Chronic Lyme Disease Explained: Co-Infections, Symptoms, and Recovery Transcript

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Opening on chronic illness mindset

It's very hard when you're chronically sick and when it look well, but others don't think you are sick. And you really are. I could tell right away if a patient's going to get better or not by my first visit, why, whether they say, oh, poor me, I'm so sick, nobody understands my life.

They remain sick for whatever reason. But those who came and said, Oh, can't stand this. No matter what it takes, when I get over it, they always did.

One of the things that has come out a lot in this summit is that your mindset matters. Research has shown that infections do change the way you think.

If you're a patient in that situation, just understanding that, that this is not you, it's not your fault, It's part of the illness. You're going to fight this and get over it.

And that's again why you need good support from your practitioners, from the family, your caregivers. Hi, and welcome to the Lime Bites podcast, where we shine a light on the misunderstood science of Lyme and other vector borne diseases, as well as the truths that many still miss.

I'm Dr. Mariah Hinchey, naturopathic physician and fellow of the Medical Academy of Pediatric Special Needs. I specialize in treating chronic Lyme disease, as well as other complex inflammatory conditions.

In this podcast, we break down what's working and what is not. We share the facts that most people miss, challenge outdated thinking, and give both patients and practitioners the tools to heal smarter.

So let's get into it and change the way we heal Lyma.

Podcast introduction and guest background

Welcome to another episode. I'm your host, Dr. Maria Hinchey. And most of you watching understand that chronic Lyme disease is such a complex and confusing and often controversial topic.

So we are going to just dive right in. Joseph Burascano Jr., MD. Dr. Burascano is one of the founding members of ILADS. He brings over three decades of experience as well as research in the field of tick-borne disease.

he is an active author and educator to both patients and other medical professionals. And he wrote the diagnostic and treatment guideline to treating Lyme disease and other tick-borne illnesses.

So welcome, Dr. Bioroscano. Please share with our listeners how you came to specialize in tick borne disease. Well, thank you, Doctor Inchi. Very nice to see you again.

What a long story. You know, I was raised on Eastern Long Island, which is the a little bit south of Lyme, Connecticut next to Plum Island. And we found out that we had the highest rate of tick-borne disease in the world out there.

80% to 100% of the ticks in our area were found to have Lymen in it. I mean, that's a very, very high percentage. So, you know, when I grew up, I didn't know any of this and no one did.

It was before the days of lyme in Connecticut. When I came back there for my practice, i did not plan to be a

specialist of any kind. There was an internist, primary care, and I saw all these patients with strange complex illnesses that no-one had a definition for.

And over time, I was kind of in the hotbed. I worked with Alan McDonald and Bernie Berger and some of the people at Stony Brook and Yale, and we figured out what was going on.

And from the very early days, we learned how to test for it. We learned, how tabulate the clinical syndrome. and I, was the first to try and tabulated treatment guidelines.

That was back in roughly 1989. Yeah, I know earlier, like 84, 85. Yeah. So you've been doing this for your whole career, pretty much? Yeah I fell into it.

And you know, Willie Bergdorf was in my office on more than one occasion. I've met him many a times. We sort of shared this curiosity about the strange new illness and that's how the whole thing evolved.

Well, I'm glad that you did because your treatment guidelines were probably one of the first things that I ever read when I became involved in treating chronic tick-borne disease.

So thank you for that contribution. You're welcome. Okay, so let's jump in. So from a pathophysiological perspective, when does chronic Lyme disease become chronic lyme?

So like, where is that division between an acute infection and it becoming chronic? What's been found is that the Lyme infection, the Borrelia infection will damage the immune system.

It'll activate it so you're full of inflammation and soreness and the flu-like symptoms.

When Lyme becomes chronic

But at the same time, it weakens it and doesn't allow the system to clear the infection or other infections that are concurrent. And this change occurs somewhere between six months and one year of infection.

Even if it's treated, if the infections is not controlled, an uncontrolled infection for six to 12 months. When I did my first studies, I noticed it was about 12-months into it where people somehow the character changed.

