Introduction to Lyme Bites and the Guest

We did it because we need better science in the field of Lyme disease and co-infections and tick-borne infections. And we need to understand better what's happening from these treatments and that we found a niche and we found an important way to contribute.

Um, but it is really important. So if I think out there in the public and for you listening out here to this summit, personally, I'm, I'm very excited about this research and I'm proud of it, but it's, you can't make a direct leap from, you know, what happened in this test tube model to what's going to happen in the human body or an animal's body.

Um, and also, you know, even if something showed up in here as not being a very effective to kill the lion's fire gear, to kill Babesia, it might still be helpful in the human body.

Hi, and welcome to the Lime Bites podcast, where we shine a light on the misunderstood science of Lyme and other vector borne diseases, as well as the truths that many still miss.

I'm Dr. Mariah Hinchy, naturopathic physician and fellow of the Medical Academy of Pediatric Special Needs. I specialize in treating chronic Lyme disease as well as other complex inflammatory conditions.

In this podcast, we break down what's working and what's not. We share the facts that most people miss, we challenge outdated thinking, and we give both patients and practitioners the tools to heal smarter.

So let's get into it and change the way we heal Lyme. Hi, and welcome to another episode. I'm your host, Dr. Maria Hinchey. And tonight, we're going to be talking about one of my absolute favorite topics, the ability of botanical medicine to help to heal Lyme and co-infections.

We're going to talk about everything from limitations of current treatments and where botanical medicines can actually shine in this arena, as well as go through some pretty solid scientific research regarding the ability of these botanicals to heal from Lyme disease.

So joining me tonight is Dr. Sanja Schweig, and he is a board certified family practice and integrative and holistic medicine physician. He has nearly 30 years of experience in the integrative and functional medicine space, and he's committed to advancing data-driven approach to prevention and reversal of chronic illnesses.

He is the founder and president of the California Center for Functional Medicine, or CCFM, which provides personalized precision medicine care. CCFM is known for its comprehensive and data-driven approach in treating complex chronic conditions and has supported first responders with health and wellness programs since 2016. Dr.

Schweig founded the Functional Medicine Research and Technology Center in 2021, focusing on chronic illness research, education, and innovation. As an active medical educator and researcher, Dr.

Dr. Schweigu2019s Path Into Lyme and Co-Infections

Schweig holds an adjunct faculty position at Toro University College of Osteopathic Medicine and has published articles on botanical medicines for treating tick-borne infections.

Welcome Tell our audience a little bit more about you and how you got into treating chronic complex infections with botanical medicine. Yeah. Thank you so much, Dr.

Hinchi. And thanks so much everybody for being out there watching this important summit and content. And yeah, I appreciate the time that you're taking to make this possible.

I know it's a lot of work outside of your regular clinical practice to, you know, do all the interviews and put together the speaker lists. And so, yeah, it's a pleasure to be here.

And, you know, my path towards this world was not linear as a lot of us, I think, experience. I knew a lot about integrative and alternative medicine early on, you know, even in college and before I went to medical school.

And I knew that that was the path for me once I decided to be a doctor. You know, went through my medical training and residency and family practice and would carve out time anywhere I could to work with integrative and functional medicine providers.

And, you know, that was sort of the, the, the energy and the lifeblood that kept me going. I really love science. I love medicine, but I knew that there was also this whole other world out there.

And so right after my residency, I jumped into private practice in functional medicine and built that practice over time slowly. It took a little bit of time, but really about a year after.

Um, I started in, in that space, my wife got sick and she had sort of, you know, kind of a mystery illness. Um, you know, we took her to several doctors and, um, you know, they thought it was something autoimmune, you know, she, she had a stiff neck and, and, you know, so she went out and bought a new pillow and, you know, she's kind of thinking, you know, what's wrong with, you know, we didn't have a lot of answers and.

I had just enough knowledge to say, Hey, this is a little weird. And, you know, I had a colleague of mine who was working in one of the practices where I was, and he knew a lot about Lyme and co-infections and he came over to our house at one point.

I still remember him in the evening coming over and he's like, you know what? Like, I think you have Lyme disease and I think you probably have some co-infections as well, probably Babesia.

And here's the test you should do. And so we did those testing. And in fact, it did show that. And it showed acute kind of permanent infections on the antibodies, but it also showed that these had been around a long time.

And when we kind of track back in our brains, we're like, wow, actually, yeah, symptoms probably started about 10 years ago when we were living in upstate New York.

And she was at graduate school at Cornell and, you know, doing field work in ethno botany and natural resources department and out in the forest. And we were loving hiking and out in the woods.

And, you know, so, and we knew nothing about Lyme and co-infections. Nobody ever warned us or told us. And so. You know, that really took me down the rabbit hole.

And, um, I remember going to iLabs that year and it happened to be in San Francisco, which is super convenient for me. And that's, you know, Dr. Berescano and Dr.

Horowitz and all these folks. And Dr. Horowitz is so sweet. He sat down with us in the lobby of the, of the conference of the hotel and then kind of went through the case, her case with us.

