Introduction to Botanical Medicine for Lyme

Hi, and welcome to another episode of the Healing Lime 2.0 summit. I'm your host, Doctor Mariah 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 limitation 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 Doctor Sanjay Zweig, 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 CCF, which provides personalized precision medicine care. CCF 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.

Doctor Zweig 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.

Doctor Zweig holds an adjunct faculty position at Toro University College of Osteopathic Medicine and has published articles on botanical medicines for treating tickborne infections.

Welcome. Tell our audience a little bit more about you and how you got into treating, chronic complex infection with botanical medicine. Yeah. Thank you so much, Doctor Hinchey, 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 interviews and put together 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 and, 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, so the the energy and a 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, I started in, in that space, my wife got sick and she had sort of, you know, kind of a mystery illness.

You know, it took her to several doctors and, you know, they thought it was something autoimmune. You know, she she had a stiff neck and, you know, so she wound body 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 little weird.

And, you know, I had a colleague of mine who was working in one of the practices where I was, and she 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.

But but yeah, and here's the test you should do. And, and so we did those testing and in fact it did show that. And it showed acute, you know, you know, kind of infections on antibodies.

Dr. Zweigu2019s Path into Lyme and Integrative Care

But it also showed that these have been around a long time. And then we kind of track back, you know, in our brains we're like, well, actually, yeah. Symptoms probably started about ten 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, you know, 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 taught us.

And so, you know, that really took me down the rabbit hole. And, I remember going to islands that year and having to be in San Francisco, which is super convenient for me.

And that's, you know, Doctor Bruce Cano and Doctor Horowitz and all these folks and Arctic horrors is. So sweetie sat down with us in the lobby of the, of the conference of the hotel and, and kind of went through the case and our case with us.

And you said, yeah, you know, this is real. And, you know, here's what you have to do. And, 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 Nami. How overwhelming it can feel, but also, how complex and how controversial.

And when she puts patients that are really hard spot, you know, to be trying to navigate their own health. And be in the middle of an ongoing medical controversy, which I really think is pretty much unconscionable.

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

And it does support ongoing treatment. Right. And, you know, so a lot of the options that are available to people are, you know, are antibiotics. I and 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 who get trained with Ilyse, which is a great organization and or who follow, you know, some of the research of Richard Horowitz or Monica Ambers or John Archer, you know, and a lot of the default, I think, is the 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, but they're not very smart, right? They're very really like, you know, you think about what is the antibiotic, do it really, 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 the BCR, Bartonella or like, etc..

And, and, 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, its replication cycles.

And, 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 persistent phenotypes. We call them.

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

You take a pill or you take an IV, or you take, you know, your your medicine, your herbs, your hammocks, and they go into your body, they absorb into the bloodstream.

And that's 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 and, you know, etc..

And so, you know, we really know that the big sort of 30,000ft 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, botanical medicines and the herbs that we chose to study.

We didn't just choose and blind. They were chosen because actually people were already using them. Right? These are sort of out in the field. People are already discussing them and folks are on, you know, different, social media platforms, Facebook or Reddit or, you know, different groups, and they're talking about this amongst each other or Trending Stories, you know, hey, I tried this, it did x, y, and you know, 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 lime 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.

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 it's like a it's like there's a lot of answers to that question. But the 30,000ft view is that and I say the patients a lot of times 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, you know. Yeah. And this gets into the murkiness of these bugs.

But just taking Lyme disease, for example, Borrelia burgdorferi is the bacteria. And it was one that was both named after Lyme, Connecticut, which is kind of probably close to where you are since you're in Connecticut.

You know, but, you know, trying to lower the load of the bacteria is one very important thing. And that's where a lot of the herbs and, and the antibiotics in particular can help with, but there's also a lot of inflammation that's causes a lot of autoimmune signaling that gets crosswise 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 again, that part of the immune confusion. And then there's a lot of underlying issues, you know, what was the terrain like before.

Why do 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, you know, was there any other parasites present?

Other viruses? You know, was there trauma that happened in that person's life? And we know that, you know, early childhood trauma and, and what we call the ace score, that adverse childhood events that that can primed somebody's system for, for, you know, higher risk of chronic illness, whether 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 all the different levers that we can follow 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, etc.

Why Antibiotics Alone Often Fall Short

all those pieces have to be dialed in. And then when you think about the treatments, whether it's and they're biotic, you know, you know, again, they're, they're somewhat simple in terms of how they work.

And we know that, you know, you can get, persist yourselves. Right. So think a little bit about, you know, persistence ourselves. What are persist yourselves.

Well, you know, in some of the research we can see that there's these, you know, there's these you get bacteria and, and it comes into your body and it starts to replicate 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, what we call, the growth phase or the, the actively dividing bacteria.

