Introduction to Mitochondria

I love to use analogies, and this is the analogy I use with my patients, in explaining what mitochondria are. And I've worked with some athletes, who I bring up the word mitochondria and they're like my own. What?

And, you know, they're training and they should know that anyone. Yeah. So, essentially, mitochondria are the powerhouse of the cell. We know that from eighth grade biology, but they also have other functions.

So they help to protect the cell two from oxidative damage. And the best analogy is we live in LA. We're both in LA right now. And in LA we have a power plant that fuels this entire city to work every single day.

And it's immediately in this moment, the power plant discontinues working. We couldn't plug in our computers, our Wi-Fi box. We can't run our dishwasher.

You know, everything stops in the city of L. A. Nothing has power. And so in a cell, we think about LA is the cell, the power plant is the mitochondria.

Really? We need to make sure that we're continually producing that energy, for the cell to function. And welcome to Doctor Talks, the podcast, where every episode leads to a healthier you.

Join us as we navigate the world of optimal health, uncovering groundbreaking strategies to conquer chronic disease. In each episode, we'll bring you the latest insights from leading health experts, medical innovators, and wellness warriors.

If you're seeking to transform your health journey, or if you're looking for answers to burning questions, you've come to the right place. Get ready to unlock the secrets of lifelong health and vitality.

This is Doctor Talks real talk from real doctors. Only issues that matter to you most. Hi, this doctor can't hold talk with another episode today I'll be interviewing doctor Amber and she'll be talking about Novel Peptide therapy options to boost mitochondrial health.

For brain power, body composition, and better recovery. Doctor Amber is a licensed natural Catholic doctor, Metro MD, Institute of Regenerative Medicine in Los Angeles.

She trained in regenerative medicine, detoxification protocol is hormone testing and treatment. Biological hormones. Anti-aging peptide therapy. Ivy nutrient therapy.

She's a private practice in Redondo Beach, where she specializes in peptide, therapy and bioidentical hormones. She's worked with a lot of entrepreneurs and athletes looking for performance optimization and has really used peptide therapy, to augment her practice.

And also, she treats chronic infections such as Epstein-Barr, RA, Candida, gut infections. She's used peptide protocols for weight loss, body composition, cognitive performance, aids, FD, autoimmune disorders and many more.

She's a physician, member of the International Peptide Society and has a peptide certification at the American Academy of Anti-Aging medicine. She graduated from Mystere University in San Diego, she's passionate about blending natural medicine and modern technology to find therapies that truly help patients get answers and outcomes for their health concerns and diagnosis.

She's passionate educating patients on peptide therapy and works with patients. She also has an office in Hollywood. And she does a lot of, telemedicine as well, which is really big now with the Covid issue.

So I'd like to welcome you, doctor. Amber, thank you so much for taking the time and being with us. So doing so, so great. Tell me just a little background.

How did you get into, peptides. Yeah. So I, I learned about peptides, actually, the book that I was reading, it's called the Testosterone Bible by J. Campbell, and also through some podcasts, I, I actually didn't hear about it through, practitioners.

It's you know, not as well known. A lot of doctors are really just hearing about peptides. And so I heard about it. I started using some of the, the growth hormone analog peptides and CJC and I from Maryland on my cells noticed profound changes.

You know, dug into the research, decided I need to get trained in this. This is really powerful medicine for patients. I was already doing a lot in the bioidentical world.

Women, hormones, a lot of that testing bioidentical for men.

Doctor Amberu2019s Background and Peptide Therapy Journey

And then, you know, found that peptides really just compliment that so beautifully. I think that they're they're really synergistic. And you said you tried the, growth hormone secreted Gog, so, you know, growth hormone gets a little it was kind of a big thing taking.

But the FDA, it's the only drug you can't give off label. And which is really work. No one's died of, you know. Yeah. Growth hormone overdose. But so these peptides you will boost your own growth hormone.

And who do you use that on? What what do you find with, with those which which ones in particular? There are many combinations of them. But, you find those helpful for what?

What type of patient. Yeah. So I work with a, I work with a lot of women. Big complaints, sleep issues. Can't sleep. And then, you know, as a follow up to that, can't lose weight.

I have a trainer that I work with in Hollywood who sends me women who are really, you know, their diet is clean. They're training five, six days a week, and they're just not able to drop the weight.

So we're doing all of that. And so adding in something after we've kind of addressed pillar one, what's going on with the hormones, balancing that and then adding in something like CJC and IPA Maryland.

So, there's two growth hormone analog peptides can catapult their results as far as fat loss goes. And not only that, it will give you that deep restorative sleep, which we know will help regulate hormones.

Just by that alone. Yeah. So basically it's instead of giving the growth hormone, you're stimulating the hypothalamus pituitary to produce. So you're basically anti-aging that know that, that master gland and it tends to do a lot of other things and then also improve sleep.