Illness became more difficult to control. The symptoms were more severe. It's also in the co-infections, which were in their background, started to become more prominent.

So in my experience, it's 12 month. Others have seen it in six months, and I guess that has to do with the patient themselves. A person is more ill to begin with.

I think it starts a little bit sooner. But so let's derange six- months to twelve months Okay. So it's not necessarily like the amount of time that you're infected.

It's the actual like disease state of the body that would define chronic Lyme disease, kind of like when someone goes from HIV to having AIDS, would you say?

Right. But it is a time sequence. I mean, I rarely see or have seen this syndrome, if you want to call it a chronic lyme, disease in someone has only been infected a few months.

That's really much more than that. Again, my studies based on clinical findings was one year, but I guess it could be earlier in some patients. Okay, And can you tell us what does dissemination mean?

Well, that simply means that the infection, the bacterium that causes Lyme, Borrelia burgdorferi, has left the skin and started to get in the bloodstream and travel around.

Now, what's very important to understand is that that's a process that occurs as soon as the tick gets to your blood, so the mouth parts of the take gets into the stream when the bacteria start to enter.

And it's been shown, for example, in animal models as well as in some clinical series, that you can get infection of the central nervous system within hours to days after the bite.

So it disseminates or spreads through the body really very rapidly. Right. And so I think it's important to point out because a lot, so, I've heard people use the word dissemination then in a way that is not correct, right?

So if disseminations is just when it is spreading to basically all of this cells in the you wouldn't consider it to be chronic at that state because like you said, it could happen within sometimes even a few hours.

Whereas a lot of people talk about disseminated Lyme disease and or use that term interchangeably with chronic Lyne disease. Well, there's a subtlety also.

It's been found that certain strains of the Borrelia germ do not disseminate. They stay in the skin and that's it. So it specifically was coined, the term dissemination was coin for that strain of Borrelia that does not stay on the screen, but does disseminated.

Interesting. Yeah. Okay. So I want to talk a little bit about the acute infection and I wanna get your stance on this because obviously we have the state of acute Lyme disease, right, to be able to prevent it from going into chronic Lymedisease.

So when someone has acute lyme, what is the minimum, like the absolute minimum days that someone should be treated?

What dissemination means

to have the best chance of eradicating that infection? And what is the desired antibiotic or antibiotics? We're talking you saw the tick, you got the tic off, like that type of situation.

Well, how many hours do you have? You see, I'm one of the people who, from the very first beginnings of this whole syndrome, epidemic, whatever, made the point that, yes, it disseminates very early.

And even in the earliest stages of Lyme disease, we have to give a full dose of treatment with an antibiotic that's going to be strong enough and a high enough dose to penetrate all the tissues, including the brain, because if you don't, what's gonna happen?

If you use a weak treatment, you kill the weaker germs, leave the stronger ones behind. You kill them more superficial ones and leave deeper ones deep to do their damage.

So in terms of how soon after the bite, I think the sooner the better. I'm sure if a day or two or three goes by or even maybe a week, although that's pushing it, before you get treatment, that probably okay.

But regardless of when you start, you really have to use a full dose. Here people say, use the smaller dose because it's in the beginning. Again, i've done a lot of clinical research.

i have seen 16,000 Lyme patients in my career, maybe even more. And again and again, the sickest patients were the ones who got substandard treatment in beginning, They had the tougher germs, the deeper ones, and that's what caused the trouble.

Over and over again, I've seen it. Now, that is another topic. How do you treat early Lyme disease? Well, you have to go back to the science. The Lyne germ is a very slowly growing germ, but it doesn't grow steadily.

It grows in cycles. They'll grow for a period of time, then go dormant and then grow again and go to dormit. And this

is the cycle in Lymen. That's about four weeks long.

So, if you have an established infection, it's my contention that you need to treat for one, to bracket one whole generation cycle. In other words, If you start to treated and stop while it is in the dormant phase, It's going to wake up and make you infected again.

