Lyme Testing Strategies & Advances That Optimize Healing

Thomas Moorcroft, DO
with Joseph Burrascano Jr., MD

Thomas Moorcroft, DO
Everyone, thanks for joining us for this episode of The Healing from Lyme Disease Summit. I'm your host, Dr. Tom Moorcroft. And today we have a really great special guest. You're in for a real treat. It's an honor for me. We're talking with Dr. Joseph, for Sukarno and for anyone who may not know. To me, you hear me throw around the turn a lot. You know, the original gangster back from when I was growing up during the rap days. And really, the thing is, like, I think about people who have made a massive difference in the lives of hundreds of thousands to millions of people. And I want to be one of them. Right. And Dr. Burrascano was one of these people who was one of the four on the forefront of sort of looking at people and saying, hey, wait, there's something here that the medical system is not really looking at. There are people suffering with chronic brain fog, fatigue, joint pain and all the other wonderful symptoms we talk about in the summit. And someone needed to stand up and advocate for patients. They also needed to inspire other practitioners to do the same and then do some of the unfortunate stuff, which is like put up with a lot of the baloney when you're a trendsetter and you're, you know, one of the early adopters and trying to alleviate the suffering of people, which is deal with all the legal fallout. And so Dr. B, I think, has been sort of like a sacrificial lamb for a lot of us, but most importantly, an inspiration a teacher, a friend, a guide, and a practitioner who it's like every day here, more people that he's impacted their lives. He's trained so many physicians. So I just want to really extend a huge, warm welcome, Dr. Joe. And thank you so much for being here to talk about Lyme disease.

Joseph Burrascano Jr., MD
Wow. What a fantastic introduction. Thank you. You got to make me blush on camera.

Thomas Moorcroft, DO
There you go. Well, hey, you know what I tell everybody in like it's this common thread. I really want everyone here to understand how worthy they are to receive healing and also to send the gratitude to the people who have done the work. And I just I mean, I know that, you know, when we're talking tonight a little bit about some of the testing that I Gen-Xers and Laboratory testing in general as you're an expert in this area. But when we're talking about Nick Harris who started I Gen-X it was like I didn't even expect to be speaking, but I had to I was so moved that at the

recent I Labs conference, I stood up and said I literally wouldn't be here if it wasn't for him. And if it wasn't for him and yourself and a few other people who were hurt, people who are around early in this movement and when everybody said, you guys are crazy, you said, No, we're actually seeing something real. If you hadn't really pushed, I literally wouldn't be here. So I'm so passionate and inspired and it's kind of like a little it's amazing that I get to talk to you as often as I do. So anyway, what happened? Like, you know, before we dove into our really our topic tonight is going to be a lot about testing because there's so many misconceptions. And if you understand testing, you can get the right support, the right diagnosis, and then we can help people get better. Because if we don't know what's going on, it's a lot harder to get better. But what got all this started? I mean, where did you begin and why were you so drawn to this Lyme thing?

Joseph Burrascano Jr., MD
Well, you know, it's kind of backwards, actually, because I was raised in a small town, you know, kind of a little country, small town, and went to college and medical school in New York City, the big city. And I was comfortable in New York, but I knew I didn't want to live and work there. In fact, I was on the phone with my friend when I was in med school and he said, Wow, it's been raining so hard. Everything's so muddy. I looked around, I said, I see cement and sidewalks and streets. I don't see any mud. Let's get out of here. So my plan was to go back to my hometown, be the local doctor. And those days, we had a TV show called Dr. Marcus Welby. I wanted to be the doctor who took care of the family and the kids. And they grew up and they took care of their kids. And my school teacher. That's what I wanted. So I went back to that little town. I opened my office in eastern Long Island where I was raised. And it was 1981, the same old 100 years older.

Thomas Moorcroft, DO
There you go. If I'm looking great.