Do you use, at Battalion as well or delta sleep inducing peptide. I have use, yeah, I have use at Battalion. And the one thing that I love about that one is it's the, it's the one molecule that I know that increases natural synthesis of melatonin substantially over time.

And we know that that's protective for immunity. And so many things think about Covid who's susceptible of Covid, those low and melatonin, those, people who are older and they're low in melatonin.

So I do love that one. Dr. Sippy I have used on occasion for I have a couple clients who fly internationally for work.

And so they're they get these flip circadian rhythms all the time, and they really need to just recalibrate that.

So I've seen that work really well there. But the honestly adding in sometimes we'll just start on from rollin. But I really find that the combination of CJC and I from Rollin is the most effective.

The way that I like to explain that to patients, because peptides are such a foreign, you know, concept. When we're explaining it to somebody. I never heard about it before.

I like to talk about the CJC as almost like the, the production. So the producing of the growth hormone and that signal in the pituitary is, hey, let's produce more.

And then I like to think about that hyper Maryland is more of like a delivery truck. So let's get it out to the body. And their work very closely. And, and we think about how Amazon works.

They have their manufacturing class, the delivery trucks and and that's very good at explaining it. Yeah I'm sure patients appreciate that because it's just like the form.

But yeah you know so one's a growth hormone secreting peptide. One's a growth hormone. And they work very well together. I have found that, you know what I'm sure you found if people don't sleep they don't lose weight.

Yeah. And that combination of well you treat a lot of your chronic fatigue syndrome, fibromyalgia, chronic Lyme and they just don't sleep. But that combination of delta sleep inducing peptide, epithelium and the, the growth hormone secreted dogs, all of a sudden they get some deep sleep, which is key.

Yeah. That's that's really where the magic happens. Because when you improve the sleep, you improve autophagy, you improve brain function, you improve everything.

And we also know you have growth hormone receptors literally all over the body, in the brain, in the gut, in the muscles. And so that those two peptides, when somebody is not feeling recover, restored, not waking up rested, not getting that deep sleep, hormone regulation is off.

Just adding in those two alone, I find, just produces tremendous effect. Nice, nice and nice things that how the peptides are very synergistic is the BPC. 157 well, basically increased growth on receptors on all the cells in the body.

So you have to consider, the synergistic effect. Yeah. So, so what got you into mitochondria? Can you talk a little bit about the importance of mitochondria.

What are mitochondria? I'm sure people have heard about it. But what really are they. Yes. So I love to use analogies. And this is the analogy I use with my patients, in explaining what mitochondria are.

And I've worked with some athletes, who I bring up the word mitochondria and they're like my oh, what? And you know, they're training and they should know that anyone.

Yeah. So, essentially mitochondria are the powerhouse of the cell. We know that from eighth grade biology, but they also have other functions. So they help to protect the cell to from oxidative damage.

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Really? We need to make sure that we're continually producing that energy. For the cell to function. And then people think. I think of, like, energy. You think of exercise, but it's every function.

And you think especially the tissues that need the membrane. And like, you know, immune system, and even cells need energy to die. And you talk about it as half a haffajee when they don't have the energy, they can't go through what's called apoptosis.

So they hang around. And that's when you get cancer. Yeah. So not enough energy. You don't actually get rid of the old cells and they turn into cancer.

So it's pretty amazing. It's it's counterintuitive here, but it affects really, everything. Yeah. It's so interesting. There's there's a lot of medical literature in a forum talks about this.

And you and I are both well versed on how, mitochondrial dysfunction is a driving force behind so many of these chronic illnesses now, and it's not really being addressed or talked about.

It's so interesting that, you know, we know things that are mitochondrial, toxic. So NSAIDs, pain relieving medications from most pharmaceutical drugs are, are toxic to mitochondria as well as alcohol.

And so you think about those three things. Most people have come into contact with those in the last 30 days in America. So not only, as we age, your mitochondrial function decreases, but then we come into contact with these substances.

We need even more support to overcome that. And I totally agree. And there's, you know, so many things we just can't get away from BPA. And we'll check people's basal metabolic rate.

So how many calories they burn per day when they come in. And, you know, you get the woman who can't lose weight and they're people. Oh, yeah. You're just eating Ding Dongs in the closet.

You know, they're exercising. And we find that they're about 25% lower metabolism than they should be for their weight. And, you know, they're like, see, I told you, you know, it's like, and it's mitochondria dysfunction sometimes, you know, the thyroid boosts that.

But there's other things that also affect the thyroid. Affect the mitochondria. But yeah. And it's, you know, the theory of aging. It's all fixed. The mitochondria, you fix such a wide array of, of issues.

You do. Yeah. It's it's really fascinating to looking at the role of hormones. I mean cortisol part of the metabolism of cortisol and creating cortisol.

It happens in the mitochondria. And you think about the role of cortisol and weight gain and l-carnitine being that amazing molecule that shuttles those fatty acids that we burn into the mitochondria to be burned.

