements that are available without a prescription. You've lectured at almost 100 CME approved medical society conferences and summits, and that's how we met at one of those conferences.

And you're just an all around extraordinary human. So we're going to talk peptides today. We're going to talk about mitochondria and the importance of using peptides and helping restore mitochondria to energy function.

And we're just going to go to and talk about whatever comes to mind. We'll see where we go with this. Okay. Sounds good to me. Okay. So let me just mention something or do we started treating special forces that's for free and just doing all these tests on them.

And our first patient, basically, he had been terrible PTSD. They all have traumatic brain injury. They all have PTSD. He had a denier where he couldn't touch his skin was like so much pain.

He couldn't read a book and they just kept blowing him off. Even a neurologist outside the V. A. and they fell on him face down, almost pulseless liver failure.

## Mitochondrial Dysfunction and Chronic Illness

Kidney failure. They put him in an induced coma and they said he's probably going to die and but he made it. He made it through and went somewhere else and nothing happened.

And I don't know how he got hooked up with us, but within two visits he's Aladin. He was gone on the first visit he could totally his cognitive function is PTSD.

He could read a book from cover to cover. He even went hiking like, you know, a few weeks later and then a director somehow got got he heard about it and says, we want to do a documentary on this.

And long story short, they got funding so they approved a 12 part documentary on these vets is going to be on like Amazon Prime, Hulu, Netflix and to show like this, the care they get is terrible and yeah and they all have every single person has come with chronic Lyme and multiple chronic infections, terrible toxicity.

And we were talking about that like everyone's just so toxic and all these things suppress mitochondrial function and even stress, you know, stress is a killer and you combine stress a, you know, chronic infection and toxins.

Those are the three things that just make everything worse. Toxic. Everything is a vicious cycle. It is. It is. So that would be my first question is how common is mitochondrial dysfunction and the causes of it?

You've already outlined a couple of the causes here, but how commonly are we seeing this? It's it's everyone. So, you know, even the age, if you look at the graph of mitochondrial function, it just drops with age.

Then you add anything, stress, toxins. So many medications are toxic to the mitochondria and there's no great test. But what we'll do is we'll check everyone's basal metabolic rate, which is mitochondria, how good your mitochondria are burning calories, making energy, measure your action output for 10 minutes and then extrapolated for 24 hours.

And everyone who's sick or people that have dieted more than three times studies show this to their YouTube, about 25% lower than a healthy person. But it's hard to find a healthy person anymore because all the toxins and and that so they have to basically you know tend to gain weight especially as we get older or if they are sick.

And so at 500 calories less just to stay even. So then they're starving again lowers the thyroid level, which doesn't come back even if you start eating normally messes up the mitochondria.

So we're just getting sicker and sicker. And then with our dysfunction, it just causes so many problems because every cell needs energy. So you think of any system that needs energy, which is every system spent, surely brain immune system got those are particularly affected.

So we see these core conditions that are, you know, just exploding like, you know, and then they give them syndrome, that chronic fatigue syndrome by myalgia, which allows them unfortunately to just basically ignore the underlying cause and just say, oh, you got chronic fatigue syndrome, here's an antidepressant instead of looking at the underlying cause, right?

Infections, chronic Lyme. And we know the underlying cause of chronic fatigue and fibromyalgia and you know, long haul COVID, we know these things are mitochondrial dysfunction.

We also know that I always say that, you know, end stage mitochondrial dysfunction has a word. We call it cancer. We call it heart disease. We call it Parkinson's.

We call it Alzheimer's. I mean, this is the result of mitochondrial dysfunction. What would you add there? Yeah. So basically everything's a vicious cycle of medicine.

And when you get especially that triad, you know, toxins and then if you have a chronic infection, but really immune dysfunction and then if you have a stressful event and especially emotional stress, it modulates that immune system.

People think, well, it lowers your immune system, but it doesn't it modulates it. So if you think of the immune system, it's very complex is oversimplification, but you think of it as h one get stuff inside the cell to get stuff outside

the cell, usually their balance.

But as you get as a thymus in the loop too, as you get older, if you have stress toxins, chronic infections, autoimmunity, all these things, it starts shifting like this.

