

Dr. Jill

Your Functional Medicine Expert®
Jill Carnahan, MD ABHM, ABOM, IFMCP

Dr. Jill 0:12

We are live. Dr. Alexis, it's so great to have you here today! Before we start, I'll do just a little housekeeping for our listeners. You guys know where to find me. At JillCarnahan.com. There are lots of great free resources there, and lots of articles on Lyme and mold. Our topic today is Lyme disease. We were just stating before we got started here that, gosh, July is the prime time to talk about Lyme disease. So I know a lot of you are watching; feel free to share with friends. You can share later. If you catch us midway, it'll be recorded. And you can always catch it on my YouTube channel, just under 'Jill Carnahan'. So thanks so much for joining us.

Dr. Jill 0:46

I want to introduce our guest. Now, a lot of my guests are close friends, and this is one new friend. We run in the same circles. We are part of ILADS, ICI, and a bunch of [other] organizations that deal with complex chronic illnesses, [such as] Lyme disease, [and issues like] environmental toxicity and mold. What we see all the time is how these things intertwine, and we'll talk about that today.

Dr. Jill 1:06

But first, I am delighted to introduce my new friend to you, and I'm just going to share a little bit about her with you. Dr. Chesney is a naturopathic physician and acupuncturist specializing in Lyme disease and other tick-borne diseases. She's originally from New York and received her bachelor's at Holy Cross College in Worcester, Massachusetts. She earned her master's in science in acupuncture from the University of Bridgmont Acupuncture Institute and a doctorate in naturopathic medicine from the University of Bridgeport College of Naturopathic Medicine in Connecticut. She's one of the first naturopathic students to complete a hospital-based medical rotation. It's kind of cool because we can talk the same language.

Dr. Jill 1:47

I just have to add—I've said this before, but I always joke—that I kind of have the heart of a naturopath because I think a lot more like you all than I do my allopathic friends sometimes. So I'm delighted to have you here, and I have such great respect

for your education. I'm always asking my naturopathic friends, "What would you do in homeopathy for this?"—or those kinds of questions.

Dr. Jill 2:08

So she's dedicated her practice to the treatment of Lyme and tick-borne diseases, and she has a private practice in Massachusetts. [She's a member of] multiple professional associations, like we mentioned. I am just delighted to have her here. She does have a new book out, which we'll mention and link up to. It's called *Preventing Lyme & Other Tick-Borne Illnesses*, and the timing couldn't be better, Alexis. First of all, welcome, and thank you for—

Alexis Chesney 2:36

Thank you. Thank you so much for having me. It's great to be here.

Dr. Jill 2:40

Everybody has a story of why they got into medicine and what has driven them. And I'd love to know a little bit about your journey here and what got you interested in what you're doing now.

Alexis Chesney 2:51

Sure, absolutely. So yes, going way back as a kid, growing up, I was very close to my grandmother. She was unfortunately quite ill, so I was in the hospital a lot—the same hospital that my aunt was a nurse at and [where] I later went back as a medical assistant. On that journey, I was very interested in medicine and had always wanted to become a doctor. Later on, as we got into college and pre-med and [as I was] reading some holistic books, as I was working at that hospital, actually, I was thinking: "What about nutrition? And how did all these people get here?"—because it was a heart hospital. I was thinking: "Diet? Exercise? Lifestyle?"

Alexis Chesney 3:37

Then my uncle actually told me about naturopathic medicine. I had never heard about it. I was taking the MCAT and was ready to apply to an allopathic medical school. And I just fell in love with the curriculum. It was exactly what I wanted to do. I wanted to learn about herbs and nutrition and do all the basic sciences, of course, but also get all of those other pieces that really got me excited and hopefully could help me make a difference and prevent illness.