Right. And so there's those phenotype or type of cells. And then there's these other types which can, you know, this call, you know, is a almost like a biphasic.

There's two different or at least two different subtypes. And then you get these precursor 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, are have gotten very smart. Right. And and so a lot of times you can give somebody antibiotic, you can 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 persistent phenotype, which maybe is kind of just hunker down and has wait it out. It's kind of like waiting out the storm. Right.

And, you know, whether that's hiding in the biofilm, you know, biofilms or 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 may be hiding in other tissues right. There 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, and you can't necessarily 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. Yeah. Monica Ambrose has shown that in some of her monkey animal, rhesus macaque model of the other 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, a diagnosis or you do stains on different tissue and then look for activity or you know, genetic material of these bugs, you can actually find it.

Right? And so it's a very, you know, complicated and nuanced approach. I think the science is really over the last 3 to 5 years, is really provide us with some details on on some mechanism of why this is happening.

Yeah. So can you give us an overview of the research that you actually conducted. And you know, 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's really an honor to work with Doctor Ying Jang at Johns Hopkins and our research was funded by the Barrier Lyme Foundation.

And so, you know, really, really an honor for me to put together this team. And, you know, Jacob, the only, my friend and colleague, naturopathy doctor was part of our research team.

And we also had advice and counsel from a number of other, wonderful herbalists and doctors, including Misha Greener and, Brian Kia Spark and Eric Yarnell.

And so we kind of 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, etc..

You know, come on, Lauren. And and citrus extracts. I, citrus. That's right. And and so, you know, and we did, the first study that we did, was in 2020 and was looking at line up really Upper Victoria in a test tube model.

And yes, first is a very important thing to understand. This was a test tube model was not in animals and it wasn't in humans. Right. And so, and we can come back to 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. Exclude area. On tone autoencoder, which is cats claw. It's lariat in skullcap. You know, sisters had some activity. Polygonal bicuspid stem, which is Japanese knotweed has some activity.

And and then artemisia also, which is interesting and also cryptic lapis. So cryptic lapis kind of end up being the star of the show really. Of these three research studies, one online, one on Bartonella and one of the PCA, and it was shown that the lapis, which has some, you know, historical research supporting its use for a BCA, given that it also has been used in Africa to treat malaria and, and malaria is, you know, you know, several similar to malaria in a lot of ways.

And so but crypto lapis actually had very strong activity against Lyme and we tested them. So 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 the persistence model. And this was done in a really elegant model that, Ying Jang has had built at Johns Hopkins and cellular intracellular model.

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, into the test tubes that we were really curious about.

So, so that study, you know, showed again that there's about, you know, seven of these that had really, you know, good activity against Lyme and crypto lapis in particular was able to prevent, regrowth in the, in the persistent forms.

And the second study, was on BCA and it, you know, showed that, you know, of those, that group, the, botanical medicines that seem to have the strongest activity against the BCA were crypto lupus, Artemisia, Scuderia.

Also, again, out cornea. And also I like them because the doctors are Japanese knotweed. And so and similarly to the first I it showed that, crypto lapis of all those was really able to prevent regrowth in this, interesting, you know, test do model.

So that was really, really fascinating. And and then the third study, was looking at Bartonella, and persist your cells in Bartonella, and, you know, the, the key botanical medicines that seemed effective were crypto lapis, also Google Snyder, which is black walnut, polygon could become Scuderia by Lexus and also Scuderia Barbosa right.

And so, you know, some of these are really kind of coming back again and again, I think that the lapis, the, the public and of course Bordertown, the school area and you know, it's really fascinating because those are some of the, the most popular botanical medicines to treat these things right.

And so the things that we're already using, but this is really, powerful to provide some, some lab evidence. 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 normally antibiotics were tested separately. And then the botanical medicines were tested individually and then at different concentrations also at 30%, 60% and 90%.

You know, we also tested, you know, independently these were the botanical medicines were tested in alcohol extracts, kind of like we take that, you know, when we take tinctures, you know, I think 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 the technical medicines themselves that were that we're 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, like 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. So super important point. And when they always try to make, you know, because people I think. You know so backing up like why do we do this research.

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.

Lyme, Persistence, Biofilms, and Immune Evasion

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

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

Like, we we really contributed, I think, to the field. But 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 is not being a very effective to kill alliance by a year to kill because it might still be helpful in the human body.

You know, because, like you said, botanical medicines are very, very smart and they're very elegant and they're frankly amazing. Right. And and particularly like, I loved the point you brought about, 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, you know, unlike the antibiotics, which can only do killing, the herbs are also helping, you know, the immune system helping inflammation, helping to lower cytokines, helping as an antioxidant, helping as a cellular energy provider.

Like, I mean, the list goes on and on and on. Like 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, a little bit of a gap there.

