

The Mold, Biotoxin, Tick-Borne Illness Connection

Thomas Moorcroft, DO
with **Jill Carnahan, MD**



Thomas Moorcroft, DO

Everyone, Dr. Tom Moorcroft here and welcome back to the Healing from Lyme Disease Summit. I'm so excited to have you here with us for this episode of our summit. And today I'm joined by my great friend, Dr. Jill Carnahan, and she is one of the leaders in the field of taking, you know, bio toxin illness, mold, illness, combining that understanding with an understanding of tick borne illness and really getting to the root cause of why you're sick, maybe why you're not recovering as quickly as you would think, and why you're getting this god awful hurt climbers and flares that are getting in your way. So this is going to be a really, really awesome experience today. And I just wanted to share a quick little story and to as a way of intro and Dr. Carnahan, I ran into each other at a Joe Dispenza event, and it was like this instant, sort of like we knew we needed to talk and meet each other, but it was like this conversation around, possibility around, you know, what we put our mind on and what we put our heart on is the things we can achieve in our lives and our mutual love of things like skiing and getting outside and doing the things in our lives that we love.

So I know that our conversation will not only give you the latest, greatest ways to start to tweak your protocol so you can move forward, but also find out a lot about really listening to what's in your heart so that we can really supercharge that self-healing mechanism. And a quick, really cool thing that I wanted to also share that a new book, Unexpected Finding Unexpected Finding Resilience through Functional Medicine, Science and Faith has been released a couple of months ago. So I strongly urge you, if you love this conversation, to dove in and grab a copy of that book because it's really just takes everything Dr. Carnahan has experienced through personal life in her professional life, and puts it on the table so that you can learn and grow. So, Dr. Jill, thank you so much for showing up today and spending time with all of us.

Jill Carnahan, MD

You're welcome. Dr. Tom. I always love our conversation, so I am delighted to be here.

Thomas Moorcroft, DO

Yeah, this is going to be so much fun. So we've talked about like mold and bio toxin and tick borne illness and what the connection is. And really I'm thinking about, you know, why don't we

define some of these things, Dr. Jill? I mean, you know, we throw out these terms all the time. And I think that like a lot of us talk like we know what they are and if we can just kind of maybe any stepping back in point a second because, you know, I love all your questions. I told you before we got started. I was so excited to listen to those. But what actually even got you to the point of thinking about more than bio toxin illness and then what are they?

Jill Carnahan, MD

So I'm going to go way back and really quick frame this with a story and then give you a big overview and then we'll dove in. If that works, I think it'll give us a great framework. First thing is 25 years old, medical student. I got breast cancer, aggressive breast cancer. So all said, my life in medical school kind of shifted. I went from doctor to patient and I just say that it's not necessarily directly relevant to layman mold, except that I've been there. And so what I bring to you is not only the education from a facility like medical school, but also this like deep knowledge from being there and having experienced illness and having experienced suffering. And I know Tom and I will talk about some of those deeper meanings, finding purpose and meaning in that and again, that's one of the messages that I want to bring is hope, because there's always hope, no matter what you're suffering from.

After breast cancer got through that, had aggressive chemotherapy and radiation and surgery six months after I got diagnosed with Crohn's disease, which is an autoimmune disease where the body attacks the gut lining. So very shortly after and now we know the gut, the chemotherapy, my genetics, my growing up on a farm with toxic exposure. Now I know the whole story. I could see how it all fits together. But what happened at that point was again experiencing autoimmunity and really diving into the gut and realizing how the gut and the microbiome affect every aspect of disease and illness. Recovered from that and moved out to Colorado in 2010, started my practice in functional medicine. I had been practicing before and family medicine and integrative medicine. But in 2010 I came out to ski and to practice medicine in Colorado and really was doing well. I was running marathons, I was hiking, skiing, doing all the things that I loved. And I'd recovered from breast cancer and I completely recovered from Crohn's.

I learned enough about the gut and we can tap into that a little bit today because I got more than my marker together. But I'll have to say, I really, really understood the pretty deep level because I completely healed myself from what was considered at that time an incurable disease. I call it reversible autoimmunity now went on. And all of a sudden in 2013, there was a massive vote in Boulder of epidemic proportions where literally they call it the thousand year flood, billions of dollars of damage to the city and to the surrounding areas. That flood led me to become the mold expert because unbeknownst to me, my building was already compromised in some ways, like an unfinished crawl space right under my office in a basement that had already a little bit of mold growing. But that just kind of took it like lit the fire into the of batteries and caused it to be much worse. So the next year I started having symptoms and I started having brain fog and skin irritation and rashes and muscle issues. And I have had

Borrelia bartonella, *la Sierra*, like you have four of the tick borne illnesses. They started to flare, my immune system crashed and I could go on and on. I really was falling apart.

Did not know why I ended up testing the basement, bounced batteries back, and then I tested my urine and I found the same kind of production of Mycotoxins called precursor things that are produced by that sticky battery. So there was a match. I knew that was an exposure. And literally the day I found out I did not set foot again in my office. It was the day after Christmas 2014 never set foot. I lost all of my books from 20 years of med school. I lost my furniture stuff. That doesn't really matter, but I just literally walked away and started over with an attempt space and then I became the mold expert because only because I had to heal myself. And if you would ask me five years before Lyme and mold, I would say, Oh, I'm not going to treat those. I don't want to do those things right. But by and I know your story is in some ways similar time, but what happens is we are these guinea pigs that I feel like the divine has given me these experiences for a very specific purpose because there's no learning like when you go through it yourself. So that's the frame of my story and why I'm so passionate, because I'm now thriving. We're skiing, we're doing all kinds of fun stuff. I feel great and I still am sensitive to mold that'll never go away.

