Introductions and Lyme Personal Stories

Good evening everyone. My name is Dr. Richard Horowitz, and I'm co-host for the Healing Lyme Summit. And I'm very excited today to be spending time with a very good friend of mine who I've known for a long time.

Dr. Sunjya Schweig. Dr. Schweig is the founder and president of the California Center for Functional Medicine, and we're going to be discussing precision personalized medicine today and how it applies to Lyme.

So, Sunjya, thank you so much for coming here today. And why don't you tell the audience a little bit about yourself? Yeah. Rich, Dr. Horowitz, it's great to see you.

great to be here. Thanks for having me as a guest. And, hello, everyone out there in the audience. And, thank you for being here. on the other hand, I'm sorry that you're here in a way, because it might mean that you personally or someone, in your family is struggling with complex chronic illness with Lyme disease or tick borne diseases.

And, as many of us, in this field, you know, have experienced a lot of us came to this from a personal connection. And for me, it was my wife who was diagnosed with Lyme disease, basically the year after I finished my residency at the UCSF Santa Rosa Family Practice program.

And, you know, she'd been sick for a decade prior and and had been to many doctors and had done many tests and had been told, you know, everything looks normal and there's nothing wrong with you.

And, you know, a classic story that I think many folks out there have experienced and, you know, Dr. Horowitz actually, the year she was diagnosed, she was diagnosed in late September, early October, of 2008, and I was scheduled to go out of town to go to a different conference.

And it just so happened that ILADS was in San Francisco that year. And I remember coming over there and learning from you and from Dr. Burrascano and, being on the one hand, completely overwhelmed and terrified, really, of what I was learning.

I hadn't, you know, never been taught any of this in med school, or residency. but also on the other hand, just remember so deeply and fondly how gracious you were with your time.

And, you know, my wife came over at one point. We sat in the lobby, and you you talked through what we were, what we were seeing and what you were thinking.

And, you know, that was really, a key, connection for me, to have that time with you and to then learn from you over the years. So thank you so much for all the work you've done and continue to do.

Oh, it's my pleasure. In fact, you know, it's interesting, I remember that very specifically when you and I met with your wife and and meeting her and going through, you know, I don't know if you remember, the conference is blur after a while.

If she doing much better now with the personalized treatment. She's doing great. I'm very grateful for that. Yeah. So and again, it was a combination of everything that did it for her, all the way down to, you know, finally doing a cleanse and, and so, yeah, lots of different aspects of what we'll talk about today with, you know, medications and supplements and lifestyle and, you know, full spectrum care that really, again, is very personalized and is very individualized.

That's very anyone. Right. Every person is unique in this field. Right. Well, you you probably know from my wife, even though I had been doing this for a long time, my wife also was sick with Lyme for 25 years.

She's now four years in remission since dapsone But I think a lot of us who get into this field, we have personal experiences with it. So yeah. So why don't we just jump in? Why don't you tell me a bit, how you got into functional medicine and specifically the personalized aspect of medicine, and specifically how you're doing this for the Lyme patients?

Yeah, absolutely. So I had a very alternative upbringing. my first name is Sunjya, and that was my birth name. And I was born in Northern California in the early 70s and actually spent six years of my childhood living in India.

And so from my, you know, basically my, my very beginning, you know, days was infused with a real, eye to an understanding of the, of the possibilities that are out there that are much broader than Western medicine.

From Functional Medicine to Chronic Infection Care

And I includes, you know, healthy diet and mindfulness and meditation and movement and yoga and, you know, even in India, you know, disciplines like ayurvedic medicine and homeopathy And so that really informed me, and I think it was by high school, where I decided, you know, I really do believe I'm going to go into medicine and, and then went to college at UC Berkeley and pursued that as well as medical anthropology and religious studies.

And so I knew that I want to go into medicine. I love science and I love medicine. And, I think it's incredible what we can do in our Western system. However, I was also very aware of the limitations and the fact that it's, you know, not really a health care system.

It's more of a sick care system that we're really just trying to bring back the final manifestations of disease using therapies that block or turn off or turn down or lower your blood sugar or lower your cholesterol or, you know, try to block pain or try to turn off the immune system.

Right. And so really, I was very passionate from even before I went to med school and before I went to residency about what's going on behind the scenes, like what's why, why are these things happening, why are these root cause conditions happening?

And so it's really, you know, anytime I had a chance to do a rotation or mentor or do a paper or a project, I always would do it within the space of integrative medicine and functional medicine and started in functional medicine practice right off after my residency.

And again, that was right around the time when my wife was diagnosed with Lyme disease. And so quickly this curtain kind of pulled back and I realized, like, whoa, you know, this chronic infection piece is so critical and it's so pervasive and so many people are struggling, whether it's Lyme or babesia, Bartonella or Ehrlichia or other co-infections or gastrointestinal infections, you know, Giardia, H. pylori, you know, the list goes on.

Cryptosporidium, or viruses, you know, we see a lot of Epstein-Barr and Coxsackie and, parvo, I mean, you know, or, you know, the list goes on as there's so many, you know, we our bodies are this incredibly rich, terrain of balance between microorganism and human and, and, you know, the information is flowing back and forth, but those can become imbalanced very quickly and with devastating effects.

And so really, my career has really dovetailed now towards, you know, general functional medicine frequently, a lot of folks with more complex gut issues or autoimmune issues or tick borne or mold, etc.

I think that's where we kind of see a lot of us see, you know, where these people really need help. but really, you know, again, it has to be a very personalized approach.

And we do a lot of testing. so we have really like a, you know, test, don't guess, philosophy. However, the tests, as you know, and as we know and as everyone out there knows, are extremely limited at times.

And so they're really, you know, adjunctive information, helpful information. but it's really the symptoms and it's really what's happening to that individual person.

listening to this and, you know, that carries so much weight for, for practices like ours. And so it's super, super personalized. It's super individualized.

It's very much like, you know, as, as our friend and colleague, you know, when Anderson said, it's like, you know, you just got dropped in the middle of a jungle and you have no map and you have no idea how to get out.

