



# THE SPECTRUM OF HEALTH

— P O D C A S T —

Podcast Session #20

## **Lyme Solutions**

with Dr. Darin Ingels

*Dr. Darin Ingels is the author of 'The Lyme Solution' which outlines a five-part plan for fighting Lyme disease. Today, Dr. Ingels shares with Dr. Shaffner this plan and how you can get started. If you or someone you love is struggling with Lyme, you don't want to miss this session.*

To learn more about Dr. Ingels,  
please visit [www.dariningelsnd.com](http://www.dariningelsnd.com).

**00:06 Dr. Christine Schaffner:** Welcome to the Spectrum of Health Podcast. I'm Dr. Christine Schaffner and today I'm speaking with Dr. Darin Ingels. Darin is a naturopathic physician who specializes in Lyme disease and also the treatment of children with autism. In our conversation today, we talk a lot about his new book, "The Lyme Solution" in which he describes his five-part plan for Lyme patients, and it's full of a lot of clinical pearls. I hope you enjoy this conversation today with Dr. Ingels.

**00:41 Dr. Darin Ingels:** Thank you for having me, Christine, I'm excited to be here.

**00:43 Christine:** I know that we've known of each other's work for a while, and you're actually really good friends with my colleague, Dr. Dang, who many of my patients know--it's fun that our paths have finally crossed and that I get to pick your brain during this podcast. I'm so excited to learn more from you today.

**01:01 Darin:** Oh, well it'll be my pleasure.

**01:03 Christine:** Great. Well, I know we have a lot to cover, but as doctors out there treating chronic illness, a lot of us have our own personal either story or encounter with chronic illness and I know that your journey began with treating Lyme disease personally. Can you share that with our audience a little bit so they understand what you've been through to get to this information?

**01:28 Darin:** Sure, and it's interesting, I think so many of us go into our field because we have personal experiences with different illnesses that give us a very quick education on how to deal with it. I was really no different. I moved to Connecticut and had only been there for about a year and a half, and about three weeks before I was set to open my own practice, I got infected with Lyme. I had classic Lyme disease: headache, fever, bull's eye rash, and I started treatment with doxycycline, which is now the standard recommended treatment. After four days of treatment, I felt perfectly fine. I thought, Okay I've been in Connecticut, I got Lyme, I got over it and that was fine. But as I started my new practice, I was doing everything and working very long days. After

about eight months of keeping up that schedule, I started to get symptoms again. So I said, "Okay, well I'll just go back on doxycycline, and that I'll be fine." I did a month of doxy and I didn't feel any better at all, I changed antibiotics, and I didn't feel any better, and so I started working with a local Lyme doctor. Being your own doctor is never a good idea.

**02:39 Darin:** I reached out to a colleague of mine and she started helping to guide me on different antibiotic therapies, and I just continued to get worse and worse, actually, for about nine months. After nine months of antibiotics and really feeling quite horrible, I had known of a doctor in New York City, I had several patients that had seen him, and he uses Chinese herbal therapy. So I went to New York City to see him, and he started me on a treatment program, and after about three to four weeks, I was about 85% improved. It was kind of my wake-up call that I needed to go back to my naturopathic roots and really start looking at what I was doing, how I was doing it, and of course how I was living my life. I think I just kind of had the perfect storm of being run down, wearing down my terrain, and I just gave that little critter an opportunity to resurface and start creating problems again.

**03:34 Darin:** So once I got back on the right path and started taking better care of myself, and following his treatment plan, it took me about two to three years to feel like I really I was back to normal. It was a very long process, but as I started implementing the things I was doing for myself with my other Lyme patients, I found that they were getting better faster, even those that had failed with antibiotic therapy.

**04:02 Darin:** So that was really my introduction into the Lyme world and now it's 16 plus years and thousands of Lyme patients later. I've had the opportunity to see how this approach really helps people get over the hump. And of course, when I wrote my book and started looking at all the research out there, it was really interesting to note what gets published online. A lot of things I think we assume about Lyme, we find really aren't true and things we think are going to work, don't. So it was really very eye-opening to see what was out there. We see now that Lyme really has this capacity to trigger an

auto-immune inflammatory reaction and I think we tend to focus a lot on the infection itself and kind of forget everything else that Lyme is doing to our immune system. So, my book was really written from the standpoint of how do we not just treat the infection, but really look at the overarching effect on the immune system.

**05:05 Christine:** Absolutely, and you were at what I consider ground zero, right? I know that having this experience in New England means your practice is probably full of Lyme patients. You've learned a lot I'm sure along the way, as I've learned a lot. My patients are our greatest teachers. I think what you're saying, which I completely agree with, is that while Lyme might be controversial still in conventional medicine because it's outside of this conventional paradigm of infectious disease where you have a bug, you give a drug, and it's gone. We just don't see that, as your story also illustrates. So, fast forward, here you are after all this experience, and you've written a book called "The Lyme Solution." I admire first of all, that you wrote a book, and second of all, that you were able to distill this knowledge and your experience into this framework. I think you've really covered a lot of important factors that get overlooked in the treatment of Lyme, and you've incorporated our naturopathic roots in philosophy. Your book has five parts, and the first part is "Fix Your Digestion." How do you approach a Lyme patient? Let's just walk through your five parts.