So you're th1 which fights intracellular infections. You can't fight those. So then you get reactivating infections like Epstein-Barr V six HPV and vaccines make that worse.

And that's why people are getting like melanomas that spread like crazy. And then the th2 is all this inflammation. So the body's trying to make up for the lack of th1 and it's just causing all this reactive oxygen species.

And then so you get hypothalamic pineal, hypothalamic pituitary hormone dysfunction, which then makes mitochondrial function worse. And then with the low mitochondrial function, the immune system doesn't work as well.

So that makes it worse. And, and so everything is a vicious cycle. So you start getting, you know, chronic fatigue syndrome, fibromyalgia, cancer, really neurodegenerative diseases.

They're all associated with autoimmune and all these things. And and you look at we did a little to develop vaccines, but our one study on chronic fatigue syndrome, they did mitochondrial, they did biopsies and mitochondrial analysis.

They found no chronic fatigue syndrome person and even a single person in the normal range for mitochondrial function and a big panel that we can't do clinically.

They can do it in a research mode, but no one was in the normal range. They were all completely outside the normal range, not just incredibly low. That's significant when we're looking at what is the solution to chronic fatigue syndrome and fibromyalgia, you know, mitochondria dysfunction is at the crux of it, is what I'm hearing you say.

Yeah, yeah. And in everything it again, I say, well, what's the cause? But when you have all these dysfunction like immune activation of coagulation, you can't detoxify with the immune dysfunction with low th1 you can't detoxify, you can't you're reactivating infections from the low immune system.

You can't repair. You can't stem cell. You get stem cell exhaustion and what they call t cell exhaustion in immuno senescence, where the mitochondria will go into, let's say, a cell danger response from the physiologic stress, or if you have a infection that doesn't go away or cancer or something that stimulated the immune system, that the mitochondria say, hey, we got it, instead of make energy, we're going to start trying to fight this.

And instead of making energy, they start making reactive oxygen species and inflammation and then they're called. So that's you'll get t cell exhaustion, but then you'll get immuno senescence.

You know, senescence is kind of permanent.

## How Peptides Work

So but if you get so it's basically the cells aren't working, but it's worse because they're actually making everything worse and they'll recruit more senescent cells because they're pumping out all this inflammation.

And so there's some things that you can do, peptides and other things to selectively get rid of those senescent cells and mitochondrial function goes way.

Up, right? What I really want to focus on for the remainder of this talk is peptides. You are a peptide expert, you have your integrative peptides company.

I've used your peptides, I've used your peptides in my own protocols and with my clients. And I really want to I

really want to make it easy for people to understand today are the people who are who are consumers of health care, who are watching this, the practitioners who we have here watching this, who are wondering, how can I use peptides to get people better?

Are you game to unpack all that for us? Yeah. Okay. All right. So at the basic level, what is a peptide? So what is a peptide? So peptides are chain of amino acids.

If it's shorter than 40 amino acids, it's a peptide. If it's longer, it's a protein that's just just arbitrary. There generally act on the cell surface.

They say compare them to hormones. Right. They act on the cell surface. They're quick on, quick off, very nontoxic. They, for instance, did a study on BBC One, the descent of an intravenous play, a game a thousand times the usual dose, and they could not find that toxic level.

And that's the case with most peptides. So that's why you double, triple, quadruple, ten, ten, x dose yourself at home. Yeah, but believe me, see, most of it I couldn't get to a toxic level.

But other meds, I'll do the same thing or some protocol. And they have what's called pleiotropic effects and some of the which a new thing is bio regulators, which I won't get too much into but it's just they're amazing and they're just even DI peptide so just even two amino acids with no one paying attention, but they go into the cell and they open up the DNA and attach a specific gene.

So they work epigenetically. For instance, some will make it so it's like you've exercised, some will great for, you know, basically cognitive function, brain restoration, other ones will, they tend to be.

So they got them from the particular tissues. So they isolated them from, let's say a calf liver or really a fetal liver, but now they're synthesized.

So you don't have to have animal, but so they'll increase protein synthesis. They're epigenetic, they're like they'll turn on, let's say 50 genes turn off some.