Joseph Burrascano Jr., MD
Looking good. Ready to take my body. So, you know, that's when the line was starting to age. And in fact, Willie Bergdorf had discovered the line Sparky and Shelter Island, which was basically a bicycle ride from my office. And as you know, a lot of people know chicks are carried by birds. And I'm on the Big Bird flyway in the whole thing. So in my practice, I had seen a number of people have these really strange combinations of symptoms, really strange illness. And the rheumatologist said, Well, it's atypical lupus or severe negative rheumatoid or the person's about mentally delayed. I mean, all these different things because they didn't know any better. But I was seeing these patients and, you know, we didn't know what really to do with them. So then what happened was they started to develop testing for Lyme and they did simple things like I have AIDS which are really very poor, you know, impressive assays. And they had false positives, false negatives. And a lot of the patients who fit this weird clinical picture, I, of course, I tested them, didn't know what Lyme disease was, and some were positive. A lot of

them weren't. Then the genius, Alan McDonald, came on the scene. Turns out he was. He's a pathologist. He's practicing in the local hospital. That was my base hospital where I had patients and patients and all. And he developed a Lyme disease culture, really a culture that was back in the in the mid-'ninety or early 1980s. And he worked with we all worked with Willie in NH. We sent him samples and hoping and he developed his culture. So he showed me he had a special custom built microscope in his lab and after work I'd go and look at the blood from my patients and see parakeets. There were seronegative on the standard testing which is, you know, the state RFA. But I like the light bulb went on.

I said, that's what's going on. In one week I called back 83 patients and they all had Lyme disease. Like, Oh, my God, look at that. You know, again, the testing was poor. McDonald's culture was just hardly available because it's still research at that point has always been research, but it fit the clinical picture of this migratory, multisystem illness that involved CNS and joints and peripheral nerves and centenarian fatigue and the headaches and all these weird things that no one could put together. So it's able to kind of pick up a clinical picture and it got so good at that that I got so good, but the picture became so clear that no other illness did this, nor the illness had the migratory properties that would also migratory arthritis and then the fatigue and then the brain fog.

And I had patients who couldn't finish a sentence, well educated people who looked fine, but they couldn't finish the sentence. And I had this more than brain fog. So long story short, they ended up testing positive or had such a clear picture. I can make a clinical diagnosis. So then McDonald and I decided to do a little bit of clinical research, and that's how I start to see more and more patients. And, you know, why was this so much Lyme disease? Well, you know, ticks became a big thing. We actually I was one of the people to start a local newspaper called Tick Tock. It was given out. We raised money and it was printed by one of the local churches, and it was put in every single mailbox in my hometown. Every single there was a direct mailing because there's like 600 people in the town. So it wasn't that big of a deal, but it was great and it was given out at the hospital also. And so we developed or I developed well. Questions And then how do you answer the questions? By studying the patients.

I always, always say I learned from that from your patients. And I say that to this day because that's how I started it. It's always true. You have to spend the time and just let them tell this story. And so the diagnostic thing became what we now know is a clinical picture when the microscope, multi-system whole body thing that progressively gets worse and has these characteristics. We also know that when you do an eye, if any type of test, you pick up about half of them, which is what we saw then. We still see now and then when we get to McDonald's culture picked up all the early data, a few hundred cultures in total, maybe not even that many, but I was very strategic in my use of that. So then we hurried. So we had this Lyme disease thing. Now what do we do? How do we take care of the patients? Well, we know it's a sparky, so maybe it's like syphilis. And that's how far back just goes in the history of Lyme disease. So with

the help of my friend Bernie Berg, who was a dermatologist, who was one of the first to describe him in the New York area and so forth, in fact, he was the one who had them changed the name, as Ritchie called, ECM erythema, chronic migraines because they thought is chronic. But it was not a chronic rash without treatment goes away in a week or two. So he at the Lyme conference in I think is Norway wherever it was we he got up and said we got to change em and here's the one who worked at McDonald's and he took the patients who had this expanding rash and they perhaps used the skin at the leading edge and cultured it. And I got really that way. So I mean, the whole thing. Then what McDonald did was he took these cultured parakeets and tested them against the antibiotics. So that's when we started to figure out the treatment. So can penicillin didn't work. That's the stuff that's kind of a drug.

It just didn't work for. Lyme oral penicillin. So then Dr. Berger said, You know, with our culture study, we found that amoxicillin was better. Why don't you try that? So try to make Sicilian. And it seemed to work a little bit, but it's like it almost worked. It really didn't. So the advice was and the determination was when we just raised the dose up, it went from five milligrams, three times a day to what we use now is at least a thousand every 8 hours, if not more. And then we had Probenecid to get a high peak and trough level so that drug you need sustain blood levels even through the trough. That's why I put medicines in anyway. So that was good. But then, you know, we give them a couple of weeks of treatment, ten days, seven days, and it starts to feel better by that. L get sick again. And then we said, Well, it's exactly the same thing you had before we gave you the medicine, so maybe we need to give a bit longer treatment.