And they said, yeah, you know, this is real and you know, here's what you have to do. And, um, you know, honestly. It was terrifying, right? And so I really empathize with a lot of folks out there who are trying to learn about this space and understand, you know, what's happening to themselves, what's happening to their loved ones.

Is this thing real? What are the nuances of the science? And, and I really empathize with not only how overwhelming it could feel, but also. Um, how complex and how controversial and it puts patients in a really hard spot, you know, to be trying to navigate their own health and be in the middle of, of this ongoing medical controversy, which I really think is pretty much unconscionable.

You know, it's just, it's, it's not right. You know, because the science really does support the questions around persistent infection with Lyme and some of these co-infections and around immune evasion and all the ways these bugs can hide in biofilms, et cetera.

And it does support ongoing treatment. Right. And so. A lot of the options that are available to people are, you know, are antibiotics. I think that's the first thing that a lot of people reach for.

And there's a lot of doctors in the, you know, sort of world of those who believe in this potentially being a persistent infection or chronic infection.

And I would say more of those doctors, you know, who get trained with iLabs, which is a great organization, or would follow, you know, some of the research of Richard Horwitz or Monica Embers or John Aka, you know.

And a lot of the default I think is antibiotics. And I think that antibiotics can be very helpful for people. And I stand by that. I think there's a role for antibiotics, but they're not very smart, right?

They're very, really like, you know, you think about what does an antibiotic do? attacks the bacteria really usually on one single mechanism of the replication cycle or the metabolic activity of the bug, whether it's Lyme or Babesia or Bartonella or Lycki, et cetera.

And really only works most of the time when the bug is metabolically active, right? When the bug is actively dividing or going through its replication cycles.

And, you know, really is, you know, antibiotics are really like a mechanism for trying to stop or kill the bug. It's a very Western approach, you know, control the physiology, control the bug, shut it down.

And that works sometimes, right? It doesn't work all the time. And there's a lot of mechanisms by which these bacteria will slow down. We'll go into persister phenotypes, we call them.

We could talk a little bit more about that. And evade, and evade those antibiotics. The other thing about a lot of these treatments, including the mechanicals, is that they work in the blood, right?

Why Antibiotics Alone Fall Short

You take a pill or you take an IV or you take your medicine, your herbs, your antibiotics, and they go into your body, they absorb into the bloodstream and they're circulating around in the blood and they're attacking the bugs that are in the blood.

But these bugs can get out of the bloodstream and can go into privileged sites, into immune sites or joints or tissues. Yeah. And so, you know, we really know that the big sort of 30,000 foot view is that we desperately need better treatments.

Right. And so that was really kind of the impetus for us to jump into some of the botanical medicine research. You know, and we think about the, um, botanical medicines and the herbs that we chose to study.

We didn't just choose them blindly. We chose them because actually people were already using them, right? These are sort of out in the lay field. People are already discussing them and folks who are on, um, you know, different social media platforms, Facebook or Reddit or different groups.

And they're talking about this amongst each other's or trading stories. You know, Hey, I tried this, it did X, Y, you know. And so we chose things that people are already using, so they have a track record in humans.

We chose things that have some evidence for Lyme and co-infections in the research literature. And we chose things that are relatively safe, right? Again, going back to the fact that they're already being used, not without side effects, but they're, you know, you have to be careful on some counts, you know, and then also things which we

think or understand can be absorbed orally, right?

You know, that's important, you know, so for a delivery mechanism. Are you ready to revolutionize your approach to diagnosing and healing complex chronic inflammatory illnesses in both adults and children?

The Lime Bites Symposium is your gateway to cutting-edge education, groundbreaking research, and innovative therapeutic solutions. Join us at Lime Bites Symposium.

at the Fort Lauderdale Marriott Pompano Beach Resort and Spa. Lion Bites is the premier functional medicine conference on complex, chronic, infection-driven inflammatory illnesses.

This year's meeting is jam-packed with leading industry experts discussing lung COVID, mycotoxin illness, PANS Pandas, as well as Lyme and other vector-borne diseases.

This conference will arm you with the knowledge, clinical pearls, and practical solutions that you can implement immediately into your practice Monday morning that will literally change your patient's lives and get them on their path to true healing.

So join us at Pompano Beach or virtually from anywhere. Register now at LymeBytes.com. That's L-Y-M-E-B-Y-T-E-S dot com. So you alluded to one of the reasons why a lot of pharmaceutical antibiotic treatments fail.

Why don't you kind of walk the listeners through what some of the other issues with relying just on killing these infections and specifically with pharmaceutical antibiotics?

Yeah. So, you know, I think there's like a, it's like, there's a lot of answers to that question, but the 30,000 foot view is that, and what I say to patients a lot of times is you can't kill your way to health, right?

You can't just go in and kill all the bugs and then the person is back to normal again. And we know that, and this gets into the murkiness of these bugs, but just taking Lyme disease, for example, Borrelia burgdorferi is the bacteria.

And it was, I don't know if anyone knows, but it was named after Lyme, Connecticut, which is kind of probably close to where you are since you're in Connecticut.