So my, contension is that, you to need treat, bracket that whole generations cycle, so for early Lyme disease even, my minimum recommendation is six weeks.

Treating acute Lyme early and aggressively

Now in terms of preventing Lyme, let's say someone has an infected tick bite, it's an engorged tick, you're starting to get a reaction at the bite site and you want to prevent Lyne from happening.

The dose and the duration is kind of a risk versus benefit equation. For example, if you use a medication for three weeks, You're going to have a pretty high success rate, but not 100%. If you go to six weeks.

It's still not going to be 100%, but it's going be much, much greater than what it would be at three weeks. But on the other hand, you don't know if you got the infection just because it is an infected or an engorged tick.

So what's the risk? What's to benefit? So again, for just a bite that's high risk, I would say three week is minimum, six weeks is probably optimal. Okay.

And you talk in your guidelines about how, you know, Borrelia lives in three different forms in the body. And so therefore you need the at least three classes of antibiotics.

Like at what point does that become relevant, right? Where just doxycycline alone isn't going to be good enough. How far after the bite would you say?

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So join us in Pompano Beach or from anywhere in the world. Don't get left behind. Register now at limebites.com. That's L Y M E B Y T E S dot com. Borrelia can do the very unique organism.

They can change their physiology, their makeup, and their metabolism to try and evade defenses and even antibiotics. So that occurs by the time the immune system starts to develop and start to activate against the germ.

The germ senses it and starts make its changes. So we know that IgM, which is the first antibody to appear, is not completely effective in eradicating infections, just sort of gets the ball rolling.

It's the IgG that starts to attack. And that doesn't really form for several weeks. it starts actually earlier than that, but it doesn' really get a good level until several week, maybe six weeks, four to six week into it.

So I think I can't prove this with any study, but I that probably four to six weeks after the infection is when you start to think about it. From a clinical point of view, an infection with Lyme begins as kind of nonspecific body aches and pains like you've got a virus.

But over time, it starts to develop into a multi-system illness that migrates from different parts of the body to other parts in the And it goes through these four week cycles that corresponds to the germ regeneration.

If the person has gotten to a point where it's become disseminated and multi-system migrating and starting to cycle, then you know for sure that the term is established.

It's hiding, it is going into biofilms which can protect it. And that's when you have to start thinking about treating the different forms.

Using combination therapy for established Lyme

Now, when we say treating different forms, one of the things that people worry about the most are the cystic forms of Borrelia, because they'll form a hard-shelled cyst, and you can see pictures of this under the microscope, that resists common antibiotics.

And the only class of medical antibiotic that really has been shown to break open the are the drugs called the azoles, metronidazole, which is flagell and tinidizole which has Tindamax.

Traditionally, what people had done would be they'd treat Lyme with one, maybe two antibiotics, like a penicillin drug added to maybe clavithromycin, and the patient would improve to a level and then kind of stop improving.

And then you think, well, you know, hitting a plateau, we have to start to add this flagel drug. So one of my old friends, the late, great Warren Levine, who was a really deep thinker, he called me up and said, you know, people do that and they get these cysts to form.

And then he started chasing a tail, trying to get rid of the cyst. He said what if you started the people on the flagell with the other antibiotics, there's no chance for it to go and hide because he already got that covered.

What I did was I went back in my charts and there are a few people for whatever reason did start that regimen for not that reason, but for other reasons.

And in fact, they did better. So my recommendation now is if you have the disseminated multi-system migratory cyclic form of Lyme disease, which means it's really getting established and you're going to start treatment, you would add a cyst buster right at the very beginning.

And you know, nowadays we know herbally there are botanicals that are thought to be cyst busters as well. So whatever your approach is to treatment I think it is wise to do that at very, very begin.

Yeah, and just make sure you have the bases covered. And like you said, instead of chasing it, have something that's covering all three at once. So it can run and hide and flip back and forth as much as it wants, but you haven't covered that.

That's right. Yeah. All right, so here's the million dollar question. Once you love lime, you always have lime. What's your response to that? I have to say no.

