Introduction to Chronic Lyme and Antibiotic Limits

Even, you know, going back to the chronic Lyme talk we discussed, I think that, you know, well, certainly I ascribe to the idea, as you talked about the two weeks of doxy or three weeks of doxy, is is often not enough, especially if someone has had this infection for, you know, more than six months, say, and but endless antibiotics isn't the answer either.

You know, there needs to be a point at which you say, okay, if you can't get off antibiotics because you just continue to have symptoms, then we got to lower the threshold at which your immune system's reacting, because it's unlikely this organism is causing tissue damage anymore.

And it's more likely that your own immune system is responsible for the damage and the inflammation that's coming. And, and and really restoring immune, you know, regulation and get rid of these, these toxins and and you know, that's that's part of it.

And and it's a process for sure. This is doctor talks real talk from real doctors on the issues that matter to you. Most. Hello doctor. Can't hold talk for another episode today we're going to be speaking with Doctor Corey to shower.

And we're talking about bio toxin illness and basically peptide use of bio toxin illness. A little bit about Doctor Corey. He grew up in Omaha, Nebraska.

So a farm farm raised boy as always, remember he wanted to be a physician, which is interesting is rare it seems these days. He graduated honors from Cornell University with a BA in neurobiology and behavior.

He earned his doctorate in medicine at the National College of Medicine. He is the owner and lead physician at Bear Creek Natural at the clinic in Medford, Oregon.

Believe it. The body has within itself the inherent ability to heal. Doctor Corey utilizes the integrative Therapy therapeutic model designed to remove obstacles to health simultaneously optimizing the self healing mechanisms.

The body healing is accomplished through the rational and sequential elimination of infections and toxicity from the body, while helping to normalize immune dysfunction, mitochondria, energy production, and cellular detoxification, repair, and really looking at the whole system.

And, you know, it's the one thing that I think standard medicine is just missing, you know, and so he I know it I consider my great friend that we're talking for ever before before we interviewed here.

And he's just always on the cutting edge treats everything the sick of the sick and and just loves a challenge. And it's just so knowledgeable. I know where you're going to.

You're going to love this interview. He focuses on functional medicine approach within the realm of chronic infectious illness, neurodegenerative diseases and autoimmune disease.

For the past 15 years. He looks a little young. I'm going to question on that with emphasis on tick borne illness such as Lyme disease, is member of the International Lyme and just Diseases islands.

He's been a member international Lyme and associated decided since 2009, when he seized the prestigious fellowship to receive formal training and treatment for Lyme.

He also was an active member of the International Society for Environmental Acquired Illness. And so that's what

we're going to talk a lot about today.

He is well versed in treatment of mold illness and series of chronic inflammatory response syndrome. And all these things are connected and they're so multi system.

And it's a it's so difficult I think of like what standard doctor said would even look at that stuff. But it's just and I see him at all the conferences and he's just passionate I love it and just wants you the best for his patients and always investigating new treatments.

He's always striving to improve outcomes and provide the best possible care, and he's really successful in the patients that have been everywhere. And lucky you and all that goes.

You get, the patients that have been everywhere and he's just doing such a great service and getting great results. So there are a lot of great things about him as well.

Guest Introduction and Background

Again, we talked about so much beforehand and so many things are changing in medicine and some things for good, some not for good. But I think, you know, all these sickest patients are getting left behind.

You know, and and if a doctor doesn't know what it is, it doesn't exist or it's a patient's fault. But, you know, you just said, tell me a little bit, I didn't even hello.

How would you have welcomed him? Give me a chance. Here. Thanks. Thanks for being on. And you're up in Oregon and I see the news, the crazy stuff going on up there.

But again, thank you for taking the time. I know you're busy, guy. Hey. Yeah. You're welcome. Kat. Yeah, we just, got through the fires down here in southern Oregon, but, you know, we're we're looking good moving into the fall here.

And and I wanted to say thanks to you, too, on this topic because my knowledge and my, my passion for learning more about peptides really started from you as as being the cutting edge on this topic yourself.

I think that was maybe five years ago at AI labs when you first presented on peptide therapy is as a unique option that I had never heard of. And, and I don't know if you remember, but I think it was me, like just pestering you for months after that and emailing you nonstop.

And who is this guy? I got to learn more about this. Yeah, and I didn't leave Cat alone. And here we are five years later. And and peptides have been a huge, huge part of my practice and improving outcomes and restoring physiology and neuroendocrine function and, and getting, you know, all these chronic people who are suffering with this multitude of, you know, chronic functional illnesses, fatigue and brain fog and pain and all these things that really the the standard medical model doesn't have answers for.

Peptides have been a huge component of the successes we've seen in restoring people's health. Yeah. And and it's interesting, you know, I give lectures on it and people just go, I can't believe there's all these studies.

Why haven't I heard about it, you know, and. Well, because there's no drug rep, right. You know, selling this stuff. And it's changed my practice and I know it's changed your practice for everyone from, you know, healthy people.

I think it's the best, you know, anti-aging, longevity, ability to stay healthy. Like you look at epitaph, you know, increasing telomere length to the sickest of the sick.

And it's been those things that people have tried. I. V. antibiotics for years, you know, and then, you know, it's like and and you specialize in some of the toughest things like bio toxin illness.

And you know what? What the heck do you do? And it's mentioned in my own story, my girlfriend just recently, I'm feel I'm good. I don't know if you ever get rid of Lyme.

I think it's kind of like, you know, virus that. But it's if you keep your immune system up and all, that's fine, but usable. Basically dramatic graphy out of out of the blue.