**06:26 Darin:** Sure, and I guess I should qualify, this book was really written for patients as a guide...I started realizing I was coming across people that were in areas that were not necessarily endemic for Lyme, they didn't have any practitioners in their area to work with. So I really wanted to have a tool that someone could really use on their own. There's only one chapter in the book that you really need a practitioner to help guide you through. With these therapies and pretty much everything else, they're something that people can do on their own. So this really is written as a self-help book for Lyme patients. So just keep that in mind, if people look at the book and they go, "Well, gosh! It seems kind of rudimentary or basic." Understand that was the context in which it was written, so that anybody out there could pick up the book, start implementing these steps, and it would not be too complex. Lyme is obviously very complex, and as a book,

I don't think it really covers everything that Lyme entails, but this was my effort to try and simplify it as much as possible.

**07:28 Christine:** Before we dive in, I'm so happy that you share that was your context, because I'm sure you and I are both so frustrated when we see all these people out there being so ill and taking so much time before people really acknowledge why they're sick and get on the appropriate treatment. I think this is really admirable that you're putting this in the hands of people so they feel empowered to look at their chronic illness or their auto-immune condition from this lens.

**07:55 Darin:** Yes, and just a quick statement. We've now identified Lyme in every state in this country. So there is no place where you are immune from Lyme and although it's still endemic in New England, I just relocated to California and even the CDC has identified that California is the fifth fastest growing state for Lyme disease right now. It's spreading.

**08:20 Christine:** Absolutely, and that's where when we take a history, it's not just growing up in Connecticut that is a risk factor, and I think the mindset has shifted but there's still a way to go with the paradigm for people to realize that this can be their issue even if they haven't grown up in those obvious states. So thanks for bringing that up.

**08:42 Darin:** So step one is really fundamental, it's gut issues. I work with so many people, I'm sure you do too, they've got this long history of gastrointestinal problems, whether it's constipation or diarrhea or gas, or bloating--there's some evidence that their gut isn't really functioning as optimally as it should. What we know, of course, from the literature is that up to 80% of our immune function stems from the gut. So when the gut is not working well, the immune system doesn't work well. So I think as a foundational core thing to start working on and improving your health, we need to make sure that everything in your stomach, in your intestines, is really doing everything we want it to do

and that you're digesting your food, you're absorbing your food, and then that's optimizing everything else that stems from that.

**09:34 Darin:** I just talk a lot about different nutrients that people can start implementing into their program to heal their gut, if they've got any kind of hyperpermeability, or what we kind of casually call "leaky gut," there are a lot of nutrients that can help improve the integrity of the intestinal lining, so that you're not getting that leaky effect and these large food molecules aren't passing through stimulating the immune system in a negative way.

**10:00 Darin:** Of course there's so much research coming out about our microbiome, our little gut bugs that play a crucial role in...Gosh, it seems like everything nowadays, from cancer to heart disease to chronic infection, and I think most of us are exposed at some point in our life to something, whether it's antibiotics, or chemicals or things that influence that microbiome. So really trying to get that back on par, gives our immune system a much better opportunity to function as well as it possibly can.

**10:32 Christine:** Absolutely, and I think just with our food supply and then the environmental toxicants that you mentioned, like glyphosate, all of these insults to our gut, we're up against a lot. From my perspective on Lyme, that not only includes *Borrelia* but the co-infections that can also affect the nervous system in the gut as well as the immune system. So for people with Lyme, I feel like we are up against a lot with their digestion. Do you have any favorite nutrients that you felt helped when you worked on the step?

**11:02 Darin:** Well, I love glutamine. Glutamine is an amino acid that's very nutritive to the small intestine. I think a lot of people that are prone to SIBO and these type of things benefit from glutamine. Glutamine is great. It's a powder, it's easy for people to take, it's inexpensive. I use a lot of glutamine, a lot of probiotics, of course, and I think we're at a point with probiotics that I'm not sure we have great data on what the optimal strain is for each person. I do have a handful of favorites that I outlined in the book that I

clinically use and I find good clinical results from. I think probiotics are good for a lot of people, they benefit from that. Of course omega-three fatty acids for their anti-inflammatory effects. And at least in my patient population, I find a lot of people really don't eat a lot of foods that are high in these fatty acids whether it's fish or nuts and seeds and things of that nature. So that is a really great supplement to help keep the inflammation down, keep your motility going the way it should and things moving through as you'd like. So, those are probably some of the top ones, I guess.

**12:13 Christine:** Yes, such an important foundational first step. I'm glad you highlight that. And then number two is "Nourishing The Body." What do you mean by nourishing the body in this step?

**12:24 Darin:** Well, nourishing the body is really more about diet and having tried various diets with Lyme patients. What I've settled on for myself and found seems to help most of my patients is an alkaline diet. For those who aren't familiar with that, it's about eating foods that alter your body pH. You are not going to eat anything that significantly changes your blood pH. I want to qualify that because people go, "Well your blood pH doesn't change." I'm like, "You're right, it doesn't."

[chuckle]

**12:57 Christine:** Yes.

**12:57 Darin:** But it does change it at a cellular level. I was actually surprised when I wrote the book and I was doing research, because I've read books over the years from various naturopathic doctors and other holistic health people on an alkaline diet. This has been around for decades, but I was shocked to find that there was hardly any research out there on an alkaline diet. I think I came across four studies. It was so disappointing. But I can appreciate that there's no money in this and people aren't going to invest millions of dollars into something that they're not going to get their return on.