You know, again, I've treated many, many patients and I'd gotten many many of them well, and they've stayed well. I still live in my hometown, my local area, And I see people who I treated 10, 15 years ago or more.

And they say, you know after the treatment I got well and never got sick again. What I found again through study is that if you can get someone to the point of being over the symptoms of the tick-borne disease and they don't relapse and haven't got relapsed or gotten re-bitten within three years, then they're never going to have it come back.

Now, the problem is a lot of people dont get early treatment, they do not get aggressive treatment. They do get appropriate treatment and fall through the cracks.

You know, there's other conditions that start to happen when you're so badly infected. You get buildup of toxins, you get overgrowth of other germs, germs that are hiding can reactivate.

And it's a much bigger problem at that point. But if you can get all of this put together and put to bed over time, and it can take months, even years of treatment, but you will get the patient well and they stay well until the next tick bite, unfortunately.

Yes, unfortunately. Remember, don't feed the ticks. I can't tell you how many patients we've completed treatment, weaned them off their protocols, and then like two weeks, two months, a year later, they're back with another tick bite.

It's devastating. At least they know how to handle them at this point. So, you know. Yeah. And they get early treatment. They see the right person and so forth.

Right. Yeah. All right. So how do these co-infections complicate the prognosis and the whole picture? Well, you know, ticks are like nature's dirty needle.

They're like a sewer. They have dozens, if not more, different kind of potentially harmful organisms in them. they've got bacteria, they have got protozoa, They have other parasites, viruses, and so forth.

And so when you get a bite, it's possible and in some cases actually probable that you'll get more than one infection.

Can Lyme be cured?

Now, what I always say, and a lot of people don't agree with me on this, but I say that when you have what's called the co-infection, Lyme and others, it seems to boil down to always being the Lyne.

If you can get the Lime controlled, the other ones are difficult but controllable. Again, because the lime is the one, Borrelia is one that hurts the immune system.

Okay, so if you could get that controlled. And that's hard to do, but if you can do that, then the other co-infections are not as difficult. But the problem is, for example, babesia, which is a parasite, when that is present with Lyme, it makes the Lyne more severe, more treatment resistant, and takes longer and more aggressive regimens to get rid of it.

So that a nasty co infection to that. And approximately, at least in my neck of the woods, two thirds of people with lyme have been shown by blood testing to have babesi with it That's a co-infection that's the problem.

So now, going back to the beginning, I don't want to get too long winded about this, but if you treat Lyme disease early, before it starts to really get into the chronic phase, and you the Lyne itself, the Borrelia, aggressively, The co infections very often seem not to be an issue, either because the immune system can contain them, if it's healthy immune systems and so forth.

It's only when you get to chronic phases, when the people start to have the system break down, do the co infection become a real big issue. Of course, there are many exceptions and some people start with the Babesia and then later get Lyme or Babese is prominent and the Borrelia come after that.

But anyway, the co-infections are always an issue and Babesa is the worst when it comes to making Lyma worse. Yeah. And then also for our listeners that don't know, Babsia is a parasite.

So like standard antibiotics that treat bacteria or kill bacteria aren't really going to be effective against Babsesia, right? Well, that's right. And the problem with treating the tick-borne diseases is that, as I mentioned, you can unfortunately get a variety of different germs at the same time and medication for one does not necessarily work against the other.

The more advanced practitioners don't use one medication. They use a combination of medications, often adding botanicals to it nowadays as well, because you want to blanket the different types of pathogens that can make you sick.

Okay, so I have a ton more questions for you, but you're really the expert and I want to hear from you. You know, as I was preparing the questions, like, what do you think?

Like, So what are the top three things that you Think people need to here about Lyme and co-infections? Are you suffering from Lyme disease or another complex chronic illness and aren't sure who to trust when it comes to herbal supplements?

Hi, I'm Dr. Mariah Hinchey, founder of LyMe Core Botanicals. As a naturopathic physician specializing in complex, chronic, infection-driven illnesses like LyME disease, i needed herbal medicine I could truly trust.