But trying to lower the load of the bacteria is one very important thing, and that's what a lot of the herbs and the antibiotics in particular can help with.

But there's also a lot of inflammation that's caused. There's a lot of autoimmune signaling that gets cross-wired in the body when you have these bugs.

And there's a lot of cytokine production and the bugs really love to kind of live in this soup of what I call like immune confusion or immune activation.

They can trigger mast cell activation and this sort of again, that part of the immune fusion. And then there's a lot of underlying. issues, you know, what was the terrain like before?

Why do some people, you know, get exposed to ticks and these bacteria and get super sick and not recover? Whereas some people can get exposed and don't have symptoms, right?

So what was the underlying terrain beforehand? Was there microbiome disruption, dysbiosis, SIBO? Was there any other parasites, peasants, other viruses?

Was there trauma that happened in that person's life? And we know that early childhood trauma and what we call the ACE score, that adverse childhood events, that that can prime somebody's system for a higher risk of chronic illness with their autoimmune or infection.

And so we have to think about all those pieces and we have to really, you know, I think from what you're doing and what we're doing and I think, you know, a number of practitioners in this space are really trying to be very, very conscious of all that and all the different levers that we can pull to help somebody's system come into better balance, better immune stability, lower the inflammation load, right?

All the pieces, brain, sleep, you know, movement as best possible, as tolerated. You don't want to over push people for risk of crash, et cetera. All those pieces have to be dialed in.

And then when you think about the treatments, whether it's an antibiotic, again, they're somewhat simple in terms of how they work. And we know that, you know, you can get persister cells, right?

So let's think a little bit about, you know, persister cells and what are persister cells. Well. you know, in some of the research, we can see that there's these, you know, there's these, you get a bacteria and, um, and it comes into your body and it starts to replicate it and divide and multiply.

And then what happens is that it builds up its colonies and then you get increasingly sick. Right. And so those are usually, um, what we call the growth phase or the actively dividing bacteria.

Right. And, um, So there's those phenotype or type of cells. And then there's these other types, which can, you know, there's almost like a biphasic, there's two different, or at least two different subtypes.

And then you get these persister cells, which are basically more tolerant and can survive exposure to treatments, including antibiotics. And we know that like.

Almost all bacteria, whether it's in humans or animals or plants, you know, we have seen this persistent phenomenon across the research and it's very, very common.

Actually, it's a very common way that these bacteria have gotten very smart, right? And so a lot of times you can give somebody an antibiotic and treat them.

You can maybe actively lower the load and kill some of the actively dividing bacteria. But then you have this antibiotic tolerant cell, this persister phenotype, which maybe is kind of just hunkered down and has waited out, it's kind of waiting out the storm, right?

And you know, whether that's hiding in a biofilm. You know, biofilms are basically like this slime layer that the bacteria can produce and basically like coat themselves over with, you know, whether it's, you know, mucus or these aggregates, these cellular aggregates, they can pull in like heavy metals and even yeast and fungi organisms and just kind of create this shell over them where now the antibiotics or even the herbs can't get in there to get them.

And again, we mentioned they might be hiding in other tissues, right? They might be out of the bloodstream entirely, right? And so. We really need to be aware of that and to understand this biphasic treatment.

And you can't necessarily, and I think this is part of the problem actually in the research literature about why it's hard to find these organisms after you've treated somebody, right?

Monica Embers has shown that in some of her monkey animal research macaque model of the Lyme infection that a lot of the standard tests, including a culture, might not even be positive.

after you have treated somebody for, or treated an animal for these infections. But if you do, you know, diagnosis or you do stains on different tissue and then look for activity or genetic material of these bugs, you can actually find it.

Right. And so it's a very complicated and nuanced approach. I think the science is really over the last three to five years has really provided us with some details on potentially some mechanism of why this is happening.

Yeah. So can you give us an overview of the research that you actually conducted and specifically what botanicals did you study? What were the outcomes that you found?

Yeah, sure. So it was really fun, actually, kind of how we got into this process. And, you know, it was really an honor to work with Dr. Ying Zhang at Johns Hopkins.

And our research was funded by the Bay Area Lyme Foundation. And so, you know, really, really an honor for me to pull together this team and, you know, Jacob Leone, my friend and colleague, and Ash Patz, the doctor, was part of our key research team.

And we also had advice and counsel from a number of other wonderful herbalists and doctors, including Misha Greeter and Brian Kea Weisbach and Eric Yarnell.

Botanical Medicine Research on Lyme, Babesia, and Bartonella

And so we kind of, you know, again, started with like, okay, what are the key botanicals which are commonly being used and let's test those and let's test some other natural products, et cetera, you know, kimono, Lauren and, and, and citrus extracts, like citrus satch, right?

And so the first study that we did was in 2020, and I was looking at Lyme at Pirelli upper girlfriend in a test tube model. And yes, first is a very important thing to understand.

This was a test tube model. It was not in animals. It wasn't in humans, right? And we can come back to sort of why that's really important for the botanical medicines in particular.

But we looked at, you know, a number of different products and we found in particular that seven of these botanical medicines were quite effective against Lyme.