And so you just basically you start listening and you start trying things and you start to triangulate a path forward. Right. so really, it involves sitting with that person in front of us, listening carefully, putting the clues together, drawing on our experience, testing, using that information, trying things, using that information.

and then working in that regard to, to guide people out of the mess that they might be in. Right. So do you have a structure when you do these personalized treatment plans for patients you were talking about?

You know, obviously the GI is very important with changes in the microbiome. We're now finding with, too much Prevotella, Clostridium, not enough acrimony.

So you're right, all of this is coming out mast cell Leaky gut. Do you have it set up in a personalized model where you do it in systems like do you think, these are the GI tests I'm going to do in symptoms?

I'm looking at these, the neuro as either cardiac like how do you structure it in your mind? for both the doctors and patients that are listening. Yes. So we do have a system and that's evolved over a couple of decades of doing this.

And it involves a few different aspects. You know, one is that, it involves, you know, sort of sequence of testing and, and then involves a sequence of care and involves a sequence of, of, who that care is delivered by.

Right. and so for example, using clinicians, we, we work, in our practice with nutritionists and health coaches and admin support and then also technology.

you know, data visualization, wearables, you know, trying to get a signal, but also trying to help that person. So that whole we think of that as like a high touch mixed with the high tech and what we're really trying to do, especially with the high touch team approach, is to find all the problems or as many as we can and to start working on them, but also to give that person the support that they need to make lifestyle change and to make health behavior change, which is not easy.

And it's not easy for the most able person, but it becomes more difficult when we have someone who's struggling from fatigue or cognitive impairment or, you know, a whole host of downstream conditions, which you outline so well in your MSIDS model. Right?

And so it really, becomes this very much a hand-holding piece, but, you know, to back up and really land on your question more definitively, I would say that the gut testing is really critical.

We firmly believe that the gut is the center of the universe when it comes to the immune system. And I you know, this is a passion area of mine, but I've spoken on ILADS I like that at conferences, you know, the borne infections also, you know, directly affect the gut and can directly infect the gut, especially Lyme and Bartonella.

Right. And so then they can cause this downstream cascade of inflammation and intestinal permeability. They can trigger, you know, Sibo, small intestinal bacteria overgrowth, you know, and so those have devastating effects downstream.

And they propagate, a systemic milieu of inflammation, again, of intestinal permeability, of immune dysregulation, of autoimmune activation. You know, if you have intestinal permeability, you almost definitely have blood brain barrier permeability.

And so you're getting, you know, the cognitive issues and the fatigue and you can't think memory issues, etc.. Let's just systemic inflammation and systemic immune disruption, systemic autoimmune activation.

So we do stool testing frequently. We test with two labs at once. And so we'll do you know like usually at Genova because it has just a bunch of helpful markers.

But I do find it's actually not very good at finding the bugs. You know, very rarely does it. Does a pathogen show up on there. so we also very regularly test with a company called Paro Wellness, and they are very bare bones on their report.

They don't provide any of the microbiome balances. They don't provide any of the inflammatory markers of a short chain, fatty acids or digestive enzymes or anything like that.

but they do show the bugs and they, they definitely find those more. And so we'll do those and then we'll do a Sibo breath test, you know, especially if symptoms warrant, we'll do a hormone testing up front, adrenals and sex hormones.

And we'll do a really comprehensive blood panel which has markers of inflammation, key nutrients, you know, like B12 and vitamin D and, you know, iron, ferritin, zinc, copper, etc..

and, and thyroid hormones and, and so that really gives us an excellent snapshot of sort of like the starting place. and then from there, we then start to work on protocols and then we start to sort of customize the testing a little bit more based on symptoms, based on response, around the bugs and around, you know, which viruses and which tickborne and, you know, are there more mycotoxins, other heavy metals.

And so, we sort of have our phase one, phase two, phase three that we'll, we'll put people through. So, so question the factors you consider most crucial and critical.

So and you brought up of course the gut. And of course you're correct. I mean it's extremely important. Most of our patients at this point we're seeing leaky gut with food sensitivities, huge amounts of Marcell.

Right. Which drives inflammation. so as far as the way you're doing this, is there any specific, personalized treatment plans that you revisit and adjust?

Like, do you always start with the terrain? Like, do you always work on the gut first? And some of these people you find, oh, the gut's fine. Actually, in some of these people.

And we can just dive in with antibiotics.

Building a Personalized Testing Framework

Or do you find like you take a couple of months and you want to tweak the hormones and get the adrenals up and, you know, get the microbiome up, do you, do you have a way that you approach it in that way?

Yeah. Again, there's no hard and fast rule. but in those cases where we really see very little symptom burden on the gut and testing looks fine. And yes, we will lead to the next stages more quickly.

And, and there's also, you know, cases where, you know, the burden, of the tick borne illness is, is so acute or so severe that, you know, we don't really have the luxury of time of kind of doing, you know, we have to kind of get some treatments on board just to stabilize them.

But we see that as well. you know, but the other pieces that I do really think need to be nail down, you know, very quickly or at least worked on very quickly are, you know, sleep and, you know, sleep.

Peace. and because these are excuse me, these are foundational building blocks which will, help all the other treatments work better, right? You know, so we've done some research on botanical medicines, which we'll talk about.

And in botanical medicines, you know, can be antimicrobial, directly killing bugs. But they can also have these much larger, interesting systemic effects around inflammation and immune balance.

And and so the bugs really like they thrive in, in, a milieu of, of immune inflammation, of confusion, of cytokine storm. And, and so you can work on that whole piece of it, you know, the cytokines in the immune system and the inflammation side with sleep, with mindfulness and neuroplasticity and brain retraining, with proper movement, with, you know, meditation and with breathwork.

And, you know, so all these pieces, while they might sound a little woowoo, are actually really critical parts of the recovery path, I think, for everybody.

And, and the more that you can really dollars in up front again with the support needed to make effective change, then I think that we can frequently get away with, treatment antibiotic protocols or protocols which become more effective and or and be for shorter durations and, or I think we have a less risk of relapse when we try to, you know, have the dismount ready to try to stop therapy.