Right. And I think that's a need for future research. Both on the synergies and 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 Buettner, who we know and love, and who passed away, not recently, was a master, master herbalist, and many of us know his work.

I actually have all his books right here. Took them out to, to show the audience, but, you know, herbal products and healing Lyme disease and, you know, herbal or viral, you know, I approached him at one point, I said, hey, we want to do this research with you.

Will you be part of our council and help us, you know, with it? And he declined. Yeah. He said, no, I'm not going to do that because it's 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 a disservice, you know, to the botanical medicines.

And I totally understand what he was, where he's coming from. But, you know, science moves very slowly, and you have to provide baby steps and provide, you know, so 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, and it's almost like there's a mismatch a little bit of from Western science of how we study this. Right.

And how has it map to it in a, in a wisdom of these, 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 roots, 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 7 or 8 other very important medicinal compounds in there that actually work synergistically with the rest of our trial to bring about all of the important, effects that we see.

You know, same thing with taking artemisinin out of Artemisia. And you are right. So what how do you feel about that, about using standardized extracts versus using, you know, the whole part of an herb?

Yeah, I, 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, you know, use case across these brilliant cultures, whether it's traditional Chinese medicine or African medicine or, you know, South America or Native American.

And, you know, 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? What? You can have one plant, but different parts of the plant have different, you know, medicinal uses.

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, 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 tier?

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

And it was interesting, you know, because, when, when Doctor Zhong, you know, put these, botanical medicines into this model which he had created, he also tested some of the extracts.

Right. So, you know, by call in from school area, by cleanses and, and, you know, by clean and, you know, 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? I think that, you know, modern science is going to add to some of the traditional wisdom around these botanical medicines.

And, and part of why that's important also is because, you know, like you, I believe we have talked about, but I believe I 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.

I make tons and tons of money on know that's what the pharmaceutical industry has their their motivation. That's why they study these things. You know, but if by any 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, to 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 like 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 am I'm super passionate about using therapeutic doses of things and using them in a rhythm or pattern that, you know, achieves cellular concentration in the body so that you're actually having some sort of consistency.

You know, as far as, like giving these medicines the ability to do, you know, what they need to do, how they need to do it. Like, we wouldn't be using randomized, you know, fractions of doses of things with various pharmaceuticals and taking them kind of haphazardly whenever we feel like it or remember and expect to see any sort of response, you know, from the body.

Yeah. That's brilliant, I love that. I guess the question, the side question comes up for me then. So yeah, on the flip side, the other thing that's really attractive about the botanical medicines is that like we, you and I and all of us who are treating these, these complex patients like we deal with a lot of individual variability, right.

And like what people can tolerate.

Botanical Medicine Research Findings

And so some of the power of the clinical 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 or with a hard time or 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 medicine is that you can you can, because of the synergism, there's 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, you know, I would say from the perspective of like not creating a hummocks 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 hrc's response is not only the, you know, for the listeners, it's that 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 those from it.

But that causes massive amounts of inflammation and it increases, interleukin six and some of the other inflammatory cytokines. And like if you're already using Chinese skullcap or Japanese knotweed to modulate, you know, the interleukin six 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.

You know, of her similar 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, a lot of it is, is food driven, knowing what their food sensitivities are and, and things like that, and helping to decrease gut inflammation, and, and get them detoxing and not just detoxing but properly eliminating toxins from the body.

So it really gets them into this position where they can then tolerate the treatment. And, you know, for me personally, a lot of times I do go in full dose, but if somebody has a reaction, you know, then yes, using the various, botanical medicines, especially tinctures, which is predominantly what I use, you know, 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. Savage. 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, I think it really does back the 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 a little bit more, gut health and nutrition and food food 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, etc. is very, very important.

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

And you said that, 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 back 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, you know, so the body is really imbalanced.

And it's incredible to me just going back how much our bodies are generally able to deal with on a daily basis. And so it's like so beautiful and elegant.

But when things start to get wobbly, it's you know, it's really, really scary for people because like, different body systems will start kind of cross talking and there 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 at 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 or how the intervention is to do.

It's hard because you might be super motivated, but you're also tired, you know, brain fog and, you get confused and you get overwhelmed.

Whole-Herb Synergy, Dosing, and Standardization

And frankly, it just takes a lot of work that takes a lot of time and frequently takes money. Right? It kind of financial. It takes a lot of resources, whether financial or time or energy, to, to 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 client, our, patient support specialists who are, you know, really just so, heart and so oriented and just try to help people at every step of the way.

And then we also build in the support of a nutritionist and health coach, and just trying to really figure out where the pain points, where people are 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, how it changes hard, right? And so being successful, that is generally hard for anybody, you know, if you're completely healthy.