And that included some that we kind of knew about, right? Like Scudillaria, Uncaria atomatosa, which is cat's claw. Scudillaria is skull cap. You know, Cystis had some activity.

Polygonum cruspidatum, which is Japanese knotweed, has some activity and then Artemisia also, which is interesting. And also Cryptolepis. So Cryptolepis kind of ended up being the star of the show really of these three research studies, one online, one on Barnilla and one on Babesia.

And it was shown that Cryptolepis, which has some historical research supporting its use for Babesia. Given that it also has been used in Africa to treat malaria and, and malaria is, you know, you know, similar, Babesia is similar to malaria in a lot of ways.

So, but Cryptolepis actually had very strong activity against Lyme. And we tested them sort of how well do they treat the actively dividing bacteria, but then also how well do they prevent that bacteria from coming back?

Right. So that's sort of more of the persister model. And this was done in a really elegant model that Ying Zhang had built at Johns Hopkins and had done some previous studies on.

So it was really fun to collaborate with him and be able to put all these compounds into the test tubes that we were really curious about. So that study showed again that there's about seven of these that had really good activity against Lyme and Cryptolepis in particular was able to prevent regrowth in the persistent forms.

And the second study was on Babesia and it showed that. of those, of that group, the botanical medicines that seem to have the strongest activity against Babesia were Cryptolepis, Artemisia, Scutellaria also again, Alcornia, and also Oligoderm pus fadatum, or Japanese knotweed.

And so, and similarly to the first study, it showed that Cryptolepis of all those was really able to prevent regrowth in this test-due model. So that was really, really fascinating.

And then the third study was looking at Bartonella and persister cells in Bartonella. And the key botanical medicines that seemed effective were Cryptolepis, also JuGlans-Niagra, which is black walnut and Polygonymchryspidatum.

scudillaria biculensis and also scudillaria barbata, right? And so, you know, some of these are really kind of coming back again and again, like the cryptolepus, the polygonum crispedatum, the scudillaria, and you know, it's, it's really fascinating because those are some of the most popular botanical medicines to treat these things, right?

And some of the things that we're already using, um, but it was just really, uh, powerful to be able to provide some, some lab evidence. Are you suffering from Lyme disease or another complex chronic illness and aren't sure who to trust when it comes to herbal supplements?

Hi, I'm Dr. Mariah Hinchey, founder of Lyme Core Botanicals. As a naturopathic physician specializing in complex chronic infection-driven illnesses like Lyme disease, I needed herbal medicine I could truly trust.

That's why I formulated Lyme Core Botanicals. where our herbal tinctures are handcrafted in small batches right here in Connecticut. We use the whole herb, never isolates, to preserve the full spectrum of medicinal compounds.

Every single step from sourcing to extraction is done with precision to ensure maximum purity, potency, and consistency. These are the same herbal formulas I used to heal myself and have used for years to help my patients and family members heal, too.

And now I'm making them available to practitioners and patients everywhere. Lyme Core Botanicals, herbal medicine you can trust from a doctor who lives this work.

Learn more at Lyme Core Botanicals. That's L-Y-M-E-C-O-R-E dot com. Yeah, that's great. So did you look at these individually and then look at them together, like in a synergistic way, or each one of these, like in the three different studies, they were tested alone?

They're all tested alone. Yeah. So yeah, synergism would be very interesting. So they're tested. So antibiotics, normal antibiotics were tested separately.

And then the technical medicines were tested individually and then at different concentrations also at 30%, 60% and 90%. And then we also tested. you know, independently, these were, the botanical medicines were tested in alcohol extracts, kind of like we take them, you know, when we take tinctures.

And we also tested the alcohol itself, right? Just to see if that alcohol was what was doing the killing and the alcohol across the board really didn't have much activity.

So that was very heartening to see that it was something in those botanical medicines themselves that were, that were doing the work. Right. And I think the really awesome point, and I'm sure this is what you were going to get to earlier when you were talking about the importance of realizing that these are in a test tube, is that when you're doing these studies on these botanicals in a test tube, you're not able to see the immune-modulating effects that make them even more effective, and you're not able to see the anti-inflammatory effects that are going to make them even more effective when you're actually putting them into the human body.

And so really, all we're seeing is the antimicrobial activity. So if you take into consideration that these are inflammatory infections that cause pretty extreme immune dysfunction and then know that almost every one of the botanicals you mentioned also have anti-inflammatory and immune-modulating properties that when you actually put this into the human body, you're typically going to see an even better outcome.

Yeah, it's a super important point. And when they always try to make, um, we do the research in part because we use these compounds. We're very curious about them.

We want to understand them better. And we did it because we need better science in the field of Lyme disease and

co-infections and tick-borne infections.

And we need to understand better, you know, what's happening from these treatments and that, you know, we found a niche and we found an important way to contribute, but it is really important.

So if I think out there in the public and for you listening out here to the summit, you know, Personally, I'm very excited about this research and I'm proud of it.

Like we really contributed, I think to the field, but it's, you can't make a direct leap from, you know, what happened in this test tube model to what's going to happen in the human body or an animal's body.