So fat. When you look at fat loss, body composition goals, you have to look at mitochondria in my mind. Yeah. And I, I agree. And you look at diabetics we find and also all the studies you look at the conditions with mitochondria dysfunction neurodegenerative diseases.

Diabetics, they all have mitochondrial dysfunction autoimmune anyone with inflammation and everyone's inflamed. And then you start talking about the gut.

You know, the whole gut brain axis. Like, I mean, everyone's gut is so messed up. And I even people who are consider themselves healthy, we find their this gut is so leaky and causing that inflammation mitochondria dysfunction and they just don't feel great.

I think everyone I know as if they're yeah, like you go to a party and talk for a while, they feel terrible. They have a, you know, family member or friend.

They're just oh my God. And my doctor says I'm fine and put them on statins. But you find you fix the mitochondria, cholesterol goes down. You know, their risk for cardiovascular disease much, much better, prevention than giving them a statin.

You know, they don't have a statin. Fixing the actually statins, they decrease mitochondrial function. We CoQ10, which protects them. Yeah. Yeah. And and yeah, it's kind of a classic.

The people get muscle aches and brain fog, memory loss, mitochondrial dysfunction. And the doctor goes, oh, but your cholesterol is lower. Why not fix the problem? Fix a line from.

Yeah, awesome. So what what types of things do you do? You do? Well, it's your first step. You come in, and you treat a lot of women and maybe you can't lose weight, not feeling great, not sleeping.

And how do you approach that patient. Yeah. So generally we're running a hormone panel, which is going to be a comprehensive panel where we're looking at the the cortisol levels.

We're looking at melatonin levels. We're looking at what are their sex hormones. And then checking thyroid because that's a huge player for so many women and weight loss issues.

So and then levels they're told their normal. Right. Right. You find that they're not. Yeah. And this and they could potentially have completely normal levels and lots of symptoms too.

So that's some clinical picture. So yeah, really I, you know, run a hormone panel, you know, assess what's going on depending on the situation. And a lot of women are on bioidentical or they'll be on birth control, basically another pharmaceutical medication for anxiety or depression.

And then, you know, have alcohol consumption, potentially a pain reliever, you know, BPA and I look at that as men. Their liver is just suffering with all of these things that are taxing those pathways.

And so a lot of what I do is liver support, detoxing hormones. And it can show up on the skin, really just supporting them there. So that's kind of pillar one.

And then looking at, since I'm trained in peptides and I know how to use them in an effective way for women, we can add in other, solutions to help their mitochondria.

Growth Hormone Peptides for Sleep and Fat Loss

And that could be anything from, you know, a supplement that boosts mitochondrial function. So adding in things like peak resveratrol, CoQ10, a lot of those really important, you know, protective factors.

Or we could talk about peptides that we use for, for mitochondrial function too, like Motsi is an amazing one for or or let's go back for a second. You mentioned toxins.

So I just want to mention one toxin that people don't realize. Tylenol is so toxic. And there's a bunch of studies showing it may be the number one cause of autism.

Wow. Yeah. And it's just toxic to mitochondria. And, it's it's a major issue. And I talked about other things for mitochondrial function, like, it's like and antioxidants.

Why how do antioxidants help mitochondrial function. Yeah. So the mitochondria, we have DNA in the mitochondria. So we have DNA in the nucleus and no DNA in the mitochondria.

And essentially, the mitochondria produces energy. Yes, but they get turn into the mitochondria, can turn into like a battleship where it's trying to protect the cell.

And if we have overwhelming amounts in a, say, a Tylenol overdose, that that DNA will be damaged. And that's a problem because then the mitochondria are not working appropriately.

It's like the whole city of LA will shut down, from the prior analogy. And so protecting against oxidative stress and damage in the mitochondria will preserve the ATP production.

It'll keep everything flowing. And when we have an overwhelming amount of reactive oxygen species, that's a problem that'll damage our mitochondria. That puts us in a really dire situation.

Yeah. And so the mitochondria, yeah, they make the energy and they they cause oxidative stress. So they make the energy. And so when you have oxidative stress otherwise just kind of stops it, you know, it stops the production.

And and I think, you know, the major thing finding on aging and all these illnesses and everyone's just incredibly inflamed. Right. And probably yeah, the number one suppressor, mitochondrial function is, you know, there's toxins, but a lot of things.

But inflammation is just seems to be a key. And have you found this? It seems to me like everyone just has so much inflammation. And and so really, everyone has mitochondrial dysfunction.

Yeah. You know what? I really when I think about the whole situation, about the research and the literature and we know all these diseases are associated with mitochondrial dysfunction from Alzheimer's, Parkinson's, autism, diabetes, you know, all of these things.

It's really the future of where medicine is going to go, is is providing us, the people who are going to farewell are those who have the tools on board to protect these biological systems, like mitochondria.