And so we had a bald guy come around, couldn't find any more. But coming underneath the bathtub, there was more toxins. Yeah. And right in the bedroom, you know.

And so it's major. And let me ask you just one question, though. Do you find because my thought if someone gets Lyme right, they're probably if they're not treated well, they get two weeks of doxy which studies show they relapse like 3 or 4 months later 80% of the time.

But if you have like nothing else, you're not going to be terrible. It's like when all of a sudden they get they seem to be more sensitive to molds, like they'll be everyone in the house.

This is what I hear from my friends. And we got, you know, like all our staff, there are like like Lyme patients, bio dogs, patients, emphasizing that because of the problem and cause actually mold to grow.

And, you know, especially the husbands. Oh that's crazy, you know, and and but the people that have the lime and other infection are much more sensitive now to the bio toxins.

Can you comment on that? Yeah, absolutely. So, so much to say about that topic. Definitely. In these chronic infectious models, there's often a trigger that seems to precipitate the immune dysfunction.

And either the growth of the organism that previously may have been managed by the immune system or, accentuates the immune inflammatory response to the presence of, you know, a latent organism that may not have actually been causing tissue damage in the first place.

And I think Lyme is still something we really don't understand, as you talked about, you know, can we ever really get rid of it? It's one of these intracellular infections that it's doubtful that we really can.

And then you start talking about potentials for sexual transmission or in utero transmission. And I think in utero is the biggest problem. I mean, I know in my home that's where I got it.

I look back one people is bigger and they go away. But like, you know, one side of my body flushing my left arm would stop working. You know? And I think that's just the huge the biggest transmission.

Right. But anyways, I just have to come in. Yeah. Yeah. No, I mean it's it's it. Absolutely. And you know, if you start looking at just like PCR, like urinary PCR analysis, like there's I know at least one labs reporting almost 94% positives in cases that were sent to them.

You know, it's obviously it presents itself as an issue in of itself in that you're going to if you want to diagnose everyone with Lyme, great. But that's probably not accurate.

It probably represents that there's carriage stages of of Lyme, and there's a lot of people who have small amounts of it in their body and have been exposed to it.

And it doesn't necessarily mean you have an infection, but it's one of these. Setting people who you think have the symptoms, you know. Yeah. Yeah. So I mean, you know, bio toxin illness itself is is, you know, a term that I think is so associated with mold.

You know, Doctor Shoemaker really popularized. And a lot of what he wrote about is, is really brilliant actually. But bio toxin illness is just this topic that incorporates, you know, everything that's exogenous from, you know, molds and solvents and heavy metals and anything that your body can create an immune inflammatory response to, to

endogenous things that live in our bodies.

You know, we're carriers for a number of things. There's pathogenic organisms that, you know, are present like that. We can't get rid of Lyme and chlamydia, cochlea.

And and, you know, Brucella and all these intracellular infections. And then there's the question about opportunists. You know, we talk about Pseudomonas or Klebsiella, Proteus, even strep that if it's in the wrong place or if it grows too much, we also can see an immune inflammatory response to that.

And that question brings up well, endotoxins and lipopolysaccharide and and antigenic debris in general that generates these these chronic immune inflammatory responses.

And how do you restore your, you know, how do you restore immune regulation? I think is is the big question in this and even, you know, going back to the chronic Lyme talk we discussed, I think that, you know, well, certainly I ascribe to the idea, as you talked about, the two weeks of doxy or three weeks of doxy, is is often not enough.

If especially if someone has had this infection for, you know, more than six months, say but endless antibiotics isn't the answer either. You know, there needs to be a point at which you say, okay, if you can't get off antibiotics because you just continue to have symptoms, then we got to lower the threshold at which your immune system's reacting because it's unlikely this organism is causing tissue damage anymore.

And it's more likely that your own immune system is responsible for the the damage and the inflammation. That's coming.

Peptides in Chronic Illness and Longevity

And and and really restoring immune, you know, regulation and and get rid of some of these toxins and, and, you know, that's, that's part of it. And, and it's a process for sure.

All right. So you're diving deep into peptides and longevity on this podcast. And we're right there with you. Integrative peptide stands out trusted by over 10,000 doctors to deliver real results for their patients.

These premium peptides are your key to unlocking vitality recovery and a longer, stronger life. Visit Integrative peptides.com and use the code Pod life for 10% off your first order.

Again, integrative peptides.com. Use the code pod life for 10% off. It's time to elevate your journey starting now. Yeah, I think we're just bombarded with so many things like and it's only thing we can test for.

But you know, glyphosate. Why is that even on the market still PCBs? Oh, it's actually kind of ironic. I went to environmental conference and snuck out and had lives and sitting there I open up USA today and on the intersection was a cover page was a killer whale died.

I found the eyes and they did a blubber analysis. And it had a thousand fold. The lethal levels of PCBs, which was banned, was 50, 60 years, you know.

And then I think also an emotional stress is just wipes out your immune system. You know, I always think it lowers it, but it really modulates it. So you can't fight the infection with tons of inflammation.

And you know, at all now it's like, you know, before I'm anyways growing up, it's like, oh, we'll send a letter, we'll wait a week, get it back. And now it's like everything's instantaneous.

We're on our phones, we got traffic. It's like all just so many different. Like even in California, the regulations for fire retardant are so much higher.

And everyone's. And all of this toxic stuff even more in California. I mean, there's so many things and it's just I think

it's killing us, you know? Yeah.

I mean, it's all getting into the groundwater. It's going up into this, you know, it's part of the whole water table and getting into the, you know, in the rain.