But I don't have a trauma around it, and I don't have the thing that takes me down for two weeks at a time. And I want to teach you about that today. Now, the bigger framework of functional medicine and biotech. And what is that, which is your original question time is I think a functional medicine has two parts and almost everything inflammatory and autoimmune that comes from these two parts. One is toxic load and the other is infectious burden. And at the very root of everything you're talking about, the summit, that's the core issue. Infectious burden is clearly Lyme disease, Epstein-Barr now Long-Covid and these other viral kinds of things and even parasites and other infections. But the toxic load is the elephant in the room that's weakening our systems and allowing these things to take hold. Because if we're chicken pox at five and we go the rest of our life, we shouldn't get shingles. That's not something that our bodies should get. But what happens is we're 80. We go through surgery, we replace a hip, or we have a massive, stressful life event. And now it's happening younger and younger because post-COVID, there's been increase in viral issues with many, many people. And so all of a sudden we get shingles. And that shingles is a sign that the weakening of our immune system has happened. So that an old thing that should have stayed dormant started to be reactivated.

That's the story around Lyman mold as well, if you want to frame it, because what happens is you get into a moldy building. It's one of the most immuno compromising toxins produced known to man. The tomatoes, the things in those kinds of derivatives, all of the toxins that mold produced. In fact, one of them make up and the like acid is actually used by the drug pharmaceutical companies to create a drug called cell cept, which is the drug that patients who get organ transplants are on. So that their body doesn't reject the organ. So that's our framework. And then bio toxins just to define that mold is one bio toxin, bio meaning from life

toxin toxin. So these are living organisms that produce toxins. Lyme and co-infections can produce bio toxins. Mold absolutely isn't the number one bio toxin, but so can singular Tara which is from freshwater fish, blue green algae in certain types of algae, the red blooms that you might have heard about in certain areas, all of these can produce bio toxins as well.

Thomas Moorcroft, DO

As it's so interesting. Dr. Joke that's like, I mean, one, like the rate at which you can speak is like amazing to me because it's like exactly the way my brain works. And I'm like, yes, yes, yes, yes. And all these really huge topics here. I love it because I do think that you see so much of like I think I love the way you frame the toxin boat because there's a lot of people who are exposed to mold and they're okay. And other people really, you know, there's something different. Like we have family members who and I would agree because in the back of my head, I hear myself saying, oh, well, there's some family members who haven't yet gotten sick from the mold. Yeah, but is that really the trick? I mean, I heard the word trauma genetics in there or and this load part. But why are some people presenting a little bit differently than other people? And why are some people frustrated? Their friends are different than they are. Their family are different than them.

Jill Carnahan, MD

Yeah. So we can think of this as obviously multifactorial, but one of the things that you're talking about is the genetics around detoxification. And the first principle to think about is the toxic load. And I'll just describe that briefly for listeners who haven't thought about this. I always think of it as a bucket analogy. So like for me, I was born on a farm with lots of toxins and a very small detox ability. So my bucket was small. So at the age of 25, I developed cancer was just a sign of poor detox and lots of exposures that were causing damage, change and damage. So for me, mold, same thing I happen to have very sensitive next more than what that means is my immune system has difficulty tagging these antigens from mold that are toxic and escorting them out of the body. And so because of that, if I get exposed to mold, my bucket starts to build up more quickly than maybe my sister or my brother or my mom or my dad or my, you know, any sort of people in my home.

And so what happens is very confusing to people. And this is why even the government and some bureaucracies have like not given credence to this, because you can have a public building or a workspace or a home and two people get incredibly ill and their innate immune system is crazy. We'll talk about that, too. And the other people are fine and they may have a sniffle or congestion. So we have innate immune system and adaptive immune system. Adaptive is your ability to cause like allergies and autoantibodies and things in innate is a cytokine stuff. We got real familiar during COVID with all the cytokines and literally COVID. The virus itself rarely killed people. It was a cytokine storm inside the body that caused a lot of collateral damage. Same exact principle with mold, same exact thing that you've seen with COVID is this mold starts to trigger an autoimmune response or an inflammatory cytokines response. It's called the innate immune system in some people, those that are genetically

predisposition like myself, and then this inside war that's happening to try to get rid of that mold, but not very effectively is literally causing collateral damage to the organs, to the brain, to the skin, to the mast cells and just creating a massive cytokine issue in storm. And we can actually measure these in the blood, but your other person in the household might not have that same cytokine response. So they just feel a little sniffly, maybe a little congested, maybe a tiny rash, but no big deal. That's how it could be different in different environments and in different people.

Thomas Moorcroft, DO

Yeah, I think it's so critical because like so many of our family members may not understand what we're going through. Like, you know, I could honestly tell you, I don't know if anybody in my family has had Lyme or not because they're all just kind of like, I'm fine, yet I had 13 years kind of once they disappeared because I do totally agree with you. Like there is this learning that changed the trajectory of my entire life and got me even closer to the things that I previously loved than I ever thought I could be. So I'm very thankful and also to be to serve in the way we are right now. What a gift. But it is frustrating and so a lot of times what I hear people come in with is their family doesn't agree with them or maybe the doctors disagree with them. And I remember a years ago I got interviewed for a betrayal summit, like and it was like funny because they're like, what are we actually talking about today? And I said, well, you know, our Lyman mold population of patients, people are exposed to these things are often either purposely, which I think is small or accidentally betrayed by their provider, their well trusted providers, by their family, because they don't understand what's this? Because you brought up this trauma word earlier and in the summit, a lot of us are talking about this and I'm just so thankful because it's such a big piece of healing. But what role does that play as a toxin or toxicant? And how do we really work on that piece?

Jill Carnahan, MD

I love this way. I love talking to you time because you go to the root and the really things that were really really yeah.