There's some things we cannot avoid. We can't avoid all plastics. We can't avoid all toxins. We can avoid some of them, you know, on purpose based. But it's going to really about bring things on board that helps support the body.

I mean, we're going to say are way better, preventing cancer, preventing these chronic degenerative issues. And this is going to become, I think, in the next ten, 20 years, pivotal.

Like this is pivotal. If you have access to these things and know how to use them. I totally agree. And it's interesting. It's like you talk to most doctors or you learn, you know, biochemistry and and score, then you forget it.

Now we're having to relearn it because we actually, utilize it. And, and I really agree because people we're keeping people alive. But are they living better?

You know, there are nursing homes and these chronic Norwegian diseases. Now, if you go to someone like yourself and they go and they get their mitochondrial, mitochondria tuned up, they're likely going to prevent those diseases ten years, 20 years, 30 years down the road and have a great life instead of being in the nursing home and fragile and having, you know, neurodegenerative diseases and, osteoporosis and cardio vascular disease and dementia, and you can really prevent that.

And we're, we're finding and it's interesting, you know, how standard medicine as well. Let's wait till it gets bad enough and then we'll give you a med and we'll, we'll keep you alive and try to start, you know, we get so it doesn't get worse but prevented beforehand.

It's it's just life changing literally events. Yeah. I can turn around your entire. Yeah destiny future of your life. And what's more important than your your health and well-being, if you think about it, like with Covid, that's really brought that to the surface for many people is you can lose your job, your car, your house.

But if your health is in a dire situation, I mean, that is really the most important thing is you, your well-being. Yeah. And and I had myself were, you know, in chronic Lyme was so sick, I, I was like, I would give up, you know,

anything to feel because you can't use anything.

And we have some other super rich and, but they're so sick, like, what's the use. You can't use your private plane, you know, it's like and it's so your, your health is, is key and we, we forget that.

And I think until you lose it, you just take it for granted. Yeah. Yeah. So we could talk about, one of this really powerful molecules that we're using for mitochondria, which is nad.

Yeah. And, there's all different forms of NAD that NAD gives, but essentially what is NAD we could talk about that. Yeah. So the nicotinamide dinucleotide.

So yeah. Tell us, tell us about that. And, and how does that work with the mitochondria. Yeah. So nad is that really important. Coenzyme. Right. And nicotinamide adenine dinucleotide.

But essentially it, it powers the the cell to continue producing energy. And it's involved in a redox reaction. But I love it. So there's different forms of NAD that we can give to people.

We can give NAD lives. We can give nad intranasal, we can give nad and a patch form transdermal. We have sublingual forms. We have precursors like na and NMN in which we can give we can also talk about five amino one, two, which is like dear to my heart peptide.

Yeah. We'll, we'll, we'll talk about that. But yeah. So with the NAD and it's, really I think taking energy so this doesn't absorb very well I don't think sublingual even some of the precursor, I think the type of, ribonuclease I probably the best the precursor.

But you're doing going right to the source and finding the IVs, doing IV nad getting the best results. You tell us about some of those things you've seen and what you use that for.

Definitely. So I like to use of course, the the bioavailability of an IV is just, compared to none. It just, it goes straight into the cell in the bloodstream.

And so what NAD does is it helps the brain cells to age. Well. And so we know that by introducing NAD to those cells that we're it's like giving the cell a spark plug to recreate energy.

If they were having, you know, kind of sluggish mitochondrial function, it'll, it'll actually even upregulate PGC one alpha, which is that molecule that we talk a lot about going back to biochemistry and that protects against oxidative stress in, in the cell.

Mitochondria, Energy, and Chronic Disease

So it's so valuable. We're using NAD EVs for addiction. There's, you know, we're you can go through a whole week of NAD IVs back to back. We use them for Alzheimer's, Parkinson's, any type of neurodegenerative condition.

Athletes can benefit because we know that, muscle tissue has just way more mitochondria because it's powering, needs that energy to fire. So I've seen athletes use it.

I really like the back to back IVs for someone with a more serious condition. So when we're doing like 4 or 5 days in a row, somebody advanced stage Parkinson's, Alzheimer's, somebody who's, you know, really, trying to avert an addiction to alcohol or, or something.

And I like to use the NAD gives more. Yeah, yeah. Oh, no, I was saying it's just it's interesting when I give lectures on peptides, like I almost especially to the public.

And you say all the things they work for, it's, it's a little embarrassing because it sounds like snake oil, like, well, how can it work for addictions and Parkinson's and for athletics?

Can you, can you talk about that a little bit? Why would it work for addictions. Yeah. So it's balancing. It's balancing those brain chemicals. And it's working through.

So if you think about, you know, why is autism related to, this poor mitochondrial function. Right. It's it's an issue with those nerve cells. We know that nerve cells also have way more Andrea than the typical cells.

