Dr. Jill

Your Functional Medicine Expert®

Jill Carnahan, MD ABIHM, ABoIM, IFMCP

Transcript

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Podcast:

#64: Dr. Jill Interviews Dr. Jill Crista on Mold Toxicity, Lyme Disease and Neuroinflammation

Text:

Dr. Jill Carnahan 0:13

Hey everybody. Welcome!—this Friday afternoon. If any of you saw the promo, we were just talking about how, before we came on live, so many of you were like, "The Dr. Jills!" It's funny [and] it's interesting that both of us have a platform around complex chronic disease and mold especially. And of course, my friend Dr. Jill has written a book, so there are lots of synergies.

Dr. Jill Carnahan 0:38

The other thing we were talking about—and I hope you guys feel this with me and with the interviews and definitely today—[is that] I love to collaborate and I love learning from my colleagues. I feel like we all can teach each other something, and especially in this realm, there are so many camps and different thoughts about mold and mold-related illness. We were just talking about how important it is for us to continue to learn from one another. Again, I just come with a very open heart because I know that I don't have all the answers. But as we continue to collaborate, we can bring more and more good information to you guys who are listening out there, whether you're professionals, patients, friends, or family of someone who's sick. It's so important.

Dr. Jill Carnahan 1:16

The other thing we were talking about that we'll get into today is that when you're in clinical practice, you have patients in front of you all the time with a complex chronic disease like mold-related illness, Lyme disease, or PAN and PANDAS—which

we'll talk about today—and you come to a crossroads where you don't have the answer. In conjunction with the patient, if you have a good knowledge base and information, sometimes we try things that are new, and sometimes we find they work or they don't. As long as there's safety, there's this idea of not only collaboration but really trying to think outside the box to bring clinical solutions to you all. I feel like my job is some of the clinical investigation and testing, and then there are researchers that are far better than me that can take that data and try to prove it out. But hopefully today you'll hear some of the cutting-edge stuff that we're doing and trying and what's working and what's not working.

Dr. Jill Carnahan 2:05

Just a little background: Many of you have been here before, but if you haven't, you can find all of my blogs and information on my website, jillcarnahan.com. You can find products at drjillhealth.com. And I will put links to Dr. Crista's site, her book, and her other website, so you'll see all those below the interview today. So don't worry if you missed something; the links will be wherever you find this interview, and we will have those linked up as well. I usually go back after the interview and, if there are products we mentioned or if there's anything like a third-party website or resource, I try to put those all in. Don't worry if you miss it I will do my best to link up on those. So welcome, Dr. Jill Crista! It is absolutely a delight to have you here!

Dr. Jill Crista 2:49

Thank you so much! It is a delight to be here. I cannot wait to have this conversation.

Dr. Jill Carnahan 2:54

Me too! I'll just introduce you briefly. You've got lots more credentials, but I'm going to do a brief introduction. Dr. Jill Crista is a naturopathic doctor, best-selling author, and an internationally recognized educator on neuro-inflammatory conditions such as mold, Lyme, PAN, PANDAS, and post-concussion syndromes. She's passionate about helping people recover their health after exposure to toxic mold. She's the author of the book Break the Mold: Five Tools to Conquer Mold and Take Back Your Health and supports mold-sick people through her Mold Canary membership.

Dr. Jill Carnahan 3:26

She also provides online training for medical practitioners wanting to become mold-literate. Again, it's such an important piece because we need doctors, right? I'm sure you have a busy clinic, and maybe sometimes there is a waitlist or who

knows how that works, but most of us are doing it, and patients are like, "Where else can I go for resources and how can I get trained?" So the more that we can reach even our colleagues with the information, the better.

Dr. Jill Carnahan 3:52

That's a lot of me talking. Now I want to hear from you. I want to hear: How did you get into this? Tell us [about] your journey. Tell us a little bit about how you got into mold-related illness and complex chronic conditions—all of these things. Tell us your story.

Dr. Jill Crista 4:06

Sure. So I went to a naturopathic school. I ended up setting up in Wisconsin, which is near where my family is. I had twins at the tail end of medical school, which I don't recommend the timing [for], but I do recommend twins. It turns out I had Lyme disease when I was pregnant with them. I didn't discover that until my kids were 11. I didn't discover it until I was at a Lyme conference going through my Lyme training and heard Dr. Charles Ray Jones present. And it was the first time that I thought, "I think my kids have Lyme." So complex chronic illness has kind of been our story for a long time. They're 21 now, so we've been doing this for 21 years. I was told it's fibromyalgia; you know, "Pick yourself up by your own bootstraps"—that kind of thing—"Everybody has aches and pains of everyday living." So that's my personal story. I went to medical school and missed the whole thing. I didn't ever connect that here I was dealing with chronic Lyme but I was doing well with it, which is such an optimistic story because of my diet, exercise habits, sleep habits, and my spiritual practice. All of these things were keeping me held together.

Dr. Jill Crista 5:19

So I established in Wisconsin. Janesville is a GM town, so we've got factories, we've got paper processing plants, and we've got lead mines. So I ended up becoming focused on environmental medicine—from naturopathic family practice to environmental medicine—and then had these patients who weren't getting better when we detoxed them [or] when we did the chelation. They ended up having Lyme disease, I discovered. So I realized I'm in the third-leading state for Lyme disease in the country.