Thomas Moorcroft, DO

Big it like I should be asking you the other questions then save this for now we're going to write to the guest right about this.

Jill Carnahan, MD

I love it so much because even in my own personal journey, dealing with these things on the nervous system level is what has made the biggest shift in the needle, not just supplements, not just medications now deserves. It's this stuff. So this is the core. This is the heart. I want to say a couple of things. One thing I talk about, my book is highly sensitive person I did not know this until my late thirties and I always wished I would have read Elaine Aaron's the one who wrote the highly sensitive person. What this is, is it's a prototype 10 to 15% of the population who literally is extra sensitive to noise and lights and sounds and smells and foods and chemicals

and infections. So this HSP population, she talks more psychologically, like they get overwhelmed after a couple of hours with like a huge group of people or like Six Flags would be my nightmare because there's so much sights and sounds and noises and heat and rides and things and too much stimulation for me. And I'm an HSP and all that to say then that I went further in the book to talk about how that part of the population is also the ones you and I see in our clinic, because they're the ones, they're the canaries that start to notice. And when you talk about your family or I could talk about my family the same, it's not necessarily that they don't have signs and symptoms of illness. They might be just having joint pain and feeling like they're getting old or brain fog and like, Oh, well, my grandmother had dementia. I'm probably starting to go down.

They just assume that those small little things are normal or they're so dissociated from their body that they're not in touch with those feelings you and I have done enough work in from. I'll just speak for myself that I notice those things. And so part of the thing is those patients that are coming to see us, they're actually maybe more in tune with their body or they're more in that age category where they actually notice. Now, this category is also more likely to experience trauma because they are as a child, they don't always fit in. They feel like they're abnormal, they're maybe too sensitive. Maybe their parents are like my family farm, family growing up. Toughen up, be tough. Don't complain, don't cry. You know, there was things that we were, like, kind of subconsciously taught. I took that on, became a strong, tough, brave woman. But underneath I'm like this little girl who's kind of still scared and sensitive sometimes and actually admitting that and being in touch with myself and my body. That's part of the trauma work. Because the first thing you said was how the betrayal of the system. There was a word that last year was a most commonly search term on Google. And do you know what that is? It was gaslighting.

And I now talk about medical gaslighting, which I think is a way better term than even betrayal, because what it is is gaslighting. For those you don't know, it can be relationships, it can be many other things can be workplace. But in our situation, what it is, is you go to your doctor, you're like, doctor, I don't feel well. My brain is like, I'm having trouble remembering things. When I wake up in the morning, my back hurts and my joints are really sore. And sometimes it's my elbow, sometimes it's my knee. It goes from joint to joint. I'm really struggling with fatigue. Every since I got covered, I just can barely get out of bed without six cups of coffee and I'm just making this up. But you might tell your story and the doctor does a CBC, a computer search, and he looks at the labs and he looks at you said, well, everything looks normal. Maybe you're depressed. And then he writes a prescription for an antidepressants and you out the door because he has 7 minutes to see you. That's the average for family medicine visit. And I know some of you hearing this are saying, yeah, that's me. That's medical gaslighting, because what it is, is not acknowledging your concerns, not listening to you and not taking you seriously and making you feel like you're crazy.

You don't know what you're talking about. And yet guess who's the expert in your body? You are not the doctor. The doctor is that guide that person to hold you and give you a safe place. But you're the expert. You know what you're feeling. It is not all in your head. And this makes me want to cry because so many patients that I see and that you see, Tom, have been medical gaslit and told they're crazy. And they come to me and I'm sure you have the same experience sometimes where I just listen and I say, Tell me more. I say, I'm so sorry you're feeling that. Let's find the answers and they start crying. Not because I'm so smart or anything. It's just because I'm listening and I'm actually acknowledging their hurt in their pain. Right? That's trauma. That's medical trauma. And we can go into other types of trauma. But this is something I know your listeners are familiar with.

Thomas Moorcroft, DO

It's crazy. It's crazy because I can hear the emotion in your voice and I can. And it just resonates to me so deeply. And a couple of things that I like to highlight for folks is, I mean, one is when I got started, I got a proper diagnosis and I got ten days of treatment. And then when they didn't, when they missed half, well, I got half of the right diagnosis and partial treatment. So that really is a mess. They missed the baby easier. And I mean, I was sick for eight years and they tried me on first. It was like depression, then it was bipolar. Well, you know, it's that hypomania, low level type two that all the good doctors and lawyers have. I'm like, Fuck you like my body hurts so bad and my brain hurts. I'm not depressed, irritated, but it's like they just kept giving me meds and then I have side effects and then it's like, oh, chronic fatigue. They just and I do think that, like, I'm trying to think of a different word. But anyway, like in medicine, we believe in you. So much. We love patients and we want to help them get better.

And then we have so many loans that we have to follow, a system that they basically put us right on a conveyor belt. So we're just part of we're just another cog in the wheel and in the system. And it's frustrating. And I love when I get to speak to people like you who whether it's through just understanding or personal experience, step out, you know, and just really talk about the truth of healing. Because physician comes from the Latin root of of teacher and I remember the first year medical school PRI, the first week, Jill, they taught us if we listen to the patient for 5 minutes, shut up and just listen. 95% of the time or more. They'll tell you what's wrong with them and how to fix them. I'm like, Wow, yeah, how brilliant. So I just feel everything you said and one other thing and I'd love to hear your take on this because I know you've been through it when I feel like I was born very centered before I had known infections. Now I can't remember before all the heavy metal fillings in my mouth, so who knows? But I find that my sensitivity is a gift. As long as I understand how to turn it up and turn it back down and I find that a lot of our patients find that like mold or lime or almost like create. They become more in touch with their innate sensitivity, but everyone around them thinks they're nuts because they're paying attention to their body and to the beautiful world around them. I mean, how do you guide people in this situation where they're sensitive, some of their sensitivity might just be actually going back to the source of who the hell we really are.