I think, you know, they found glyphosate in the Saharan desert. It there's no place it isn't. And, you know, just incidence of chronic illness and incidence of cancer, like these are things that have been increasing over the last 40 to 60 years.

And I don't think it's a coincidence that that same time period represents the highest increase in, you know, our our belief that you know better living through chemistry, right, that we can add more chemicals, we can manage agriculture, we can, you know, manage our forests, we can manage our food, we can do all this stuff.

And yeah, maybe in the short term it helps. But in the long term these, you know, bio toxins by definition is I don't know by definition, but the primary problems they represent is that they are fat soluble.

So you know, so these things end up depositing into areas of our body where we don't easily excrete it. And so they affect things like or endocrine function pretty, you know, proportionally neuroendocrine system.

I hypothalamus or pituitary gland and then just cell membranes. People don't realize they think oh it's, you know in our fatty tissue. And you know, it doesn't mean it's in your but it means that it's like it's taken into the cell membranes.

It's in the mitochondrial membranes. And it causes, you know, these long chain fatty acids, these odd chain fatty acids that, that really it's like cell scarring.

Right. And these are things that impair membrane fluidity, the ability to exchange nutrients and waste, you know, protein binding. Second messenger molecules, fluid balance, paroxysm function.

And ultimately you get this auto intoxication as cells enter this this cell danger cycle. Right. As we've all heard about which creates this, this senescence, where the cell just kind of stops really operating.

As we talked about it. But can you give you a little short definition of the cell danger response like have mitochondria. Yeah. You know, and I I'm not going to be an expert on, on Robert Navios work.

But the way that I see the cell danger response is that when you have an intracellular toxicant, whether that's an environmental toxin, something exaggerates or whether that's like the presence of an intracellular infection, like lime or something else that our bodies aren't able to clear. Right.

So we have certain immune cells that are dedicated to this. We have proxies ohms that are supposed to push this stuff out. We have, you know, subsets of our natural killer cells like our CD 57 sets that are designed to try and address this.

But when the toxicity or the infections kind of reach these critical thresholds that the immune system can't manage, it anymore in order to prevent further damage to the body in the cell, you get senescence.

You basically get a phenomenon where the cell goes to protect itself. And so in so doing it, it you know, you stop seeing recycling. You know, this autophagy I guess is the opposite of cell danger response.

You stop recycling mitochondria, you stop your ATP, and your Krebs cycle slows down. You start to see lactate increasing. Instead of pyruvate, you see, you know, you know, all these phenomena associated with impaired mitochondrial function, impaired cellular function.

You see increases in toxicity. You see, you know, cytokines that that go up. And really all of this is self-preservation is the way I think. I think and I everything's a vicious cycle, you know, and it's like you don't have enough cellular

energy to kick the stuff out of the, you know, like heavy metals.

You need energy to get it out of the cell. If you don't, it's stuck on the human skeleton. Do it's, you know, it's stuck in there. Yeah. There's so many things like that.

It's either, you know, you're you're getting healthier or you're getting worse. And I don't know, you may see the same. I think it's like I can't go to a party where someone comes up and either they're so sick or their family member or their friend, you know, and I know you didn't see that.

You know, ten years ago, 20 years ago, you know. No. And it's it's yeah, it's an interesting phenomenon. I think a lot of people ask the question of like like what you're saying.

You see this person at the party, you, you know, you're talking to a friend. He talks about an acquaintance or his wife or someone's like a why is she so sad?

And, you know, the question's always like, well, we live together or, you know, we're in the same we're exposed to the same thing. Why is this person sick and why am I not?

And, you know, we we, you know, we already cover these sort of direct effects of bio toxins, how they impair you know, you know, our membranes and our cellular function.

But the indirect effect, which is really what sir is, is all about that chronic inflammatory response syndrome basically says that about, you know, call it 20 to 30% of the population lacks the what's known as these HLA receptors that are needed to recognize toxins as they're presented from dendritic cells that are normally bound to these these major histocompatibility complexes.

So, you know, when you can't generate an adaptive immune response because you can't create CD4 antigen specific T cells, you you start driving a chronic innate immune inflammatory response, and you start to see cytokines going through the roof.

You start to see, you know, impacts as the toxins end up binding into, you know, the hypothalamus and and the leptin receptors. And so then you see this whole cascade that happens where melanocytes stimulating hormone drops off.

And and then you see a cascade of vaso active intestinal peptide levels dropping down. And then the pineal gets affected. And of course, you know, we all live up to 1000, which is, personally idea as well.

And, and so you see this huge array and, you know, as you look at the bio toxin pathway, you go, well, you know, why is it I have GI symptoms? Why is it I have pain?

Why is it that I'm cold all the time? Why is it I'm, you know, achy? Why did my my my libido drop off? Why am I peeing all the time? And it's because these upstream neuroendocrine hormones kind of direct a lot of these things.

And when you shut off the the spigot up here, you're not going to water any of the plants down here. Controller. And it just and and even like, you know Marcellus it's a huge thing.

And you know, I know you're on the Marcel Mastermind group and this it's not gone directly affect the mast cells. I might look upstream, you know and and it's funny a little things I ask patients.

Do you, you know, drinking efficiency like a racehorse. Like what? Yeah. Yeah.

BioToxin Illness, Mold, and Environmental Triggers

You know, and, it's interesting and so many things. I've been doing some deep dive, you know, on some of these bio regulator peptides. And like inflammation, the hypothalamus just causes so many issues.

And and it just affects everything. And yeah. So when you have a bio toxin illness you're like I guess the standard you know is the mold everyone thinks of.