That's why I formulated LyMe Core botanicles. where our herbal tinctures are handcrafted in small batches right here in Connecticut.

Co-infections and Babesia

We use the whole herb, never isolates, to preserve the full spectrum of medicinal compounds. Every single step from sourcing to extraction is done with precision to ensure maximum purity, potency, and consistency.

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Lymecore Botanicals, herbal medicine you can trust from a doctor who lives this work. Learn more at LymencoreBotanicles.com One thing is that you have to see the right practitioner because if it's properly treated, you can get well.

You can't get over it. It's not a hopeless case. So that's very important. Second thing, is as a patient you really need to become your own advocate. Keep copies of all your records, lab reports, doctor's notes, x-rays, whatever is being done.

keep your on records. Learn about the illness. Teach your caregivers, friends and family, co-workers what's really going on to get the proper support and advocate for yourself.

And the final thing is these illnesses are clinically managed. There's not a blood test you can do or a scan or anything. You can on a regular basis see how well you're doing if the treatment is working and so forth.

It's all based on how you are feeling and what kind of things are happening. So the third and very important thing that I had all my patients do is keep a daily diary.

Because you'll see over time that there are good days and bad days. With Lyme, you see a four-week cycle. If the treatment is working, the bad day is less bad and there're fewer of them and the good day's better and they have more good.

So you want to see that evolve. You want see if a plateau happens where you have to start to change treatment or

change regimens and so forth. The Daily Diary is the other key piece to this.

Yeah, it's super helpful for practitioners to be able to tell too. And yeah, if a patient comes in and they're having a bad day, everything's worse. If they are having good day everything is better.

So it is nice to have as close to objective, you know, information to look at as possible. But also, I tell the patients don't go crazy and have this like every single day every little thing and strange things because number one is going to make you crazy.

Number two, after a period of time you're not going do it. So I have a calendar, which is like a one month at a time. And you put like black dots of bed day and a blue is a good and yellow is in between, you know, whatever you want to do.

So you can hold it up and say, there's the pattern and look at this, a four week cycle. This is. Like a 10 out of 10 is now a 4 out 10, what every way you wanna do it, at number or a color scheme or whatever, and just do a monthly calendar.

You don't have to write things down in detail, but you do want a mark on the calendar significant symptoms, changes in medications, that kind of thing, milestones.

Right. Yeah, important to keep track, but don't dwell. Good idea. So Dr.

Three keys for patients: care, advocacy, tracking

Bioroscano, share with our listeners how they can reach you if you want to be reached, as well as if have any exciting news or events coming up that you would like to share.

Well, I don't have an office practice anymore. I'm doing straight research for different companies right now, so I am not available to see patients, although I do consult with physicians on their patients on a regular basis.

So that's one way. There's a conference coming up at the end of February into March that I'll be speaking at and giving two lectures. That's in Austin, Texas.

TfIM, right? Yes, will you be there? I will be with you. Excellent. Wonderful, and then always we have the iLADS annual conference, right? That's true.

And also what I do in my educational efforts, I've done a number of different webinars that are available online in different places. Do you also recommend, so you brought up like the importance of keeping track of your symptoms and you were talking about the life cycle and all of that, do you think that it is important to treat for two months past the resolution of symptoms?

Is that one of yours sort of suggestions, guidelines as well? I know that that's something that I learned at ILEDS. I can't remember if that was one your recommendations or not.

Well, it goes back to this four week cycle of the Borrelia. You know, if the treatment is working, as I mentioned, the bad days get fewer and the good days, get better, and you have the calendar to look and, you know.

All right. The third week of every month is my bedtime. So if you're getting better and better. And you get to the point where you expect a beta week and don't have it.

Maybe that's controlled. On the other hand, maybe it isn't. What I always recommend is go through one more cycle just to be really, really sure. That means at least one month to six weeks of treatment.

Others are a little bit more conservative. They like to go two to three months. from the end of last symptoms. But again, keeping the calendar is a really important thing because it's the guide.