But if you're sick and you're tired and, you know, brain fog and you don't have a lot of resources, is 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 something we could spend a lot of time talking about too, because I, 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 that, that area.

And, you know, also Lyme and Bartonella in particular can infect the gut, both infect the gut and affect the right. And then if you have inflammation in the gut, you're happy with us 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, etc.. And then that propagates this whole systemic inflammatory piece, leading also to break down the blood brain barrier.

More confusion or anxiety or depression or 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 want to reiterate it.

The bugs love inflammation. And they love immune confusion because there's inflammation and immune confusion. They can just do their thing and hide out.

And the immune system is going to be like, wow, 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 it's, you know, you know, you know, opportunistic infections, like it was a yeast or a fungal lobe.

It can kind of blossom. Or there was viruses that had been late into your body was doing a good job just keeping me in the box. But now they're coming out of their box and joining a party.

And so controlling inflammation, healing the got, you know, all these pieces of lifestyle pieces, our, our, our treatments, their treatments for, like, the treatments for Bartonella treatments for a VCA.

People sometimes think, well, you know, I'll do that, but I want to get to the antibiotics. I want to get there. And, you know, like I have to tell them all this is going to pave the way if we do this first.

And yeah, we can start some medicines judiciously, probably. But I don't love going in guns blaring with antibiotics if we haven't cleaned up that whole terrain situation, because there's going to be more side effects, there's going to be more hard time reactions like you talked about.

This can 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 that just kind of lurking in there. So anyway, there's a lot we could go into that. But yeah, the left up is is a 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, 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 forward, I think there's actually going to be a big role here for technology and for data and for wearables or a ring on.

And we do a lot of work with this, with our first responder population and also our patients 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, you know, so I 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 really exciting time as a practitioner and a patient. But 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 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 help to track symptoms every day without having a patient have to really like harp and dwell on it, because they already are.

Lifestyle Foundations and Terrain Repair

We both now, 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 to like kind of democratize, some of the treatment is it's still really hard to get to your office or to get to my office just from, you know, you know, how many patients were able to see and, and the cost, etc..

And so, you know, people are out there searching however they can. They can. I was just playing out this morning like, what is ChatGPT say around, you know, persistent of Lyme disease.

And does it give a balance approach. You know, 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?

How do I treat it? Or you know, is can Lyme infection be persistent? And, you know, it's still, you know, falls from some of the mainstream concepts and ideas, but also really like outlined it.

You know, a lot of what we're talking about is 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's 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, you know, is what I'm experiencing real?

You know, I go to the specialist and they say there's no such thing as chronic Lyme disease. They say, you you know, your tests aren't CDC two tier positive, so you don't have Lyme disease, you know, but I would say, you know, trust your instincts and trust your body.

And and don't give up. Yeah. You know, you know, 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, you know, being singled out as the weird one or the crazy one that, you know, the doctors already said you're fine and you know, you're still complaining of X, Y, and Z, so you must be the problem, right?

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, for people who 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.

But, you know, it's a, you know, 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 a progress and you feel like, this is the right fit, awesome.

Let's keep going. But don't be shy. How about if you're feeling stuck or uncertain, get another opinion. You know, like ask more questions. You know, find another person to to weigh in, because, you know, if somebody goes to 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. And 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, etc.. You know, we'll talk through it which say, hey, you know, or that makes sense.

And I feel like it's a back and forth. Your job. My job is like the pattern recognition person because we've seen a lot of, I've seen, probably 10,000 cases, you know, so like a lot of cases.

So but, but we don't know everything. So just keep keep on going. 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. Yeah. And and you know, I don't know why I'm going to say this, but also, like, you shouldn't be afraid 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, if you do, you have to be afraid of hurting someone's feelings or offending them.

Then it's maybe not the right practitioner, right? Because I think that, you know, even in the mainstream system, like, you know, the the, you know, people 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 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, data science and just like, adapt.

Patient Advocacy, Access, and Closing Advice

But but, you know, if, if they're, if someone, if a provider or another person, family friend or if they're telling you that you're wrong or that you 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, yeah, I can get like, you know, bristly and like dismissive and like, I don't know nothing else to do.

The tests are normal. Like, go away. That's their problem. It's not your problem. Right? Yeah. 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, you know, and to be transparent is 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, like, the fact that, like, these clinics are consolidating under big hospitals, you know, the primary care world.

So I'm always curious about how do we how do we break this down and also get people, you know, more or less segments of the care in a smaller way. And so we also have what I 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, and we also have the opportunity to do a health consult, you know, so one time, ask me anything session. And so for people I think that that we're 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, siloing the care and getting out to more people.

Yeah. That's great. So tell our listeners, 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 CF med, CCF Mediacom.

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 line. We'll see you next time. Yeah. Thanks for having me.

Thanks for taking the work to make this happen.