But really it's everything. Right. That's yeah that's just it. It's, it's you know, that it's as you just brought up with mast cell activation and you know, why is this happening.

And sure, we know ways to manage that with, you know, stabilizing the the histamine response. But the question is like what's what's driving it. And so that process of discovery and of trying to understand what it is, is I think, you know, the first the first step in this and there's there's definitely different ways that you can, you know, assess or diagnose someone with bio toxin related illness.

The visual contrast sensitivity test, I think is still, you know, very helpful. You can do it online at X Test Comm for free or, or you can buy. The what I mentioned more.

What like why does that work. What is it. Yeah. So I think it was developed by the Air Force if I remember right somewhere and like the 60s or 70s to find out when pilots had been exposed to excessive amounts of jet fuel, which is, of course, a solvent, and it would impair their body's, you know, their central nervous systems ability to work.

So the visual contrast test is it's looking at your your brain's ability to distinguish contrast. So really it's like these gray circles with gray lines that go that, you know, that are hatched one way or the other, or a vertical. And, you know, you put yourself a fixed distance away from, from the card or the screen and you're looking to see which way those lines are going.

These gray lines on a gray background. And what they found is there is a strong correlation between the presence of bio toxins in the brain and the inability to process that contrast to actually see it.

The visual processing centers in the brain are capable of doing it. And it's it's fairly accurate, actually. It's a good way. And it's an inexpensive or even free way to actually say, hey, look, I think there might be something going on here.

And, you know, and so that's, you know, that's that first step and part of a big picture, of course. And from there, you know, you can do a variety of things.

You can say, well, let's find out what it is. So the way I think of bio toxins is there's direct and indirect ways to assess for them. So yeah, you know, directly we we know that you can measure mycotoxins in the urine.

Like you can use Elisa or mass spec to look for certain mold toxins. You can look for heavy metals. You can just do a blood draw and compare. Like is your level of mercury higher or lower than the 50th percentile?

It's, you know, that you find in the Nhanes that data. Let me ask you, what tests do you like to do for bio toxins? And, you know, like the real time or great planes, you're looking at urine and yeah, some people just like everyone has, you know, and it's like, when does that become significant in your mind.

So sure, with symptoms. And then also with heavy metals, what type of testing do you like to do. Yeah. So I, I go on the circuit honestly. And a lot of these tests I tend to prefer using a laser studies or antibody based test with real time labs right now for, for mold toxin because it captures all of the metabolites.

Whereas mass spectroscopy like you're only looking at a specific molecular weight, right? So you're only able to capture that toxin in its conjugated form.

And so if glued with iron, for example, is bound to oak or toxin or glia toxin, you're not going to pick it up. So you, you know, so the allied. Promise that binds this stuff.

Yeah. Yeah. Yeah. So so the. Yeah, exactly. And so the Eliza I use from real time labs, but if I'm looking at

solvents, I'm, you know, there's, there's only a few labs that are doing this us biotech or, or great claims are both labs that I think are are both good.

I see great results on both and looking and those are mass spec tests but they're looking at metabolites. So I think they're you know, I think it's a better option because you're not looking at the conjugated form, which gives us better data sets.

So if we're looking, you know, for petroleum distillates or herbicides, insecticides, you know, plasticizers, you know, PCBs, like you were saying, all that can be reflected on on those urine tests.

I still tend to recommend that people do a glutathione challenge for a week before those tests, taking, you know, 1000mg twice a day to, to mobilize all this toxin.

And then I tend to even stop it within 24 hours so that we're. Just there real quick. How do you like to give that? I use liposomal glutathione. So, you know, actually orally, I do oral.

Yeah. And oral liposomal glutathione I own. If they're able to do a sauna, I say for the, you know, the night before they collect their urine. I think that helps to mobilize things out of fatty tissues, because that's really what we're we're talking about right now.

You know, and then, of course, in the mold toxin world, and this has been a big topic, but you want to avoid foods that might have mold toxin in them for ideally a week before you do the test, if nothing else, at least three days home.

Is it some of the healthy foods? Right. Yeah. You know, you talk about nuts and seeds or coffee or, you know, fruit, right? Like, you know, a lot of fruit or berries or aged cheeses or wine or, you know, any grain. Corn is notorious.

All of these things or, you know, they're siloed in the United States. They can be siloed for years at a time. And you get mold forming in the column of grain.

And then it gets milled into flour. And now you got mold toxin mixed with all this, which may or may not affect things like, you know, our gap junctions in our gut, but ultimately it's going to result in false positives because you're going to you're going to be picking up things that are moving through your body.

And it's thought to be the reason for, you know, one of the plagues on Egypt and the first born dying from mycotoxins in the grain. Yeah. You know, yeah. Goes way back.

Yeah. Everyone was hurt. Like, even. What was it? The French Revolution or, you know, all those things like ergot. I mean, in the grain supply, everyone's hallucinating from from.

Yeah. And you wonder, do I don't I just wasn't planned about it. But I'm wondering, are people's brains changed now and different? Are they more I think kind of fight or flight basically polarized like is that part of toxins?

You know, stress plays a part. But I think toxins probably play a part too. You know. Definitely they do. I mean, so again, like how toxins affect us, like we know they create these immune inflammatory reactions with, you know, all of these innate driven cytokines like, you know, IL two and interferon gamma and IL six and all the things we don't want to see.

But in the central nervous system, which is mostly fat, you start creating activated microglia, these cells that once they get turned on, they just they're always screaming and panic.