Alexis Chesney 4:06

Later, at a naturopathic college in Bridgeport, Connecticut, a friend of mine, unfortunately, became ill. Then we found out that all these bizarre symptoms that she was having were actually due to Lyme disease. So then again, I thought, "Wow, this is a really interesting illness!" medically speaking. It was just unfortunate for her to experience it, and I could see on that end how difficult it is to experience these symptoms. But then, also medically, [I was] thinking how difficult it can be to test for and treat, that it's a great imitator, that it can have many symptoms, and that multiple systems in the body are affected.

Alexis Chesney 4:46

From there, I actually did an internship with Dr. Horowitz. It was amazing. He's my mentor, and that got me started. So I moved to Vermont and did a residency. I had no idea at the time that I was really on the front line of Lyme in New England. So it was a great time to arrive and have that foundational training with Dr. Horowitz. I also brought in my naturopathic background and really started seeing a lot of people that I didn't necessarily expect.

Dr. Jill 5:22

Gosh, thank you for sharing. It's so interesting. Again, it's almost always like we don't choose. I do a lot with mold and Lyme disease as well, but I didn't really choose them. It kind of happened [to come] upon me through my own experience. So it's almost like we're chosen to do these things.

Alexis Chesney 5:38

I agree with you, yes.

Dr. Jill 5:39

It's definitely kind of a calling thing because I remember years ago, like a decade or so [ago], I was like, "I'm never going to treat Lyme disease." I mean, I believed. I saw it. I saw the patients. But I always thought: "This is so complex. People aren't getting better," which is not always true. But I remember just thinking, "Oh gosh!" And of course, if I really want to help people, I have to treat Lyme disease because it's everywhere, especially in these complex populations.

Dr. Jill 6:03

I'd love to know what you think. I have this idea that there's a functional medicine core—integrative-functional approaches, which is basically how we both view the

body and the illness spectrum—[and that] it has a lot to do with toxic load and infectious burden. The weight of these two things is really at the core of most of our illnesses. And I'd love to know your thoughts about that because, of course, tick-borne infections are the great imitators, as you mentioned, and they're infections. And I feel like there's such a correlation because if the system is weakened by a toxic load, Lyme tends to be more symptomatic. But what are your thoughts on what you've seen with that connection between the two things that we see a lot of?

Alexis Chesney 6:47

Yes, absolutely. The body is so complex, and rarely do I see somebody walk in with classic Lyme. "Oh, I have a swollen knee, and I have a bullseye rash." [laughing] Occasionally that happens, and I'm like: "This is great. We can take care of this right away." And they're like, "What?" [laughing] But if we can get it acutely, which is why I wrote the book [about] prevention and acute treatment, then we don't have to worry about the complex chronic illness. But when we've gotten to that point, so many things have happened, and sometimes people have multiple conditions. And toxicity is huge, of course—inflammation.

Alexis Chesney 7:23

And I definitely work with mold illness and environmental illness, and sometimes it's the mold. It's like, "If you do not get out of this moldy house or change your work situation, you're not going to heal." And I've gotten a little better about being a little more pointed about that because it's not easy to do. I totally get that. You can't just wake up one day and leave your home. That's really hard to do. But I see people get better if that's one of the issues that they're dealing with. Getting out of that environment is huge for their healing. So I think there are so many layers. Of course, as a naturopath, and in functional medicine, we look at the full picture. We look at the whole person, all these different systems, and how they're involved. So, of course, I'll be looking at toxicity, inflammation, and adrenal support. How is their sleep? How's their stress level? All these things are really important.

Dr. Jill 8:18

I love that. First of all, conventional medicine barely acknowledges anything except an acute tick bite. Maybe in just a second we'll talk just about that because it's July—it's tick season. And gosh, if we could prevent even one person listening who got a tick bite and got treated early from going on to chronic illness, that's huge. So we'll let you address that question.