Jill Carnahan, MD

You just said it so perfectly because according to Aron's research on HSP is we're born that way and we're often born into a family where they're not and nothing.

Thomas Moorcroft, DO

Again and they think we're nuts, right? Yes.

Jill Carnahan, MD

Yes. So we're this and each family I think each generation has one of these often maybe more than one, but there's often a sensitive person and they end up you said it's so great because it's not it can be a curse in some ways because we get sick easier. We feel, you know, the droughts, we feel the sunshine we go the way we build all the things in our environment. We're way more sensitive to. But the gift part is this: We're perceptive and it's shown in the research often as far as problem solving or becoming a healer or someone who's actually really delving into problems in the world. There's so much attention to detail because we can't shut it out that we actually do have a gift in this. And like you said, when we sit in front of a patient, my gift is that I, I sense things that are on a subconscious level, maybe that the eyelids, if they're half closed or if they're wide open and afraid, or if their tone of their voice changes or their posture is closed or open and all those things that I'm processing at a subconscious level and actually adding to the depth of understanding of who's sitting in front of me, whereas again, nothing wrong with that. It's just because they're driven and they're a little bit more robust in some ways, but they may not notice all the details.

We notice. And for me, like, I can hear a symphony and be taken to tears with the emotion that I feel from these incredible experiences or like, I know you can relate to this when we're on the top of the mountain, there's fresh powder and we're alone in the silence, in the stillness of that snow on the trees is just like it takes my breath away. It's one of the reasons I love skiing because the experience is so profound. Absolutely amazing. So all this to say for the patients and the people who are born like this and more sensitive is a gift. And what you said as well is what I found is if I can reframe my cancer, my Crohn's, my mold, and even my ex psychopathic boyfriends that were difficult relationships and all of these things as teachers, then all of a sudden I'm like, Oh, what's the lesson? How could I learn from these things? And I know now from my I've had 20 years, maybe, maybe more of experiences like this, that whatever comes my way, I know I'm going to be able to handle it, even if it's really difficult, really painful, something I don't wish for myself. It's still I know with such certainty now that it's going to be a teacher, it's going to be an experience that frames me and shapes me and makes me a better person. And because I'm going into that, be with my mind looking for that. We've shown in the neuroscience that when we look for good, when we have gratitude, when we look for meaning and purpose, it reframes everything. And all of a sudden what could be horribly traumatic becomes a beautiful thing to a nervous system. But it's all how we frame it, and it really does make a difference.

Thomas Moorcroft, DO

I think the frame is so critical and I'm not saying I don't I don't know. I don't think you're saying either that bad bad stuff doesn't happen. Right. And we're going to get into maybe more the nuts and bolts, if you will, of bio toxin illness, because I think it's important. But to have this framework because I remember like one of the most healing things in my entire life was going to an event where I kind of was supposed to focus on some part of my life that went well. Oh, and where it's almost like a variation on a power box. So you walk around it and your team gets you all excited to jump in. And one of the women in my group was like, Well, I went to a beauty pageant and I just went for fun. I wasn't supposed to win. And then all of a sudden they're putting a crown on me and I beat all these people who were like, Did the beauty pageant all the time. And there's a guy who's like, I'm 42 years old and I just sold my tech company for \$40 million. I don't have to work again. And somebody is like, I hit a grand slam and some baseball game and I became like, you know, locally famous. And I'm like, well, I remember this thing that should have been really good.

And about 3 seconds later, somebody kicked me in the groin and it was like it was just I couldn't think of a time in my life where the gratitude continued, but I went along with it. Jill And in the moment of this, it like all of a sudden the body with like deep in my body, like my soul just opened up and my heart opened up and taught me the lesson and what it really was was I was at a hockey tournament in Lake Placid, and my old man, for the only time that I can remember, showed up 100% to support me. And I was so mad at him, I couldn't receive it. I couldn't even see it. I was pissed at him. So then in this moment and it was three years after he had died, I decided to go back and rewrite my history. And this is the reason I wanted to just interject this little piece is the reframing that Jill is talking about here is you can actually our history is just the emotion and the meaning that we give it. So you can change that. I went back and change and I said, Oh, my dad actually was there for me. So I went back to 10th grade in high school and now from 10th grade through like 40 some years old, I had a dad who supported me and that was not my story 5 minutes beforehand. So I just think it's what you just said is so powerful about framing it. And I just wanted to add and you can change it. You can change what you decided.

Jill Carnahan, MD

I so that because it gives you because that's something really. Oh, they have regrets. I've learned I don't have any regrets. I mean I make mistakes and I'll admit it. I don't mean like that, but like I no longer ever have a regret because I know there's something good that's going to happen here. And so you can really you can do that. So. St What I'm saying is it's in the past, you do have regret. You can go back and change that and frame it and change the emotional charge around it. Right? And that's really trauma work. That's all it is.

Thomas Moorcroft, DO

And that supports your immune system now because you've taken this huge cortisol and limbic smush off. It's such a great thing. So then if we bring it to you, what we're doing, because I know

that for a while I often almost said, I don't think I might have said it once, but I often said I might have lost 13 years of my life to tick borne illness. And you will not hear me say that ever, except in an example anymore, because I'm like, I had some suffering. I had some things, like you said earlier, I didn't want. But now how do I so how do I then take this? And when I come back to my objective symptoms, because a lot of people listening, I'm sure are going, yeah, this is great. It's kind of like the woo woo mindset thing. That's great. But I'm actually suffering today. How do I approach objectively maybe reporting my symptoms to you or myself or some other practitioner and maybe advocating on my own behalf that I truly have a symptom without it becoming an identity is such that I traumatize my self by accident again.