Dr. Jill Carnahan 5:51

So Wisconsin is the third leading—

Dr. Jill Crista 5:53

Yes. It bounces between third and fifth depending on the [number of] cases each year. So then I realized, "This is Lyme disease, and I don't really know enough about it." So I went and got trained with ILADS. When you apply the functional medicine and naturopathic medicine principle of "find and treat the cause," now that we had identified the cause, we cleared the metals, and we were dealing with the Lyme thing. A lot of people got better [as a result], and that's so elegant and beautiful.

Dr. Jill Crista 6:20

But there was this group of people that still weren't getting better. In one of those patients' homes, they found black mold. I did home visits in those days because I wanted to learn, so I followed the inspector around and the remediators around, and they estimated it was about a 12-year history of exposure. That's when I thought, "Wow, I don't think I really understand mold." I graduated with some education in environmental medicine as a naturopathic doctor—I'm very lucky that way. I knew it as an allergy problem, and I knew that in some rare cases people can get sort of an MS-looking picture. That's basically how I was trained.

Dr. Jill Crista 7:00

So when I hit the research for this patient, I was like, "Oh, this is why he has tinnitus, this is why he has anxiety, this is why he can't sleep, this is why his guts are a mess, this is why he sprains his ankle stepping off the curb, this is why he has pelvic pain and urinary frequency." It started to put all these things together. And then I realized my "chronic Lyme" patients were actually mold patients. We went investigating, and it was like, "Oh, my gosh! Mold." "Mold exposure history." "Mold exposure history." "Mold exposure history" or current in almost all of those cases. So that's when I really became the 'mold lady' as you do.

Dr. Jill Carnahan 7:37

Yes, you and I. This was the coolest thing about—

Dr. Jill Crista 7:41

Yes. I've heard you say that you didn't find mold; mold found you. You know, and that's kind of how that happened. I had this protocol using naturopathic medicine. And then my kids and I moved into a moldy house and didn't know it, so that's the impetus for writing the book. I had a really big loss in my life; I was going into perimenopause, they were going into puberty, and so you excuse all these things and you pin it on other things. The fact that it duped me and I had been working

with it for 10 years [made me think], "This is insidious!" Then the flood kind of revealed itself for us, and I realized it was mold, and I knew exactly what to do. I had the people to call. I was so fortunate, and I felt so privileged, and that's really what made me feel like, "I need to write a book about this because this is stuff everybody can do." None of this is rocket science.

Dr. Jill Carnahan 8:38

Yes, bringing awareness. [There are] a couple of things I heard you say. Number one, with things like Lyme and mold, we're conventionally trained—naturopathic for you, allopathic for me—but we're not taught this stuff in our training. Even in the functional integrative realm, it's not taught to the level that you and I have gone to. What we found is that we came across ourselves, situations, or patients where we couldn't find the answer, we started off talking about [how] we needed to know more information to help people. This deep dive into complex chronic [illnesses] such as Lyme, mold [exposure], and neuroinflammatory stuff—it's so rare to have a doctor who really, really understands it.

Dr. Jill Carnahan 9:21

So the other thing that you and I share is this passion. First of all, it kind of discovered us, right?—because we happened upon this. We felt like we wanted to find answers for patients, ourselves, and our families in those tough cases. We had to, right? Like I always said: "I don't want to do the Lyme. Someone else can do that." You've heard me say this before in these interviews, but then I was like: "I have to. if I want to get people well I have to understand."

Dr. Jill Carnahan 9:42

The same with mold—[the] mold [situation] for me happened in a similar way. I was actually in denial for several months because I was like, "No! Because this will mean I have to leave my work or home, or something pretty big is going to have to happen." I was in denial, which is why I always have such grace with patients in meeting them where they're at. And granted, they do have to get out of the moldy environment at some point or remediate, but I have a lot of compassion because I know myself. I kind of knew before I knew what was going on, and it was hard to get my mind around what it was going to take in my life—the changes. All my medical school books for 20 years had to go and certain things. And it's all good; my health is worth everything—the same with yours, if you're listening. But those things are kind of hard, and now that we're in it, it's like, "Of course!" But I remember those feelings of, "Do I really want to go into this?" We've chosen, by accident or purpose, the most complex cases that we could have on planet Earth, right?

Dr. Jill Crista 10:36

Right. And they're the people I love to work with the most.

Dr. Jill Carnahan 10:40

Me too! People bring me these charts that are four inches thick, and they're like: "Oh my gosh, I'm so sorry for all those records. Is it too much?" I'm like, "No. I love complexity. Bring it on!" And actually, it sounds like you do too. I actually really enjoy the challenge. And not only that but so many of these patients are traumatized. They've been to so many doctors, and they've said: "Oh, your labs are normal. It's all in your head. See a psychiatrist." I mean, crazy things. These poor patients. I have such a depth of compassion because I know that there are real answers like you do. I know that if I can't help them, at least I can start to guide them in the right direction. And there are a lot of people who have given up or [others have] taken away their hope, right?

Dr. Jill Crista 11:18

Yes. You bet, absolutely. I think that's what I align the most with you—the heart-centeredness of what you're bringing to the table.

Dr. Jill Carnahan 11:28

Thank you, [I feel the] same with you; it goes right back to you. The other thing was your journey of discovery [with] your home. Then we have to discover [how] to first become healers to ourselves. I love that you started talking about the emotional [and] spiritual [aspects] too. We're going to talk about some of the physical [things], [like] herbs and [such]. But I found one of the most important things in these chronic complex diseases is actually addressing the mind and the mindset and the trauma and the relationships—all these pieces are part of it as well.