But studies that were done, they were all very positive. I think physiologically, it makes a lot of sense.

**13:35 Darin:** Our body really functions best in an alkaline state at a cellular level, with the exception of the stomach, the bladder and for women, the vaginal area which are very acidic to protect against outside invaders. The rest of your body is actually pretty alkaline. So it's not about the pH of the food, it's about how the food breaks down in the body, that's what affects your cellular pH. The end result of acid formation is generally inflammation. So essentially this is an anti-inflammatory diet. There are other diets out there, there's a Paleo diet, there's what's called the anti-inflammatory diet. They're all hybrids of the same thing. I think the biggest difference in what I've observed in an alkaline diet versus a Paleo diet, which is probably the closest thing, is a lot of people I see when they say, "Oh I'm eating Paleo," and that means they're consuming a lot of animal protein. I think there's some interesting research coming out that high animal protein consumption can lead to kidney problems, that proteins are actually hard for your kidneys to break down. The average, I think, American needs about 75 grams of protein, and I think the average male consumes well over 100 grams of protein a day.

**14:44 Christine:** Oh wow.

**14:45 Darin:** So over time, that could be a little bit taxing. I have seen quite a few people that are in very early stage kidney disease. I think if we go back to our true Paleo forefathers, we didn't kill every day. We killed when we could. I think our diet was mostly what we could forage off the land and pull out of the ground, that is probably a little bit closer to our Paleo forefathers. What it really boils down to is that you're eating mostly a plant-based diet and you keep your animal protein down to 20% or less of your total intake for the week. I like it because I think it's very sustainable, it's doable for people, they're not really restricted on too many things where I say, "Look, just don't eat that at all." There are foods I outline as being very acid-forming in the bodies, things like dairy products, and processed junk foods, and unfortunately coffee, which I love.

**15:40 Christine:** Don't take away our coffee, right? No, but it's important.

**15:44 Darin:** Well, we know it's used by most Lyme patients, because the energy usually suffers. You know coffee is a nice little pick-me-up to keep your energy motoring along. But I know for myself when I was in the throes of Lyme, if I had a sip of coffee, my neuropathy would flare up within minutes. I tested it over and over and as much as I hated to admit it, I could see that very clearly, it was affecting me. So, even that concept... Well, it's just a little bit. For some people, that little bit is too much. As a general rule, when I advise people when they're starting this kind of diets it's like, Let's just toe the line, stay away from the foods that are very acid forming. This may not be a forever thing. I'm at a point now where I can have coffee from time to time and it doesn't bother me like it used to. If your body heals, and improves, your tolerance will be better. But when you're first starting, if you can kind of toe the line and stick to the diet it's better. I do find people respond very well to it.

**16:37 Christine:** Absolutely. Do you measure pH with saliva or urine or do you just go based off of symptoms of people that are following the diet correctly?

**16:46 Darin:** I like when people buy some pH strips and test their urine several times a day, first thing in the morning and then about 20-30 minutes after they have a meal. Usually, after about two weeks, people get a pretty good sense about whether they're staying alkaline with what they're eating and I tell them, "Keep doing it until you're consistently alkaline. And then maybe just check it periodically as needed." But I think once people get the program down and they know what they should be eating, they don't have to keep checking regularly. Initially, it's a really great idea because I've had some people who felt they were really doing a great job and they kept testing their pH and it's very acidic, so it tells them they're still getting something in their world, that's keeping their body more of acid form.

**17:31 Christine:** It's a really inexpensive tool, pH paper, and you can pick that up from Amazon, from any health food store. I agree, I think that's a great idea. Then once you

are on the right diet, you self-regulate very quickly because you see that foods that are going to create inflammation, you feel them pretty immediately. The diet question always comes up in practice, and I know there's so many trends between Paleo, ketogenic, vegan, this, and that. And it's a hard topic, but I think you've chosen a wonderful protocol to follow to decrease inflammation. I'm excited to incorporate that more when I get back from maternity leave, [chuckle] you are giving me some tips here.

**18:18 Darin:** The keto diet seems to be the flavor of the month and has been touted as being a great diet for everything. I just find keto diet, for a lot of people, very difficult to sustain. I think it's a great induction diet, long-term... There's at least been a few studies that suggest that long-term, this may not be such a great idea for a lot of people. So again, I wanted something that would be sustainable for people, and I think an alkaline diet becomes a lifestyle, it's nothing that's overly difficult and people don't feel deprived of anything. So again, it's just a little easier for people to follow.

**18:58 Christine:** Absolutely, especially when we're asking our patients to do so much with protocols and therapies and we have to interact with food all the time, so that can be very psychologically taxing when we give people too hard of a diet to follow, so I agree. Number three is a big topic right? "Treat Infections." How do you approach treating the infections?

**19:19 Darin:** This is where I think those of us in the Lyme world will probably have very differing opinions, and I don't know that they're right or wrong, they're just different. I can speak from my own experience, having been someone who was on antibiotics for an extended period of time and actually not getting better at all, but getting much worse, I think that tends to be a fair number of people I work with who've been down that pathway and have not been successful. And again, there's some research out there with the antibiotics long-term that the benefits take place while you're on it, and then you lose it when you come off, or there's no benefit at all. Of course, I get very concerned about what it's doing to our microbiome, not just our gut...we have a microbiome in all our

tissues and I don't think we've fully appreciated what happens when you're on anti-microbial like that, for such an extended period of time.