Dr. Jill 8:39

But having said that, a lot of people don't remember a bite. They don't remember being bitten or [having] any sort of symptoms at all. And the prevalence of people who have underlying tick-borne infections is just astounding. So if you don't remember a tick bite, I've heard a statistic that 30% of patients, and I'd love if you'd correct me if I'm wrong here, actually have a bite that ends up presenting with a bull's-eye rash and the typical malaise and fatigue, and maybe a low-grade temperature. But many people do not.

Dr. Jill 9:10

Another thing I want to talk about later is tick-borne relapsing fever because many people are talking about it and it doesn't present like a typical Lyme disease. Let's go back, though: It's July, and it is prime time—tick season. What are some preventative things people can do if they're out hiking in endemic areas? And what would they look for if they were to get bit? So tell us a little about the types of preventative things we could do for tick-borne illnesses or bites.

Alexis Chesney 9:36

Sure, absolutely. Yes. Prevent the bite, yes. There are many things you can do, and I think it's really a combination of all these different strategies that makes for the best outcome. In this area where I am in New England, we have mainly deer ticks, or *Ixodes scapularis*, the black-legged ticks that carry Lyme. So those are the ones we're really looking out for. In my book, I go through all the main ticks in all of North America. So, depending on the area, you can look at: "Well, what ticks am I looking for?"—because they all look different and they all carry different pathogens. I really want to empower people to get familiar with this idea so that they know, "Oh, actually, it was a tick that doesn't even carry anything," which is a little rare but can happen.

Alexis Chesney 10:25

The American dog ticks in this area actually don't carry any diseases at this point. It's amazing. I hope it stays that way. But the lone star ticks are moving their way up. So at some point, we're going to have these two ticks—the deer ticks and the lone star ticks—to look out for. And they carry completely different things. So familiarity with that [is recommended]. And if you had a tick bite, save the tick, because then you could get it identified and tested to find out what pathogens it's carrying.

Alexis Chesney 10:52

But in order to prevent that, which is certainly the first goal, things like tick repellents [and] thinking about personal protection [are helpful]. I like something called cedar essential oil. Cedarcide is the company I tend to use. There are some studies behind that, and I also see [that] anecdotally through patient use and my own use. I used some on animals and dogs that I'm friends with and have had in the past that do really well at repelling ticks. You can certainly use DEET.

Alexis Chesney 11:27

Another thing that I really find very effective, and there are some amazing studies on this, is permethrin—not on your skin; it is toxic—on your clothing and your shoes. If you're going camping, please think about your equipment and your tent to repel, disable, or kill ticks. So there was a study looking at just doing your socks and shoes with permethrin. That decreased the chances of a tick bite by 76%. That's pretty amazing. You're much less likely to get a tick bite by using that.

Alexis Chesney 12:18

Also, there's something called TickTubes that takes the permethrin that you can use on your clothing and applies it to the yard. Like, thinking about: "Well, okay, let's also think about my environment and someplace I might frequent my yard and my garden or hang out there. And I might have kids." We want to think about that and make it a safe environment without ticks. You can put TickTubes out there. I just love them. I've had such great feedback from patients. It actually decreases ticks by 93%.

Dr. Jill 12:55

Wow, tell us about it. I don't even know what TickTubes is.

Alexis Chesney 12:59

Yes, so it's actually targeting the mouse population because most ticks first get infected by feeding on someone like a mouse—a small animal—because ticks have these three different life stages. So by the time they get to us, they've probably already become infected by feeding on something like a mouse. So, if we target that population, that will decrease the tick population.

Alexis Chesney 13:27

The TickTubes—you can make them yourselves. You can buy them. It's basically a tube. You can save a paper towel roll or a toilet tissue roll, so it's biodegradable. Then you can save your lint from your dryer, or you can get cotton or some kind of

material like that that a mouse would like. Then you treat that material with permethrin—safely. Wear gloves. Go outside, spray it down, and let it dry. Then, when it's dried, put it into the tubes. Then you put the tubes out in the mouse habitat. They go inside the tube, they get the cotton, they bring it back to their nests, and it kills the ticks on them and their family.