So then I did a study. I mean, I can go on for hours on this one pirate. So I study matched them for age and weight and symptoms as much as I could. These were all my local patients at the time. No one knew of me as a Lyme doctor and came from far away. So I treated them for ten days, two weeks, a month, two months, three, four or five, six months, and kept tabs of their progress. And I found that using that high dose of amoxicillin probenecid, there was a 17% success rate. If you treat if one month or less. And okay now how do you define success rate? That's very high on this question. Mm hmm. Going back in time when Lyme was named and discovered by the group at Yale, they decided that Lyme had what they called major and minor symptom. The major symptoms of Lyme with the Bell's palsy, the acute arthritis, and the diets and the minor symptoms to them anyway, were all the things that were left the fatigue, the brain fog, the headaches and rapidly that was all the minor symptoms.

And what they did was they treated people with oral penicillin, I think was for ten days. And they found that the minus symptoms of present would go away. So they deemed it a success. And they said that I'm sorry, the major symptoms would go away, like the Bell's Palsy, the card itis, the arthritis, but the minor symptoms would persist. Now, they couldn't understand or even believe that ten years of penicillin could cure everything because it should. Right? So their thinking was at the ten days cured Lyme, which they defined as the major symptoms. And the

minor symptoms that were left were the post line that said this whole post treatment, Lyme disease syndrome came back. This is back in the 1980s. So they defined.

Thomas Moorcroft, DO
From the beginning basically.

Joseph Burrascano Jr., MD
You know, so they define because they don't want to admit that their treatments failed. Okay. I mean, that's you left, but that was really the truth. So that was their definition. But as a clinician, I mean, they were they were people were referred to them. And when they made that determination, people go back to their hometown. And that was the end of the story. But it was me as a primary care doctor for my local friends and family and patients. The buck stopped at my desk, so I said, You know, if you had something and went away and then came back, it's still there. Less. If you look at the literature, if you get a Bell's Palsy with Lyme 95% of the time, it'll resolve on its own at least improve. Likewise the major center virus arthritis of Lyme if it comes acutely, only persists in 5% of the patients lyme colitis. Even without treatment, most people it's not even picked up and others who did get a heart block.

Even if you don't hit them, throw a seven to something aggressive over time it will resolve. So they are so called ten days of successful penicillin treatment, getting rid of the major symptoms of Lyme and therefore, in their words, a cure really was a natural history of Lyme disease. The treatments did nothing, but they led to the post Lyme syndrome. Okay, so back to the beginning. Then I decided to do my study with all the different antibiotic days and doses and all that. I said, All right, I have to redefine what success is. Success is getting rid of all the symptoms major and minor, and had not come back for at least three months after therapy, minimum three months after treatment, so as a much more strict criteria. So using that one month or less achievement, 17% of people went back to normal when I extended it to two months was a little bit higher, like in the twenties and on and on. It went. Interestingly, when I got to four months in males, it plateaued at a 67% success rate. But in females it took six months to get to the oh, these women who were hormonally active.

And nowadays you recognize that for whatever reason, the hormones and all the women with Lyme sometimes don't do as well. So that was the basis of how I got this whole thing started. And that was also the basis, the number one recognized of the clinical picture of Lyme disease, even in the presence of the zero negativity. Number two, determine that you need a good strong dose of medication, which nowadays we know about penetrating blubbery barriers and and time kill curves and all this fancy stuff. That means you really need a high dose and sustain blood levels. And it also meant that short term treatment didn't work. Need long term treatment for Lyme. So here I was back in the mid 1980s forming the foundation of what we nowadays do with Lyme disease. We recognize that the blood test leads to basic life is not that great and that you need a strong dose of the medication if you're going to find one that works,

some do and some don't. And the third thing is that you have to treat them long enough to get them into remission. And that's how the whole thing started. And I all did this on my own. And so at the time this was late 1987 or seven, came on the market in Stony Brook, published that was seven works in these untreatable patients and curable patients because they cheapened penicillin in comparison anyway. So then the drug reps for seven wanted me to speak, so they brought me to a place I was in New York. They took me to New Jersey someplace, and I spoke about what I just said right now. And one of the doctors in Jordan said, Wow, I've been seeing exactly the same thing. So he introduced me.