**20:12 Darin:** I've had one woman who was on antibiotics continuously for 12 years and she was paralyzed three times because of the antibiotics. In my mind, I'm thinking, "Well, where do you draw a line in the sand and say, Maybe this isn't the right path for her." I think we don't know that we ever get rid of Lyme completely. Right now we don't really have the tools to measure whether Lyme is still in your body. Is it still active? We're still dependent on tests that are questionable at best, so since we're measuring sort of the immune response to the micro which tells us very little about its activity, I'm of the opinion that I don't know that we ever get rid of lyme completely.

**20:55 Christine:** I agree.

**20:57 Darin:** We know that it's been around for a long time. We pulled an ice man out of Austria 5,000-years-old and they did a DNA sample of the blood and found evidence of Borrellia. So this is an old organism that's been around a long time, and why it resurfaced in The '70s and '80s, who knows? I think this is probably an organism that a lot of us get exposed to. We all don't get ill from it. So in my mind, when I'm approaching treating the infection I'm really thinking about how do we control microbial load while we're really continuing to work on the terrain to keep it healthy enough that it will manage it on its own. The way I always equate this is, if you get chicken pox when you're five years old you can get shingles when you're 55 old and it's the same virus that's been your body for 50 years. Something in your body changes that allows the virus to become opportunistic and then it starts to create problems, and I think Lyme just happens to be a very exceptional opportunistic microbe. If we can really fix the terrain that may help keep it at bay. But in the meantime, when you've got an overload, much like an overgrowth of yeast or any other microbe, we do want to help control that.

**22:07 Darin:** I favor herbs and feel they're very effective at controlling the load without compromising our microbiome, at least to the extent that we see with antibiotics. If you

go online and you read about different herbal protocols, there's just a whole bunch of them. What I've observed is that they all worked to varying degrees with different people. What I outlined in my book is what I personally used and what I've used with most of my patients. I started with Dr. John in New York City. His protocol is really a series of Chinese herbal formulas, and for people who aren't familiar in Chinese medicine, they really don't use herbs by themselves, they're always mixed in formulas.

**22:49 Darin:** I think three herbs is probably the lowest number you'll see in most formulas, and it can be as many as 12 or 14 herbs. So what he did is, he looked at traditional Chinese formulas, then looked at the modern pharmacology of what these herbs do, so he calls it modern Chinese medicine, where it's a combination of traditional Chinese medicine plus our current understanding of what these herbs are doing pharmacologically. That's how he formulated these different products.

**23:16 Darin:** I think they work very synergistically. I rarely see Herxheimer reactions with them. The mix of the herbs seems to mitigate that pretty well. I rarely see any kind of gastrointestinal problems. They're very well-tolerated, clinically, they're the most effective protocol that I've used with patients. The downside to it is that it's a lot of capsules. Several different formulas. But there's several formulas that help address the microbe while also addressing the totality of everything else Lyme does. There's a formula of anti-inflammation, another formula to help improve circulation, another formula to help boost your immune system. I think it's the most comprehensive of all the protocols that I know of.

**24:03 Christine:** I agree, I think a lot of patients who find you or myself have typically failed antibiotic treatment and so are needing a different approach. There's a wisdom with herbs, we're not just isolating an active ingredient, and asking the body to work with that. Herbs are intelligent and there's a synergistic phenomenon we see when we combine them. I'm excited to see your protocols. We've used a lot of beneos herbs, which is another herbalist in the community, but Dr. Chong, I know is very well respected and has a lot of great results. It's nice that you're using capsules because we

use a lot of herbal tinctures and not all of our patients can tolerate the alcohol, so it's good to have options.

**24:51 Darin:** That's exactly it, I tell people look, whatever protocol we start with, we're going to go 6-8 weeks. At that point, depending on how you feel, we'll make that decision about whether we want to continue with it, or if it's time to cut big and try a different formula. I've had some people start down one path and they're not responding the way we want and we change and then they do beautifully--so everyone's Lyme is their Lyme. We just have to accept that what works for one person may not work for another. I've also used a lot of the Cowden Protocol. Dr. Lee Cowden, who is a cardiologist, helped develop this, and these are tinctures that come mostly from the Amazon, and Peru areas of South America and I like a lot of these herbs. There's a woman at the University of New Haven, Dr. Eva Sapi, who got Lyme herself, she's a researcher, I'm sure you're familiar with her work. She actually started studying these herbs in vitro, but at least comparing it with antibiotics, particularly doxycycline, and what her research found is that it actually a, works better than doxycycline but b, doxy only works on Lyme when it's in its un-coiled form, where the herbs were actually treating Lyme in all its different forms.

**26:09 Darin:** So at least in vitro, there's some pretty good evidence that herbs might be a bit more effective than even doxycycline. We know in vitro studies are what they are, but at least there's been some research into them. And clinically, I've used them a lot and I have found good results. Stephen Buhner is a great herbalist, he's got a good protocol. I've used a lot of Byron White formulas, Susan McCamish's "Beyond Balance," again also has some very potent formulas. What I find with Byron White and Beyond Balance is I see a bit more herxing with those formulas. They're very potent, they're very strong. So even a few drops goes a long way. With the Cowden and the Zhang protocol, I see less herxing, so that's kind of why I've sort of steered people more in those directions, at least to start. The Dr. Zhang stuff is great. The biggest downside to it is cost. It's expensive and it's a cost-prohibitive for a lot of people, but again, it's another option out there.