You know, you you start to see NMDA like all of these toxins tend to, you know, what they call excitatory toxins because they stimulate the NMDA receptors and drive, you know, intracellular calcium build ups and things that actually do impair neurogenesis.

And para go D'Andrea agenesis and and affect our both our our cognition as well as potentially, you know, creating or setting people up for things like dementia or cognitive decline or or worst case, you know, you know, neurologic autoimmune symptoms.

So yeah. Because yeah, it's that, you know, glutamate and you know, basically same toxin, which is the side story is that I start stuttering so bad, right?

I couldn't carry a cell phone. I got I couldn't say hello, you know. And then I read I was going to go to actually one of the doctors I did a residency with and was on his team.

He stuttered really bad, but he opened a stuttering center in Irvine. And then I read an article on aspartame and stuttering, and I stopped and I stopped stuttering.

In two weeks. Wow. And if all of a sudden I get by one time, I change from Starbucks to Coffee Bean and they didn't have. Instead of sucralose, they had aspartame.

I started stuttering and I'm like, what's going on? But it's very it's like Diet Coke, too. It's like, it's like, I can't get off of it. It's like addictive.

It's like it's an excited toxin. You know, you get amped, but it causes stuttering. I mean, so talk about a neurotoxin, you know, and that's mild compared to all this other stuff we're taking it.

Yeah. Thankfully a water soluble thing that you stop it. And within a few days ideally it's clearing out of your system. Yeah. Yeah yeah. No that's that's a good example for sure.

And so. Oh so how do you approach a patient. So I'm sure it's patients that have been everywhere and have this complex symptoms like a phantom doctor or a doctor or even neurology whatever.

They come to you. What, what how do you start. What do you do? I take a really, really good history. That's that's the first part of it. I think that one of the worst problems we see in the medical system right now is no.

One does that. What are you talking about? Yeah, I mean, managed care, right? Managed care has been a it's great if you have a bladder infection, but if you've been suffering from chronic fatigue, I don't know how much someone's going to accomplish in ten minutes.

So you know, at the. Box, they're great if you break your arm or something. But if you're outside the box. And that's what I say, you know, I say, you know, the way the medical model right now is great.

It's set up for heroic medicine. Like if your life is in danger, by all means I would, I would, you know, and I'm appreciative that the medical model we have exists.

But if, you know, for the millions of people who are suffering from from chronic conditions, there is a process of discovery.

Testing for Toxins, Infections, and Immune Dysfunction

It's, as you said at the beginning of this, you know, this this talk that it's a puzzle and it's it is kind of gratifying to try and understand or unravel this whole puzzle.

But so I'll start off with, you know, usually an hour and a half to two hours with someone, which gives me enough time to hear their story, ask detailed questions on all of the different systems in their body, go back to when things started and try and understand the lineage.

Whether it was, you know, maybe they were in a house, maybe they were traveling, maybe they got a tick by, maybe they were, you know, emotionally or or abused or had some sort of, you know, trauma to them.

There's usually some sort of a trigger and you start there. You know, in the absence of that, what I tell people is let's throw out a big net, right. And, you know, because there's there's usually some.

I like that term. I love getting lots of information. Right. And so you're not running down the lane that not that you miss this over here. You know. Right.

And people are like you know, it's like we do so many tasks and that freaks out the phlebotomist that like quest or whatever. And I remember I went myself and they're like, oh, this is the doctor that orders all those tests.

I'm like, yeah, I've heard these, like really cute. But Yeah, yeah, I will say it helps to have we have a great lab in our office and our, our lab director is, I mean, an unparalleled in our ability to process like, you know.

Yeah, it's just comes with, like, a lot of tubes. Just big. Like, this is what you want to order. And what if I don't mind? So what labs do you use? What?

What? Yeah. So it depends on what I'm looking for. So that wide net question that we sort of talked about a second ago. So if I'm like I'm always going to say it's some interplay between infections immune dysfunction and environmental medicine.

So that's kind of the three points on the triangle. Right. And and so you know, on an infection level, depending on their history, I might do a really broad like antibody based study like we'd see from like Syracuse has got a great pathogen associated immune reactivity.

It just test for antibodies. Doesn't mean you actually have it of course. And and I and I think that's an interesting topic in of itself because, you know, in medicine we all hear about these IDM and IgG antibodies.

And okay IgG means it's you know, it's recent and then you should get IgG. But in these intracellular infections is, you know can't like you see these IDM spikes that continue to happen.

But at the same time I've seen islands doctors, I've seen other Lyme doctors saying, well, you know, at least for me, I'm initially treating IgG and patients and once they sero convert to IgG, or if I get an initial patient that's IgG positive, I'm going to say, is this really an infection or is this just an immune inflammatory response to the presence of this infection.

Maybe you do an antimicrobial challenge mutant antibiotic or a series of them or maybe do some herbal therapies, but it doesn't make them better. Or if it just makes them worse.

Like you need to think that maybe the issue is really they've got this is chronic immune driven inflammation. So just again on the IDM and so like infection these doctors regular doctors say okay we've been taught from medical school.

Yet I do have antibodies. And you get IgG. But a couple things is that if you like with the immune system dysfunction you see in these conditions, so that one t rag is low and the t h do t 17 times that you can't convert near antibodies IgG.

Yeah. And I antibodies are basically like I think of them like a dog. Hold on your pant leg like but IgG are more specific and they activate complement and they explode the thing you know.

And then all of a sudden you treat, you either treat the immune system or treat the infection. All of a sudden they switch the IG but they'll go to the infectious disease doctor as well.