And they they tend to be like the kind of smart or kind of smart peptides in that they'll turn off all the cancer genes and turn out to turn on the the anti-cancer genes and tremendous studies showing reduction in cancer, increase in longevity, nothing I mentioned B before where they did A, there's going to be published a two year study by a regulator in healthy people, these longevity study and they found in two years taking them, they check their physiologic age, which we can do.

There's telomeres and methylation of DNA ways to do this. They were on average seven years younger than the placebo group. And in 2 hours. So yeah. Sounds like. That's going to mean that.

That's going to be an important up and coming topic. And, and treatment mode of that modality. Yeah. And we're going to so what I'm working on is formulating adding bio regulators to that, you know, standard peptides.

And so they'll probably be five or six types of BPC with combinations. You want to be super gut, you want one for brain, you want a TB for frag, for, you know, this that you know, yeah, yeah. So.

So back to the back to the. So we've established that a peptide has amino acids, amino acids are the small components of proteins. I'm going to ask you a really silly question here, but I know people want to know how does this differ from the amino acids that are essential that we have to take in from our food and the amino acids that we that our body makes?

So why would I take a peptide in a in a supplement form when I get amino acids from the food I eat. So explain that. Yeah. Well, your body as you get older, all these levels drop and especially with any chronic illness stress.

So your body, there's so many checks and balances and ways that are, you know, get suppressed, that your body

won't make these when it when you just take amino acids.

So it's kind of like giving precursors. You're just hoping it will make those, but it's going to those are going to go everywhere. So there's much more specific.

And the nice thing is they don't get broken down in the gut like they, you know, and they and they're typically from longer proteins that get cleaved at particular spots.

So if you look at like all the common protein, the enzymes they actually have, when they get broken down, their sections are left over. That is bio regulators.

And there's also a lot of bio regulator in food like milk, although milk and some negative things, you know, sea cucumber or whatever it may be. But it's they've kind of become where we thought kind of, you know, the master control or the hormones, but these are above that and they'll modulate where hormones kind of do a thing, turn on, turn off.

The peptides are kind of smart. Let's say you get BPC. If you have high blood pressure, you will lower it. If you have a low blood pressure will raise it.

If you're hyper valuable, which we see, a lot of it will lower it. If you can't clot and you've a bleeding disorder, it will raise the coagulation. So they're fine tuning and modulatory rather than just stimulating and being what's called atrophic.

They have a lot of different effects and which actually ends up being much safer than a med that has a particular effect. It's more like supplements where they have a lot of effects, but it actually they kind of modulate a bunch of things that end up balancing each other out and they end up being much safer, but they're much more potent than supplements, you know, a thousand fold.

## Peptides for Immune Modulation and Mast Cell Issues

Okay. So, so that makes sense. So we'd want to use them. Now, can you focus in we understand what it is and why we'd want to take them. Can you focus in on which ones, which peptides are going to support a mitochondrial function and B solving the problem of low energy?

So how are we going to support energy with these things? Yeah. So I'll put the, the mitochondrial peptides in different, different classes to make it make sense.

I think. So the initial thing is the immune modulation. So when you have immune dysfunction that we talked about, the feedback is going to cause mitochondrial dysfunction.

So one of the first things you want to do is give immune modulatory peptides. So and those like for instance the most common, the most used peptide and when I give lectures and I have a hundred studies on like BPC 157 and it takes everything from they people like as a gut hormone but friends they gave this was a rat study which you can do on attorneys too but that.

About politicians we do that. But yeah like I'll take that. Okay, that's actually better. I like that one. And they had inflammatory bowel disease and also MMS and it work for both, you know, and the nice thing with BBC 157, it's equal potent if you don't have the salt and there's a stable BPC, which is really unstable BPC and this is getting too technical, but when they make it a cell, the body will actually excel.

It's called acetylation and Amadi, and it will cap the ends of these peptides to protect them from the enzymes in the stomach. But company that came out with salt because the patent ran out on the a, c deleted or AHS or C deleted and mandated, which that's how it's naturally is and it decreases the polarity of it.

So not only that they were resistant to the enzymatic break down, they absorb better, they're much more potent.

They basically they have much higher affinity for the receptors.

So it's much better. But they kind of named it stable, but it should stay stable. BPC But anyways, and that's where we tell people to start, you know, if you're going to start with something, so at BPC you can't go wrong.