Dr. Jill 14:08

That's amazing.

Alexis Chesney 14:09

Yes, it's pretty incredible.

Dr. Jill 14:10

It's so practical. I wonder, with the permethrin, is that safe for animals or not?

Alexis Chesney 14:16

Once it's dried. So, yes. It's great for dogs. They actually make some bandanas and little dog shirts. You can find all sorts of things online. Or you could treat your own clothing.

Dr. Jill 14:28

Then you could treat a bandana, let it dry, and your dog could wear that on a hike, and that would offer some protection.

Alexis Chesney 14:33

It would, yes. There's a company called Insect Shield. This is what I recommend for clothing because it lasts longer when they treat it commercially. It lasts 70 washes in the washing machine, whereas if you do it [yourself], it only lasts six weeks.

Dr. Jill 14:52

Okay. Oh, this is so helpful.

Alexis Chesney 14:53

So that's good to keep in mind, yes. So, it's like: "Okay, we're not going to send shoes to Insect Shield. Let's get the shoes on the schedule every six weeks, put them out,

spray them down," and maybe socks too because of that other great finding. And then other clothing—maybe we want some gardening outfits, hiking outfits, or whatever—get that [done] from a proper company that can do it a little better.

Dr. Jill 15:15

Oh, this is so practical. I love it. And then another thought that I had, and I'd love your opinion: I've seen the lemon eucalyptus, and I thought there were some studies on that, but I don't know how effective [they are]. What's your opinion on the natural stuff? Is it effective? Or not really?

Alexis Chesney 15:30

On mosquitoes, yes. The thing is, they kind of confound mosquitoes and ticks. When I was doing my research for the book, I kept coming across this: "Oh, because it's another arthropod, it would probably work with ticks." I really wanted to look for studies that would be specific to ticks because, in my experience—actually, I use lemon eucalyptus for mosquitoes but not for ticks—I use Cedarcide for ticks. And I see that I really need to use different things.

Dr. Jill 15:56

That makes so much sense. And thank you again, because I'm learning a lot right alongside our listeners. Tell me again—the brand that you like for that.

Alexis Chesney 16:07

It's called Cedarcide.

Dr. Jill 16:09

Okay, okay. Very practical. So we talked about clothing; we talked about prevention. So if they do get a tick bite and they find the tick, you said: Let's send it in. I know a few companies. What would you recommend? Are these commercially available to the patients, or do they have to go through their doctor? How would they get a tick tested?

Alexis Chesney 16:24

It's all personally driven. I use tickreport.com. That's out in New England, so it's in Massachusetts. They're UMass. They're excellent. [There is a] really quick turnaround time. But there are a few others. IGenEX does it. Ticknology. There's actually one in Colorado. I cannot remember the name of it. What I would look at

when we're looking at this: The expense; and what are you getting for your money? Like, what are they testing? Some of the companies only test for a few pathogens. So I'm really interested in looking at: "Okay, which tick is it?" And then, "Which pathogens per tick do we need to look for?" And UMass definitely does that with tickreport.com. So I would just check into that to see if it's really worth doing or if you can really feel good about the results. And "Oh, it's negative." "Great! It doesn't have any pathogens," which is nice to get.

Dr. Jill 17:20

Yes. And this is so great because, again, I've seen different reports on how long it has to attach to infect. I think it may vary by species. Is that correct? Can you tell us a little about the two main ones—the deer tick and the lone star tick, which are coming up with high burdens of infection—and what they typically carry?

Alexis Chesney 16:24

Sure. The deer tick, the black-legged tick, can carry Lyme, *Borrelia myamotoi*, which is a tick-borne relapsing fever. But it's hard tick relapsing fever—because a lot of the tick-borne relapsing fever is actually from the soft tick. That's more out west and south.

Dr. Jill 17:58

Yes. I'm seeing a lot of it out here.