**27:17 Darin:** My approach is that there's all the different options, and let's meet people where they're at, in terms of what they can take, what they will take, what they can afford and then hopefully, between all the different protocols we have out there we'll find a good fit. When you look fundamentally at what all these herbs are doing, they're really doing the same thing. There's something that's anti-microbial, there's something that's anti-inflammatory, there's something that's helping improve circulation. I mean, they're really kind of addressing the same fundamental problems. So if you just start down one path and again, you're not getting the results that you're expecting, then don't be shy about trying something different. I typically give it six to eight weeks, if you get to that mark and you don't feel any different you can change protocol. I don't think I've ever seen anyone that really started to turn the corner after the third month, or the fourth of being on the same exact protocol. So I tend to change at that point.

**28:09 Christine:** Absolutely, and you bring up a lot of great points. Everyone is individual, in how they respond. So what works for your friend might not work for you, and so it's about not being discouraged. There's so many great formulas out there, so we have a lot of options and we all get in our niche or wheelhouse of what herbs we see work, but if they're not working, there's a lot to choose from. It's not just like, "Oh, try this antibiotic. That's our only option." This is an American marathon, not a sprint in treatment. And so we have to just have patience. I like to rotate different herbs and things, so having a lot of different options available, is important as well.

**29:06 Darin:** Well, so that's the beauty of it. And as you mentioned, the nice thing about herbs is that they're doing so much more for your body. Plants have this wisdom. Again, we're not just taking an herb because of its anti-microbial effect, it's an anti-oxidant and it's doing all these other beneficial things for the body. So we just get more clinical benefit from herbs than we do from antibiotics that really just kill the bug. We're adding more to the body by using herbal medicine.

**29:40 Christine:** Agree, absolutely. So step number four, is a really important step and this is one of the things that gets most overlooked, maybe in the conventional model. Step number four is "Remove Toxins." What do you mean by that?

**29:56 Darin:** Well, if you look at the average American that gets exposed to over 80,000 chemicals a year, it's not rocket science to figure out that we are being bombarded with things that really undermine our bodies, and undermine our immune system. And to a certain degree, we can control a lot of it. So, it's really recommendations of how to clean up your home, how to clean up your environment, to get rid of all these toxic chemicals that you might be using to clean your home, or pesticides and fertilizers and all these things around your yard because there's an accumulation of effects of all these chemicals. In reality, nobody really studies the long-term effects of these chemicals, when it's a single chemical, let alone when it's in combination with thousands of others. So it's prudent, for anyone who has any kind of chronic illness, and actually even if you don't, just to keep yourself healthy, to start going through the house, through all your cupboards, go through your garage and start pulling anything else that has something in it that might be potentially toxic to your body and get rid of it, appropriately of course.

**31:04 Darin:** There are fortunately a lot of natural products out there that will keep your house spick and span and clean and keep your yard looking nice, without having to resort to these things that are potentially more damaging to your body. So, that's anything from what you're cleaning your house with, to products you use when you're in the shower, to make up for women--all of these things that your body can ingest and absorb through the skin. We need to be mindful that they do have that cumulative effect on your body. So this is a very easy, inexpensive thing that anybody can do, it doesn't require anything more than a little bit of time.

**31:44 Darin:** And over a longer period of time, it does have an impact on your overall health. So control what you can--you can't control the farmer down the road necessarily that might be spraying their crops with a pesticide, but at least where you live, you have

100% control over that. So take advantage of that and make your home a safe haven. If you can control your work environment or even a school environment, great, that always helps.

**32:12 Darin:** The other part that I talk about more depth is mold. I'm sure you've experiences too. Mold is the one thing that probably mimics Lyme more than anything else. I've just seen so many people that end up with mold in their home and have no idea. And they go on for months or years of Lyme treatment thinking, Boy, my Lyme is just resistant, it's not getting any better. And then we come to find out that they've got a leak in the roof, or their basement and they've got a decent amount of mold that's actually contributing to their health problem. I was expecting a lot of mold when I lived in Connecticut, because it's an old area, with homes that are 200, 300, 400 years old. Here in California, I was surprised. The number of people I've seen since I've been here that have leaks in their homes and have terrible mold issues, I thought, well, it's a dry environment. We probably don't see very much of it, but even in an arid environment, you can still get indoor mold and not be aware of it.

**33:12 Darin:** So particularly, if you've been down the Lyme path and things have been somewhat resistant, if you haven't investigated, get your home tested, make sure there's no mold that you don't know about and if there is, there are things you can do to remediate your home. If you've had that exposure there is help to relieve your body burden of mycotoxins and if you've got mold allergy, you can treat mold allergy. There is a way of treating it. It's just you need to have that awareness that that might be a contributing factor.

**33:43 Christine:** I absolutely see the same thing. And the message is, if you're not getting better, continue to have that detective hat on, because there's always a reason why. I practice down in California as well, not only in the Bay Area but also southern California a few times a year. There are different climates in both areas, but I'm so shocked with how much mold people are struggling with, especially in the Bay Area. It's a hard problem to solve, a lot of people get nervous about their home and the cost of

remediation and everything, but it's really vital to people to solve and to deal with that, because some of our patients won't get better unless that's addressed. What's your favorite test for mold for those there listening, and suspecting that they might have mold in their home? What test do you like to run as a screen?