Jill Carnahan, MD

Okay, love this. This is why I wrote the book. Because I had to learn autoimmunity metaphorically is self-hatred self-loathing because you're attacking self and there's a peace. That's truth around that, right? You had to go. Amen. And Gabor might and Peter Levine and all the trauma. They talk about this, they talk about the studies. So this is backed by science. But I had to learn that. And the thing that you're relating to in how do we actually show up and trust ourselves and our intuition? You cannot love yourself and switch that story until you trust yourself and trust your body and trust your intuition. So what I had to learn is actually I had to listen to my heart. Maybe it was palpitating too much or maybe I had a stomach ache or whatever thing that was going on in my body and trust my intuition that there was something there that was in me. It was very subtle and that's where intuition goes too. You have the sense of like, something's not right, right? Have you ever listeners felt that something's not right, but you don't even have words for it? But what you have to do is first trust that your body has enough innate wisdom, that it's giving you truth, it's not giving you false, and then loving yourself enough to show up with that truth.

And you might need a journal about it. Write about it, make a list of symptoms so you don't get distracted in the doctor's office. But what I would encourage you to do is come, first of all, loving your body and loving yourself no matter what you've been through. I had my breast betray me, my colon betrayed me. My grandmother had all kinds of organs. And at times I was angry, like, why I'm so strong in my mind, but my body's failing. And I actually was mad at my body. Perfect example. When I was 5 to 7 years old, I played the piano and I was decent, but I was so frustrated that I couldn't do it perfectly. I would bite my fingers until they bled because I was so angry at my body. I would literally try to cause pain like, Oh, fingers, why can't you play? And I'm telling you that silly little story, because that's the idea that when we hate or when we loathe a say, we are heavier than we want to be, or we are not as smart as we want to be, or we can't think clearly, or our skin looks terrible with rashes like I've had.

Whatever it is that you don't like about yourself, that self-hatred and self-loathing is not good for your immune system. And it's not good when you go into a doctor and try to get some answers. You need to love yourself first enough to know that there's truth so I can trust your intuition and then go with the strength and a calm, humble confidence. And hopefully your doctor will be

the same humble and kind where you can actually bring to him or her your concerns and stand your ground. Because you know that that in need of wisdom in your body is truth. And then even if it's your truth and no one outside can see it, it doesn't decrease the validity of your experience. And that's what I encourage you to really like. And sometimes people you have to journal, you have to even talk to a therapist because you want to get your story and what's really happening to yourself clear. And then you take it to someone. And if that doctor doesn't listen or ignores you or gaslights, you find another person to help you. And the last thing is you need to be your own advocate, because in this world, no insurance company, even the best doctors, are going to do everything for you. And so if for me as a physician, I want to empower that patient to feel strong and able to take control of their life and their health and do the things they need to do. And I want to help in a system, but even if I want to help and assist, ultimately you as a patient, anything you do to become empowered will help you on the journey to carve your path to healing.

Thomas Moorcroft, DO

Yeah, I love being clear on your story. One of the frustrating things for me is when people come in as I have, I believe in Bartonella like, well, what symptoms they're experiencing. Well, I also had the Bezos's. Okay, well, how does that show up in your life? Well, I also have Botox talks that I don't like. I get that. But make sure you've got your clear story. So I can understand. I love the empowered sort of clarity that you're describing, because then we can feel you. And the thing that most doctors and other health care practitioners get in the medicine for is because they love helping people. And when you show up and you have a clear story that tells how you're experiencing your illness, then they connected you on a human level. And we all want our doctors to connect with us on a human level. There's two people in the room and sometimes more. I would just say, like you're saying, just let the one of you start the human connection. Why not it be you? Because you are in charge and it's your health.

And I just love it so much. And one thing I always like to highlight, Jill, too, is our I would suggest from what I've studied in medicine, our body is always 100% doing its very best for us. It's never betraying you, and it may not be experiencing health the way you want it to, but like until the moment you stop breathing. And even then we could debate that your body is trying its damndest to stay alive. That's what the body is designed to do. So I'm to say it's not really taking you out. It's just maybe we need to reframe. And I just love the pathway that you set for us to do that. So if we can come into our appointment and our understanding of our own symptoms with empathy and compassion and love for ourselves, and we have some clarity and we're reporting how we're experiencing it, and hopefully we've done it ahead of time. So we're a little less hysterical energy behind it. What are the symptoms that kind of make you think Lyme disease and tick borne illness? What are the things that make you think more than what might be sort of some of an overlap?

Jill Carnahan, MD

Got it. Okay, so let's get practical. I love this. So cognitive issues are really the number one symptom for mold. They can be for Lyme as well. And again, in a moment, I'll tell you how I differentiate between the two, but brain fog, which is a very generic, non-medical term for feeling like difficulty with concentration or focus or executive function, which is like planning and organizing. Some people just feel very disorganized and they have difficulty doing it to do list or getting the laundry done or the wonder from room to room. All those things are kind of cognitively some people have OCD, so they really get focused on a certain thing and they have to, you know, count or check things or or even just get stuck in a rut of they have trouble moving out of that thinking outside that little box. Some people have a lot of anxiety, insomnia, depression is part of that, too. And those are all common with both more than Lyme, but mold. Absolutely. Number one thing is cognitive. Number two, probably with mold as Marcel, all types of symptoms. And as you know, post COVID do this to become real popular. Muscles are primordial cells that prevent their immune cells that kind of protect us from our environment. But they get triggered by certain things hot, cold, chemicals, food, smells, sights, sounds, molds is a big one.