Alexis Chesney 17:59

Are you? Yes, yes. [inaudible]

Dr. Jill 18:01

I'm seeing more tick-borne relapsing fever than typical *Borrelia burgdorferi*, which is crazy.

Alexis Chesney 18:06

Yes. I wonder: In the outdoors, the soft ticks, like *Ornithodoros*, that carry other *Borrelia* species, really affect people when they're sleeping in places like cabins or caves, actually. It's really interesting. Different sorts of environments.

Dr. Jill 18:25

And from what I've read on those ticks, they can come out at night with the human [inaudible], attach and detach within seconds, and really infect a person. And they never know it, and they often don't get a rash. So it's a little bit more mysterious. So back to the ticks that we were talking about [inaudible]. They carry *Borrelia*, the classic. And then what about *Bartonella* and *Babesia*? Do they typically carry those?

Alexis Chesney 18:47

Black-legged ticks can carry *Babesia microti*, *Anaplasma*, *Fagocytophilum*, and the Powassan virus. So yes, deer ticks can carry a lot of different pathogens. The lone star tick can carry something called STARI. Doing research for this book, I just thought there has got to be an unfortunate epidemic of whatever is causing STARI because it's a Lyme-like illness. You can get a rash that is like Lyme, but they still haven't figured out which pathogen is causing this syndrome that's very Lyme-like.

Alexis Chesney 19:31

Somebody actually identified something called *Borrelia lonestari*, but in another study, it dismisses that. There just aren't enough studies out there about this topic. So I'm really looking forward to, hopefully, some researchers getting to the bottom of that because I can only imagine that people are going untreated.

Alexis Chesney 19:51

So, lone star ticks—that's that. And, *Ehrlichia*. Those are the big ones for lone star ticks. There's also the Heartland virus in certain places that a lone star tick can carry. So, yes, it's really tick by tick, very different as to what they might carry.

Alexis Chesney 20:10

In the book, I go through the profile of each disease so that you can look it up and say: "Okay, many people are familiar with Lyme, but what if it's a tick that doesn't carry Lyme, like these soft ticks?" although they're very Lyme-like symptoms in some ways. Or the lone star tick: "What am I looking for?" and "When do I need to tell my doctor?"

Dr. Jill 20:30

That's what I was finding in my population—patients that presented with Lyme-like illness but weren't testing for *Borrelia burgdorferi*, which is the classic. And again, for out here, I've seen a lot of tick-borne leptin fever. For people who aren't familiar. What would be a classical presentation of Lyme? I mean, we know the initial [phase]; we talked about that. But what if someone's had it in their system for

years? What would be the type of symptoms you would see in patients with Lyme disease, for those who don't already know?

Alexis Chesney 20:58

Oh, yes. The list is long. Of course, there's that coming and going and moving around of joint pains. It can happen; it may not. That's very typical. Neurological symptoms [such as] tingling and numbness, especially tingling numbness that comes and goes and moves around—very classic. There can be joint swelling, cognitive issues, fatigue, and nerve pains like burning, stinging, or bite feelings that people describe. Those can come and go. As you know, the list goes on.

Dr. Jill 21:37

Yes, yes. And I especially always think, like you said, migratory, because there's a very, very small differential, meaning other types of things could cause it. If it's either nerve-type pain or joint pain in general that goes from the elbow to the shoulder to the knee—you know, migratory in nature—there is a very small list of things that can do that. So that's always, like you said, high on my list of possibilities if someone's experiencing that type of pain. Tell us a little bit about someone who finds a tick attached to their skin. What do we do about that?

Alexis Chesney 22:12

I would recommend taking it off as soon as possible. And I don't personally like tweezers. I don't know if you've had experience with them. It mutilates the tick most of the time. It's hard to get off. And then we're agitating the tick, so it might actually regurgitate pathogens back into the patient. I love something called O'Tom—the Tick Twister. It's actually from France. I can't even remember where I came across this, but it is amazing! It has this twisting system. And they make different ones out there.