Dr. Jill Crista 12:03

Yes. Oh my goodness! As I was going through my own healing and then the real healing—you know, the deep healing—I realized I had invited mold. I had an energy of fear and involution, and it was sort of like I signed up for it in a way. I'm sure that I made that contract of, "I want to help people globally in whatever way that I'm most meant to do that," and you know, my angels are like, "Okay, here you go."

Dr. Jill Carnahan 12:34

Oh, I totally understand because I've learned in my life that it's all experiential. I have to experience some of these things and then understand them at that deep level because some of the understanding you and I have that's unique is that we've lived it. There are little tiny things that you recognize not from a textbook—which there is no great textbook out yet—nor from training but actually from experience, understanding, and recognizing. So let's turn just a little. I want to come back to mold and Lyme and how they play [out], but let's talk [about] PAN and PANDAS. What is this, first of all? Define what it is and how, not only children typically, but adults can have some of these symptoms. And then let's dive into: How would you look at those patients? So let's dive into PAN and PANDAS first.

Dr. Jill Crista 13:20

Yes, my goodness. I'm a mom of twins with PANS, so that's been my in-the-trenches learning as the research is catching up and the protocols are catching up. Dr. Charles Ray Jones, who was a mentor of mine, really helped me understand that this is one of the conditions under the umbrella of infection-induced autoimmune encephalopathy. Pre-COVID, nobody really got this, and now I feel like that's going to be the other complex chronic disease that we're dealing with—this chronic infection from COVID. So that's infection-induced autoimmune, meaning an infection started this to have your body attack itself, and the way or location it's attacking is in the brain. That's what the encephalopathy part is.

Dr. Jill Crista 14:13

So PANDAS and PANS are actually two separate diagnoses because the criteria for diagnosing them are a little bit different—the suddenness is a little bit different, and the age is a little bit different. But basically, with PANDAS, it's tied pretty strictly to a strep infection. Then, once those autoantibodies are turned on—which are attacking the basal ganglia of the brain, the brain stem; our reptilian brain, our safety—now those immune cells of the brain are primed so that any subsequent infection, even viral, can flare the condition. It's got a wax and wane pattern, meaning a flare and a calm, and a flare and a calm. The hard thing for us doctors is that we don't know then, "Is the person getting better because my protocol is working, or is it because it's a normal course of this condition?" Sometimes you don't know. Sometimes you have to wait it out and see. And then you don't know—if there's been a flare—is this the natural progression of the illness or did they have a new infection or a new exposure? So it makes it complicated to treat.

Dr. Jill Crista 15:23

The symptoms that are going on are pretty consistent with both. There is what we're calling in medicine 'OCD,' which people in the public hear and think of repetitive hand washing or the movies that you've seen of someone open the door, close the door, open the door, close the door. They have to do it five times before they can walk through the door. In a child, that's going to look different. That's just compulsions. It might look like a kid who just can't follow directions because they're overriding their thought process with the compulsion that is saying: If you put your shoes on and go to school, something bad will happen to us on the way to school. So they're saying, "I have to stay home," so it seems like they're not listening. What they're really doing is trying to control this compulsion that makes them feel unsafe, which is so sad in your heart to think about a little one having that experience internally.

Dr. Jill Crista 16:15

Also, ticks are quite common. You might see some sort of anxiety, depression, or oppositional behavior. It's just like the kid with PANDAS; it's like they changed overnight, whereas PANS can be very different. I'm seeing in my own practice that it's usually kids who come into this situation with maybe congenital Lyme, so they never really had a normal immune system. Their onset is going to be less rapid. but both can also have handwriting deterioration, learning difficulties, food restriction, or food avoidance. The way that I see that is that's them naturally saying [in essence]: This might have something infective in it; this is probably going to increase my lipopolysaccharides—as I know you've talked about—and that's going to increase my brain inflammation, so I'm just not going to eat.

Dr. Jill Crista 17:03

I think that if we really can start to look at: "What is the symptom telling us?"—then we will know how to help them out. I also see a lot of bedwetting, abdominal pain, insomnia—that's a big one—[and] sleep problems with these kids. I think of it as: They came into the infection with an immune depletion of some sort, and mold is very commonly the reason for that immune depletion.

Dr. Jill Carnahan 17:28

So you're framing it as—and this makes sense—basically, some sort of immune weakness allowed this infection to get the upper hand, and they probably have a genetic susceptibility to neuroinflammation or autoimmunity as well. You gave some really good descriptions of how you might see that.

Dr. Jill Carnahan 17:45

And you mentioned in vitro transmission of infections; let's talk just a little bit about that. I don't know that people really understand or know but there's been a lot of cases where I'm talking to a mother and we're talking through and we're realizing, "Oh gosh she definitely has Lyme and co-infections"; we test we find it and then she's like, "My children also have symptoms and some of them were… " And I have a suspicion that in many of them there is that transmission, especially. How would you differentiate? And again, sometimes we don't know for sure; of course, we can test the child. But is that common? How would we see that present? And what are your thoughts on the transmission in utero?

Dr. Jill Crista 18:20

Yes. We don't have studies on humans, but we do have some studies on dogs. We'll just stick with Borrelia because it's an easier one. We know that Bartonella and Babesia can also cross the placental barrier, so we can assume that's probably the situation with these, but they're kind of different in how they infect a cell. With the Lyme bacteria, when the mom got an active Lyme case while pregnant, most but not all dogs got the Lyme as well. So I don't know if that's then that genetic variation in the pups who got them and the pups that didn't. But the majority then of the offspring do actually get Lyme disease through placental exposure.