It works for kind of everything, whether you have autoimmunity, brain dysfunction, joint degeneration, neuropathy, you know, stomach problems, really.

It promotes healing and reduces inflammation. Mm hmm. Okay. And then. The other. Yeah. So if you look at the other and we become kind of immune modulatory clinically find when you fix someone's immune system, so many things get better.

And if you want to look at basically if you check someone's immune system and how we do that, we find a lot of people do cytokine testing, but it can really throw you in a wrong direction because let's say you have low t one like we talked about which most sick people do, elderly or age people stress people that the body will secrete these cytokines trying to raise th1.

But if you do that test, say oh or teach one dominant. No, you're the opposite. The body's trying to is trying to fix it. And and oftentimes the cytokines they work you can test them in research but they're very labial and they're very prone to just, you know, degradation.

So like a lot of times they come out and they're all zero, you know, so that that can lead you straight. But if you want to look at that th1, what's the best marker for th1 is natural killer cell activity, which a particular cell that will monitor your body for cancer, for intracellular infections.

It will also signal other cells. Hey, let's mean cells. So let's get going now first with chronic fatigue syndrome patients, they found, you know, about 80% of those patients had low natural killer cell function and about 25% at Logan Patrick, a cell number.

So a lot of people have the natural killer cells there, but they're not doing anything. They're just exhausted. They're infected. And so that's a marker for th1.

That's a clinical marker. And the problem is that LabCorp doesn't do it. QUEST As it but you have to have special processing and they screw it up probably half the time.

So I ended it multiple times, and we just actually talked to LabCorp to try to develop it, even though we asked them ten years ago and they said they would, but they didn't.

And then for the t two side, you want to look at C for A, which is I think it's a breakdown of complement, the one we're finding as human transforming growth factor beta.

And this will go up with inflammation, but it causes so many problems. It causes immune activation of coagulation, it causes fibrosis. So you get, you know, NASH You know, fatty liver, kidney disease, atherosclerosis, congestive heart failure and bringing that down, well, all of a sudden, again, start fixing a lot of things, including improving mitochondrial function and things that will actually directly suppress that.

The human factor beta is a barrier called Valen tbw for frag so thymosin beta four so all these thymic peptides so as you age you're famous here in your breastbone envelope.

So it just starts basically shrinking. So it's about age 9 to 12 and it starts going down and then it has its lowest point when you're around between 35 and 45.

And if you notice, that's when you start getting all these diseases of aging. And so they have all these like things called the trim trial where they give like growth hormone and things to rejuvenate the famous.

But it's just like just give thymic peptides like thymus and Alpha One is approved in 37 other countries for cancer, for chronic infections, totally safe.

But a study came out in early college showing the safe and effective for COVID. So the U. S. banned it even now. So if it works, if it works, we get rid of it, right?

Yeah. Because then they couldn't do the emergency, you know, act with the with the vaccines. So what we did, we took the Amazon Alpha one and did metabolomics proteomics and a number of others to and said, Hey, what peptide is going to replace this?

That will have the same effect from a bunch of different biomarkers. And it turned out to be by a margin, which is about 100 times more potent than formula, in which another thymic peptide and villain, which is a bio regulator and it outperformed the famous novel and it's orally available.

And yeah, so they ended up with the combination that it will lower mast cells that modulates the mean system, increase your ability to fight infections or reduces our immunity.

I mean, there's just so many things that that these do. And then another one that will lower it is the CFPB, which is probably the most anti inflammatory substance I've seen.

So like mass cell anemia in the mass cell mastermind group. And they're all stuck on, you know, trying to suppress the mast cells. But the mast cells are normal.

It's not an abnormal mast cell. It's upstream. It's what the heck is stimulating it? So you modulate the immune system and so you stop stimulating those, those mast cells.

This is fascinating. Because it. It can't I just want to interject here, because this whole mass cell problem and this is huge. I mean, I can't tell you how many patients I talked to.

They're like, I got mass selling en masse. So I'm not like, I can't do anything because a mass cell. And and so what you're saying is there's a different strategy here to solving this.

Yeah, well, we don't even we we kind of say, okay, just hold on. Oh, they're usually en masse cell inhibitors, you know, antihistamines and Singulair.