And then what happens? Right. So, all of these pieces, I think are very, very important upfront. No, I agree, you know, when when we approach it also we do the same thing with the inflammatory component, you know, with the message map that you discussed, I, you know, I always think of it in terms of like six rivers of inflammation going into an ocean where the three BS Borelli, ABC, Abad, and then the gut, the microbiome, leaky gut, mast cell, asleep of course.

And also mold, toxins, heavy metals. And whether you have the nutrients to be able to detox. You know, when I, when I have this conversation of inflammation with, you know, our our mutual friend Neal Nathan, you know, he and I go back and forth about do you treat the mold first?

Do you go after this first? Like in what order do you do it? Because it seems like at least in California, where he is, he's finding the mold pieces are driving an inflammatory response very strongly in that.

Without doing that, all the other factors of inflammation may, you know, not play a role. So do you find like patients have preferences? You do you give them choices with this or and when you do find mold in metals, how do you evaluate like which of the most important points on this personalized treatment map?

Because it it does get a little bit tricky sometimes figuring out. Right. Because mold can cause overlaps and fatigue and brain fog, but so do all the three BS.

You have a a way you kind of figured this out. You just kind of dive in there for patients to and see how it works. Yeah. So that's an excellent point that you bring up because both mold, more toxicity, more exposure and also Marcel Marceau activation syndrome.

Marcus both of those buckets are those conditions have a symptom picture which looks almost exactly like Lyme disease or tick borne infections. And so there's this incredible overlap between these these three pieces.

And and all of them, you know, basically can cause almost any symptom across almost any body system. Know I think in my brain, you know, with 15 to 20 years of experience doing this, you start to get a certain amount of pattern recognition.

But I think it's also important, you know, you have to like take your, your, your lens off or from time to time and just make sure that you're not just kind of focusing on, on the thing that you like to do either you're good at doing and really make sure you're evaluating all those areas.

And so a lot of times we'll be doing things simultaneously, right. But it really does depend on sort of what the story is. You know, for example, if somebody tells us that, you know, they were, you know, in their usual state of health or maybe they're a little bit sick, but then they lived in a home where they had, you know, significant exposure to water damage or leaking or, you know, known mold, etc.

and they have testing that shows, you know, urine, mycotoxins or elevated. Then, you know, that will rise up, that will become, okay, we might need to address this more quickly. Right.

the mast cell piece is interesting because that's actually, you know, there's certainly testing that can be done for that. I find, that the testing is a bit hit and miss, meaning, you know, the chances of false negatives on the test is very, very high.

A lot of the tests have to be processed very specifically. You have to be, you know, drawn and immediately put in a chilled centrifuge and spun and then kept on ice.

And and if it's not done, you know, even minutes off of that protocol will, you know, half life in some of these mediators is in the order of minutes.

And so even minutes not in the right temperature can cause a degradation of that sample. And you might just have nothing there by the time it gets to lab.

So we'll frequently just try things right and treat, the mast cell piece. Because, you know, some of those treatments can overlap and be potentially beneficial for for the tickborne side too.

Right. So things like H1, H2, blockade, Claritin and Pepcid and then, you know, supplements like quercetin and magnesium. And there's a long list. You know, there's many, many different things, even things like gastric, chrome and keyboard.

Often, especially if there's a lot of, of, gastrointestinal or, you know, gut symptomology. so I, I find those are really helpful. and so it's kind of like a symphony, right?

You kind of kind of get all the instruments tuned up and and learning the score and playing well together. And so a lot of times we'll be bouncing back and forth.

we have to be careful in that, in that realm to not overwhelm people. You know, people I think, you know, a lot of people are very knowledgeable, but they're also, sensitive.

Their bodies are sensitive and they're reactive. And and then there's that, you know, the big sort of cognitive impairment piece that some people experience and, and there's just logistics and cost and the burden of trying to take all these supplements and adhere to these lifestyle changes.

So it can be really, really overwhelming. and that's a really big passion area of mine of like, how do we make this better for the patient? How do we make this experience better and solve for the support that they need?

And, you know, it goes from a care team and technology to be successful on a navigating these paths. curious to hear, you know, sort of on your end, how do you see that and what your experience in your practice is with, with that complexity?

Yes. No, I, I agree, I mean, sometimes things come up to the surface, like I will find most toxins in the vast majority of my patients. The article we just published in microorganisms three months ago was 84% were positive, but interesting.

It's only been a handful of patients, at least lately, that the mold was really interfering strongly with the success of the Lyme Bartonella protocols, the adapt some combination therapy.

I've. I have a patient in Europe and a patient in Florida. They had done 4 or 5 pulses of daptone and they kept getting better, but they kept relapsing quickly and just weren't pushing ahead.

And I said to them, have you ever had mold exposure? And they went, no, I don't think so. But they were both living near bodies of water. We tested them, the levels were off the wall.

And both of these patients, once we started detoxing them, they got significantly better. So it was it was no longer the the Lyme and the Bartonella and the bbca.

Right. It was the mold that kind of moved to the top, as you were saying. Some things change over time. So it's it's a very good point. How do people get Ahold of you?

do you have any upcoming events, anything you want to share with people that is important for the community? Yeah. our website is, we're the California Center for Functional Medicine and the website is CCF.

Mediacom. And if you go there, you can read a bunch of information, and we try to put a lot of helpful information onto the website, blog, you know, newsletters, and also links out to our social, channels that are there.

That would be, you know, I think the best, the best way for people to find us. Great. Thank you. All right, so let's dive back in. So, question genetic or biomarker tests that you use to guide treatments.

Do you, do you look at the HLA factors? do you do any of the specific like there's some amazing genetic testing out there that I know some of the docs do, especially on psych medicines.

How much do you use that genetic testing for these personalized treatments? Yeah, I've gone back and forth with that, to be honest. you know, we we certainly, you know, do think that the methylation testing, the GFR, comt these can be helpful.

Prioritizing Gut, Sleep, and Immune Balance

I feel like, you know, we did a much deeper dive, sort of using 23 and me to parse out a lot more of the snips, the single nucleotide polymorphisms we've done out in the past.