And all of a sudden they get overactive and they throw out their prostaglandins and histamines and things. We can develop leaky gut heartburn, massive intestinal permeability, new food allergies, rashes, congestion, sneezing, itchy eyes, heart palpitations. And I could go on because it can affect every system in the body, but that mast cells are a big component as well for many people, like I mentioned, for mold, specifically congestion, upper respiratory, sinus issues, sinus pressure, puffy swollen eyes, itchy eyes, trouble breathing cough, unexplained chronic cough maybe some lung issues or breathing issues or new adult onset asthma. The gut can be massively affected, and typically mold causes massive increase in intestinal permeability, which can lead to new onset of autoimmune disease, new onset of food sensitivities, other things like this, chemical, multiple chemical sensitivity where you're really sensitive to the detergent aisle in the store where you weren't before. And again, that's part of the load working up other weird things about mold is static shocks or breaking watches or electronics that can happen when your age is really low, when your body's not able to regulate electrolytes, and when you sweat, you sweat very salty, and you create a electrostatic gradient on your skin like a battery.

And so when you touch a doorknob or you touch electronically, touch a watch, you can actually create a spark that blows things out of the water kind of crazy. Increased thirst, increased urination are common also because the ADHD dysregulation hormonal issues are huge. Most of it's related to aromatase upregulation, which causes men and women to take from their stores of testosterone and make more estrogen. So men get man boobs, weight gain around the middle, more prone to diabetes and low libido. Women will get heavy, painful periods fibrosis, breast disease, endometriosis, PCOS, all kinds of difficulties with their cycles or low libido as well. And then adrenals can be affected either high cortisol, which causes kind of like anxiety, trouble sleeping, weight gain, puppy face, puffy humps on the back of your neck and all kinds of things

in that realm or low cortisol eventually. Sometimes that happens as well, where people are exhausted, they crave salt, they have low blood pressure, they have parts with those. When they stand up real quickly, their blood pressure will drop and they get very dizzy. Your lightheaded or tachycardic, their heart will race and there's so much more. But those are just a few Lyme I typically think of as presenting with fatigue and some sort of. And that's like classical one where you're going to be a Barton.

They all have their different personality profiles, but at the core, Lyme usually has some form of fatigue, some form of brain fog and some form of pain. I would say mold can cause pain, but I don't typically see more being pain. The primary issue, it's more cognitive and immune and Lyme being more of a pain, especially multi joints and going back and forth where you multi different joints are affected different days, your elbow one day, your shoulder one day, your knee another. That's very uncommon for most diseases for Lyme. So it's kind of perfect pneumonic, we say. And then the differentiation, there's a few things I'll do. Obviously micro toxin testing in the urine is helpful. Confirm a diagnosis is not diagnostic in and of itself and then I do still do C3 and C4. And if you do it with a lab that needs to go on frozen dry ice, so very, very cold temperature immediately. But if it's done correctly, C3 is more likely a bacterial trigger like Lyme or co-infections, and C4 is more likely a chemical or mechanical trigger like mold. So even though it's not diagnostic or perfect, there's more likely C4 is mold and the more likely C3 is Lyme if they're elevated.

Thomas Moorcroft, DO

Cool. Yeah, I mean, I think that's one of the hardest things to sort of sort it all out. And a lot of it is that detective work because like you said, a lot of it can overlap. And if you dove down the Bartonella Trail, I mean, my goodness, the similarity between, you know, Bartonella and mold is just crazy. So I really I think that's a really great way to kind of start to piece it apart. And again, everyone, we know that the reason we're doing this summit is to let you know that there's a lot of different options out there. And I think, you know Dr. Jill really highlighted find the provider that resonates right with you. That loving mutually respectful compassionate sort of relationship and partnership where, you know, you can both be really honest and supportive to each other is probably one of the most important things. But also so obviously finding someone who knows what the heck they're talking about can also help. So what? What do I do? So we say, hey, maybe I've got by a toxin mold related illness. How do I kind of start to just think about treatment? I mean, there's obviously there's 100 billion different nuances and protocols. But what, you know, how would you kind of create like an overall how do you think about it? So that says some folks who are kind of flying all over the place can kind of land it a little bit.

Jill Carnahan, MD

Yeah, I have a very clear direction of kind of order of operations. And what I do is limbic system is always involved in this. Once again, I dove into the research in my book and I found that we know and you and I have seen this like anyone with mold exposure, there's almost a trauma and kind of a PTSD aspect of it. I've seen this for years and I think almost 100% of patients I've seen

have some sort of whether they needed this disconnect, that trauma from the experience, because otherwise they stay in this fearful response, they're afraid to go in homes, are afraid to travel or whatever. But what I realize is that's not just the psychological response. A fear of the experience in the literature literally talks about a chemical inhalation response of a chemical into the access, triggering the limbic system and the amygdala, which triggers a trauma response, but not a like, I'm afraid, kind of psychological or I don't have good support system psychological or I, you know, whatever kind of thing those are. It's not so much the psychological. It's literally a chemical trauma trigger from inhaling a chemical. And it could be more that could be other chemicals.

And this is completely disconnected from if you're healthy psychologically. So you can be the most healthy well, therapist person in the world. You've done all your work. You're in a good spot. You don't have any sort of massive limbic overload and mauled by the chemical nature will still trigger a trauma limbic response. So I put that up here because while I'm doing everything else, I want to give them some tools by here and I'll be thoughtful therapy, EMDR are neuro linguistic programing or something like one of the programs out there, the Gupta protocol that any hopper dangerous and there's so many more coming out that are just as good there's a lot of them out there. Those kinds of things can disconnect the limbic loop from the trauma of the mold. The line that's right up there at the top next is if you have massive activation, you must stabilize that because those patients of muscle activation can sometimes act to take a sip of water and get reactive. So that's the extreme case. But they're so sensitive, it's really difficult as a practitioner to guide them with herbs and medications and treatments because they can't tolerate. So I always take the limbic system, get something, you know, brewing there, talk about myself, see if that's a big issue.