I mean, that's, the way you manage the Lyme patient is not by blood tests. It's by clinical picture. So what do you, when you were practicing with patients, what did you tell patients to expect?

Like, how did help them to navigate this chronic illness? Well, expect medication, of course. Expect frequent office visits. I think it's so important to see the patient, put hands on the body, examine them, have an interaction because that's really, really important.

So many, let's say not in the alarm world, but in other worlds of medicine, they'll see you for a condition and then that the end of it. They never offer a follow-up visit.

But I always insisted on follow up visits, so that is an important thing. have to tell them that unfortunately it's a difficult illness because there are many uninformed and misinformed clinicians out there that might lead you down the wrong path or misdiagnose you, mistreat you.

So that's very big danger. Another unfortunate thing is that it is a very expensive illness. You do end up seeing a lot of different medical providers, you start to have, to order tests from laboratories that don't always take insurance and it becomes expensive.

The other thing is that it does take time. In the sickest of my sick patients, who I got well, I would tell them, expect three years of some kind of treatment.

Maybe not continuous antibiotics, but it'll be three days before you're back to yourself again. And that generally holds true. Of course, many people get better sooner than that.

But for the sickness of the stick, except three-years. Yeah. Good points. What would you, in addition to those things, what would say are like the primary challenges that a patient would face?

Treatment expectations and patient challenges

A lot of things. One thing is your outlook. You know, it's very hard when you're chronically sick and when your look well, but others don't think you are sick, and you really are.

It's really hard to stay positive and optimistic. But I can tell you again and again, I could tell right away if a patient is going to get better or not by my first visit, by whether they say, oh, poor me.

I'm so sick. Nobody understands my life. They remain sick for whatever reason, whether it is the germ affecting their psyche or the other way around? I don't know.

But those who came and said, I can't stand this. I'm going to fight it no matter what it takes to get over it. They always did. Yeah. And I think one of the things that has come out a lot in this summit is that your mindset matters.

But you know, research has also shown, I mean, you can't blame the patient for all this because research had shown that infections do change the way you think.

And that sometimes is a big challenge. But, if you're a patient in that situation, just understanding that, that this is not you, it's not your fault, It's part of the illness.

You're going to fight this and get over it. That's again why you need good support from your practitioners, from the family, your caregivers and so forth.

and that's why not only do you educate yourself, but to educate them as well. Yeah, and I was going to make that point too. I think if every Lyme patient could bring their spouse or their parent or children, if they're old enough, to come in to really just understand because I that a lot of them that have just been dragged through the system, they are hopeless and some of the almost rightfully so, right?

They've been told it's in their head. They have been there's nothing wrong with them. And yeah, a lot of people just really give up hope. And it's like, they think that their own family members don't believe them.

So I've had a of success just being able to explain in front of the patient, you know, to the family member that they're not making this up, you know, in that, like, listen, if the brain is on fire, and, I did an interview earlier today with Dr.

Nancy O'Hara on pans and pandas. And it's like the basal ganglia encephalitis causing OCD, panic, anxiety, rage, all of those things. It's very, very real.

those behaviors. Well, think about it. If you're a patient in that situation where your, you know, in layman's terms, your nerves are on edge and you are frustrated and angry, go to the wrong physician.

They say, well, I don't know what's wrong with you. We'll do a blood test at a standard lab or the hospital I work for and pick up rate is less than 50, so they don't know what's wrong with you.

And they do a lot of different tests and they say, but you know, my knee's hurt. So they send you to a rheumatologist or an orthopedist. They do all their tests, they said, well, I don t know it's right for you, But by then, you're getting tingles in your nerves and say well I'm going to go see a neurologist, You get a big test work up, maybe even a spinal tap and there's nothing conclusive.

Then you go on to someone else and it s got to be in the head. By then the spouse or the family members are saying, come on, here it goes again. You know, they spend time, money, effort waiting for scans to take three weeks to get done and all this happens.