And I just felt like it wasn't really, mapping out, you know, I don't think the research was really holding up, you know, the, the necessarily the, the ability for us to say, okay, here's this, this snip and their, this pathway could be deranged and therefore you should take this supplement.

I think that was an attractive link to make. But I feel like it broke down in practice. And I feel like there was a number of practitioners out there who were building very specific, very complex, very expensive protocols for people with tons of supplements based on their, you know, Snip reports, single nucleotide polymorphisms reports, and I just wasn't convinced that that was, you know, sort of the way to be doing it.

So we've been backed off on that a bit. We still again, really do believe in the methylation cycle, frequently just support people with with targeted B vitamins in their, you know, the HLA you know, both for I know Dr. Jones, I've worked with him and he was using that for, you know, lying predisposition, predisposition potentially.

And also, you know, obviously there's certain links to autoimmune rheumatic diseases, etc.. you know, also that's been used the HLA, DRB has been used in the mold field, by Richie Shoemaker.

That was popularized. And I feel also like that is is not. Yeah. That's not totally sold on that link. I think a lot of the folks in the Moorfield have moved away from some of those markers a little bit.

you know, interestingly, I'm tracking, some other markers as well. For example, you know, markers of hyper coagulation, right? I think, you know, the Covid pandemic really brought to light, this whole micro plot and hyper coagulation piece, which a lot of us knew was going on in the background with Lyme and chronic illness, car fatigue patients.

but we didn't really have it mapped or tested as well. And so I'm excited for the opportunity potentially to have that become more available. You know, whether it's thrombus that's the gram or other micro clot testing, it's still not widely available yet for us. but, but I have been tracking things like factor five Leiden and also the Pi one genetics.

You know, and so the Pi one is, you know, well-supported in the literature for predisposing to, to embolic events, to clots, etc.. And I do we really do see actually, a lot of our chronic illness patients, you know, showing positive pi one genetics.

And so I do think there's a link there between this tendency or predisposition to forming clots or micro clots. And then, you know, the, the risk of these chronic illness pieces.

So, that's one thing that we're tracking. You know, it's interesting you brought that up because you, you remember you've been around long enough, as I have that years ago that was really discussed a lot, whether you should even be using heparin in some of these patients when you'd see, thrombin, antithrombin products.

Right. And fibrinogen. And the question was is like how much of a role was this playing? And of course, with Covid, with the micro clots, right. in fact, there was an article that came out in nature this morning on, people who have my allergies, who have muscle pains with Covid, with this post exertional fatigue.

And they were finding mitochondrial dysfunction was playing a role, but they wanted to know if the clots were actually interfering with the oxygenation.

They couldn't prove it in in the recent study, you know, we we look for it from time to time. I've never been clear exactly what the role is. I, you know, believe over time that, some of the supplements were using like an Acetylcysteine were giving to everyone with glutathione on for their horses.

And it turns out that an acetylcysteine blocks von Willebrand factor, so it stops clots. And I think the reason maybe we haven't seen as many, you know, clots in our patients because nobody's died from Covid in our practice.

I think that, you know, it may be actually the neck blocking some of those micro clots forming. do you have a protocol, by the way, that you're also using for Covid in your practice that you've integrated at this point?

Yeah we do. Yeah, absolutely. It continues to evolve. you know, as we move through now into year four of this, of this pandemic. but no, I agree. I think, you know, some of the star players, are things like and acetylcysteine and then glue an alpha lipoic acid and a lot of the mast cell support.

We find that was really, really helpful. and so, yeah. No, I'm, I'm right there with you. I mean, it's interesting that they've discovered, you know, on on the 16.6 map that I have, eight out of 16 points have now been associated with long Covid, so.

Right. So it's always like infections causing inflammation causing immune dysfunction right near me. Dysfunction is causing parts and it's causing mitochondrial dysfunction and autoimmunity.

And there's viral persistence and viral reactivation and low serotonin. They're finding the virus in the gut. I mean, it's it's very interesting to watch for those of us who've been doing chronic Lyme for so long that the overlap is actually quite strong right at this point between both the symptoms and some of the pathophysiology.

so let me just switch gears just for a second on, these very sick patients I know who come to you like they do with me with comorbid conditions. can you talk a little bit about, how many people you're seeing at this point that have babies apart, that have some of these overlapping conditions and where you use you published a wonderful article a couple of years ago that I think many in the community know you did it with Hopkins researchers about some of the natural botanicals.

And I was kind of wondering if you could talk for a minute how you use these botanicals in these people, with these comorbid conditions. Yeah, absolutely. So, yeah, in preparing for this, discussion today, I was rereading, your, your empties paper, one of the earlier ones you've done so many, you know, this was the, 2018 that you published in health care.

you know, the part two, of the role of the misfits model, you know, and so you provide some really excellent

numbers and data in there. And I think we're seeing relatively similar, you know, experience on our side, although I will say, you know, I think, you know, the frontrunners in terms of the tickborne infections are really Lyme and Bartonella.

And I'm actually debating these days, you know, who's number one. You know, Bartonella is really, so, so prevalent. And, you know, while we we know that Lyme is obviously passed via tick bite and maybe some other by the insects, it's not as well described as Bartonella, which is like, you know, basically so many different biting insects that are biting multiple different animals or mammals and are, you know, transmitting the including fleas and lice, etc..

you know, as well as the cat scratch, you know, route as well. So Bartonella, you know, is really a big player on our side. And and again, going back to the systemic infections, it crosses over so many different systems and also causing so much gut disruption.

and so that is really, really one of the key pieces, that we're, we're seeing. and so, you know, and so sorry, remind me the second part of the question.

So with the gut. So for example, you, you published some really great article with Hopkins research on the botanicals and those. Of course, those botanicals do not affect the gut in the same way you discuss crypto, lapis in Chinese, skullcap and Japanese. Not.

So maybe just share a little bit. Because you do functional medicine, you're an expert in it. Maybe share a little bit how you use these botanicals, especially in people who have gut, you know, problems or detox issues I think would be useful for everyone to hear.