I think the comparison is like, normal cells in the body has about 1000 to 2500 mitochondria, for a nerve cell has about 10,000 plus cytokines. Yeah. So way more and so if we have any sort of issue with mitochondria, it's going to show up in two places.

First, the brain and the muscles, brain fog, fatigue, muscle weakness, lethargy no motivation to work out. Right. So and in the case of addiction, any sort of, you know, think about like mood disorders and do you think about Alzheimer's and Parkinson's? Why is an impact in the brain?

Well, we get a lot of nerve tissue that's playing a role in that conduction. And it can absolutely impact, those conditions. So yeah, I haven't use it specifically for addiction in my practice.

I've used it more for a neuroprotective, for some of my Alzheimer's Parkinson's patients. But there's a clinic in San Diego who does phenomenal work, on addiction within NAD.

It's amazing. Yeah, I, I think it it works great and prevents like it reduces the withdrawals and that. But yeah, if you're going to do addiction you gotta like, do addiction.

Totally different clients all. But it's it is amazing. It it works for that. But yeah it's interesting I you know we'll do big panels like sounds like like yourself and look at the immune system and we find that like autistic kids, their panel, their immune system, all the dysfunctions look just like a chronic Lyme patient, like just like a chronic fatigue syndrome patient.

And that ultimate, you know, everything's a vicious cycle, especially with mitochondrial dysfunction, that everything starts breaking down, which causes nothing to break down.

And but you get at that commonality, you fix the mitochondria, you're going to fix a lot of things. Yeah. What what what has been your some of your biggest success stories.

Oh, so I had a fibromyalgia patient who, I actually was using LDN with her because she also had depression. And so that's low dose naltrexone. It's, opiate blocker at very low dose, and it modulates the immune system.

So it, so all these chronic illnesses also have immune dysfunction where one immunity is too low to too high. But that causes a lot of inflammation, which then cosmetically dysfunction.

And then once again we're back to a lot of contract. Right. So mitochondria yeah. So we we use some LDN. That's a great simplified explanation of what it does.

But it helps increase those endorphins in the brain through adaptation. So we block the receptors transiently at night and then ends up improving mood helping with pain all these things.

So the LDN I use nad with her, she had market improvement in pain. Went from probably 8 or 9 out of pain to 2 or 3 within a matter of four weeks, which is amazing.

Well, thank you for her life. How much you changed her life. Yes. Yeah, that was a powerful case. She was told. I'm sure, you know, we we actually published our results, and this was 12, 15 years ago that people saw, on average, 7.2 physicians without any benefit.

And then they came in by the fourth visit, 80% got safely better. But, you know, they were told that, oh, it's all in your head. And then they start believing it and, you know, like, oh my, am I just lazy?

And then their friends abandoned them and they're all, you know, they look fine, just exercise and eat better. And it's it's a terrible loss because doctors, you know, in general, if they don't know how to treat it doesn't exist.

And it's patients fault. So I'm sure when they come to you and you're like, hey, I this is a real illness. And I'll show you the dysfunctions and I can treat it.

Just right there, I think is very powerful. Yeah. There's so much power in explaining to someone that the symptoms and what they've been going through is really a meta bullet, cause when same with weight loss, it's a metabolic issue.

It's a insulin resistance issue which is driven by mitochondria and other mechanisms. But the insulin piece is why things like Mots C, which is mitochondrial peptides, that it's so amazing for, insulin sensitivity.

And they actually found that children who had obesity had really low levels, like a third of the levels of mozzie that they should have. And mozzie is a peptide that helps, with insulin sensitivity.

And, you know, shuttling the glucose and the fatty acids into the cell through the glute for receptors to be burned for energy. And they were low in that.

So we know that, you know, mitochondria plays a huge role in the obesity issue. The the chronic disease picture of insulin resistance in America. And we're not talking about that.

And we need to be offering solutions and and addressing that. And so I think it's just pivotal to finally bring the mitochondria to the spotlight and treat that.

Yeah. So you're kind of breaking the cycle because once they kind of get the insulin resistance, then they actually get increase inflammation and suppress the mitochondria.

Yeah they're actually suppresses thyroid function. Metabolism drops. So now they get more weight gain and more insulin resistance. So that's why it's so difficult for people.

And so resistance and diabetes lose weight because they if they also, you know, go on a diet, it's basically the thyroid sense is that. And then basically gets lower.

Tabassum dropped. So it's yeah you have to intervene and fix their broken mitochondria because they're not burning any calories, even though people think all they're doing is just eating all day.

But really it's that inflammation and mitochondrial dysfunction. And you fix that and they're like a new person. And I'm like, oh my gosh, I'm like a regular person.

You know, they see their friends that are skinny just eating crazy. And and it's, you know what? Percent of the population is obese and it's just it's going up.

I think the only country that's more obese. And us, I think a Saudi Arabia where or they can hide under the big, you know. Yeah. But it's, it's, it's bad.