And also, you know, even if something showed up in here as not being a very effective to kill the lion spiral gear, to kill the BCF, it might still be helpful in the human body.

You know, because like you said, Um, botanical medicines are very, very smart and they're very elegant and they're frankly amazing. Right. And, and particularly like I love the point you brought up of like synergism when you mix these things together.

You know, these plants have hundreds, if not thousands of different phytochemicals and you know, pathways, you know, that these are working on only a small number of what you're killing.

And, but that, you know, unlike the antibiotics, which can only do killing. The herbs are also helping me out of the immune system, helping inflammation, helping the lower cytokines, helping as an antioxidant, helping as a cellular energy provider.

Like, I mean, the list goes on and on and on. You could go, we could talk about that for hours. So, you know, translating the research directly to the human or the animal is, you know, there's a little bit of a gap there, right?

And I think that's a need for future research, both on the synergism, on mixing, you know, different botanicals together, what happens there. And then also some of these other activities, right?

And I'll tell you a funny story. Steven Buehner, who we know and love and who passed away, not previously, was a master, master herbalist.

Whole-Herb Synergy and Standardized Extracts

And many of us know his work. I actually have all of his books right here. I took them out to show the audience, but you know, herbal antibiotics and healing Lyme disease and herbal antiviral.

I approached him at one point, I said, hey, we want to do this research, will you be part of our council and help us with it? And he declined. He said, no, I'm not going to do that because it's very Western in its approach.

It's very reductionist and you're taking the herbs out of there. place where they shine and that, you know, to him, I think he felt like I was in a little bit of a disservice, you know, to the botanical medicines.

And I totally understood what he was, where he's coming from, but you know, science moves very slowly and you have to provide baby steps and provide the steps that other people can march along the pathway.

And so I appreciate his input. You know, there's so much synergy that botanical medicines offer, and it's almost like there's a mismatch a little bit from Western science of how we study this, right?

And how does it map to the innate wisdom of these plants? Yeah, you know, it's funny too. Like I get very, oh, I don't know what the right word is. I get very worked up about disturbing like the constituents in the whole plant.

And I am very much, you know, like if you're going to use, for example, Japanese knotweed root, you know, we

want to use the whole root. We don't want to just extract the resveratrol out because then you're missing, you know, like the seven or eight other very important medicinal compounds in there that actually work synergistically with the resveratrol to bring about all of the important effects that we see.

Same thing with taking artemisinin out of artemisia annua, right? So how do you feel about that, about using standardized extracts versus using the whole part of an herb?

Yeah, I definitely agree with you. I believe that the whole part of the herb or whichever part of the plant has its strongest evidence for from an indigenous use case across these brilliant cultures, whether it's traditional Chinese medicine or African medicine or South America or Native American.

But these are the people who have been using these plants for thousands and thousands of years in many cases. And, you know, they've learned about them over time and they've documented the effects and they've really come up with sort of what part of the plant and, I mean, it goes so deep, right?

What part of the plant, you know, what, you can have one plant, but different parts of the plant have different. you know, medicinal uses, um, you know, when it was harvested, where it was harvested, what the conditions were like, how, how you treat it after it was harvested, you know, how you, um, how you either let it sit and dry or you process it right away, or do you do it in alcohol or do you use it as a pill or do you use it as a tea?

You know, so like many, how do you extract those components? Um, so there's a ton of wisdom in there. And I think we do really need to lean on that, right?

um and It was interesting, you know, because, um, when, when Dr. Zhang, you know, put these, um, botanical medicines into this model, which he had created, he also tested some of the extracts, right?

So, you know, bicolin from scleria, uh, bicolensis and, and, you know, bicolin and, you know, and, and he actually did show activity for some of these, right?

Again, in the test tube. And so I think there. I think that there is a developing story still, right? And I think that, you know, modern science is going to add to some of the traditional wisdom around these botanical medicines.

And part of why that's important also is because, you know, like you, I believe we have talked about, but I believe I'll speak for both of us when I say.

You know, I don't really support trying to find a single metabolite, which then we can patent and put into a pill and make tons and tons of money on, you know, that's what the pharmaceutical industry has their, their motivation.

That's why they study these things. Um, you know, but if, but on the other hand. There's some value to finding a standardized compound or set of compounds or mix of compounds at a standardized dose that we can replicate and get out to people, right?

And so, you know, try to decrease variability. And I think that is important for some of these treatments. So I think it's a yes and. I think it's really good to have the credibility and the science behind it.

And I think it gives patients and maybe some of their physicians a comfort level, you know what I mean? That at least there's some research, there's some study.

And yes, like when it comes to dosing, I'm super passionate about using therapeutic doses of things and using them in a rhythm or pattern. that achieves cellular concentration in the body so that you're actually having some sort of consistency as far as giving these medicines the ability to do what they need to do, how they need to do it.

We wouldn't be using randomized fractions of doses of things with various pharmaceuticals and taking them haphazardly whenever we feel like it or remember.

and expect to see any sort of response from the body. Yeah, that's brilliant. I love that. I guess the question, the side question that comes up for me then, so on the flip side, the other thing that's really attractive about the botanical medicines is that you and I, and all of us, we're treating these complex patients like We deal with a lot of individual variability, right?