That's false positive because you've had these symptoms for a long time and it's IGA. It's like no. Yeah. And that's just it. And it's it's interesting because again is you know we go through this, there's clues along the way like you're saying like you can look for a split complement.

You can look at C for A levels. And you know, you see a number that 20,000. And it's exactly as you're saying. Like this is part of the reason why they're not converting like their their bodies are constantly pushing this to inflammatory reaction.

They're not converting. They're not getting an effective immune reaction. They're just generating a lot of smoke right there. It's it's you know, it's.

A kind of body's trying. Yeah. Yeah. Effective. Yeah. Yeah. Hey, let me close this. Blind or like quick. I'll do that. This thing. Is. Driving me nuts. Can't, Hey. Live TV.

Hey, there we go. Getting a lot of lines on my face. So. So, anyway. So testing, so direct testing. I'll do it again. Like, we can look at individual organisms, individual infections.

I use I Gen-X for a lot of that testing. But broad nets, things like Chirac's for mold I use urine micro toxin with real time for solvents. I tend to use Great Plains Lab and for heavy metals it's a whole topic.

But I, I think a lot of a big part of the problem is people jump straight to doing challenge tests. They start doing EDTA, DPS, things like that. Of course you're going to be high.

There is no reference range for someone after they got high. So the way that I think is most high end, the best integrity way of looking at heavy metals is just do a blood drop, just measure your, you know, blood mercury and blood lead.

You can do urinary arsenic. And there's the. They're going to show just recent exposure. So if they're having recent exposure you're usually going to see really really high levels.

Or you're going to see it in year end. Right. Like you shouldn't ever see urine mercury or urine leading arsenic. Definitely. You're going to see that no matter what.

But other things you're going to see. Arsenic come from. Arsenic. Well, it's in rice. It's in certain like if you have chickens or livestock, I know you'll see it in some of those.

It's a contaminant in well water for certain areas of the country like. Or anything you can eat that's, you know, it's like it's scary because it's like, all right.

It gets up in the atmosphere and it rains like even all these, you know, and basically biodynamic and, you know, stuff that's it rains on there. You know.

I there are things that would be helpful and maybe, you know, maybe it would be part of this like preventative, like you want to stay healthy like humic and folic acid is a great way to bind stuff in the gut.

Chlorella probably has some good binding ability. I mean, there are binders, but if you start getting you talking about, you know, like clay or charcoal or prescription polystyrene or, you know, glutamine and or any of these other things, my concern long term is that you might be impacting your ability.

To find nutrients. And can you just mention the very with the binders? Sorry, what was that mentioned? The theory like why? Why you do binders. Yeah for sure.

So again like when you if we're talking about the chronic patient and we're looking at like toxins and embedded in fatty tissue, well your body's always trying to move this stuff out, right?

I mean, on some level, your body is trying to get it out. It's maybe not efficient. Maybe you don't have this HLA receptor recognition, but you're still going to mobilize things on some level.

So anything that's fatty is going to ultimately end up in your bile and get eliminated through renal, you know,

excretion. Usually you see this hydroxylase ation followed by conjugation.

And and that and the liver and that comes out through bile, which of course is where most fat soluble toxins go. That's going to get in, you know, excreted into the small bowel.

And ideally it's going to get eliminated with stool. But the problem with fatty things like fatty toxins is you get intrahepatic recirculation. So all of this gets reabsorbed back through the distal part of the small intestine, back into the bloodstream, back into the paddock being where it gets redistributed back into the tissue.

So again it's just driving all this. So binders like we're talking about whether it's it's a natural binder like green clay or charcoal or a prescription like Kostya I mean it's designed to grab on to that bile and, and prevent those toxins from being reabsorbed back into the body.

So you actually have a net loss, right? So things are moving out of you. So it's one of the reasons why, you know, you're always going to take these binders an hour and an hour and a half before you eat.

And in my patients I'm always working to give them some collagen, something that's going to stimulate a bile release. Right. And that could be something simple like a bitter.

Or you could use something stronger like that also has benefits, reparative benefits like loss for title colon or, you know, some some type of tropic formula to to really.

Get like a drink with bitters. What's that like a nice drink with. Yeah. Yeah, exactly. You get a Manhattan. You know, that's the best way to get your bile moving.

And but it's scary. I mean, it should be everyone taking binders all the time, you know? Yeah. So I eat sushi, I take, you know, key leaders, yeah. With it.

And I take Alinea, you know, for parasites, repairs and doctor Stuffy. It was an la gi. I did a little study on always the parasite, like, but on where all the parasites were, all the patients he had, and they were not in the low income areas.

They were in the high income areas. And so we're trying to figure out why. And we, we thought was, you know, either cats or sushi. Yeah. So don't even get me started on cats, cat.

But but, you know, it's funny because that, you know, we call it the executive problem. You know, you see the same thing in with heavy metals, right? Like people who are not often in the most socioeconomically depressed area are buying more fish, eating more sushi.

And predictably, mercury levels are much higher than than in many other. Oh it is. You can't eat anything, you know, I know. So you got to take your DMZ and you know, and like I was saying, with heavy metals, like it's really not magic, you can Google the Nhanes data and and yes, it's the federal NASA data.

It's updated every six years typically can't. Are alternative wacky. You know, stuff. You know, not even alternative not wacky. And if I remember right the way so say it's all divided into percentile.

So you're at the 25th, the 50th, the 75th, 90th or 95th percentile for mercury, lead, arsenic, cadmium, whatever. And if you're at the 75th percentile or higher, I think the terminology is it's likely that the heavy metal load in your body is contributing to some disease process.