And, what do you think the whole obesity crisis, is from you've kind of mentioned a number of things, but what's your your thought. Yeah. You know, it's interesting because in America, we're one of the most industrialized nations in the world.

I mean, we've created more novel companies, business ideas. We're one of the most creative nations. We've done so much in terms of innovation. We got Microsoft and Google and a lot of these things have started in America.

And so we've created this, and I worked with Wall Street and I work with, you know, entrepreneurs and people who are building their businesses and it's it's a burnout culture.

And so we're burning ourselves into the ground working to accomplish something. I know I, I med school is exhibit A of that. So, I think it's really about not to say that, you know, I'm so ambitious and all for hard work, but we need to help the body support itself through that.

And that's looking at mitochondria. What's happening with chronic stress and, sleep deprivation. We're not able to do that. Autophagy in the brain like we need to do.

And that plays a role in setting you up for something like Alzheimer's and Parkinson's, down the road. And so what are the things? It's not it's not telling people to, you know, not be ambitious, but it's like, what what are the things that we can bring on board for you to help you, support, support you.

And I don't think that conversation is happening enough with really high level go getters or people who have really high stress jobs in LA, you know, and who's using NAD to support themselves when they're tired.

I know I am, but a lot of people don't know about that. So, yeah, I think it's I think it's a cortisol issue. Sleep deprivation, chronic stress, cortisol.

You know, we know that that causes abdominal adiposity and that visceral fat, which is poses risk. So I think it's a lot of things mitochondria we talked about.

So I think stress plays plays a big part. And and it's interesting with the cortisol it when your body's like tries to make cortisol it's a great corporate job.

And releasing hormone would actually really is a huge stimulator of mast cells. And so stress equals inflammation. Inflammation equals mitochondrial dysfunction.

And yeah and so we're we're back to your to your core thinking everything comes back to mitochondria.

NAD and Cellular Energy Support

Yeah. And then the one thing that you mentioned earlier that was really valuable is how immune dysfunction plays into that. So the effects between cortisol and immune regulation, there's a very tight link right there.

And so chronic stress you know, why do so many women after the age of 30 have autoimmune conditions? Well, the thing is Glenn and volutes, we're not producing as them as pets as we get set up for a perfect storm for autoimmunity.

Right. So yeah. And it's interesting, you look at, you know, I don't want to bash some doctor, you know, but like in lacrosse, they don't look at the immune system and they don't think that they have Hashimoto's or other auto immune.

I mean, there's oh, they'll just treat the thyroid. But you find, you know, that you look at their immune system and really you can look at the immune system and tell how healthy a person is and what dysfunctional immune system they are going to get.

All these diseases of aging. Yeah. And after when the, you know, the famous, in volutes and when we're 45, it's basically a fraction about, you know, 5% of what it was.

And so I mean systems off, which then again causes the, the all that oxidative stress makes you much more prone to autoimmune worse with women, you know, so they tend to get out of immunity.

And instead of just like, you know, going after the damage and say, oh, we'll try to limit the damage, why not try to fix the underlying immune system, which ties right into mitochondria?

The immune system basically, affects the mitochondria. The mitochondria affects immune system. So you kind of

got to look at everything. And so do you use immune modulating peptides.

Yeah. So I've used the thymus and alpha not only in myself in patients. And I have seen that one be pretty prolific and effective. But also the other one that's not really talked about a lot.

I've used is l l 37. So that one upregulate that, catalyze it in the gut. So it essentially wakes up the surveillance system in the gut, say, hey, let's get Candida, let's get an gut infection taken care of, because usually the patient will have a low secretory IgG in their immune system.

It's just in the tank. And they're not able to actually, you know, identify and kick out the gut pathogen. So I've seen them down to be really effective.

And now with that. So a lot 37 it's an endogenous anti-microbial peptide. And it's pretty amazing that has such a wide array of effects. For instance, studies show that it kills the Lyme cysts better than like the antibiotic tonight is all it, which is for that it works against yeast and parasites and yeah, they find it slow.

So you find you you give it to patients. And you find are you looking for infections first? Are you finding that? And, so test g.i panel and look for your gut.

And what are you finding in that? You're finding a lot of patients just have significant parasites or dysbiosis or Candida mandi. It is a big one. I see a lot of people Candida, especially if they have a history of eggs and and psoriasis.

It's usually driven by some sort of Candida overgrowth or, you know, gut microbiome imbalance. So we'll address that. And there's a multi-pronged approach.

But peptides are just bringing in a new level of what we're able to do. For patients because I've I've put patients on, you know, gut healing protocols, leaky gut Candida protocols.

And I just haven't seen anything work as quickly as adding in something like a low 37 or to one that times and alpha one, it's just it blows my mind that we're able to actually reintroduce those peptides that are bio identical to the body.