Start to treat that with antimissile components, H1 blockers, H2 blockers, nasal stabilizers, herbal things like quercetin and nettles and Chinese skullcap and stabilize. And then we go to Lyman Mole. And if I have them both, I always treat the toxic load first because there's cases where that toxic load weakened immune system, just like in my case, old Lyme symptoms started to pop up. But if you get them detox and out of that environment of mold, sometimes, not always, they either need very minimal treatment for the line or they don't need treatment at all. So that's kind of my order. Limbic system, massive activation, more toxic load. And then Lyme and metals can come in anywhere in there. I usually don't do metals very high up either because often there's another interesting thing I'm sure you've seen when I do toxic panels in the urine, I see all the toxicity. If in mold, mold, trash is the glue to found detox system. So very often when they first appear and they're in massive multi exposure, they're buckets full, they will look toxic with metals and chemicals and everything you test because their load is so high and their detox is so impaired that every exposure is just filling up their bucket. So once again, if I take care of them all, take care that exposure, get them out of exposure, enhance the biotechs and pathway with glue found. Add binders in six months. That toxic load is lower. Even if I'm not directly treating it well.

Thomas Moorcroft, DO

I mean, just in the like the way I think too is like because it's like optimize body's ability to heal itself and to me I think of as being a physician has been a catalyst for healing. So if we identify where the body's stuck, it's like our wheels are spinning in the mud and we just maybe rather than getting a wrecker or have five people push, maybe we just put all of chalk under the wheel and then let the car do the work. And I just love it because you're identifying that the high sort of the target rich areas, the big toxins and I would agree mold is like I just remember like when I got started, we knew so little about mold and then like now it's just like, oh yeah, we can get it people better so much faster, you know.

Jill Carnahan, MD

So it is amazing now that we know and I'm and we keep learning right now long COVID throwing another loop in the weird cytokine step in immune system and you know a whole other topic.

Thomas Moorcroft, DO

Yeah well it kind of looks like I mean, a lot of that is like that inflammatory, you know, that chronic autoimmune inflammatory thing that you highlighted so well. I feel like pretty well versed in how to treat long haul anything because of what we've learned from all the what we've learned from Lyme that I really like. But I also think it's even the COVID thing is like when you look at it the way you just highlighted such a great way to start to think about it because some people want to do everything at once and then we have our super sensitives who can't seem to do anything at once. And so now we have a roadmap to do that. So one of the things that you you pointed out that I think is just kind of interesting, too, because, I mean, I always like to think about one of the tests we do for mold is in the environment is an environmental relative mold index or an army.

But what's really cool is a lot of people when I first learned about this from Dr. Schumacher and Dr. Klinger, when it was first kind of coming out, we were hypothesizing, like a lot of people with mold illness can live in an army of two and some people need to be below zero or one. But an army of two means you still have more wet mold in your environment than 63% of the country. So we don't need none. We just need less. And they make that vessel bigger. How do we do it? Because it's an environmentally acquired issue. How do we look at our environment and figure out do we have water damage like you had in your office? Maybe that was a little more obvious in some of the other places, but how do people because I think that everybody ask me, how do I find the right inspector? How do I find the right or mediator? Like, how do we know if our homes, water damage or office or our school is water damage? We need to even consider this.

Jill Carnahan, MD

Okay. This is a great question because it's so that's we can't do any detox, any IVs, any nutrients, anything. If someone's still in a massively moldy issue or sorry, in an environment, usually none of the things will really work until you take care of this. So this problem is core number one step

at ground zero. Okay. So what do we do? I do Hermes. I love Hermes because it gives again, empowers a patient to do something themselves without even hiring anyone. It's also called Q PCR. And I want to explain something because Hermes is old technology that was used. There was HUD housing that was studied about 600 homes and half of them they thought were moldy. Half of them weren't. So they took those numbers and created a logarithmic scale to create the Hermes score based on which were moldy, which were not. Well, surprise, surprise, Tom, after this was all done, they found a lot of ones that were categorized as non moldy, had mold. So it really skewed the results.

And I feel like the validity of the bottom line score an army is not really as valid as we thought it was, so I don't really use it, but the data from the same that what the test is is cubic yards qualitative PCR, meaning they check for DNA in the dust. The data that's shown in the army is absolutely valid. So what I now do is I look at that, look at the intervals visual species I calculate it hurts me score which you can find online. It's six molds, two types of aspergillus could tell me I'm sticky and malaria and I use that because that was validated in human studies based on the score. So 0 to 11 is likely safe for someone with serious or more toxicity. 1115 We don't know. There's no statistical significance. So it's gray land above 15. That's amazing. Tom 99% of people with Lyme more toxicity or illness did not get well in that environment. So what I can say pretty surely with someone with the score 1520 630 which is really high, it's let me get well in this environment so you can use the army, but I don't love to put a lot of weight on it because it's hard to say for sure if you should get out or not. But you can calculate. It hurts me within that score. And if you're a doc like me or you do your own research, you can actually look at the individual mold and see.