You actually was Patti Smith from the Lyme dissociation introduced me to a doctor on the west coast. The boy who passed away a number of years ago. But to talk to him about what I said, he said, wow, I'm funny. The exact same thing. So here are three different on their own type. Lyme Doctors East Coast, west coast and halfway between almost exactly the same things. We started working together and talking about different things and then the word spread and linking that came on board, Richard, with all the different people came on board and that's how this whole crazy thing got started. I was never expecting to be a Lyme doctor. I want to be the local country doctor. Fine. You know.

Thomas Moorcroft, DO
Kind of the same way, though.

Joseph Burrascano Jr., MD
Revolution in medicine or become controversial or you know people recognized me by my initial Dr. be I mean you know.

Thomas Moorcroft, DO
What's funny because it's like I mean, yeah, I didn't plan on doing this either. It's just that you see, the people are suffering and you want to be the doctor who helps them get better, you know? And it is so interesting that I love things like you sharing so much of your time for this conversation so that we can get the word out. And that's what so nice. I mean, I think, you know, get a little irritable about all the baloney on social media and all this virtual stuff. But there's so many good things that can happen, like we can get to more people more quickly rather than you guys having a conference and then waiting and waiting back then. No. Did you guys I mean, were you guys seeing co-infections or even talking about co-infections or well, that's another interesting story. Here we go. Well, remember I said about the success rate with Marxism prevention about 67%. And these are not necessarily people who have been sick from forever. We had some long term illness, but also people sick for less than a year. So it's kind of a catchall. But nevertheless, are some people just didn't get better with that.

Joseph Burrascano Jr., MD
And then we had a stronger drug like IV process and at the time then another percentage got better. And there's another story too, that remind me to tell you about that. Stuck in a long term recession anyway. So there's still a undercurrent of people who didn't completely get back to their improve but didn't completely get back to normal. And then a very strange thing happened, I don't know, in Long Island where I was practicing there and still live, there was an outbreak of the disease, a zoonotic infection of a parasite which is not supposed to live in the United States. And it was geographically just the eastern tip of Long Island, wasn't anywhere else. You know, when you talk to people who think about, you know, biowarfare and stuff, I'm not going to get into. That was very strange that something had this outbreak of a tropical zoonosis was not a disease. So the same thing happened. We got it was not just me. This is all the doctors out there, all four of them. I mean, it was exaggerated, but it was clearly there's some other infection going on and people would report, I got a tick bite and then I got this high fever and I got off balance and short of breath.

And these migraine like headaches. And we'd go to the hospital and on the bloodstream you'd see these babesia. So that was like an acute thing that woke us up to this. But the truth is, Babesia had been present all along. We just didn't recognize it. We thought it's kind of mixed in this whole Lyme disease picture. So once we got through that whole thing and got those patients better, then our intent is we're more aware of the bees. Yes. So first it was Lyme disease, then it became Lyme plus Babesiosis. Then later on we start to appreciate, you know, there's anaplasmosis going on there. Like at the time it's just a and then after that it was in a plasma and that was another one that came along and we recognized that. Was that common out there, though, even though a lot of the ticks carried it? And then later on we recognized Bartonella and it was all clinical, is all based on patient reports and keeping good track of them. And I had one of my patients keep a daily diary and temperature records and we just go through the data at every visit and that's how we learn is really greatly rewarding. Fascinating. And it help the people, too.

Thomas Moorcroft, DO
You know, it's interesting, Jane. I say to a lot of my patients, don't be interesting to your doctor.

Joseph Burrascano Jr., MD
Yeah.

Thomas Moorcroft, DO
I really like it. You have like 83 people in the beginning. We have all these people that you love and you care about. Yet at the same time, they're interesting because they're not just following the regular thing. But thankfully, people like you dove into it. And, you know, I'm sure we could talk forever about all the I just roll it all up into a thing called baloney that went on. But it's part

of when a system is believes in one thing and they're starting to see something they can't explain. Like you said, it's kind of like, well, my thing didn't work. So they kind of hunker down in their spot. And it's just so inspiring that you and others are willing to push. And to me, that's like that's why we go into medicine is like to learn and like I'm all I mean, the truth today when we're even talking will be different in a couple of weeks or a couple of months. You'll love adding it. I love when we get to add more stuff in and learn more and find out how to help people better. So you mentioned like so I want to make sure that we have some time.