We already make, you know, thymus and alpha and time is in beta. But to to add in more of a good substance or add in the signal to help our body make more of what it looks like, and it just explains what thymus and alpha one, thymus and beta for their thymic peptide.

So as we were talking about the thymus, it basically it from age 15 on it just keeps declining. And so your immune system gets worse and worse. And that's about age 45 is when you start seeing you get the immune dysfunction and you start seeing all those issues.

And and so the famous and alpha one really increases that. I missed the T one. And it's approved in 30 countries or so for HIV cancer because this side immune system not only fights infections, it lowers your body for cancer.

And then thymus and beta four is a modulator. And then BPC 157 lowers that too. So you can use these peptides and, and follow that immune system and you find everything gets better.

And I know you probably see you know, Sibo and everyone's like oh treat the Sibo. But you know there's that gut brain X but also the brain gut axis. And I find I I got in so much trouble with the Ciba guys.

I said, I think it's a symptom, not a cause, because it's it is you get you basically treated, it comes back because you got the gut dysfunction from the immune dysfunction that's causing.

So, you know, you can treat people feel better, but you still didn't fix the underlying issue. The reason they got Sibo. Yeah that's fascinating. Yeah.

So it's it's it's really digging deeper a little bit deeper. It's the immune dysfunction. It's the mitochondrial dysfunction. So there's really paramount pivotal underlying you know I talk about like it's seven layers deep weight loss is the issue up here.

But down here we got a lot more going on. Yeah. It's like you don't even. Yeah. It's fix every underlying. You find the gut plays a big role. Yeah. So I've loved using BPC I've used the injectable, but I've also used the capsules in a lot of patients for leaky gut.

I've found that to be more effective than so many, other leaky gut protocols, or sometimes in tandem, but usually just Bpcl alone. It's just really effective.

Yeah. And and so just a little plug. Shameless plug. So yeah, we now have the BPC 157 out as a supplement. And then TV for thymus and beta for big molecule that again modulates.

But it's too big to take orally. It needs to be injectable. But so we found the fragment that actually is orally available and active. So it does all the same things as thymus and data for.

But we did take out the part that stimulates mast cells. So that's and it also it's shown to specifically heal the tight junctions. So you get kind of that double the BBC, lower the inflammation fixing the tight junctions.

And we're coming out with K PV added to it. So we're kind of getting off, but it's a mylanta cartoon. Troubling alpha melanocytes stimulating hormone.

So I don't know if you've heard of, you know, melanin tend to which is like the Barbie doll peptide, where you get tan, you lose weight and you have increased libido.

And then PT 141 for libido, which works for erectile dysfunction. If nothing else works. But it's also very anti-inflammatory. But the problem is, is if you take it for inflammation, you'll get tan, which can be good.

But, you may have found different, but if you're older, it can make all dark spots darker.

Immune Modulation, Gut Health, and Brain Peptides

But so we take out the the small active section. There's only three amino acids that has all the, the anti-inflammatory properties but doesn't cause the, increase of melanocytes stimulation.

So we're adding that orally. It is so anti-inflammatory, that you put on, you know, let's say psoriasis within a couple hours. It's, it's so much better. But.

So that should be coming out a couple of weeks ago and shameless plug. But, yeah. So, so with the gut. What what are there, peptides. These brain peptides. Do you like?

Yeah. So I have used to Cmax, and this is, so, like, for very sensitive for desired eczema. It's more for increasing that burden off of user and medical students I've used and myself just for improving retention and memory.

This can be really effective as well. Have you experimented with us? Yeah, yeah. And, we like them and I and see, like, you know, very calming. It can be subtle and used over time.

Then there are cerebral. Eisen. Which I know you've used it. Everyone, fine. Can work very well, even in, like, end stage Alzheimer's. It studies that dramatic improvement, but had to be given.

Evie. But we are. That will be coming out as an oral supplement, probably in the next month. So we're excited about that. So it's. Yeah, that will be able to because, for everyone it's like the peptides are very big.

And all of a sudden we're worried that, you know, the FDA, I think it's big pharma kind of says, hey, we you know,

we we don't want to lose all this, all this business.

So they're putting pressure on, to stop compounding pharmacies. We and compounding pharmacies may go away. We may not have bioidentical hormones. Yeah.

It's it's very, very scary. And they're doing it behind the scenes. And so we don't know how long. So we're trying to move to bringing these out in a, in a different, modality where.

But, I'm worried, but a lot of people just don't know. And, you know, the power of big pharma, let's see. So how do people what what would you recommend to a patient there, like, but all these doctors are not feeling well.

They can call you. They can do telemedicine, or do they look for. Yeah. Like, how did they find me? Reach out to me. Yeah. Or how would they go about finding a doctor if they want someone in their area or.

So if they're looking specifically for peptide therapies, they could go to the International Peptide Society, or a forum. They have a network of doctors you can usually look up, who's a functional medicine doctor who is a doctor who would be trained in peptides near you.