**34:44 Darin:** Well, for the home or for themselves?

**34:48 Christine:** We can talk about both, but the home first.

**34:51 Darin:** I think you've got to find a local company that does mold testing, in terms of the type of testing, there's a few different ways to do it. We see the best results for companies that do a combination of what they call spore trapping, where they basically come in, it looks like a fan and instead of blowing air out, it sucks air into a cartridge and then they use that cartridge to see if any mold spores got trapped. There's another test out there called ERMI. ERMI is a way of evaluating how much mold you had based on a test sample, it's sort of a longer term evaluation of mold that may be in the home. I like the combination of the two. There's a newer test called a HERTSMI-2, which is sort of an abbreviated version of an ERMI that looks at some of the molds that are known to be some of the more toxin-producing ones, that gives you a pretty good idea about your exposure. One thing I like about spore trapping is that they can go from room to room and they can isolate specifically what room might be the bigger problem.

**36:01 Darin:** So at least if you need to have anyone come in and do any kind of remediation, they know where to start, they're not just tearing your whole house apart. For testing people, there's a lab called Great Plains Lab that does urine mycotoxin tests. And again, there's a way to do it that you can kind of stir up the pot a little bit to get your body to excrete these mycotoxins using glutathione. Usually people have to take glutathione for a few days and then on the fourth day, collect the urine sample and that gives us a relative idea about what the body burden might be of mycotoxins. So there's a way to test your home, and there's a way to test you.

**36:40 Darin:** Ritchie Shoemaker, who's probably regarded as one of the gurus in the mold world, he talks a lot about mycotoxicity and definitely, this is a problem for some people, but he neglects to talk about mold allergy, which is actually an immune reaction to mold spores. I find a lot of people that have had mold exposure, they have mold allergy as much or more than mycotoxicity. So, there are really two different problems related to mold. One is an immune reaction to mold spores. The other one involves the fact that some mold secrete this chemical that when you breathe it in, is very toxic to your body--so it's not an immune reaction, it's just a direct damaging effect of that chemical. There are two different problems caused by the same issue, but you have to treat them completely differently. My feeling is if I know that there's been exposure, we test for both mold allergy and mycotoxicity to make sure we're covering the bases.

**37:34 Christine:** How do you identify mold allergy? Do you do a lab test or just the clinical picture?

**37:41 Darin:** We do a combination. We'll do skin testing, we'll do blood testing. There's several different ways you can evaluate for mold allergy. The problem with a lot of mold allergy is that it's not IGE. So a regular allergist may do skin prick testing or even if you do a blood test, a lot of times it'll look negative because a lot of these mold reactions don't involve IGE, which is the molecule they're looking for. So it's good to try doing several different types of tests for mold allergy just because there might be different immune reactions.

**38:12 Christine:** I absolutely think that's wise and important to distinguish and I see that as well. How do you treat mold allergy? Are you using SLIT or LDI therapy for treating mold allergy?

**38:27 Darin:** Yes, we do either sublingual immunotherapy or what's called SLIT therapy, or we'll do LDA, Low Dose Allergy therapy. They both work.

**38:37 Christine:** Right, you just have to trwhich find which one works better for the patient. Those are great points there. You mentioned avoiding exposure within the home our environment and the mold piece. A lot of our audience is interested in heavy metals as well. Do you have any pearls for heavy metal toxicity?

**39:07 Darin:** Well, if we do a six-hour provoked urine test, we'll find heavy metals in just about everybody, just because we're all exposed. The one thing that doesn't correlate well is your body burden with your clinical symptoms. I see some people that we do the test, they have sky-high levels, and their symptoms are fairly nominal, and other people who are very, very ill, and we do the same test and there's hardly any metals that come out at all.

**39:35 Darin:** I think it's something that we need to be mindful of, just because again, we all have exposure and depending on your sensitivity level, it's not generally one of the first things I look at, it's probably one of the last things. In all the people I've ever done chelation therapy on, I think it's a relatively small percentage of those that really had a huge benefit when they did the therapy. There's so many other things that are probably a bigger chunk of the pie, but yes, I'm a huge advocate of doing sonotherapy and colon hydrotherapy. Both of them are very effective at getting rid of not just toxic metals, but also getting rid of other toxins. Even if you never did a test and you had no idea what your body burden was, it would be very safe and easy to do either colon hydrotherapy or sonotherapy or both, and your body is going to get rid of these things anyway. I had some Lyme patients who had tried everything under the sun, they really didn't do well, and they did colon hydrotherapy and they felt amazing.

**40:33 Christine:** I feel like a lot of our naturopathic treatments, supporting what we call the 'organs of elimination' are really foundational for our patients. We do a lot of colon hydrotherapy and coffee enemas in our patients too, and it's amazing that such a relatively simple tool can help with pain and fatigue and brain fog and that global detoxification effect that you get as well.

**40:57 Darin:** I know people have to get over the mental hurdle of doing hydrotherapy. I say, "Look, try it one time, see how it goes." And where I am here in California, we've got several really great colon hydrotherapists, and there are so many good ones out there, that really know how to do it in a way that makes it comfortable and easy. I think again, most people find even after one session, that they noticed they feel a little lighter, their energy is a little better. Once you start mobilizing those toxins, it becomes pretty evident how much they're affecting you.