We could always circle back to row seven that I just want to make sure that we have some time to talk about some testing in terms of like, you know, kind of the discoveries you made about testing and you've mentioned the EFA isn't all that good. And just to highlight for everybody there, you know, a lot and we talk about is it an antibody screen, it's like should we look further in testing? So we have phase analyzes and some people call this Lyme A, B or Lyme antibody screen. Yeah, but what's it what is like sort of the maybe we can take a just a brief moment on what is this standard sort of what if you just wanted the acute care clinic, your primary care doc, what is the general approach to testing that we're seeing at the moment? And then we can dove into what we really should be doing.

Joseph Burrascano Jr., MD
The well, you know, medicine, especially nowadays, is so much dictated by the industry of medicine, you know what I mean? In other words, you have insurance that covers certain things and that's what people do. And so go to the primary care doctor, the emergency room with the walk in clinic. And if Lyme is suspected, you get a blood test done at a commercial lab. Well, the commercial labs, if you do an effective IMMUNOFLUORESCENCE antibody assay, which has about a 50% sensitivity in about 15 to 30% false positives, things like Epstein-Barr virus can give you false in that, or they'll do an Eliza test known Eliza test basically is and I have faith that's been I'm changed. So it's put in a machine so the machine can run hundreds of them at a time. When I say you have to look in the microscope to see the thing fluoresce, the reason why they do that, labs do that is because these are FDA approved tests and insurance companies only like to pay or usually like to pay for FDA approved tests.

Now the FDA uses a lab strain of Lyme for Borelli B 31 as their standard that lab strain was collected by Willie from the island off of New York State from a tick. So this was a germ that number one is New York. And that is so nationwide and that the germs do very location wise. And number two, it was from a tick, not from a patient. So who knows if that's even what's infecting people. That became the standard that the CDC and FDA used to define the Lyme disease test. And even to this day, like how many years later, decades later, if you go to the FDA with the new Lyme testing, want it to be approved, it has to be compared to something. And the comparators, what they call the comparator is this blood test, the analyzer based on strain B 31 from a tick from New York state. So if you go to the doctor not knowing and maybe the doctors aren't educated or the nurse practitioner, whoever, to take care of you, and they said,

well, I'm going to a Lyme test in the hospital as a contract with one of the big labs. That's what you get, the 50% false, right? So that's where guys like you and I have come in. And Doctor Nick Harris. Nick Harris is a lab person and he saw this craziness going on. And so he left his commercial lab and formed his own. He was the one who found that I Gen-X and he recognized that you can't use a lab strain have to use a human strain and you can't rely on an RFA or even in the he developed the best western blot there is and from there he went on and developed more and more things and that became the lab of my Gen-X genetics. I just read that 40,000 doctors as clients all around the world because they're so good at what they do. So Nick Harris was the one who and I slowly came in the picture because we were going crazy. Where are we going to get better test? McDonald's culture was not something you can do.

It took a week to play with it. You know, it wasn't a commercial test. So Nick came to the rescue by performing on genetics and developing better tests. And so we went from a terrible EFA to a little bit less terrible. Eliza And then we had better allies that Nick developed using human specimens. And then the Western blot using both the lab strain and the human specimen to increase the coverage. So that's how we started to get into the specialty labs. But still, if you don't know what your doctor doesn't know and you just go to the regular commercial lab, you're going to get the same faulty tests that was developed in the 1980s and 1990s. And that's the sad part.

Thomas Moorcroft, DO
So one of the things that I always run into and try to educate on, and I always love when I can pick the brains of the people who know the most. What's the problem like? Let's pretend for a moment I can get an I Gen-X, you know, allies of or I feel like a really high level screen. When should I do it? Because I think a lot of people one of the things that drives me the most crazy Joe, is like people go to the acute care clinic and they've got the symptoms. They had a tick bite. They and it's like, Oh, here, start your doxy. Then they do the tests and it's negative two days later and they stop it and then they see us years later.

And the problem is everyone's tested them. But now the test isn't even all that good because we just beat them with antibiotics. But like is there a what's the timeframe before we would actually, you know, before we dove into some of these other tests, like where people would actually expect to see it positive, assuming, you know, we make a lot of assumptions in testing like their immune system actually is highly functional. We know Lyme can suppress your immune system, so that's a different topic. But but when should we even look the test, I mean, like as a primary care doctor because to me, the way you prevent chronic Lyme is treating acute line appropriately. So let's just like I really want to take a moment and.