As soon as you reach the 90th percentile that that, you know, the terminology changes to say it's likely that heavy metal level in your body is causing symptoms.

And the problem is, though, they'll just adjust the reference range to be 95% of the people. Well, that's just good. Yeah. So now your normal. It's like with testosterone they keep lowering the range because people are lower now

because of all the right things you know.

Right. It's it's nuts. It's totally true. What is normal. And this also brings up the idea of like what answer. Is normal when you get older. Cardiovascular disease say oh your heart of your normal.

Yeah. Yeah. Right. Right. And and it's, it's and there's really sensitive people and people react individually and you can't treat everyone like a cohort.

Right. And this brings us to the topic of like, well, how do you know if it's affecting you if you. So now you have high levels of mold or heavy metals.

So that brings to the indirect testing. And that's all of the Shoemaker markers. That's like looking at your MSA levels, your VIP levels, TGF beta one I love that test. No one ever.

I don't think people understand it very well, but I. Don't know what work what lab do you like to get that from? You know, it's yeah. So I bounce around but MSA, VIP, I use lab core TGS is lab core C4 a we were using National Jewish Health out of Denver for that.

They screwed it up like they time and then. Well, and actually in this class. You know sending it. Yeah. Yeah. So questions told us they won't be pastors anymore.

We live in too small of an area. So we're not even able to do C4 days. Now. We use a lot of lab core. We do VEGF and MMP nine through Lab core 88. And Osmolality is quest like.

Bad job. With quest, it's zero 90% time. It's just they process it wrong. Yeah. So yeah. And that's and just they don't want to be a downer with patient okay.

Labs are like you know the gold standard. I sent our web guy just for basic labs. He did lab core. This is LabCorp. Quest of the upper level. You walk downstairs or labs right above each other and walk down to the same test at quest one.

He was diabetic. The other one, he had great insulin sensitivity like him. One day when C was six, yellow was 5.4, insulin was 18 on one, and I think eight on another.

Peptide Treatment Strategies and Immune Regulation

Like that's basic stuff it. Yeah. And think about all these other tests. You know I've seen so many botched test I mean I, I could go off on a whole someone who I had a simple UTI, I well it was his pilot nephritis but but her she had you know, they reported no bacteria right at all.

And so I'm thinking, oh my God, this has got. A new tech look in and. Yeah. Yeah. And you know what I said, what I get as an answer is like, well, have you ever tried to look at a an anthill under a microscope?

It's all black. So they have too many bacteria. You can't see it. I was like, oh my God. So you know, meanwhile I'm ordering all these other tests, sending someone to urgent care when really they just needed to be treated with an antibiotic for an infection, actually.

And and it was cheaper. You have to be an expert in everything. You know. Right? Right. Exactly. You know. But but yeah, all those indirect markers are really helpful to understand.

Okay. Now you got the toxin like how's it affecting you? A couple other markers I really like, you know, FDG is. And don't ask me to tell you what the full name of that is, but you can do that test with doctors data.

It's a urinary test, and it's actually a marker of DNA damage. And what was it again? 80H. Like eight hydroxy DG. And it's really, you know, tends it really toward the tends towards heavy metals and saying like, are the heavy metal

levels actually affecting your DNA?

But it can be used for a lot of things tied like glycine is a marker of mitochondrial impaired mitochondrial function that you see on the Great Plains Solvents panel.

And these are markers that you can see improved. Right. So it's it's great. You know, similarly we talked about the damage. Like I mean that's serious.

You know. And it's not going to hurt you tomorrow. But ten years down the road. That's right. I have a lot of issues. You know these people. And I also a doctors like I or I think our first job is convince the patient they're in the right place.

And how do you do that with these tests? I love to get all these tests right, but a lot of times it's not cheap. Yeah. And and so it's kind of the art.

Like do you do some indirect tests or hey, there's something going on which I kind of like say. So now as you dig deeper, you have a little kind of a strategy to how you because it's rare the patient go, okay, give me all these, you know.

Yeah. You know, ten, ten different panels in different labs. How do you approach that. Yeah. So I guess there's two answers to that. One is what can you get away with with insurance.

Right. So all these question lab core tests that we talked about a lot of the times we can get insurance coverage for that. So that's hugely helpful in a scenario where we're looking at out-of-pocket testing.

Hopefully a good history sort of helps to direct in that way. But ultimately there's no easy answer. Can it's a lot of gut, right? It's a lot of seeing a lot of patients.

It's just a. Lot of familiarity. I know that there is you know, there is. And I think testing like, you know, like autonomic response testing or kinesiology or electrodermal testing and I, I don't do that.

There is a provider in my office who in some cases I'll send to him and say, hey, you know, run up one of these energetic tests for me and just give me your top two things that are hits.

And that helps sometimes to hone things. And for some people. But as I kind of alluded to earlier, like these big nets, this idea of like, let's, let's just do a general antibody study, you know, maybe we need to measure immunoglobulins to make sure they have enough of them to even, you know, see a result that's quantifiable.

But and, you know, assuming that their humoral immune system is working, you can maybe do just general screenings for like, again, like a chemical immune reactivity, which is a test or a mucosal immune reactivity.

These are going to look at, you know, solvents and some heavy metals and some infections. You combine it with a pathogen associated immune reactivity test.

You get this. You know, you test for everything from strap to chlamydia. You know, there's. Likely not the antibodies but the, the the basic lymphocyte test to see their reactivity.

So it's a different type of test. It's a different. Yeah. It's just saying you've been exposed. Right. It doesn't really mean anything more than that.