So they're angry and I don't blame them. I would be angry too. And that's why when they come to a practitioner who's lime literate and they say, wait a minute, we know what's going on with you.

We can fix it. It's like, wow, the light bulb is on, you know the curtain raised. That's, like oh great. But then it's up to the job of the practitioner to, to carry it out and to make sure that they do get better.

Yeah, I agree. So what resources are out there for caregivers and family members to educate themselves and become more Lyme literate and learn how to support a patient navigating chronic Lyne disease?

Mindset, support, and educating others

One of my favorite organizations in that regard is lyme.org. That's what they call themselves, and that's actually the website, lime.it's very scientifically based, but it's also something that is amenable to the non-professional, it is also geared toward professionals.

They have great, great articles, they have newsletters, educational resources that are really, really important and very helpful, a bunch of really great people.

So I support them in that regard. Wonderful. And do you have any advice for patients on how to talk to whatever other medical providers like that they have to have in their lives that aren't Lyme literate?

Like how, to broach the subject? Because I mean, I had a patient tell me last week, so she went and found a new primary care physician. She mentioned to them that she had chronic Lyne disease and the doctor said, And they didn't mean chronic Lyme disease.

And I'm sorry, let me rephrase, also said, I don't believe in Lymedisease. This is in Connecticut. I mean, not that Lyma isn't everywhere in the world, but you know, it's like.

You know I was seeing patients as the Lyman specialist, lets say. Because most of my patients that, you know, by my time I was really into this came from out of town.

So, I always insisted to have a primary care doctor for day-to-day concerns and things like managing blood pressure, whatever else, and to be there if there's a side effect of medication and they live 500 miles away.

I also insisted, number one, that they have an active primary physician that's seen on a regular basis. Number two, I would every visit make up a summary of the visit and send it to that primary care physician so they would know what's going on.

And then I'd have the patient see that physician on a regular basis, even if there's nothing special happening, just to keep them updated in the loop.

So now that means a primary-care physician actually is relieved of their duty of dealing with Lyme disease because now it's not their department. Just like they won't have to worry about someone getting neurosurgery because that's their Department of Primary Care.

So it relieves the primary care doctor and the patient can say, well, it's not a matter of belief. It's a religious disease. You know, scientific, but don't worry about it.

Do you hear from my day to day concerns? We're going to keep you in the loop. But if I have a problem related to the tick-borne disease, then I'll call my specialist.

And you can always call that specialist anytime you like and get the records. Now, a physician who's a Lyme denialist will never on their own read about Lyne disease in a way that's meaningful.

So if they're really hostile toward you, then it's best to just change physicians. But on the other hand, you don't necessarily have to fight. You do your thing with your Lyman practitioner and leave your primary care person to do primary.

Okay. That's really good advice.

Resources and closing advice

Thank you. Anything else that you think our listeners should know before we wrap up tonight? Well, as I mentioned several times, education is really important for yourself, for your caregivers, and so forth.

And so, there are several websites you should know about. The website, Lyme.org, of course, is a great resource for everybody, patient practitioner alike.

Also, they are the LyME organizations, iLives International LyMe and Associated Diseases Society. They have a website with a lot of resources, the Lime Disease Association.

Pat Smith's organization, likewise, very scientific, a very solid place to go. And interestingly, the Lyme disease lab called Hygenics has on their webpage a lot of resources that people are often not aware of.

They have webinars, many of my webinars are on there too, they have educational articles and monographs and so forth. So it's more than just what the tests are, it is also educational resources.

Those are the good places to go. And also because that website from the laboratory, it's specific to the tick-borne disease. It's not like you're going to spend hours looking on YouTube and finding non-specific things and trying to search for what you want.

This way is a direct path to getting your answers. Wonderful. Thank you so much. If this episode gave you an answer, brought you new insight, or made you think differently, subscribe to the Lime Bites podcast and share with someone who's ready to take control of their healing journey.

And if you can, please leave a review. It helps others to find the show. Thanks for listening and we'll see you next

time.