Joseph Burrascano Jr., MD
When she takes another sort of accurate it's another lab. So you know the standard blood testing whether it be in if they analyze a western blot, what that does is it doesn't look for the

germ itself. It looks at the body's reaction to the germ. Right. The test using that type of technology usually takes several weeks, at least four weeks in some cases six weeks for the test to start to show positive. So if you were out camping or gardening or raking leaves or whatever you were doing and you either had a tick bite or maybe were just exposing to realize it, and then we could chew later or even several days later, you start not feeling well. And finally ten days you go to the doctor and they do a blood test that's in the window and expected to not show positive if you go to the point. Well, now I have a rash, which is like a couple of weeks into it, maybe into the blood test. It's going to be negative and the uninformed doctor says you don't have one, it's negative. But this is the thing.

They now have new technology testing that doesn't use the same technology as Western Blots and efface. Analyze This is the thing called an immunoblot which uses engineered proteins in it and they found that that would pick up early Lyme disease at the time of arrest using samples from the CDC. 93% pick up. There's no test otherwise known in the world for Lyme. That's been proven and reported on 93% sense of an early warning but again this is a test where you get I Gen-X of course but the actual the local doctors don't have access to this test in most hospitals now some of the better hospitals do contracture they JENNINGS but it's pulling teeth because they want to do what's on the lab slip that the hospital provides and in the computer and they don't necessarily want to send blood after.

Thomas Moorcroft, DO
So this newer immunoblot, they're actually even able to pick it up in like that first 2 to 3 weeks. We're still missing the first little bit that actually requires the doctor to be a doctor and use clinical diagnostics. Well, you know, they actually get the.

Joseph Burrascano Jr., MD
The earliest positive test for Lyme itself is actually a T-cell assay, because when you get infected, the T cells respond first. And that's a blood test. It's called the T-cell response assay, but that response only lasts about three or four weeks and then diminishes and maybe even goes away. And then that's when the serology start becoming positive. That's what's called the B cell response. So the T cell test is one where your blood is drawn. It has to get to the lab right away, which is sent to California or some other place, Jennings says. And too. And they keep your cells alive in culture. That's why they had to have it done so quickly, and they tested to see if it responds to the germ being present. So that's another very early test that hospitals know about was primary care doctors don't know about. But it's out there. You and I know about it, but they know.

Thomas Moorcroft, DO
Yeah. And then in is this a place where if we look at like there's so many oh my God, this just so many things we could talk about. You know, I just think about DNA, though, too, like a lot of people are like, oh, if you don't have DNA, it's you don't have Lyme. But then other people are

like, if you have DNA, you don't. It doesn't mean you have Lyme in a blood sample. I mean, tissue is a whole nother class in and of itself, but it is early in Lyme or late in Lyme. Good for doing a DNA test. Like where do those fit in?

Joseph Burrascano Jr., MD
Well, you talk about a DNA test. The lab test is called the PCR polymerase chain reaction. So people know it is a PCR test. What that does is it looks directly for the presence of the DNA of the germ you're looking for in this case. You're looking for that in the bloodstream. Unfortunately, even in early Lyme, it's not very sensitive, at least not the way most labs do it, because, number one, they're not that many spa kits in the blood sample. And when they go through the blood, they're not always they transit and disappear and then transient. So if you're not lucky enough to catch, it happens to be flying by, you don't pick it up. Second thing is their technical limitations. Certain things in our blood, like the hemoglobin and heparin and other things in our own DNA interfere with the PCR assay.

So the pick up rate is really very low. But that's not the end of the story because what a genetics, again, Ajax has done is they've completely reversed the way that this is done. What they do is they take the sample blood from the patient and they don't test it right away. They put it in an incubator and they put nutrients in it and they get it to make it a very nice environment for the sparrow keeps the Lyme germs and they grow to such a point where they now can be detected. Also, they filter out and deactivate those inhibitors. So you have a very pure growth of the germ and within a couple of weeks they now have a positive test. So I don't have the statistics on. But in general, you find that these tests are at least 6 to 10 times more sensitive than standard PCR test, and that's something that will definitely be working in early life as well as in Atlanta.

Thomas Moorcroft, DO
Nice.

Joseph Burrascano Jr., MD
And that culture test, by the way, is available for Bartonella and Bbca even are looking at a plasma.