Dr. Jill Carnahan 19:07

That's what I've seen clinically. Often we do tests, and sometimes I'm not seeing it in the children, depending on what the situation is. Especially if it's a really complex eating disorder—eating issues from birth, feeding issues, failure to thrive—there are a lot of things you can see in the children. So quick question: What would you do if you had a woman who either was wanting to get pregnant or [who was] pregnant and you knew she had an active Borrelia, Bartonella, Babisi, or all three? Would you do herbal treatments? What are your thoughts on pregnancy or pre-pregnancy planning with Lyme disease?

Dr. Jill Crista 19:46

That is a great question. And again, I go with my training with Dr. Charles Ray Jones. He has total comfort in treating pregnant moms with antibiotics; I did not. As a naturopathic doctor coming into that training, I was just like: "I don't know about this. It's going to kill the baby's gut microbiome." But when you have something that is as microbiome disrupting and high force as Lyme or even co-infections now on top of that, sometimes you have to meet it with the same amount of force. So I got very comfortable using antibiotics in some of those more tender situations, because now as a mom living with kids who were given congenital Lyme, I can tell you that I

would have much rather spent the first year repopulating the gut and working on gut healing than 21 years working on an autoimmune disease.

Dr. Jill Crista 20:37

So really, I meet the patient where they're at; they really drive the bus on this one. I try to talk with them about what the risk factors are. Yes, antibiotics are going to cause some gut problems, and plants work perfectly well. If there's a true belief in the remedy that you're using and it's aligned with who you are, the way that you live your life, and your belief system, if we can match those, then it works so much better. But I rarely give an antibiotic without also doing the plants, and I think that makes me very unique just because I've seen so many studies where it's reducing the resistance and reducing some of the negative side effects of the antibiotics.

Dr. Jill Carnahan 21:20

Yes. And I'm assuming that with pregnancy, the penicillins or the cephalosporins would be your safer alternatives?

Dr. Jill Crista 21:26

Yes. It's usually a combination. He will actually use amoxicillin as well.

Dr. Jill Carnahan 21:34

I love your perspective because it's so similar to mine. Again, I was one of those like: "I don't want to hurt the gut; I'm not doing antibiotics." And then I realized sometimes it works better—whether it's pregnancy or not, I'm talking all over—for Lyme. I'm definitely like you; I feel like there's an absolutely appropriate place for these drugs, and they really are game-changers. What's your experience? For me, the herbals, I love them; I use them all the time. I love what you said because I'm checking in with the patient: "We have these options. What feels best to you?" I can use all of them. I would say that in my experience, herbs tend to suppress and control, but they don't always eradicate as well. But you're the expert with herbs as a naturopath. Have you felt like you've been able to truly eradicate [infection] without medications?

Dr. Jill Crista 22:21

Yes, definitely in some cases. It takes a heavier dose than people are comfortable with and even how I was trained [for]. But I came to this from the position of: "Okay, I'm about to give this person three antibiotics. We're about to do Doxy[cycline], Zithromax, and pulsing tinidazole or I could try going higher on my herbs and just

see." Thankfully, I had patients that were adamantly against antibiotics, so I was like, "Well, then it's game on; let's figure this out." So I used much higher dosing with the plant medicine tincture, particularly because I feel like the alcohol seems to disperse it better, and that's a Chinese medicine thing.

Dr. Jill Carnahan 23:09

Sometimes I go alcohol-free because I think they'll tolerate it better. But I agree, I think the alcohol tinctures actually work better. It's so great.

Dr. Jill Crista 23:16

Yes. I think they kind of push and disperse. I was giving two teaspoons, four to six times a day [for the] dosing. And yes, it does get better.

Dr. Jill Carnahan 23:28

This is great! That's been the conundrum for me: The stuff I use at the doses I use. I feel like we can control it [while] they're on the herbs, [but] once we take them off, often they'll flare. What are some of your favorites? I saw the John Hopkins study with Japanese knotweed and cryptolepis—some of the leaders. I do love those. Let's talk herbs and some of your favorites. The funny thing is that that was in vitro. I still clinically find that you still often need others, and I don't find they're the end-all-be-all, but you're the expert on herbs. What are your favorites for, say, Borrelia?

Dr. Jill Crista 24:01

Japanese knotweed. Interestingly enough, East Coasters tend to do very well with a little echinacea, which is very different from the Midwest Borrelia.

Dr. Jill Carnahan 24:13

Yes, and I would have been concerned about that with overstimulation. That makes sense, though.

Dr. Jill Crista 24:19

Yes. And then something berberine-containing. Usually, I just use berberis, or it could be Oregon grape root or something like that. I love Stephania for pain or a lot of that inflammatory joint stuff if somebody's expression is really jointy—also Japanese knotweed for that. Cat's claw is lovely, and you can use it in tinctures.

There's this whole thing about TOA-free—I used whole plant cat's claw and have done just fine with patients not having problems with that.

Dr. Jill Carnahan 24:54

And have you found that cat's claw has good antiviral activity?

Dr. Jill Crista 24:59

It's a good Epstein-Barr... You know, that layer of, like, an HHV-6 and an Epstein-Barr. So is olive leaf.

Dr. Jill Carnahan 25:08

I love olive leaf! Olive leaf—again, this is my clinical experience, but it feels like the only one that people don't really [get a] Herx[heimer reaction with]. It's such a supportive, nurturing herb. I don't know if I can remember anyone who's ever had a bad reaction [to it]. It's very nurturing.