And like what people can tolerate. And so some of the power of the botanical medicines is that you can actually start lower and ramp up slowly over time and find someone's tolerance and push their body a little bit or a medium amount, but not like just kind of blow them out of the water with a hurt timer reaction, which is really, really scary and hard.

Whereas the antibiotics, you don't have that. ability, right? You really have to hit a certain dose threshold or you risk resistance, right? And so, yeah, finding, and that's the beautiful thing about the botanical mesons that you can, because of the synergism, there's a lot, a much lower risk of resistance a lot of time, not all the time, but a lot of time, right?

So you can kind of play with the dosing and individualize. Yeah. I mean, I would say from the perspective of like not creating a HERX if possible, which isn't always unavoidable depending on the patient, but yeah, definitely being able to get the patient ready for treatment, you know, doing all of that foundational work, preparing their gut, decreasing the various inflammatory cytokines, you know, so we can choose which herbs we're going to introduce first.

So that, you know, because a big part of a HERX response is not only the, you know, for the listeners, it's the LPS or the lipopolysaccharide, which is part of the outer membrane that gets broken down when you are killing the organism.

So it actually releases this from it. but that causes massive amounts of inflammation and it increases interleukin-6 and some of the other inflammatory cytokines.

And if you're already using Chinese skull cap or Japanese knotweed to modulate the interleukin-6 and the various other cytokines, you're going to actually decrease, from my experience, I see, you're going to actually decrease the severity and the frequency of Herxheimer reactions.

And again, this is especially if you've already started to kind of like drain that patient's bucket as far as like taking away things from their environment and their lifestyle.

Lifestyle Foundations for Healing

A lot of it is food driven, knowing what their food sensitivities are and things like that and helping to decrease gut inflammation and get them detoxing and not just detoxing but properly eliminating toxins from the body it really gets them into this position where they can then tolerate the treatment.

And for me personally, a lot of times I do go in full dose. But if somebody has a reaction, then yes, using the various botanical medicines, especially tinctures, which is predominantly what I use, you can back it off to like, the highest amount of drops that's tolerable.

And then you can ramp it up by like a drop or two per dose until you find that patient sweet spot. And then, you know, they might sit there for a couple of weeks or months, and then you're able to go up again.

So like, there's a really, you know, brilliant ability to, to wean that person up if they need to. Yeah, totally. Absolutely. Same page. Awesome. So I kind of dipped the toe in regarding lifestyle and all of these other, you know, important things.

Why don't you elaborate? Because I know treating a patient from a lifestyle perspective and doing all of these, you know, therapeutic lifestyle changes is a big part of how you practice as well.

So do you want to walk us through it? Yeah, absolutely. Yeah. So. Again, going back to like the terrain piece of like why some people get really sick and some people don't and why some people are sick.

You treat them, they get better versus some people are sick and you're just searching, searching, searching for the door. Like how do you find the thing that's going to help them?

You know, and I think it really does like all the lifestyle interventions are really, really key. And just to rattle those off, you said it already, but gut health is primary importance.

We'll go into that a little bit more. Gut health and nutrition and food, food as medicine. Neuroplasticity and brain retraining and emotional healing, I think is super important.

Exercise and movement, again, as tolerated. Sleep is really, really critical. Hormone balancing, whether adrenal, thyroid, sex hormones, et cetera, is very, very important.

These bugs can all really derange those. Treating mold, environmental exposures, I think are really, really key. And then, you know, in my opinion, antimicrobials, whether it's antibiotic or botanicals, right?

And you said it, you know, but I want to just expand on a little bit of like drain the bucket a little bit, you know, but a lot of times, you know, these bugs really will cause so much inflammation and immune confusion that your system is kind of overflowing.

You know, you can use the analogy of a bucket or a sink, you know, the sink has the drain on it and it has the faucet. Right. And in order to, and when someone comes into your office or my office and they're super sick, usually it means that the drains backed up and the faucet is on too fast.

And then the sink is overflowing and they're having all these symptoms as wild and scary and, you know, unpredictable things are changing day to day. So the body is really imbalanced.

And it's incredible to me, just going back for a second. how much our bodies are generally able to deal with on a day to day basis. And so it's like so beautiful and elegant, but when things start to get wobbly, it's, um, you know, it's really, really scary for people because like different body systems will start kind of cross talking and it will be, you know, hard to figure out what.

What the, what the, what the trigger is and what do you do to get better? Right. And so our clinic, we have a very systematic approach and we really lean on the gut and nutrition and stress and sleep and all these pieces first.

Right. And we know also that. You know, having the ability to change these things or to modify them is hard, right? It's hard because people don't always know what the thing to do is and how the intervention is to do.

It's hard because you might be super motivated, but you're also tired and you have brain fog and you get confused and you get overwhelmed. And, and frankly, it just takes a lot of work and it takes a lot of time and frequently it takes money, right?