And but if you fix the upstream and stop stimulating them because it's this immune dysfunction that it goes away and and also another big stimulator is if you look at these sick patients, they'll have low cortisol, but a high active there's a resistance.

You know, they have a high AC, they have a high cortical drop in releasing hormone produced in the hypothalamus, which is a very potent stimulator of mast cells.

So if they have a high activate, you want to lower that and a little cortisol works, but also fixing the immune system.

## Mitochondrial Peptides and Energy Support

I did a review article of axis dysfunction and Chronic Fatigue Syndrome and found that the overwhelming majority of patients with chronic fatigue syndrome and fibromyalgia had adrenal dysfunction.

But it's not picked up by standard blood tests. And even, you know, the HGH stimulation tests, which endocrinologists will insist on, it's ridiculous.

It's like hitting someone with the head in the in the head with a hammer and saying, Oh, do you feel that? Oh, your pain's in tact, you know. So if you see someone with high HGH, especially in they have often low cortisol, then you have a little cortisol.

But then when you fix the immune system, you'll find that if you can reduce that. CRH But like people with pot interstitials as it is in all these mass cell conditioned gut issues, when you fix those other things that goes away and it's a horrible illness and they're just getting pounded on by the same stuff and histamines and you know, and they try ten different types and histamines and and, you know, look upstream and fix the immune system so amazing.

Well can I could talk to you all day on peptides. It's such a topic that fascinates me. I think what we've established here in this talk is that, you know, peptides are a solution that people may not have thought about in terms of supporting mitochondria health and supporting all other chronic inflammatory health problems.

And so so I would I would encourage our viewers to really explore peptides. Now you've got you've got help available for practitioners, help available for consumers.

Like I mentioned earlier, your products are available without a prescription. So can you tell us how practitioners can get support from you? I know you have a you're launched. Yeah.

And, and peptides. Is we should talk for a minute about mitochondrial peptides. Yeah. Yeah. So get to those. Yeah. So mitochondrial peptides stimulate mitochondria and so there's basically two peptides that are made in the mitochondria.

Okay. That will, will stimulate. One is moxie and it's probably the easiest one to get and it will directly stimulate mitochondrial function. And then the other one is human in which is been around, it tends to be expensive and hard to find.

But the reason it was named human and because they gave it to Alzheimer's patients and they became human again. Yeah. And so, I mean, these things are just they work so well, if you could, you know, directly stimulate mass cells, mitochondria, you're going to make everything much better.

Weight loss, you know, immune function, autoimmunity, cognitive function, depression. Again, all the neurodegenerative diseases, ALS, we we have ALS patients come in and wheelchairs and they're jogging now.

That and. They go back to the drug just. Now at these the tide tides people can get on their own or is this a prescription peptide. These these will be injectable injectables.

Yeah they're too long to take orally but and then there's also the other peptide again the Myanmar doctor we talked about BPC what Betty seven lives in a for one which hard to get to before Frank AP then there's you can get over or or just a supplement like my tokyu PCA Coke CO ten but they're not that pope there's a this is a synthetic peptide called SS 31 and it is 1000 to 5000 times more potent than than like P Q Q CoQ10 because it, it selectively gets into the mitochondria and so there's it's probably and there's probably 15 studies on this on in phase two, phase three.

So it will be a drug at some point. And then there's one called five amino one M. Q Which, you know, physiologically it tends to block this pathway of NAD nad will stimulate mitochondria and it makes more might nad available to the mitochondria.

So it stimulates them. And for instance, we had one of our, uh, doctor have a, her daughter just, you know, straight-A college student and doing everything but was so anxious OCD, she kept pulling out all her eyebrows and was just having a tough time.

And we put her in five minute, 1 a.m.. Q And within four days she stopped. And then we gave her some other mitochondrial peptides, and then it stopped working.

So then we gave her SS 31 I think we over oxidized her mitochondrial, we stimulated it so we what SS 31 does it protects the mitochondria and and basically it works like an intracellular antioxidant.

So it's really interesting. We see just incredible things like that. Other things like Cerebral Said know that brain

peptides will improve mitochondria function now t three and you don't have the National Academy of Hypothyroidism.