Yes, absolutely. So yeah, it's really, really, gratifying to be able to do that research with Dr. Zhang and Dr. Leona. and, you know, we actually had three papers come out of that with Dr. Zhang's model.

One was on Borrelia, one was on the X, one was on Bartonella. And, you know, some of the top, botanical medicines that came out of that were fascinating, actually, I should I like to pause always when we talk about this, in general public, you know, because I think that there's a tendency to to see that and to look at and be like, okay, you know, these botanical medicines can be used to treat Lyme or Berbizier or Bartonella, and that's true.

And that and that's part of how we selected the clinical medicines, because they're actually already being used in, in the community, the practitioner community, the patient community.

But I do like to just, you know, provide a framework and remind folks that these were, test tube studies. These were, in vitro studies. And so, you know, basically we were we were taking the organisms and, and, you know, this is all done in Dr. Zhang's lab at Johns Hopkins at that time, you know, growing the organisms and getting into different life cycles, whether long phase growth or stationary phase biofilm, you know, communities, and then adding the botanical medicines or the natural products to the test tube.

Right. And so it's very like kind of, you know, reductionist science approach, which to be honest, rubbed some herbalists the wrong way because they and we and you recognize that some of these botanical medicines do have an antimicrobial effect, meaning they're going to kill the bug.

Mold, Mast Cells, and Overlapping Chronic Illness Drivers

But a lot of their action, they're they're basically built from, you know, hundreds and hundreds of different active phytochemicals. And some of those have cooling effects, and some of them have anti-inflammatory effects or immune balancing effects or hormone balancing effects or gut healing effects.

And so it's the synergy of an individual plant or botanical medicine. Plus then adding multiple plants together. They have this sort of crosstalk and, you know, community effect really.

And that's really where the magic of botanical medicines come. Right. And so, you know, I always like to point that out, not to say that we shouldn't and can't use these.

We do do and we should use them. but we definitely still need more studies. We need more, you know, animal studies and even human studies to really show what's going on now, backing up.

So, you know, what do we find in those studies? You know, basically, yeah, there are several key botanical medicines which showed, you know, activity in this test tube model to kill, all three of these organisms.

Right. And, you know, some of the key players, you know, crypto lab, this was a super interesting find. I think that was sort of like the story of all this research.

you know, because you had talked about crypto leopards. We've all known about crypto lapis and its potential benefit for BCA, given its historical use in Africa against malaria.

And Bubka is a pure plasm, you know, malaria like organism. And so the leap was made. Let's use crypto lapis against Bubka. And we did in fact see some clinical benefit with that.

Right. But to then find that in the test tube, this botanical medicine actually was able to kill and prevent regrowth or prevent, you know, so this biofilm, you know, stationary phase of the bacteria for Bartonella and Lyme was a big Right.

That was really, really interesting to see. And so yeah, Crypto lapis definitely has gotten more use in our clinic from that finding. And you know, other botanical medicines like Scuderia skullcap, which also has antiviral, antifungal, anti-inflammatory aspects.

Scuderia was one of the key herbs during Covid and and that. And that's Chinese. That's Chinese skullcap right. Yeah. Because skullcap. Exactly. Yeah.

you know and then Japanese knotweed polygon polygonal because become the Latin name. So, so a lot of these key botanical medicines are really, you know, well represented in our practice in terms of how we use them when we use them.

And a lot of times, you know, going back to our earlier discussion, you know, this is a really easy thing to reach for if you want to add something into a gut protocol or hormonal protocol or detox protocol, more protocol have, you know, you know, it's very usually, you know, lower side effect and, and lower risk to incorporate these sooner.

And some people just have, you know, a great response to them. And that's that's most of what they need. and some people will use that as sort of the entree and then transition to antibiotics when we're ready.

and so a lot of times there's, there's a sort of mix and match, situation that happens. Yeah. No, you're absolutely right. In fact, we use them. I after I read your paper, I mean, I started using it for broader reasons because I was using crypto lapis primarily for Bbca before.

Right. And then also the articles came out on, on Duncan AI where you can use, right, a cornea, Japanese knotweed, Chinese skullcap. crypto lapis. Right. Artemisinin.

We started using all of these. I mean, I will still say, and I'm sure you've seen the same thing, but he is highly, highly resistant. it is not an easy bug to be able to get rid of.

And, you know, the recent article about a week ago that got published on using to Fennekin and a Toba clone weapon, and I asked my nurse practitioner, John Fallon, and I said, you know, I I've used a lot of it in the past, and I, a lot of combinations of ivermectin and a lot of herbs.

And what I think is happening is we're knocking down the load of these bugs. And I think it's happening for a lot of

these, both herbal and antibiotic protocols.

But it definitely requires, I think, a very comprehensive approach. And we need more research on it because I'm not convinced at this point that to quit and autofocus alone is going to be enough.

And the side effects of to Quinn is, it can be a little severe with the anemia and the meth hemoglobin. So, yeah, there's a lot of research. And you're right.

I mean, in human subjects, it's great to see it in the test tube. When I took the research from Hopkins on what happened with in culture using sulfa drugs like that zone or Zentrum Max rifampin, methylene blue for Bart.

What Hopkins didn't tell me, of course, is what were the doses of the drugs? How long to use them? I mean, this is where I had to figure out the clinical pieces, but but it's still excellent work and I think it works really well incorporating these herbs.

I think you've done some great research there. it's a big addition to the scientific literature. so other questions I would have for you on is patient preferences.

Like you might have your ideas on, you know, treating some of these people. And just like I do, we have to follow the patient's lead. They may have a sense that I don't want to do a lot of drugs this way.

How do you work around that? How do you speak to patients about their preferences when you kind of work with these personalized models? Yeah. And to me that, dovetails with a bigger concept, which is that, this work is, is very collaborative.

you know, it's not very classical, sort of top down, you know, doctor says what to do, and then you just go and do it and you're not really allowed to ask questions or question.

we, we, we really try to check our ego at the door and try to understand that this is very complex, that everyone's very individual and, and, and they need individualized care and that they do come in with either psychological predispositions or, you know, physiological, you know, predispositions that where their body can or can't tolerate certain things. Right.