You have to kind of financially, it takes a lot of resources, whether financial or time or energy. to go through these things. And so we have built in this support into our care plan, our care team.

And, you know, we have a team of clinicians, we have our patient support specialists who are really just so, are in so oriented and just try to help people at every step of the way.

And then we also built in the support of a nutritionist and health coach. And just trying to really figure out where are the pain points, where are people getting stuck?

What is the support they need at the right time? You know, to make the change, to stick to the change, you know, habit change is hard, right? And so being successful at that is generally hard for anybody, even if you're completely

healthy.

But if you're sick and you're tired and you have brain fog and you don't have a lot of resources, it's even more hard, right? And so step by step, figuring out those pieces, putting them into place one at a time.

You know, if people only can do one, you know, I do think it's going to be, it's going to be the gut and it's going to be diet and nutrition and. You know, that's the thing we could spend a lot of time talking about too, because I feel like a lot of people are really restricted in their eating and we don't want that.

But we do want to figure out, you know, because of the fact that 70 plus percent of the immune system is in the gut, we want to figure out what's, what's triggering in that area.

And, you know, also Lyme and Bartonella in particular can infect the gut, both infect the gut and affect the gut, right? And then if you have inflammation, whether it's from foods or from mold or from these infections or from parasites.

You get intestinal permeability, you get exposure of the systemic immune system to basically the outside world, right? Other bacteria, food particles, chemicals, toxins, et cetera.

And then that propagates this whole systemic inflammatory piece, leading also to breakdown of the blood brain barrier, more anxiety, more depression, more sleep disruption, brain fog.

So all these things are like really going hand in hand. And the bugs, I think we said it before, but I just want to reiterate it. The bugs love inflammation and they love immune confusion.

Because if there's inflammation and immune confusion, they can just do their thing and hide out and the immune system is going to be like, what's going on?

I can't even figure this out at all. And they get a free pass, plus they invite their other friends to the party, whether there's some, you know, opportunistic infections, like there was a yeast or a fungal load that can kind of blossom, or there was viruses that had been latent, your body was doing a good job just keeping them in the box.

But now they're coming out of their box and joining a party. So controlling inflammation, feeling the gut, you know, all these pieces of lifestyle pieces are treatments, they're treatments for life.

They're treatments for Bartonella, they're treatments for Avesia. People sometimes think, well, yeah, I'll do that, but I want to get to the antibiotics or I want to get to the herbs and you know, like, well, I have to tell them, well, this is going to pave the way.

If we do this first and yeah, we can start some botanical medicines judiciously probably, but I don't love going in guns blaring with antibiotics. If we haven't cleaned up that pulse terrain situation, because there's going to be more side effects.

There's going to be more her time reactions. Like you talked about, there's going to be more immune confusion. And so the treatments aren't going to work as well.

And if they do work, when they do work, the risk of relapse is higher. Right. If you, when you stop, because there's still this sort of, they're just kind of lurking in there.

So anyway, there's a lot of, we could go into that, but yeah, the lifestyle pieces are really critical. And I think people know that. And then it's just a matter of like.

Getting the expertise to help you figure out what's first and second and third and getting a plan and getting the support and all this clarity piece. And so that's what we've really tried to lean into and build into our practice.

Flashing it forward, I think is actually going to be a big role here for technology and for data and for wearables, like the Auraringon. And we've done a lot of work with this with our first responder population, also our patients, but like ways that we can track physiology and get a even a deeper signal into is something working or not, right?

And what is the physiology of the body saying? I think the power of that data really comes if you also overlay symptom tracking, symptom data, right? And so once you have those two pieces in place, you start to get a really interesting signal.

And then I think this whole AI revolution, AI world is going to be very, very interesting of helping us to start to make sense of underlying patterns and to kind of see insights that our human brains maybe hadn't been able to surface.

And so I think it's actually a really exciting time as a practitioner and a patient. But it's all, it's still hard. There's a lot of work to do still.

Yeah, there's definitely a lot of work to still do, but yeah, all of that, all of that AI and that piece of it is very, very interesting. And I think, yes, like if we could have some sort of data driven device that helped to track symptoms every day without having a patient have to really like harp and dwell on it because they already are.

We both know, but yeah, I think it would. It would help to see patterns. It would help to see responses, which I think would be really valuable, you know, to the practitioner for sure.

Yeah, absolutely. And helping the patient too, like it's kind of democratized. of the treatment because it's still really hard to get to your office or to get to my office just from how many patients we're able to see and the cost, et cetera.

And so people are out there searching. I was just playing around with it this morning, like what does chat GPT say around persistence of Lyme disease and does it give a balanced approach?

And actually it's pretty impressive. And it goes through just a cold query of like, You know, what do I do about chronic Lyme disease?

Patient Advocacy, Finding the Right Practitioner, and Closing Thoughts

How do I treat it? Or, um, you know, is, can Lyme infection be persistent? And, you know, it's still, you know, pulls from some of the mainstream concepts and ideas, but also really like outlined, you know, a lot of what we're talking about.