Dr. Jill Crista 25:23

Yes, and it's nice because it's antifungal. If you do have somebody that has been on antibiotics and they have this candida overgrowth or biofilm or something like that, that's when I'll toss in that little bit of olive leaf or something that will help from a broad-spectrum standpoint. If there is mold in there as well, I use thyme—that's one of my favorites because it's ultra-safe and broad-spectrum. In the hospitals, they used to use thyme essential oil for fumigating rooms. So I'm like, "Well, if that worked in hospital basements... "

Dr. Jill Carnahan 25:51

Yes, why not? Right.

Dr. Jill Crista 25:53

And Dipsacus with teasel root, I'm very careful with. I'll drop dose that, and I put that in a separate bottle. They just drop it in water and then can sip off of it because that can really [cause a] Herx[heimer reaction in] a person. That might be a Midwest thing. It's one of them that I see for Rocky Mountain spotted fever, and I just saw that you were talking about that in your newsletter. So I'm careful because sometimes I think we might flare up a Rocky Mountain spotted fever with that one. And then Smilax glabra or sarsaparilla is an endotoxin binder. So that one is great for the person whose gut is a mess and who can't tolerate even a little sprinkle of

megaspore. You're just trying to get them some sporebiotic and [with] sprinkles they have a Herx[heimer reaction] from that. Then I'll add the Smilax. Those are some of my favorites.

Dr. Jill Carnahan 26:40

Oh my gosh, it's so helpful. That's tremendous. In that John Hopkins study [on] cryptolepis... My experience is that it's really harsh and you have to be very careful. But [have you had] any experience with that one? Do you feel like it has a place? Is it on the higher spectrum of aggressiveness? Or anything in particular on cryptolepis?

Dr. Jill Crista 26:58

I start with artemisia when it's a babesia combination. Then, if that's not kicking it or because we get liver intolerance to that, that one is one you pulse in and take out, and pulse in and take out. You can pulse for a good two weeks. But if that's not kicking it, then I will add the cryptolepis. And then, for Bartonella, Hettunya is lovely.

Dr. Jill Carnahan 27:22

My favorite. We used to call that hoity-toity in the office because no one [could pronounce it]. But I totally love that one. Everyone says it differently in our office.

Dr. Jill Crista 27:32

Yes, that's ours. And milk thistle, everybody's like, "Ooh, she needs a Silybum."

Dr. Jill Carnahan 27:36

Exactly! This tremendous. Okay, so we talked a little bit about: What are PAN and PANDAS?—an overview. Back here, Lyme and herbs. Let's go back. Say you suspect PAN or PANDAS, neuroinflammation of some sort, how would you work up that patient? Do you do neural autoantibodies or do you do a clinical diagnosis? How would you look at the patient who comes in—whether it's a child or an adult—with neuroinflammation?

Dr. Jill Crista 28:03

For PANDAS and PANS, those are still both considered clinical diagnoses, just like Lyme disease. Even though we really like having labs [done] for Lyme, really, it's still okay to have a clinical diagnosis. Because of that immune deficiency antecedent

state, I do like to do an IgG-A-M-E—subclasses of G and subclasses of A—if we're going to do any infection labs. Now I have an idea if we will need to augment the results because they could be muted if the child is in a low IgG subclass. We typically see 2 and 4. It's what I'm seeing in practice. IgG subclass 3—I'm pretty much thinking they have mold exposure or candida overgrowth if that's low because that has that disulfide bond like the gliotoxin does. So that's super informative.

Dr. Jill Crista 29:02

Typically, if I see that, I need to be supporting their IG in some way, shape, or form, or they're going to be susceptible to infection and flares. So that would be number one. And then a good old CBC—we can tell a lot from a really inexpensive CBC. A lot of them, their white count is just edging on low or [is] low. My functional level for white count is 5.0 to 7.0—that's the sweet spot.

Dr. Jill Carnahan 29:28

I totally agree with you.

Dr. Jill Crista 29:29

Healthy. I'm so lucky I was trained in that functional stuff way before we changed numbers.

Dr. Jill Carnahan 29:36

Right, because then they keep changing our numbers—same thing. And I love that you said that because that's one of those flags where people say all the time, "Oh, my doctor said I've had that for 20 years—the white count of 3"; you're like, "Wait, there's a big deal there." I love that you mentioned that. So if you're listening and your doctor said your white blood cell count is low but it's normal, find someone to help you figure that out because there's usually an underlying cause.

Dr. Jill Crista 30:00

Absolutely! And then, if platelets are low, I think about mold as well, because mold is one of the few things that can cause low platelets. So again, you hear that a lot; they're like, "My doctor said it's okay, though." It's like, "You can tell a lot from the CBC and the Chem panel—that's why we run them." And there can be inborn areas of metabolism that are not PANDAS or PANS that you can rule out. That would be things like copper and creatinine clearance, which are totally unrelated to PANDAS or PANS but have a very similar picture, and B12 deficiency as well. A lot of kids have

B12 deficiencies because their guts—from pesticides and glyphosate—are not able to take in any more, [and] now we get that deficiency. It can look a lot like the neural picture of PANDAS AND PANS.

Dr. Jill Carnahan 30:56

Yes. I don't know what the reference range is for you, but if it's below 500, I'm thinking there's an issue.

Dr. Jill Crista 31:03

Support it, and it tastes good. Sublingual B12—what kid is not going to love it?

Dr. Jill Carnahan 31:08

I know. Right. There are lozenges—cherry flavored.