And that they've been they're the expert, you know, the patient is the expert here because they've been living with this condition frequently for long periods of time.

And they've tried a lot of things usually. Right. This is a usually a very motivated, very smart population of people who, have have kind of been through the wringer.

Right. And they're, they're, they're sort of they read a bunch, they listen to a lot of summits and they listen to a lot of podcasts, and they've seen a lot of practitioners, you know, both mainstream and, you know, functional alternative, you know.

So I always that's one of my favorite things about my job is I get to learn every day from my patients, you know, and at the same time, patients don't have a lot of times is they don't have the pattern recognition that we have, and they don't have the experience treating hundreds or thousands of patients over, you know, decades.

And and so I will also kind of push people that I'll bet. And they say, oh yeah, I tried that. I can't do it. It didn't work. Don't want to do it. And you know, I'll say, well, yeah, but when you tried it, you hadn't done all these other seven things that we've now done.

And so we're talking about a different terrain. And so I'm not going to tell you you have to do anything. But, you know, let's maybe talk about what would feel safe and what would feel like a trial that you could get on board for.

And we have definitely seen some breakthroughs that way too. Right. So, you know, we say very, very

collaborative, you know, but it is our job to, continue to just kind of bring up all options and to present, you know, a sort of a buffet of, you know, of choices and also recommendations on sort of what we've seen, as working in this individual case.

And part of that is, is experience. Part of that is, is, in science and research and, and a lot of that's just intuition, right? It's just sort of our sense of what we've seen and what kind of what this looks like and what it smells like.

And what we have seen works in the past. And, and so it is, you know, kind of feeling our way through it again a little bit. Yeah. You know, you brought up a great point about pattern recognition and this form of like personalized medicine and precision medicine because, I don't think of it in terms I love the term about the pattern recognition because it's true. That's what it is.

ultimately, for example, Bart, I agree with you. I mean, it's showing up now in the majority of our patients that I've kind of wondered in the past how many of these resistant cases had Bart and we just didn't have the tools.

Right? We didn't have the direct droplet PCR from galaxy. We didn't have Bartonella immuno blots in Bart fish. We didn't have T labs, Bart fish. I didn't have the tools right.

Botanical Therapies for Lyme, Bartonella, and Babesia

For 17 active Bartonella species to go tell someone that the pain in the bottom of your feet and these big lymph nodes you're having and you're you know, severe eye problems and, you know, horrible neuropathy you're having.

I had no idea, right, that this could have been did to Brett, know to, Bartonella have been so nice species. You're Elizabeth, but you're right. It's the pattern recognition that severe neuropathy with Bart.

The the last paper we just published, the ones who had the worst severe. Neurosci. Archaeopteryx symptoms. Right. Rosalie Greenberg and others have published on schizophrenia and Bart.

We, one of our patients reversed completely their psychosis, their hallucinations using dobsonian and methylene blue. So. But you're right, the pattern recognition is really, in a sense what helps with the personalized approach.

Because if someone has horrible neuropathy, horrible Pots disorder, Nami, which showed up in our study, bad neuropsychiatric pain in the bottom of the feet, the stretch marks, the classic extreme or granulomas a Bart.

That's the pattern recognition that says, gee, maybe I should be putting Bart to the top of my list, right? And going after that. So I think it's a great point.

and I didn't think of it in those terms, but you're right. It's just like the busy as the pattern recognition of day sweats, night sweats, chills, can't catch my breath.

Air hunger. We we do differential diagnosis. What makes people short of breath. But ultimately it's it's the pattern recognition that helps with this kind of a personalized approach.

So yeah, it's a great point. Yeah. Absolutely. Like, you know, to your point on the Bartonella, you know, I don't see mold or gasp causing some of those symptoms like pain in the bottoms of feet or the air or, you know, if it can do some of the neuro psych, but, you know, there's some specific symptoms that really kind of bring our attention to, to that, part of the case.

And that's what I hear. Again, amazing debt of gratitude to you for for publishing, on the HMC, the Horowitz Medical Questionnaire and giving us now a statistically standardized survey instrument, which we can use to sort of stratify, you know, probably not.

You know, possibly probably. And that's been really, really valuable. And I think that, you know, the next step in my brain of what really needs to happen from a precision medicine, from a personalized medicine point of view, to

really help solve for Lyme disease, and also just all chronic illness or complex chronic illness is to really get better at using data and to use data in a way that's intelligent and is proactive and using this, you know, this new, you know, really almost tidal wave of, of AI, artificial intelligence and machine learning and, you know, you've done, you know, very amazing and robust, you know, data pulls from your charts, but it's also very manual.

And so how do we scale that? How do we get, you know, a system out where we have, you know, a data dashboard now, which is pulling things in automatically and almost, you know, like my, my friend and mentor Daniel Craft, and he talks about, you know, this idea around wearables and sensors.

And, you know, our cars are so smart and they're very electronically heavy now. And they have hundreds if not thousands of sensors and always happening in the background.

And then, you know, a little check engine or, you know, service. Now light will come on. So we need that for humans right. We need some system that's tracking, you know, our wearable data and our symptom data and our treatment data and, you know, treatment outcomes and and you just saying, okay, everything looks like it's going decently well or Oh, something's not going well.

You should you should go in and get that checked out by an expert. And so I think there's a lot of opportunity there. I think there's a lot of potential in the next, next decade of where we're all going.

I think AI is going to play a really big role with that. so I'm actually pretty excited about about where we're, where we're at now. You're right. the obviously the big data is important.

And, you know, when I, when I had to go through the charts in my office, this was done by hand. I mean, we didn't have we didn't have the tools. And in fact, I'm just going to eat for the first time after 40 years because we're moving, I believe, in to our medical barn shortly.

Right. Can't have, you know, these thousands of charts following with me. but but you're right. I mean, the AI revolution is going to help. And by the way, I mean, you may have heard about this, but I, probably by the end of this year, I hope I'm just starting to work on a randomized, double blind, placebo controlled, randomized trial for daptone.