It was really kind of cool. That's great. Yeah. I've not tried that. Yeah. So any, any last pieces of advice you would give our listeners or if there's one thing that you could tell everyone listening, what would it be?

Yeah. So I think it applies to everybody at whatever stage, but particularly if you're out there and this is new to you and you're trying to figure out what does it all mean?

And, um, you know, is what I'm experiencing real. I go to the specialist and I say, there's no such thing as chronic Lyme disease. They say your tests aren't.

CDC two tier positive, so you don't have Lyme disease, but I would say trust your instincts and trust your body and don't give up. Get out there, you know, get the resources around you.

And it also goes for your doctors and your providers, but also your friends and family. I see a lot of people being singled out as the weird one or the crazy one or like, you know, doctors already said you're fine.

And then, you know, you're still complaining of X, Y, and Z. So you must be the problem. And that's such a damaging place for people and so traumatic.

So yeah, just don't give up. you know, keep looking, keep researching, keep asking questions, you know, try to find a provider who knows how this works and get the answers that you need.

And even when you're working with, like, people are working with me or they're working with you, like, you know, keep that relationship going for as long as it makes sense for you.

Um, but you know, it's a, you're, you're a consumer and you are hiring us. You're, you're paying your money. You're hiring me. You're, you're asking me to do a job for you.

And as long as that is working and we're making good progress and you feel like this is the right fit. Awesome. Let's keep going. But don't be shy about if you're feeling stuck or you're uncertain, get another opinion, ask more questions, you know, find another person to weigh in.

Because if somebody goes to see you and they go to see me, they'll get, you know, I don't know, 60, 70% the same information, but they'll get 20 or 30 or 40% new information.

And then, and so you can really round out the picture that way. I work really collaboratively with people. I enjoy that. I enjoy learning from my patients and they can bring me, you know, research they found, or they can bring me other opinions from doctors and providers and, you know, internet, et cetera.

Um, you know, we'll talk through it. We'll just say, Hey, you know, what does that make sense? And I feel like it's a back and forth. Your job, my job is like the pattern recognition person.

Cause we've seen a lot of, uh, seen 10,000 cases, you know, so there's like a lot of cases. So. But, um, but we don't know everything. So just keep, keep hunting.

Yeah. That's great advice. And I think it's so important. It's like, there's a practitioner for every patient out there, right? Like my style might not be right for somebody, you know, but yours might be right.

And it's just, it's really like, make sure that you resonate with the person that's treating you and you feel comfortable that you can be completely honest with them.

And, and, you know, I don't know why I'm going to say this, but also like you shouldn't be afraid of, of offending or hurting someone's feelings. That's not what this is about.

You know, what you need is more important and having the right fit. Yeah. And if you do have to be afraid of hurting someone's feelings or offending them, then it's probably maybe not the right practitioner, right?

Cause I think that. You know, even in the mainstream system, like, you know, the people who are out there researching and saying that chronic Lyme doesn't exist and, you know, I don't think that they're bad people.

I think that they're doing the best they can. They're doing what they believe. I think there's a lot of ego involved, so sometimes I wish people would just check their ego and kind of look at the science, do the science and just like adapt.

But, you know. If they're, if someone, if a provider or another person, family friend, if they're telling you that you're wrong or that this is, you know, or if they're offended or they're upset, that's their problem.

It's not your problem, right? You know, usually from a provider point of view, I think it's because they feel threatened. or they feel like they're at the limit of their knowledge and they can get defensive.

You know, they're like, you know, can get like little bristly and like dismissive and like, I don't know, nothing else to do. Their chests are normal, like go away.

That's their problem. It's not your problem, right? Yeah, that's great advice. Well, do you have any upcoming events

that you would like to share with our listeners?

Anything going on exciting? We, so we're just really enjoying, you know, seeing patients. We do see patients across the US, you know, in a number of different states.

And I'm always thinking about like how, you know, I'm sensitive to the fact that. What we do is expensive for folks and to be transparent, it's not because we're making a ton of money, it's just because it costs a lot to run a clinic.

I think that's part of the fact that a lot of these clinics are consolidating under big hospitals, the primary care world. So I'm always curious about how do we break this down and also get people, you know, more, or like segments of the care in a smaller way.

And so we also have what we call the functional medicine checkup, which is an opportunity for someone to meet with us and have a couple of visits and get a set of labs done and then get our advice on it.

And then we also have the opportunity to do a health consult. you know, sort of a one-time ask me anything session. And so for people, I think that it was trying to, you know, again, find ways to make it more accessible, allow them to sort of have a tasting menu.

And yeah, so, you know, opportunities like that I'm really curious about. And then just again, you know, kind of unsiloing the care and getting out to more people.

Yeah, that's great. So tell all the listeners on how they can get in touch with you and your practice, your center. Yeah, thanks. So we're the California Center for Functional Medicine and our website is ccfmed.

We're also on social and yeah, happy to, to help in any way possible. Well, thank you so much for being here with us. We really appreciate it. I think that was a lot of really good information.

And to all of our listeners at home, thanks for joining us. And I hope that this was helpful on your journey healing Lyme. We'll see you next time. Yeah, thanks for having me.

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