And I've done a number review article showing the way we diagnose and treat thyroid. This country is wrong and people go by the test which which doesn't work unless you're super healthy, not exposed any toxins, stress, if you're not all there, all those things, but that will directly stimulate mitochondria, then the T to which it will break down to and is in some of the or seeing thyroid but they're trying to ban that will actually increase the will cause mitochondria to multiply.

So those are a couple of the delta sleep inducing peptide which is used for sleep. It's not a sleep med, but it what it does, it lowers the inflammation in the sleep center.

And so all these people with like brain on fire, with brain inflammation, it lowers that six couple of weeks to work and it will actually be part of its action is increasing mitochondrial function and a little purl of someone has poor sleep.

They don't get deep sleep, which is anyone with brain inflammation, traumatic brain injury, chronic infections, autoimmunity and all these vets also had it antibodies to their brain like crazy.

And and so it's nuts but you add delta sleep inducing peptide at battalion, which is a pineal peptide or pineal gland, which is another one. And that will be the combination we have up next. But They're pineal peptides, but they actually will balance out your hormones.

They actually increase telomere telomerase, so increases telomeres so you get younger. That study, especially when you add it to a famous Zen like TB for Frag or or babies, another one.

And they give it to adults 65 years and older who had a significant heart disease.

## Practical Use, Resources, and Closing

They had a policy, a placebo group. They followed it for 15 years. And the ones that basically got the treat but only got six treatments to over that time, six, six series of treatments.

They had like a 2.5 fold less mortality, less morbidity, their cardiovascular function increased while the other placebo group decreased. So it's these are kind of the you know, if you're going to take one thing, it just reduces your physiologic age.

And they gave another 1 to 2 rats that were menopausal and they gave a battalion to them. 80% started menstruating and 25% had normal light bursts, you know, so super anti-aging and what we use it for fertility along with just kept it and some other things but anti three.

So I see I see why you're building a yearlong program on this here. Yeah there's a lot of information so this is this is incredible. I know that you've given our viewers hope, the ones who are watching, trying to solve their energy problems and chronic inflammatory conditions and diseases, I know you've piqued the interest of practitioners who want to know more about how to utilize peptides.

I also am really happy to hear that people can go get intravenous peptides to help with some of these more advanced inflammatory diseases. And intravenous or subcu.

And now we have a cheat sheet that will tell you what they all do. And also, if you're going to start, here's a protocol like start with a. So where. This one.

Where can our viewers get in touch with you? How can they find you? I would say email the site. Go to what's the site. Integrated peptides dot com. Great.

And there is a place where they can go in an email from their formation. And then we'll be doing the training program and we're going to have a health coach training program too and tell my better medicine dotcom.

So it's the peptide and stuff that works mastermind but. Drugs and what works, peptides and stuff that works. Yeah. Because there's stuff you got it, you know they cause they, they're synergistic with just about every med ever another peptide like, like we'll start people on ten peptides.

I know I've sent you messages before like hey can, can I, is it okay if I combine this, can I use this and this. And every you come back. Yeah, yeah. Do it. Yeah.

They, they can't find a, you know, a negative interaction. It will actually you look at the studies on BPC, it will prevent side effects of medications.

For instance, if you overdose someone on amphetamines, you give them BPC, they don't have the symptoms or withdrawal or prevent withdrawal prevents a hangover.

Yeah. But you know, so all these things and also protects you against mycotoxins in mouths. So it it normalizes EMFs will stimulate or basically open up the calcium channels.

People get palpitations and which which peptides should which peptide? P. S. 137 Oh, here we go. Back to BBC 157 is the one you're talking about. And I'm also yeah.

And also the TV for Frag and the Villain and they all do it too with a different mechanism. So and that's the thing. You can't go wrong with them. It's just yeah.

Was the subtlety of using you know what first and. Thank you so much for your for your information today and for your for your support of this project.

And we'll make sure that everybody knows how to get a hold of you. And I'm going to encourage everyone who just listen to this to go learn more about peptides from again.

Great, great. Thank you so much. You're doing a great job again getting the word out and mitochondria people go, what the heck is that? What the heck are peptides?

What the heck are mitochondria? All of it. Yeah. It's a step. That's why we're here. Yeah, it is. It is. Thanks so much, Ken. You have a good one. But great. Thank you.

Bye bye.