And we will be developing the protocols. They are looking at the big data as best we can. I spoke to Bob Moses about it, about using Bayesian statistics.

So you can actually look at the data as it's as it's coming in and possibly adjusting it versus completely blinded. We have to figure it out. But I think that's going to answer a lot of questions, because I'm hoping to get like 150 people, 50 in 1 arm.

That does exactly the protocol we just published in microorganisms, one that has a placebo, that's shown that no one knows who got placebo or not. And then another arm that's, you know, maybe a plaque winner.

Taxi cycling just for a standardized control group to compare. But we're going to look at the 16 point message model and see how many people have mold and how many people have medals and how many people have got disruption.

Because without gathering that data in large numbers of people, it's very, very difficult to figure out, as you said, with this, chronically ill population, we have and, I think most people know at this point, half of America, 50% of Americans, you know, suffer from one chronic disease and 87% of our health care costs, 70% of the desert are chronic due to chronic disease.

And we don't have a model to be dealing with this. And that's where I think the integrative functional medicine approach, you know, internal medicine is great.

It's great for acute care. It's great for blood pressure and cholesterol and whatever. But when you're dealing with

these chronic illnesses, you definitely need a new viewpoint, a new lens.

And I think you're right. The I approach will definitely help us here. So yeah, no, super excited that you're doing that, that next round of research.

you know, because the other thing that needs to happen also with this data is that because we need we need, support, we need guidance. And, you know, it's very hard, it's very manual and very labor intensive to do this work, and it's hard to scale.

And so there's so many, you know, people out there who need help globally. And, you know, having that, you know, data coming back in, you know, hopefully in real time to the practitioner can be super valuable, but it also can be extremely valuable for, again, doing exactly the kind of research you're doing and proving out this treatment works.

This one doesn't work. This works for this type of person, for this, you know, this, you know, genetic subtype or you know, with with these other comorbid conditions, etc..

So no, I can't wait for and it's going to be a little bit of a, time window for you to get that all done. Are you tracking any kind of wearable data or symptom data with, with the research you're doing now?

there will be some because obviously I have to track pots to sort of nami or with with heart rate and blood pressure, right, for these patients. Because just like with Long-Covid, in the the last study we published, I think it was 40%.

And that's what was roughly in the health care when I published in 2018, you cited, I think it was like a third of the patients. But yeah, I mean, we have to have some wearable data.

Absolutely. And, it's a good point. by the way, I will be passing around that study to people like you, Bay Area Lyme, you know who you've. It's a wonderful organization. You've been with them for years.

And I'm on their board also the advisory board and they've done some amazing, amazing work. And, I will be running the study by everybody. By your smartest people are buried alive by you before this goes out.

by I told Brian Fallon and John Alcott same thing. I want everyone to review it. So because we have one shot at this, we've not had a randomized trial in 16 years, roughly.

And, you know, the time has come. So I'm just one one of two men. Yeah. Just 1 or 2 last questions for you with this. how often do you have to revisit these treatment plans?

Because like in my office, I will generally find that if obviously, if all is going well, I don't have to bother looking at this. But I do notice sometimes, you know, people are doing well to getting better and better.

And all of a sudden they hit a roadblock. And I'm kind of curious, how often do you see this happen? And do you have to go back? Because sometimes I have to go back and go, gee, we haven't checked the adrenals in two years.

I wonder whether the adrenals are lower. one time we had the thyroid normal six months before, and then all of a sudden they were hypothyroid. How how often do you have to revisit your plans in these in these personalized precision models?

Yeah. My experience and our practice is that is actually, you know, we're iterating a lot and we're kind of constantly evaluating symptoms.

Patient Collaboration and Pattern Recognition

We have people fill out multiple symptom questionnaires for every visit, you know, things like the MSK and Promis

ten and the fatigue severity scale. And so we're kind of just tracking that in, you know, not real time, but you know, semi real time per each visit.

And so basically to your point like yeah looking for those fluctuations and looking for those, you know sort of branch points where because I think what happens is that, you know, and we Anderson taught me this a long time ago.

is that the body can the immune system can really only focus effectively on one, maybe two things at a time. And so the symptom picture will be reflective of what the immune system is trying to, you know, deal with whether it's Lyme or Bubka or viruses, etc..

And then, you know, we provide, you know, testing and then we provide treatments and we're working on, you know, potentially hopefully that, you know, problem that the body needs to resolve most high level.

And then, you know, and then we do that and we, we effectively either, you know, treated it or, you know, gotten it into the background. And now the immune system will will shift its focus and reprioritizing.

So you might see a very different symptom picture, up here and that can be very disconcerting for people and actually very distressing. Right. Because I said, wow, I was getting so much better.

And now all of a sudden I feel like the wheels are coming off the bus again. And this I've never had this thing happen before. You know what's going on, you know, is is not working.

Should I go see somebody else? You know. And so I think with that like reassurance and hand-holding, you know, we can really explain to people actually, no, this is normal.

This is what we do see happen. you know, we think that this means that your body's shifting its focus now and it's much more of a Bartonella picture, whereas maybe before it was Lyme, you know, and so because, again, just because the tests are negative doesn't mean those bugs aren't there. Right?

I always tell people, you know, usually on the test a yes is a yes and a no is a maybe right. And we do have you listed off some of these better, you know, directed.

By the way, can I use that with my wife that a yes is a yes but a no is it maybe. Can I I'm looking at. Absolutely. Say hi to me for me as well too. yeah. So, so. Yeah, but but, you know, we don't that's another holy grail, which again, Barry Lyme has been trying to track is is improving diagnostics because this data that tests that we can run are fairly abysmal.

It's definitely improving. It's gotten better over the last decade. you know, but there's so much richness in science and, you know, with transcriptomics and proteomics and metabolomics and, you know, all this, you know, sort of genomic health, you know, I think that there's there's optimism, but it really is dependent on the symptoms.

That's where the whole story frequently is. No, I agree. And where it gets tricky. And I think you're probably seeing the same thing as me, is that people will go along well, you know, treat their Lyme and their, their Barton.