Alexis Chesney 22:47

But sometimes the tines are—if you're going to slide this under a tick—too far apart. Once, I had a patient come in; she said, "I'm trying, I'm trying to get this," and she couldn't get it off. And it wasn't the O'Tom; it was a different one. So I tried with hers, and then I took out mine, and I got it right off. It's really easy, and you can use it on dogs and [other] animals. They're great, and it's just a little slide-and-twist action. After that, I would save the tick and consider sending it out to be tested. Then you know: "Okay, if it's negative, we don't have to worry about it" if it's a trusted company. "If it's positive, then there are the next steps." I do a lot of prophylaxis with patients, so we can talk about that, and we can actually look at:

Which pathogen is the tick carrying? It doesn't mean that we know if it's transmitted or not, but what do we want to do preventatively? Maybe your tick is carrying Babesia and the other person's tick is carrying Lyme, so that would be a different prophylaxis.

Dr. Jill 23:50

So, it sounds like ideally, if they can afford it, if there was a tick attached, you want to send it because then you know what you're treating, potentially for prophylaxis. What would be your approach? Number one: To someone who—we didn't have the tick, we have no idea—knows they got a bite and maybe has a rash and symptoms. Versus someone for whom we have the actual tick and an ID on, maybe infections. Tell us about how you approach those two patients.

Alexis Chesney 24:14

Right. So, like an asymptomatic patient versus somebody with signs and symptoms?

Dr. Jill 24:18

Yes, correct. Yes.

Alexis Chesney 24:20

Yes, so if there are no symptoms, then it's really the patient's choice. Of course, in my experience, I would treat it myself and my family [accordingly]. But some people want to be proactive; some people don't. So either they could watch and wait, send the tick out, or they could do a prophylactic treatment, for which I've created these tick bite formulas. It's per tick. So there's the *Deer Tick Bite Formula*, which has cat's claw, knotweed, cryptolepis, and Houttuynia, because those are some of the top herbs that go after the pathogens that the deer tick carries. It's per tick; I have different formulas. And also, of course, herbs are doing so much more, right? They're helping the immune system work better. There are studies showing some of these, how specific they are working on how to combat how Lyme takes over the immune system, and how to correct that. It's pretty amazing—knotweed especially. So yes, we might do that for 30 days if you have no symptoms.

Alexis Chesney 25:21

Then, if you have symptoms... So then we're in a totally different camp, right? Now we're dealing with symptoms. Maybe you have the bullseye rash, maybe you have a fever or flu-like symptoms, or maybe joint pain has started. So then I look at: Do we want to use antibiotics? And I'll use antibiotics for an acute disease because this is

now considered an acute tick-borne disease. We might also do the tick bite formula along with it or some other herbal formula. And strategies, depending on whether we test the person and find out what they have, or if it's an erythema migrans rash, then we know that's a sign of Lyme disease—you know, the Lyme rash—it can look a lot of different ways. Yes. So, that's kind of the gist of the approaches.

Dr. Jill 26:04

Oh, very good. It's super helpful. I love—you kind of glossed over it—that you developed these tick-bite formulas! This is amazing! It makes so much sense to me. Those are some of the same herbs that I like to use [for] chronic or acute [cases]. But I really love the idea of doing that for someone. Of course, I'm [in] allopathic medicine, so it's like, "Do we give doxycycline or not?" And of course, chronically, I love the herbs; I use them all the time. But I have actually rarely thought about using herbs in the acute setting. But for an asymptomatic individual who doesn't want antibiotics, it makes so much sense. I think that is just an incredible way to do it. So how many different tick-bite formulas do you have?

Alexis Chesney 26:42

Uh, geez, maybe seven. I forget. I think I profiled seven different ticks, so yes. [laughing]

Dr. Jill 26:48

So, you kind of put those together in your office? Or are those commercially available for other practitioners to use? Or how does that work on your tick-bite [inaudible]?