**41:33 Christine:** I have the same thought. I say, just try one, if people are a little resistant and then usually, once you get over that and you feel better, people will have no problem doing them. Coffee enemas you can do at home and they're really inexpensive. They're time consuming but they can make or break how a patient feels in a day. So it's a great self-healing tool.

**41:51 Darin:** Absolutely.

**41:51 Christine:** So number five, Darin, is "Sleep and Exercise." Tell us your thoughts about sleep and exercise for our Lyme patients.

**42:00 Darin:** I see that after people get Lyme, even if they were great sleepers before, they tend to have sleep disturbances. And of course, when you get into that deep sleep, that's when your brain, your neurons repair themselves, that's when all that magic happens of really healing. The more you miss that, the harder it is for your body to recover, and of course, when you're not sleeping deeply, your energy suffers during the day and you're fatigued in your week and so forth. I think anything we can do to help facilitate better quality sleep helps with any kind of chronic illness and certainly Lyme disease. So again, I outline certain nutrients I've used to help facilitate better sleep. It depends on whether your problem is falling asleep, staying asleep or both, but again, there's a lot of things we can do without using medication to try and get your body back on track and get you back on a regular sleep pattern.

**42:53 Christine:** And unfortunately, I feel like if people have been undiagnosed for a long time, they might end up on prescription drugs that can have side effects. So I think it's important to give people alternatives. And we have so many tools within naturopathic medicine, I'm a big proponent of sleep as well as you are, just for the healing effect it has on the brain and our lymphatic system. So I agree, sleep is huge. Do you have any favorite herbs or things like melatonin that you find work well with your patients?

**43:30 Darin:** Well, I find melatonin for people whose difficulty is falling asleep tends to work well for the vast majority of folks. If the difficulty is staying asleep, I don't think that's melatonin's bigger thing. So for that I use a lot of 5-HTP, 5-Hydroxytryptophan. I use a lot of glycine. Glycine binds to part of the brain that helps induce GABA, which is that neurotransmitter that kind of shuts your brain off. Herbs, again, we've just got a slew of herbs that are a great for facilitating deeper sleep. I love passion flower. I love Valerian, I love lemon balm, Schisandra. We can just have so many that, again, you just have to kind of find what works well for you. If you find that you've been on something for a couple of weeks, and you don't really feel like it's making a difference, try something different. I like most of these other natural things because unlike some of the sleep medications, they don't generally leave you with that hungover feeling in the morning where you're groggy and have a hard time getting going. So again, they're generally safe even at relatively high doses.

**44:35 Darin:** And again, you just have to find that combination that works best for you. There's also a lot of other things that I think help induce sleep that don't involve taking a pill at all. I find acupuncture is very effective for helping people get better sleep. We've been using a PEMF, Pulse Electromagnetic Frequency Devices that help people get better sleep. Sometimes even engaging in things like yoga helps. Yoga helps kind of reset the nervous system a bit and help people sleep a little better. That is a good option for people who aren't as keen on taking something to get better sleep.

**45:13 Christine:** It's not always a pill, I agree, and I'm sure you're also aware of the increase in blue light exposure with our screens, and the effects on our pineal gland. I

think that's also another kind of lifestyle tool, to not have your iPhone in bed with you, to not have your computer screen on right before you go to bed. I like baths, as well, Epsom salt baths or using essential oils and things that kind of calm the nervous system down before bed. Those are some great tools. And then how about exercise? This can be somewhat challenging, right, with some of our patients--but movement, I know, is a positive thing for their lymphatic systems and their bodies.

**46:00 Darin:** I think with lyme particularly that is a factor, because fatigue is such a common problem, the thought of doing exercise seems a bit daunting. I know how I was when I was in the throes of lyme, I mean getting off the couch was hard enough, let alone doing any kind of any activity that was physical. I was an athlete my whole younger life and was always into different sports and enjoyed it and I got to the point where I'm so fatigued that laying on the couch was about all I could muster up. I think I literally one day just said, "Oh, I'm going to sit on the floor and I'm just going to watch TV and stretch," I can at least do that. I started with that and then I started with a couple of laps around the house and then a couple of laps around the block and over time, I started picking up martial arts. I think seven years later, I got a black belt in karate and again, it took a while to get my mojo back. But I think any kind of movement, even if it doesn't feel like it's much, is something. And thinking about our lymphatics, particularly--we need that muscle contraction to move our lymph. There's nothing pushing it like our blood pressure.

**47:08 Darin:** Even that little bit of movement can make a big difference and anything is better than nothing. So even with the most restrictive people I've seen with Lyme, and I've had people even in wheelchairs where I know they can still use their upper body-- I don't feel like you have to do anything overly strenuous or long-term, particularly when you're starting. It can be just as simple as stretching. I talk about other types of gentle exercise and again, whether it's yoga or Tai chi, or walking, or swimming, I think it's just the consistency of doing it that makes a difference. As your stamina gets better, as you feel better, you can tolerate more, you can increase your duration and intensity. But in the meantime, just do what you can, but do something.