The BBC acquires it and all of a sudden they start to develop. I just got an email this morning from someone. The night sweats started coming out right with the air.

Hundreds like the BBC all of a sudden reactivated. And he had done very well before with some a toga Cologne and is through mycin. And he asked me should I go back on it?

And the answer was, yeah, and you need another treatment course of it. And what happens is sometimes a normal adrenal from two years ago can now be stage three adrenal dysfunction.

And the reason you're so tired and not responding is, you know, you need some adrenal support. Whether it's hydrocortisone or herbs, glandular whatever, or, your pots wasn't so bad all of a sudden it's worse, or you got Covid

and now you're reactivating Epstein-Barr virus or herpes virus six.

So, you know, in these precision personalized models, and I think all of us who do this have to kind of keep going back and saying, and you said it really great before with the pattern recognition, if a certain a symptom is coming out of it's fatigue, it's tough because it's everything from hormones to viruses to Lyme bubka bar to, you know, the gut.

It's it's difficult. Yeah. But if there's specific patterns you go after it. And oftentimes we see that sometimes tests that were even normal or borderline before change over time.

So I think you do have to keep going back and reevaluating. And you're right, that pattern recognition and having kind of the tools where you you go through, for example, for me, the 16 points did I do mitochondrial regeneration.

Have I checked your blood pressure lately? you know, how's your neurosis doing? Is there trauma in. I mean, you know, this. You see this? You discussed it earlier.

The trauma and the emotional trauma in some of these people. It affects their immune system, where it's almost like they're programed that, you know, I don't want to get better, and you've got to go in there and use techniques like any hyper DNR or Gupta.

so, you know, I think all of these tools that we have are very, very important. And, you know, I think in kind of finishing this up a little bit, this personalized medicine approach, I agree with you.

It's, it's, I think the, the best way to go because it's kind of the sanest way of addressing it because everyone is completely different. I don't think any of us, you know, treat patients the same.

We have certain tools we use, but it's different. So, yeah, thank you for bringing that up. I think the pattern recognition point and kind of reevaluating is it's a very important point when you're trying to get these chronically ill patients better.

Yeah. And they're beautiful. And also anytime you have a, speed bump or a change in the, in the picture clinical picture, or you have a decompensation or you have a regression, that's also always, important opportunity to just cross check and double down on all of the lifestyle pieces.

Right. What's going on with sleep? What's going on with mindfulness and meditation and breathwork? And you know, what's going on with movement and what's going on.

You know, to your point, the neuroplasticity, the brain retraining piece, we see that as huge, huge, huge, huge, right. And so really agree with that.

You know the amygdala gets into a fight flight freeze. And I do think that a lot of folks with complex chronic illnesses were primed from early on. They frequently have a high Ace score adverse childhood event.

And that has you know, the research is incredibly robust on that.

Revisiting Plans, Data, and Future Research

you know, causing immune dysfunction and cortisol, dysregulation and, you know, downstream risk of chronic illness. And so really, really have to double down on all those pieces that diet, you know, do they were they gluten free or on more of a, you know, anti-inflammatory diet.

But then when, you know, traveling or just stop doing that or kind of regressed or drinking more alcohol or not sleeping, all these pieces are really critical.

they're kind of a bummer sometimes. It takes a lot of work and it can be socially isolating, but they're also a lot of

power there for people because they can take charge of their health.

And, I want to point out one nuance before we pause. Also, you know, that have been learning about a lot recently with regards to breathwork. So breathing. Right.

And so, James Nestor's book called breathe is amazing. there's, you know, a lot more awareness now about the importance of breathwork and breathing, but it's not so much just about, you know, pace your breathing, count to certain numbers, breathe in, breathe out.

You know, there's actually a lot of very deep science around, carbon dioxide and oxygen balance and what the. You know, what's your CO2 tolerance and, you know, trying to achieve, higher level of CO2 in the body.

So that you get better oxygen, delivery to the tissues and to the brain. And so working sometimes with, you know, trained breathwork, coach or a functional therapist and even using devices like a cabinetmaker, there's consumer based, you know, capnography devices which can measure the entitled CO2 during your breathing.

And some people are kind of surprised, like, oh, I thought I was, you know, breathing well or reading correctly. but, in fact, I had some work to do. And there's another device.

I have it on my desk here, actually, this is called the Breather Fit. And this is, like, basically like a workout machine for your diaphragm. And so basically has two dials on, one on each side.

And so one will create more resistance on the in-breath. And one and the other one will create more resistance on the outbreath. And so you can actually train your diaphragm.

You can, you know, basically exercise your diaphragm, so people can look that up online. It's a, globally available device. They're based in Europe. and so, so that piece and and really again, you know, the mental, you know, cognitive piece is not to be underestimated.

I we find it really, really important now. Thanks. That's, it's important that I'm assuming probably with this breathwork, I'm in train the diaphragm.

You're seeing it help with some of the vagus nerve dysfunction. Because obviously, the vagus nerve is controlling immunity. It's controlling pots. It's, you're seeing it help with some of these people?

Yeah, absolutely. Yeah. It's controlling immunity. It's going to Pots. Its trying. Gut its controlling. You know, airway all these you know everything. Basically everything.

Almost organs all the way up to the transverse colon. Right. So super, super important. cranial nerve that, that is, is of vital, vital importance. Okay.

Well Sunjya We're we're coming out of time here. I want to thank you so much for taking the time today to do this. It was great seeing you. We we need to connect a little bit more.

can you please tell people again, just the best way to contact you if they want more information from, your practice. Or, running this summit. our practice is called the California Center for Functional Medicine, and it's, ccfmed.com You can find a bunch of information there.

And, also links, to all of our social accounts there where we're we're fairly active. Right. Well, thank you again. It was it was a great talk. It was great seeing you.

Please give my best to your wife and and to the family, and to all the people at Bay area. Lyme for all the great work they're doing. And, so those of you who are following on the DrTalks summits, we'll be seeing you again soon for the next episode.

So thank you for coming on board. And, attending this particular important talk. So thank you so much. Thanks for having me. Take care.