Dr. Jill Crista 31:12

They're like, "Oh, do I get my cherry candy?" And then a natural killer cell function [test] is expensive if someone doesn't have insurance coverage. So for the natural killer cell function, I'm only running that if I'm not sure. If I've run the igGs or the IgG-A-M-E, then I might add that natural killer cell, especially if there's [been] known mold exposure. That tells me if that kid is going to be able to respond to IVIG therapy or not. And what do we need to be doing to boost that natural killer cell count? There are simple, easy things like the thymus gland, and the SBI Protect from Ortho Molecular. That's giving actual igG, and people say, "Well, that can't work because your stomach acid will denature it." Well, I've seen it bring up numbers.

Dr. Jill Carnahan 31:01

Me too. I always used to say, "It's close to IVIG." Just for people who don't know, IVIG is intravenous immunoglobulin. It's from plasma donors—thousands of donors—for the patient who has a severe immune deficiency and low total IgG. It's a game-changer. But it's very expensive; we're talking $8,000–15,000 per infusion. Of course, usually, we get insurance coverage. But as you can imagine, it's expensive, it's time-consuming, and can be hard to titrate and tolerate. So it's amazing, but what Dr. Crista and I are talking about are oral bovine immunoglobulins, which are like colostrum, like new milk, and they contain all those immunoglobulins. I agree with you when I don't have the option of IVIG or I just need a little extra support… And the studies show that these immunoglobulins orally bind—passive binding—of viruses, H. pylori, lipopolysaccharides—

Dr. Jill Crista 13:56

I did not know that!

Dr. Jill Carnahan 13:57

Yes.

Dr. Jill Crista 13:57

That's why I love to learn from you.

Dr. Jill Carnahan 33:00

It's mutual. So yes, for H. pylori and viruses, even the coronavirus—not necessarily COVID but the whole family—there are studies that show that it passively binds. So when I have someone who has COVID and is actively having gut symptoms, I immediately put them on a spore probiotic and bovine immune globulins, and they do a lot better.

Dr. Jill Crista 33:21

That's a great tip. Interesting.

Dr. Jill Carnahan 33:24

I love that you mentioned that—immune system. And I kind of interrupted you on labs. Natural killer cells, blood counts—is there anything else that you wanted to mention?

Dr. Jill Crista 33:32

Yes. Vitamin D. I mean, that's what we should be checking out on everybody. But specifically for people with immune issues, I do a 25-OH and then a 1,25 [dihydroxy blood test]. For people listening who don't know, the 1,25 [dihydroxy blood test] conveys a really good marker for brain glutathione status. That's sort of my cheap and easy get-insurance-coverage test to get that done because I've seen so commonly that those are the people that respond better to glutathione supplementation.

Dr. Jill Carnahan 34:03

This is fantastic; this is great. I've heard some of the lectures on intracellular infections like mycoplasma, atypicals, and then Aspergillus. So if you're listening, what we're talking about is the regular vitamin D that most doctors check, which is 25-hydroxy, and we want that to be—my ranges are like 50 to 80, maybe even a little higher.

Dr. Jill Crista 34:25

Sixty to ninety for me, yes.

Dr. Jill Carnahan 34:27

Perfect, yes—really similar. But that conversion, that 1,25 1,25-dihydroxycholecalciferol is active D. You don't want that super high. But if you see that really high, especially when their D is low, they're converting to that active form and there's a reason. So you're talking about brain glutathione status. I'm seeing intracellular infections, so to me, it's a clue that something is creating this inflammatory process, and I'm looking for infections. The common ones are mycoplasma, chlamydia, pneumonia, Aspergillus, or some sort of mold or yeast issue. And glutathione, that would make sense because they're probably depleted in glutathione if any of those infections are present.

Dr. Jill Crista 35:02

Exactly, yes. How interesting.

Dr. Jill Carnahan 35:05

It is. This is great. So MMP-9 can also [affect] the blood-brain barrier with mold; that's a whole other issue. But when you mention the blood-brain barrier and glutathione, a higher MMP-9 can often be associated with a 'leaky brain' if we put it in layman's terms. Would you say that's kind of how you view that? Your thoughts on MMP-9?

Dr. Jill Crista 35:26

Yes. Actually, our colleagues Dr. Raj Patel and Dr. Thalia Hale just presented at ILADS, maybe last year. I think it was in person—so [the date must coincide with] whenever we did that last one in person. Dr. Hale presented that they see a correlation between MMP-9 and histamine intolerance and the onset of mast cell activation. Then it makes it such an easy way to test for histamine. You don't have to be doing Mayo clinic—"send the sample on deep freeze"—[or] all that kind of stuff. You don't have to deal with any of that.

Dr. Jill 35:57

Yes, because how many times do you do tryptase or histamine [testing] and get negative [results]. For those who are listening, those are markers for MCAS. But often, unless we catch someone in the midst of a flare, their tryptase is normal and their histamine is normal. So MMP-9. And it makes perfect sense because histamine creates permeability, so it grows right along with blood-brain barrier permeability issues too.

Dr. Jill Crista 36:18

Yes. Isn't that interesting?

Dr. Jill Carnahan 36:20

I love it. It's like all full circle. Do you ever do a Cunningham panel or any of the autoimmune neural... ? I mean, those are expensive. Like you, I try to do the cheapest, easiest things to start. Do you like doing that? You maybe don't even need it to confirm, but do you use that very much or anything else in that realm?