Starkey anything above five. Tell me more. Starkey I start to get worried and that's not very high. But those are so toxic. If it's like 12 or 30 of Starkey or Octomom, you better get out or deal with it because it's massively toxic. So I'm looking at those individual scores and I call because if you get a mediator in and they know about this and you say agent earnings, they'll look at you like, that's crazy. That's not valid. But the Q PCR is valid is same test, same test. So I still say go get an army just like you did. But I actually talk about this technology and I love educating your listeners because if you're talking and you say Q PCR, any more than Specter will know what that is, it's a valid of dust and historical data in the home. So use the term Q There are, but still use the data and do these armies empower yourself, get some information? That's number one. Of course, inspection can help, but you yourself can look and look for signs of water damage on your sinks. If you see circles where there's rings, where there was water, or you see more bulk or a wood buckling of your floors, your hardwood floors are starting to buckle. Or when you step on them, they're kind of bouncy.

If you haven't disconnected the water line from your fridge or look behind your fridge in a long time, you better check just as you're. I got the risk of radiation from a waterline leak your washer, your dry, your fridge. I've heard tons of people whose water lines bridged. Water dryer, dry. You know, any of these things are not hooked up properly, so be sure you have to be basic

maintenance checking under your sinks. Little see sink leaks can create big issues, attics and places where there's exchange of air into your home. If they're not sealed off and mold free, they can exchange mold spores into your home and windows that aren't seal properly. And I could go on and on, but those are just some common ones. And if your home is below grade and there's any intrusion through the walls or there's any things that aren't sealed or your sump pump is leaking and spreading into carpeted areas, all of those are red flags. So you do need to do a little work, but you could do some of it for very little expense. Now, good inspectors can be hard to find because they might find the mold. They might not. Many times that I patients who suspect mold the testing positive on my end I think there's an issue that they go through one, two, three inspectors who don't know where to look and they say, fine. And if you only do air sample, there's validity to all sampling. But if you only do air sampling, typically *Aspergillus penicillin*, which are the early growers, they're not as toxic as decking. Tell me they can go into the air and you can find them, but the stack in guitar medium will rarely be in your air unless the issue is like post-Katrina completely saturated home. Right? So you'll often miss the really toxic mold in air samplings. So you need to do more than one thing and you absolutely need do someone who visually knows how to inspect and knows how to look for these things I'm talking about.

Thomas Moorcroft, DO

I love it. Yeah. It's like. It's such like the Wild West almost. And like, every different inspector has a different thing. And I think the highlighting of that is great. And I just remember I'm really thankful for some of the virtual work we've been able to do because of the COVID pandemic. I've actually been able to see water damage above my patients as I'm talking to them, and they're like, Oh, I never thought about that. So definitely all the things that Dr. Jill just highlighted are really key things to look out around in your house. So, Dr. Jill, I mean, this has been amazing conversation. I feel like we could go on all day long. We hit on all these things. But, you know, I think that where we started should be a place where we end is I'd love to give you kind of free, free rein to kind of like land us here. Anything you want to tell us about, you know, trauma and probably more importantly, hope in recovery or any little pieces we may have left out so that is my thing is always let's leave on on a note of hope, because I hope everyone listening to this really gets that we're giving you some tools here. But we started off with like really the key core to unlocking your own self healing. So I would love to hear kind of any last words you have to kind of bring us home.

Jill Carnahan, MD

So a couple things I have already mentioned, but one thing is be your best advocate for yourself. Start loving yourself, listening to your body's signals and intuition, and really trust that message that is guiding you and directing you in your body does have the power to heal, because it does. It really, really does. If you're loathing yourself or fighting yourself or any of those things, do that work around starting to be. I would say it's very simple. I literally it on a script be kind to yourself. So often we have messages or things in our mind that are very like, Oh, I'm such an idiot. Oh, I shouldn't have done that. Or in all this regret and hard harshness. And we would never say

those things to anyone else, but we say them to ourselves. So listen to the things you're saying in your head to yourself and start to reframe. That's part of neuro linguistic programming, reframing those things into kindness. Also, I'd be like, Oh, sweetheart, you're doing a great job. Look what you've been through. Like, I mean, you can call yourself sweetheart, even your men out there. It's okay. It sounds crazy. It really works because that kindness to ourselves actually changes the function of good.

Thomas Moorcroft, DO

Just hearing you say it.

Jill Carnahan, MD

Yeah, I know. I just was like, Oh, sweetheart, you doing? And if any of you out there listening, I'm talking to you, sweetheart. Be kind to yourself. You're doing a good job. There is hope, there is meaning, there's purpose. And I'm so sorry you're suffering. I don't want to decrease the value of that pain and suffering, but I want you to know there's hope and there's healing. And that's what I'd love to leave on. And the last thing is this you mentioned before, but part of my life's work has been written in this book, and I'd love to share with anyone who wants to know more, because a lot of the things we're talking about, I went really deep, shared very personally about my own journey in the book Unexpected.

Thomas Moorcroft, DO

Awesome. Well, Dr. Jill Carnahan, thank you so very much for your time, your wisdom and and really sharing personally from your heart and your experiences. I think, you know, as I like to connect with my patients and all of our listeners, like when we actually share our experience, we have that, you know, humans, we're pack animals and we love to connect. And I think that that's such a gift. So it's been such an honor. And just thank you so much for anyone who is interested in learning more about you and your work and where can they reach out and find you.

Jill Carnahan, MD

Yeah, my website. It's just my name, JillCarnahan.com. And there is loads of free stuff there. Blogs, podcasts, link to the book, all kinds of things. Jill Carnahan and I also put lots of fun stuff on Instagram, which is just Dr. Jill Carnahan on Instagram.

Thomas Moorcroft, DO

Awesome. And we'll make sure that our on our show notes and on our summit resource page, on our website, we have all the direct links for everybody so that they can reach out. And again, thank you so much from the bottom of my heart. It's always great to have a conversation. And everyone, thank you so very much for being a part of this amazing conversation and this healing experience in this episode of The Healing from Lyme Disease Summit. And I'm looking forward to seeing you in our next episode.