But it does help to funnel things a little bit more. You know, if I had my way and, and and ultimately I, you know, I try and encourage patients to do as much as they can because the more information you have when you start, the quicker, the quicker you can get from point A to B.

And honestly, a lot of the times the less expensive it is because you're not heading into things that you don't need

to go down. I know you know, and it's but it's hard.

It's like, well, I don't want to do that, I want to the patient is so sick now that I want to do that. Like I want to get the information because there's likely like you've been to 22 doctors, right.

This something let's look down some different path. But it's it's tough I mean people are paying a lot. They have insurance like that not covered. Right.

And that's what you know, the medical system is it's tough. And and these patients with these chronic multi-system illnesses are are they. It's just a tough tough.

But you know even speaking to that like maybe you know and and maybe even they'll just leap into the topic of peptides a little here. Like, you know, we had this idea of like upstream versus downstream things, right?

Like we know that how things get affected, sometimes it's helpful to just test for these upstream modulators, like if you test an MSH level in someone and it's not measurable like it's it's less than a quantifiably.

You know, something is probably bound to that leptin receptor. You know, something is disrupting the Mylanta system. And you know, you've already identified one thing.

So, you know, this is where like Milnerton comes in. And I don't think people really realize that Mylanta is synthetic MSH and you can use it and and it works great to like work on all these peripheral cytokines, work on reducing activated microglia in the brain like preventing these NMDA receptor.

You know, you know, constant stimulation. So, you know, there are simple ways, but, you know. It's very meant to like Glanton, sort of like the Barbie doll peptide, where you may see a tan, you lose weight, you lower inflammation and.

Yeah, and you increase libido like a sign you. But but you do get a pigmentation change if you're young. I like it, but oh, my God, I did it. And I turned so dark it's like, oh my gosh, what is this guy?

You know. But also if you're all together all in some dark spots and come out. So it's not the best, but but that whole system is something that I think is finally doctors are recognizing it's so anti-inflammatory mast cell activation.

Yeah. And you know I think inflammation is what's killing everyone. I mean, just, you know, one common pathway, inflammation, mitochondrial dysfunction, which go all go together.

And I think that's a great. So there's KTV, which is the tri peptide, is the piece of it which, which attaches to those receptors but doesn't cause the hyperpigmentation.

Yeah. Yeah. And people don't I don't I don't think it's really realized in that as you mentioned, inflammation drives all of this. And Milana Tan and Cfpb have both been shown to have anti-inflammatory properties comparable to prednisone, without any of the negative consequences of using a systemic corticosteroid.

So wow. Right. Like isn't that a huge deal. And similarly BPC you know, so you start thinking of like inflammatory bowel disease is or rheumatoid arthritis or other things that really, you know, or, you know, ankylosing spondylitis, all these things that people are on chronic steroid therapy.

This is a such a better option for so many of these. Yeah. And even if they're on steroids you give it a counteracts it. You know there you go. And it's like yeah you're you're reducing inflammation.

But actually anabolic rather than catabolic. And yeah. So you know what are your favorite peptides or what are typically the order you use that I understand is gonna be variation.

Like you know what tests come up and yeah, but what what in general are your go to peptides. So so I guess what

I'd start off by saying is like I categorize peptides in terms of like what they do.

So the way I deal with any bio toxin illness is like, I kind of have this seven hour program in my head that I think of, which the first one is always removing or detoxifying the substance.

Right? Like if you. Get out of that environment or whatever it may be. Yeah, get it out of the body, okay. Whether you got to kill something or help, you know, excrete toxin, then we have replenishing upstream neuro regulatory hormones, then reducing inflammation, then rebalancing the immune system, restoring endocrine function, repairing mitochondrial function, and then finally rehabilitating impaired neurologic function.

And the reason I'm telling you that is because I start in that top down approach. Okay. So as we talk about the first thing, well, the second thing, after removing the substance replenishing neuro regulatory hormones.

So we already talked about melanin tan I love this stuff. I use it a lot in a lot of patients and I find it's incredible vitamins. Do you have problems with people getting dark spots or. Yes.

Yeah, I do actually. And so the way I tend to use melanin tan is I tend to kind of think of it as a priming the pump, where I'll use higher doses for roughly, you know, sometimes 6 to 8 weeks, which is the life cycle of a of a T cell.

Right. So we're trying to actually impact that immune inflammatory response. And then I'll reduce the dosage frequency or amount pretty significantly.

Because by that point, you know, as you're seeing you're seeing melanocytes deposition, you're seeing dark spots, you're seeing all of this stuff happening and that that's, you know, helpful, that sort of modulated KP as you talked about won't do that.

Unfortunately, as as soon as I had wanted to start using in regulatory bodies that we shouldn't speak of, sort of like pulled that off the ability to even.

Bring it back. We should have it in a month, I hope. Yeah. Well, I'm going to. Yeah, I'll be all over you on that one because I'm excited because because theoretically, KP, as you mentioned, has some of the same benefits of of using Milana lantern from, you know, its ability to reduce all of the inflammation in the body cutting, but.

It's more potent. Is it okay? I didn't even know that. Yeah. So that's something I didn't know. But people don't realize they, you know, these MSH or the terminal fragment with KP it up regulates IL ten and it induces CD4 and CD 25 markers on T red cells.

So it improves antigenic tolerance. The presence you know of these things. It you know in models of RA and inflammatory bowel disease. I. I think it's going to be huge.

And they even have, you know, psoriasis. You rub it on I don't want to hear it's gone. And when my girlfriend was getting that dramatic graph, you rub it on like ten minutes late, it's gone.

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