Alexis Chesney 26:55

Well, I work with an herbalist at Sojourns, where I work. And in the book, I give [recommendations such as] Woodland Essence and Herbie's Herbs. There are different companies that carry these, because some of them are kind of esoteric herbs. Cryptolepis is sometimes hard to find. Also, for those who are interested or for people with an herbalist background, I actually go through how to make the tincture yourself. It's a hard process, so it's not for somebody who doesn't want to invest the time and effort. But if you do it in this particular way that my herbalist does it, I feel like, okay, we'll have the medicinal benefit that we really want to get from these herbal tinctures.

Dr. Jill 27:42

Oh, this is so helpful. And I want to talk just a little about your book because all this stuff is in there. I just ordered a copy, so I can't wait to get that. I was just delighted, again, to have you because you're such a wealth of knowledge. Tell us a little bit about it. It sounds like you wrote the book to give people this kind of information. And really, there's nothing like that out there right now. There are a lot of people talking about medication treatments, a lot of people denying it exists, which is crazy, and then some other things. But this sounds really helpful. Tell us a little bit about the book.

Alexis Chesney 28:12

Yes, thank you. I just saw that gap in knowledge out there, like you're saying. I came to it in my clinical experience, more so when dealing with people with chronic illnesses. But then, unfortunately, I would see people come back. They'd get better, and then, hey, we live in a beautiful place—they're getting tick bites. And I might have told them: "Hey, try some repellents." "Try this," "try that." They may have done it; they may not have. So, every year, my handout would just get longer. And it was like, "The Tick Prevention Handout." It was like two or three pages—it was ridiculous. So people said, "You should write a book."

Alexis Chesney 28:51

I actually first wrote an e-book, and then, in story publishing, I got a call one day just after it went out on Amazon. Carlene called me, saying, "We'd love to have you write a book with us," which was great. I didn't expect that. I just really wanted to get this written down in a longer, more thorough manner—you know, in an e-book, which, I forget, was 50 pages or something—so people could get it. And now it's beautiful. I love how I got to work with an illustrator. There's a little tick ID in the back—a color guide—so you can really find out which ticks are in your area, like I mentioned, and be able to hold your tick up next to it if you had a tick bite.

Alexis Chesney 29:38

I really want to empower people because so much of this is really in our hands. There's no vaccine. There's really no one proven, easy treatment to cure Lyme at this point. It can be a really debilitating illness. So I think prevention at this moment is really the cure. If people really put their effort into prevention, I hope that fewer people [will have to] deal with what can be a really hard illness.

Dr. Jill 30:06

Gosh, this is such great information. So now two questions before we go. Someone asked about Tick Remover. Is that the name? And I wanted to be sure we repeated that, and I can actually type it in here. What was the name of that?

Alexis Chesney 30:17

Oh yes. O'Tom Tick Twister.

Dr. Jill 30:27

Got it. Okay, very good. I will reply. And then for someone from the UK, so Europe—I know nowadays with international medicine and telemedicine, sometimes we encounter people who either travel or that—is there any information on this for European ticks that you have? Any basics on what we might see that would be different from the US?

Alexis Chesney 30:47

I know. I think about how I want to look at Europe and other places. There are so many different types of ticks. A lot of the information is similar. I didn't profile any *Ixodes ricinus*, [which] is a big population of ticks in Europe. I do mention *Borellia garrani*. That's one of the main causes of Lyme disease in Europe. So I think basically the prevention strategies [and] most of what I wrote about are going to apply. But you won't have a nice little identifier for the tick. [laughing]

Dr. Jill 31:33

Yes. What I'm finding is that some of these are supposed to be in Europe only—I think maybe *Babesia divergens* is supposed to be more of a European [tick]—and I've seen a lot of that in the US. I think what's happening is that, just with our travel, a lot of it is crossed. So we'll probably see more and more of everything, everywhere [inaudible]. And even here—I am in Colorado—it's supposed to be a non-endemic state. And I cannot tell you the number of people that I treat with tick-borne illnesses. It's interesting because there are a lot of patients with a lot of dog history, dog exposure, horses [inaudible]. And then, like I said, the tick-borne relapsing fever is much more endemic out west and in Texas in these areas, so I'm seeing a little bit more.