Dr. Jill Crista 36:40

Just like in the mold world, because I have identical twins, I do a lot of split sample testing comparing the two of them. I just can't help it. My kids tease me that I'm Hitler. I'm like, "Hey, I'm just running lab tests." Yes, so what I learned is that I have my sicker twin—that's when I learned how to do IgG-A-M-E first—[who] had a more severe IgG subclass deficiency and a more normal-looking Cunningham panel. My healthier kid—and it makes sense when we think about this as a vitality thing—was a positive Cunningham full-on. That was when it was first available commercially. I think they've changed numbers now. And his IgG subclass was normal.

Dr. Jill Crista 37:32

So then I contacted Dr. Cleary at the University of Minnesota, who is doing studies on ASO—anti-streptolysin O—which is one of the things that a PANDAS panel might include. Also, pneumonia titers, anti-DNase B, ASO—those are all when we get into the PANDAS-specific things, not just the immune assessment things. He found that there's a high prevalence of [inaudible] negative ASO in PANDAS and PANS kids. Again, that kind of confirmed my thing of like, "Before we're running any of these other tests, we better make sure we know the immunoglobulin status of this child or we're going to be thinking things are negative when they're not."

Dr. Jill Crista 38:13

So that research was really fundamental for my understanding that it really does still need to be a clinical diagnosis because that Cunningham panel, while they have adjusted the numbers, I think could still be tricky, as with anything. With Lyme labs or even a strep or any normal antibody [test] or a mono test or something like that, we could be seeing muted numbers.

Dr. Jill 38:37

So I love [it] because again that's something I do on every patient—immunoglobulins total, subclasses. Not a lot of doctors are consistently doing that, but I find it core. And we're going to talk about the immune system next because that's one of the core things here and everything that we're talking about. But that makes so much sense. So if you're listening to a doctor and you're a patient, ask your doctor for these tests. It's really important to check total IgG, total IgM, total IgE, and total IgA.

Dr. Jill Carnahan 39:01

IgA is your mucosal immunity, so your sinuses, your mucosal surfaces, and your lungs. There are a lot of people with deficiencies there, and they're going to have more proneness to candida in the gut, chronic sinusitis, and anything on the mucosal surface. They're going to have more difficulty eradicating those bugs; they're probably going to have more trouble with biofilms. And there's something called selective IgA deficiency, which can be diagnosed by low serum IgA. This is a clinically significant immunodeficiency; there's a high correlation with celiac disease in that. So have your doctor check for celiac [disease] or gluten sensitivity if that's low.

Dr. Jill Carnahan 39:34

IgM is less common, but that's one of the immunoglobulins that's also important, and that actually defines an immunodeficiency as well. IgG is the one we're mostly talking about—the most common one. And there's a new study—I don't know if you've seen this; I think it was just a few months ago—[in which] they're actually classifying IgE deficiency in and of itself, which we've never... That's more of a histamine response.

Dr. Jill Crista 39:55

That is usually high.

Dr. Jill Carnahan 39:57

Right, but if it's low, it actually qualifies as a new diagnosis; it's a different type of course. I've just been finding a few of those with zero IgE. That also qualifies in the realm of immunodeficiency, even though it's kind of a different arm of the immune system.

Dr. Jill Crista 40:11

Interesting. Yes, I had not seen that. That's really interesting. I'm glad. It's amazing; it really speaks to our environmental impact, doesn't it? More and more immunoglobulins are getting knocked down.

Dr. Jill Carnahan 40:25

Yes, and let's transition—in the last 10 minutes or so [that we have left]—[to the] immune system. I think that we think very much alike. I'm always telling patients, "I think that if we tested 10,000 people on the street for Lyme disease, we'd find a lot of people have Lyme and they don't even know it." But they're walking around; they're asymptomatic, and they're fine. This is important for patients to not feel like victims because they get this diagnosis of Borrelia, Lyme disease, or any [other] co-infection, and sometimes they're like: "Oh my gosh. I read this book. I saw a Facebook group. Am I going to die?" Or you know, they go with the worst-case scenario.

Dr. Jill Carnahan 40:55

And I always want to frame it. And again, I want to hear your perspective in a second here. If it's presenting with symptoms, our bodies should be able to keep some of these old viral [issues] and infections under control. So what it usually means is that there's a weakness in the immune system that's allowing that to pop up. Our job as clinicians is, yes, we treat the infection, and the load, but the majority of it is actually: How do we support your immune system?—because you should be able to walk around with old infections and not have them all take you down. Your thoughts on that? Your approach? The immune system is so core, right?

Dr. Jill Crista 41:28

Yes, 100% I agree. Yes, the immune system is so core. It's so important, and that resilience [is also]. We're talking about trauma and adverse childhood events—it's so neat that that conversation is moving into resilience. It's not that everybody doesn't have trauma when growing up; it's about: How resilient are you? [It's the] same thing with infections. That's one of the things I remember [being] so shocking in the early days of my Lyme training: they said, "Well, you never get rid of Lyme." It's like, "What?!" [They'd say], "Once you have it, you have it in your body." I'm [like],

"That can't be right." There are people that I've treated and cured. And yes, if you were to take tissue biopsies and stuff like that... That's from Dr. Alan Mcdonald's research of finding it in the brain and finding it in different places in the body. That just floored me. That's when I realized, "Wow, okay, this is really about patient education, building resilience," and trusting your body.

Dr. Jill Crista 42:24

I see that with mold a lot [where] it took a mold exposure for someone to say: "Now I know it's okay to be the inconvenient one at the restaurant or at the hotel and ask for another room; it's okay to be doing that," where before they might have thought, "I don't think I feel very good in here," and they would have stayed.