**47:58 Christine:** I think that's really important, to see small wins and it's so important for the lymphatic system which is so overlooked in medicine. Once we get the lymphatic system moving, I think that's another great tool to help people feel better. So I'm really glad you put that in, Darin. Well, we've covered a lot. This is a great book and has so many great tools and tips, I know people can dive deeper in your book. I just wanted to touch briefly on a therapy that you often use in clinical practice called Low Dose Immunotherapy. I just wanted to share this idea in case people haven't heard about it or if they're stuck or struggling with their own therapy, to know that there's another tool out there to help them with their treatment. So, can you just briefly explain what LDI therapy is and how you've seen it work while in your practice?

**48:58 Darin:** Low Dose Immunotherapy is a way to help modulate your immune system against whatever microbe may have triggered an auto-immune reaction. It was developed by Ty Vincent. He's a medical doctor in Hawaii, a little over four years ago, maybe going on five years. It was really based out of another therapy we call LDA, which is a way of treating conventional allergies, like mold and pollen and dust and so forth. Dr. Vincent had been doing LDA and realized that the immune mechanisms with which our immune system reacts to allergens really wasn't distinctly different than what was happening to different microbes.

**49:37 Darin:** And again, we have some pretty good evidence in the literature that these microbes through a mechanism called "molecular mimicry," start interfering with our immune system, so that our body treats it more like an allergen instead of a pathogen. As a result it engages a different part of the immune system, not the part that would normally just eradicate it, but a different part that's autoimmune, that starts interacting with our own organs and tissues. So Dr. Vincent started playing around, I think Lyme was actually the first thing he tried. Now, we probably have 40 or 50 different antigens that we work with, but the concept is really trying to find a way to turn off that autoimmune reaction that the microbe may have stimulated.

**50:24 Darin:** So basically, all of these extracts are dead organisms, they've all been irradiated, so they can't reproduce, they can't cause infection, but they still maintain the surface proteins and antigens we need to help the immune system recognize it. Then we mix it with an enzyme called  $\beta$ -glucuronidase, and this enzyme seems to help modulate whatever you mix it with in terms of down-regulating that immune reaction. Now, in saying that, I know Dr. Vincent stopped using the beta about a year ago, and now he basically just dilutes out these dead organism in water, so it's basically a homeopathic nosode. What we found clinically is that for people who've tried a lot of other different therapies that have failed, sometimes this makes a huge difference in turning off these various reactions that Lyme and all these co-infections can cause. Our one mix that we use, we call it the Lyme Mix, and it actually has 74 different organisms in it. Lyme and Bartonella, Babesia, Anaplasma, Ehrlichia and Rickettsia, so we're covering all the bases. And then we have all those individually for people who need it.

**51:30 Darin:** I find it's a very safe, effective therapy. The biggest downside to it is if you have the right antigen and the wrong dose. If your dose is too strong, people will flare. And we've seen people now over the years that had pretty good flares. It's probably a different mechanism than an actual Herxheimer reaction, but you feel pretty terrible on it. So the good news is, if that happens, you've now just proven that's what's causing the problem. So now it's just a function of finding the right solution. We forewarn people that it could happen. And if it does happen, it's annoying, but it's nothing to panic over because now we've really pinpointed what the problem is, and it's just a function, instead of working through and trying to find what the right dilution is. But again, I've had people that have tried various antibiotics, herbal therapies, other things and really haven't had much success and then they start doing this therapy, and sometimes within days to weeks, they really turn a corner.

**52:31 Darin:** In addition to Lyme, this has been a very effective therapy for kids with PANS who get this autoimmune reaction that causes various neuro-psychiatric problems where they get anxiety and OCD. And literally overnight, you'll see these mood and behavior changes in children. I've had now several kids with this problem

where literally within days to weeks, you can shut that whole thing off, by using this therapy. So for some people it's a game changer. I think now there's probably maybe 100 or more doctors that have trained with Dr. Vincent in this therapy. So, it's out there, it's available. I think it's something worth trying particularly if you've been stuck in your therapy.

**53:16 Christine:** Absolutely, and I think working with a skilled physician to help you navigate the dosing and the potency is important. I'm just curious, do you find with the PANS kids that the strep, or LDI works the best, or do you look at other infections as well for the PANS cases?

**53:36 Darin:** Yes, strangely enough, the Lyme one has been more effective than the strep one.

**53:41 Christine:** Makes sense. Yes, that's becoming more and more common for these little kiddos. I'm glad you found that that works, that's really helpful for a lot of people. Well, I feel like I could pick your brain all day long, Darin. This is wonderful information, and if our audience wants to learn more about where to find you, at your practice, as well as where they can find your book, can you share that information with us?

**54:09 Darin:** Sure, my website is [www.dariningelsnd.com](http://www.dariningelsnd.com), and I've got information there, there's a link through if they want to buy the book, if they want to sign up for our email list, we have a lot of great information about Lyme and other things to help feel better. We'd love for people to join us on social media as well. Again, we're always trying to provide information to educate people and help people get healthy.

**54:41 Christine:** We'll have all of that information in our show notes. This has just been a pleasure speaking with you today and I know our paths will continue to cross. I really appreciate your time today, Dr. Ingels.

**54:55 Darin:** Well, thank you so much Christine. It's great being here.

**55:00 Christine:** Thank you for listening to the Spectrum of Health Podcast, I hope you enjoyed my conversation with Dr. Darin Ingels. Please check out his website in the show notes and please pick up a copy of his book, The Lyme Solution. I think he has a lot of great information to share with us all from his experience. And I hope you enjoyed the podcast today. Thank you.