Dr. Jill 32:33

I just keep thinking of questions, but one other thing I think will be interesting for our patients—because a lot of them will be like: "Oh, I got tested; I'm fine"—what is your thought on a classical Western Blot from one of our hospital labs? I still do

those because once in a while I find a positive. They're a great start, but the sensitivity is quite low. Do you have any comments on that kind of test versus the IGeneX profiles?

Alexis Chesney 32:36

Oh, absolutely. Yes. Yes, this is a conversation I have all the time with my patients.

Dr. Jill 32:43

Yes, me too. That's why I want to talk about it here.

Alexis Chesney 32:45

I'm sure. I'm sure. I always talk about the different levels of testing and levels of accuracy, so we first have the ELISA, which I never do. Although it could pick it up. And if it does, hey, great, but it doesn't rule it out. And then there's a Western Blot through a regular hospital. Sometimes, because that's covered by insurance, people opt for that. That one's 60 to 70% accurate. Again, it doesn't rule it out; it might pick it up. And then we go to IGeneX, Western Blot—about 70 to 80% sensitive. And then after that is their ImmunoBlot that they came out with, what, maybe two years ago? A year ago? Yes. That's great. That's 90% sensitive.

Alexis Chesney 33:28

That one is picking up on, like you mentioned, [things like] *Borrelia garinii*—so all these different species and strains of *Borrelia*. You can even order [a test] to get that speciation, so you can find out what species it is, as opposed to *Borrelia burgdorferi*, which is the Lyme disease of North America that we typically see. They're gaining so much data by having that [information on] speciation available. It's really interesting.

Dr. Jill 34:00

Yes. Sometimes we'll screen, like you said, because it's covered. But if I really suspect it, I almost always go to higher-level testing because it's just so much more helpful.

Alexis Chesney 34:10

Oh, of course. Of course.

Dr. Jill 34:12

It's not cheap. So for those of you out there, there is some insurance coverage. So sometimes you can get it covered, but it is very expensive. But usually, it's very, very worth it to have the diagnosis in the clinic.

Dr. Jill 34:25

Well, before we leave, first of all, thank you so much for your time and expertise. Like I said, I learned some great things, and it's super helpful information for patients. Thank you for your labor with this because this is such critical information. Especially because we often have books about treatment, having someone that goes the whole spectrum, including prevention, is so critical because that's where we can maybe make a difference. Where can people find you? And then, is there a preferred source to purchase your book? I'll be sure to include a link.

Alexis Chesney 34:54

Sure. You can find me at DrAlexisChesney.com. I see patients remotely through my private office. I also work full-time at an amazing clinic in Vermont called Sojourns Community Health Clinic. My book is available widely. It's on Amazon, Indie Books, or any bookstore. You can order it through them or any local bookstore. Also, if you want a signed copy, I created this because I had all these events for a book tour laid out, and then they were all canceled.

Dr. Jill 35:27

Oh yes! Right? Oh my gosh.

Alexis Chesney 35:30

My book came out in March. I've been doing some things online, so I can't sign books in person. But if you were interested in such a thing, you could go to my website, and then there's a link to get a signed book sent to you.

Dr. Jill 35:46

Perfect. I will include those in our feed. Alexis, thanks again. It has been a delight to get to know you. Maybe once we travel again, we'll actually meet in person.

Alexis Chesney 35:56

I know! I hope so. I was looking forward to [attending] the ICI conference in person, but oh well.

Dr. Jill 35:59

I know. Thank you for the great work you do and for being so generous with your knowledge today. Thank you again.

Alexis Chesney 36:08

Thank you so much.