Dr. Jill Carnahan 42:42

That's my story, [which] I had to learn. I so get it because I was compliant and easy to get along with, not making waves. One of the things that—I don't know where I was told this, probably a therapist at one time—I actually write for patients all the time: "Be kind to yourself." Literally, I write them a prescription because so many of our patients are empaths, they're givers, they're nurturers, like you and me, and they're even healers, and that nature is beautiful. They're people who are giving to their family, their friends, their children, and their parents. Everybody in the world gets their love and compassion except themselves.

Dr. Jill Carnahan 43:18

I had to learn that. It's actually being kind to yourself when you say, "No, I'm sorry, I can't eat that" or "No, I'm sorry, this room doesn't fit me." That is so important in teaching people to heal: It's okay to love yourself enough to take care of yourself and to be kind to yourself.

Dr. Jill Crista 43:35

That's beautiful. Yes, absolutely. And it's hard when you're a kind person. You feel like you're putting people out. It's a whole new thing to learn—a new way of being in the world.

Dr. Jill Carnahan 43:47

Gosh, this is so much fun. What last bits have we not covered or would you say are super important to people listening if they have been diagnosed with Lyme, or if they have a child or loved one with PAN or PANDAS—which is becoming more and more common—or the complex chronic [illnesses] a lot of people are really

suffering now, or even post COVID? Maybe you're out there and you're like, "I haven't been the same since four months ago when I got COVID, and I'm still trying to recover." What can you leave them with as far as hope, insight, or any last bits of advice?

Dr. Jill Crista 44:21

Yes. Well, there's one thing that I've kind of stumbled on in the mold world in the Shoemaker training: VIP spray is a game changer for people. It regulates the hypothalamus, pituitary, and adrenal axis. But a lot of my patients didn't tolerate that. When I learned the Shoemaker protocol, I was like, "Oh, I'm missing this whole thing." So reformulating things. I've reformulated vasopressin into a homeopathic [form], so it's like an ultra-small dose, and it trains the brain to start making it again. And I've done this with VIP as well. It's a game changer for people, and they can tolerate it, and you don't have to wait till all their infections are gone—blah, blah, blah—and all that kind of stuff.

Dr. Jill Crista 45:05

So I think my message of hope is that if something that you are working with your doctor on isn't working if you have a complex chronic illness or are a sensitive person, try an ultra-ultra-ultra-small amount of that. I was referring to the spore biotic sprinkles [earlier] because it may be that you are so receptive—which is a gift—and willing for healing. You're open. All the channels are open. It only takes a microdose to make a difference. We talked about Lyme. I'm using big doses of a tincture, but sometimes it's just a drop of a Byron White formula, and that's all they need, and their body is in a state of receptivity. So don't feel cursed or beat yourself up or those kinds of things; that is actually a sign that you are very receptive to healing and ripe for change and finding your health again.

Dr. Jill Carnahan 46:01

Oh, I love that you ended with that. That's kind of my story. I remember when I first got mold issues, I was like, "Oh, I'm going to kill this!" and "I'm going to take care of this." People have heard me say this before: I don't know how many binders I took, but I loaded up on the binders. For two months, I had hives from my neck down; my whole body was covered. [I had] like 3+ pitting edema. I was a wreck. I was going way too fast for my sensitive soul, which I had to admit that I was.

Dr. Jill Crista 46:28

[inaudible]

Dr. Jill Carnahan 46:30

I do; I've decided I'm a sensitive flower. But what I've learned—exactly what you said—is that all of a sudden now, homeopathic doses are gentle things. I do so well with these things, and they're just tiny little drops of this or that or small doses or intermittent pulse dosing. Now that I've accepted that I am sensitive, it's actually this kindness to ourselves—back to the original story there—[that we show] when we do that. So again, if you're listening and you're being blown out of the water, work with your doctor or just try things at a lower dose because sometimes you'll get a really great response at a lower dose. It's kind of counterintuitive [but it can be very effective].

Dr. Jill Crista 47:07

Yes. Ooh, I just got chills. That's so true. Some of you that are listening—we just hit something there, I can tell.

Dr. Jill Carnahan 47:13

We did, I know. I'll tell you, guys are the worst. I don't mean to stereotype, but men are like: "Give it to me. Give me a plan. Give me a protocol. I just want to beat this!" Again, not the stereotype because I'm sure there are some women out there and there are some men that aren't like this, but in general they want to go and get at it, and sometimes I'm like, "It's actually better if you go more slowly."

Dr. Jill Crista 47:32

Right. Now we don't have to pick your kidneys up after all this.

Dr. Jill Carnahan 47:36

Exactly. "Your adrenals are totally trashed!" [laughing] This is so much fun. Where can people find you? Where can they get your book? I'll include links, but I want to have them on here as well.

Dr. Jill Crista 47:47

Thank you. My website is drcrista.com. You can get my book on Amazon, at Barnes & Noble, or wherever you get your books. You can get from my website, my training course for practitioners if you're a practitioner listening. That's on my 'courses' tab. And if you are a person suffering from a complex chronic illness, you can check out my membership on the 'memberships' tab. It's super fun. We have these open Zoom

rooms where people can share with each other. And the members—man, we've attracted the neatest people!—are all there to help each other. It's great.

Dr. Jill Carnahan 48:25

That is so great because one of the biggest things in healing is realizing you're not alone. So again, if you're out there feeling alone, I love it and would highly recommend [it]. Well, thank you for your time today. I knew it would be a treat, and it was. We appreciate your advice and insight!

Dr. Jill Crista 48:41

Thank you. I appreciate the invitation, and I can't wait till we chat again!

Dr. Jill Carnahan 48:46

Sounds good.