It's few and far between. There's quite a few practitioners that are not trained in it. You and I both are very well versed, and they are prepared to use that in practice.

And I'm always learning to and experimenting on ourselves with practice, which is part of the experience too. But yeah, they can they can go to either one of those sites.

Those are pretty reliable places to find a practitioner. There's some functional medicine trained practitioners. You can go to the Institute of Functional Medicine, and locate a doctor.

A lot of societies popping up because and it's interesting that we're now having, you know, do for I don't know, 20 years, you know, kind of a small group.

And now it's, you know, cardiovascular surgeons in there and they're realizing that they're, you know, and they're just not satisfied of just doing the standard stuff.

So I think it is the way of the future. And one of I think the good things about this Covid is they really expanded telemedicine. Correct. And before, you had to have a license in the state where you would connect with that patient via telemedicine.

So, but now they rescinded that. Hopefully it will stay. And because it really opens up access, so you can go to a doctor anywhere in the country, a patient can say, hey, they want to see you and, you know, Florida or whatever it may be.

And you do a video first visit before you get to see the patient. And they come out. So, I think that's that's a great thing. Huge it yeah, it's already happening.

Like patients are flying if they live in Florida and they're doctors in California, they're going to fly anyway just for that initial visit. 30 doing it. It's going to open up access.

I agree it's going to be help. Yeah. And I think it is hard for patients to figure out because, you know, with the internet it's hey, who markets the best.

You know, and it's it's scary. Some things are being set out there and you know, people that say, oh, they're for and you go, oh my gosh. Or, or I'm sure you've had this like go to so-called integrative functional doctor and you're like, oh my gosh, they messed up.

And it's giving everyone an hour, you know, and, and our, group are the way we practice bad, bad name. You

know, I that, I think you see that now with everything, but, nice, nice.

So, And did did you ever do standard medicine? So I, I but as far as, like, conventional medicine, local school or practicing conventional medicine. Yeah. I'm yeah, I had I have not I have only looked through the lens of, holistic functional medicine that's been I was lucky because my last year of med school, I was out in San Diego.

I was in Seattle for quite a while training there. And then I, came down to San Diego and do a lot of clinicals, and I got exposed to this entire world of regenerative medicine and joy injections and I. V.

therapy and ND and and then, you know, upon graduating peptides. And so that excited me. I actually I was going to go the conventional route and I job shadowed a bunch of practitioners.

And what I really witnessed was the insurance based model, the 15 minute visits, six prescriptions, walking out on a seventh one. You know, just I was really depressed thinking about doing that for the rest of my life and considered changing my route and now the doctors are doing the best they can.

They're amazing practitioners, and a lot of ways it's just a system that's broken. So. So I just didn't want to be fine. Yeah. Yeah. And you can't do this stuff, you know, it's they have nine minutes and they're judged on on how cost effective they are, which means not doing testing, not doing therapy, seeing as many patients as they can.

So they're, they're they're stuck. It's not that they're bad people. It's it's a bad system.

Finding a Practitioner and Closing Remarks

And really the doctor and like HMO style, who cares the least makes the most, you know, and for us, like yourself and it's if we don't get the patients better, we don't get patients in know.

Yes. And so, yeah, you you have to keep learning and, and I think it is nice it's now, you know, people ten years. What do you do. I'm like, oh how do I explain this?

You know, and because if you mentioned, I mean, I was not going to say alternative and that means no evidence. And when I first I get sick myself and found, hey, I'm not getting better, I don't want to go to this alternative.

And I went to these so-called alternative, comfort. I'm like, oh my God, there's more evidence based and what they're teaching me, right? And now at least I think the medical students, everyone is getting exposed to these things and seeing the difference, because I do think it is more evidence based and it's really just practicing better medicine. And I think that's what we do.

Absolutely. And I'm a huge fan of, looking at the research and evidence. And I was trained that way even, you know, it's very, very, very much so, you know, sourcing what is not effective for what are the research studies.

And then it brings us back to the biochemistry, which is so fun about going to a forum. It's just I get to dive back into all these pathways that I forgot about.

Since med school, and now they're all relevant and they mean something to me. Yeah. It's weird. Yeah. It brings you back to your second year of medical school.

Or was that. Oh, forget that. Just wait for the drug rep to come in and tell me what's mad. And, you know, now it's like, so algorithmic. I have this, I, I can give them this drug or this drug, you know, and so it's.

Yeah, it's I think being a medical detective, it's, it's much more satisfying. Yeah, I find I think that's what practitioners do in this line and so much more satisfying seeing patients get better that have been so many other standard, you know, good doctors, but in a bad system.

Yeah. That's wonderful. Keep keep up the great work. And, it was very nice chatting with you. And thanks for taking

the time. Absolutely pleasure. I'm excited to be on Peptide Summit when it goes live.

Well, yeah. From, everything. Thanks again. All right. Bye bye now. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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