Thomas Moorcroft, DO
Right. Which is so important. And that's actually it's so interesting that you say that like maybe I have a microcosm of the great minds think alike thing, but it's like because one of the things that's so challenging for me is like one of the other things that I think is so interesting about immunoblot technology and this holds for Lyme as well as other Babesiosis and Bartonella is, is, you know, when most people are like, I know that Quest has and LabCorp and other I always call them local labs in my chart. But you know your standard a conventional lab will have an they'll call it a Lyme Immunoblot but it's essentially a Western blot that's really looking for that b 31 and that's about it. And then when you look at like an eye Jennings Emmy, you know, blot, the

beauty of this is we're looking and we were, you know, joking around the other day about since July two versus census strict new or stricter but with Lyme is like is it Borrelia burgdorferi like B 31 and that's about it. Or are we looking for this broader thing where we're picking up these other species that people start to hear about? Like my own, I in California insist things that may not be in the general medical literature, or I should say they are in the general medical literature. More and more and more. We're finding them in more people, but we don't have a commercial test for them. So to me, like the Lyme Immunoblot, we can find so much more with things we would have missed before we don't miss. And then, you know, and maybe you can also talk on like the bees and bartonella immunoblot because to me that those are game changers for not missing somebody with a species that we might not know yet.

Joseph Burrascano Jr., MD
Well, I won't be too nerdy, but I got to be a little bit technical here. Okay, so I need to prevent this Lyme or the bees or any of the other. And you do an affair analyzer test or even a Western blot. How does that thing made? Well, what they do is they have to have the germ itself growing in a culture, in the lab, in a petri dish. And they then take that germ and they break it up into a million pieces and use those fragments, those protein fragments in the lab to make the tests from that. Okay. So the problem is that you're going to have like every protein that is whole entire German's inside proteins, outside proteins, proteins that every germ has, proteins that only these germs have. And so when you make a test from that is so much scatter that you might get proteins that are present in line but also present in even a virus or something like, you know, some other bacteria.

So you get some false positives, but also you get proteins, so many of them that are specific to that one germy grew in the petri dish that you only pick up that one germ. So now again, I talked about blood tests like the EFA analyzer. Only you miss half of the cases. Well, it turns out they're using again the technology, this one tick germ, the not even a human germ, but it's been found that there are at least eight different major Borrelia Lyme in the United States causing Lyme disease and at least that many relapsing fever. Borrelia, which people think of relapsing fever, is a completely different illness. And what it actually is, because relapsing fever can present just like Lyme disease and a lot of information on that. So basically we have at least a dozen if not two dozen different Lyme like germs that can infect people and cause the clinical Lyme disease that's not at all picked up by the big lab.

Local lab tests because they only are looking for the germ that they broke apart, which is the standard lab stream with Lyme or Bartonella or the okay. What the immunoblot that I Jennings has done, which is entirely different. Remember said the immunoblot they use, they don't make it from busted up germs. They make it in the laboratory by reverse engineering the DNA of the germ. And they can pick and choose exactly which proteins they want to use to make their test. Not only that, they can look at all the other germs, all these dozen or two dozen different Borrelia or the 30, 40 different Bartonella or the dozen different Babesia, and pick specifically

the proteins that they want that will indicate all of things. So maybe a C or negative HFA is not because it's a crappy test, probably being a medical term, but maybe you're testing for the wrong germ. So the advantage of the Lyme immunoblot that I Gen-X does compared to what western I call in blood is that I Gen-X uses number one. This lab created reverse engineered DNA proteins, recombinant proteins and number two, they use it from a number of different germs, not just that one lab strain that the FDA uses. So here you're picking up a much broader variety of germs. And in fact, they picked up some things that no one even knew existed in human patients. So it's really an exciting test. And so many people who get negative on the standard test, they get the immunoblot amount that shows up. You know about Bartonella. How often do you get a positive Bartonella serology from a commercial lab? And percent of the time, 20% of the time there, if you're lucky, maybe, you know, the Bartonella pick up is much, much higher on it. And that genetics immunoblot and they're the ones who have it. No other lab has this.

Thomas Moorcroft, DO
Well, and the part that I love, you know, because as a practicing clinician who's seen people in there always like so many people, spend so much money and I go, Oh, it's expensive. Doherty Disease tests. I'm like, It's much more expensive to not know the right answer. And it's also.

Joseph Burrascano Jr., MD
Sick.

Thomas Moorcroft, DO
Yeah. And the other part is they're spending money. They're spending less money more often to get inaccurate results, which could actually set you up for being treated inappropriately or actually letting your subacute just early. Chronic. Getting really chronic. Yeah.

Joseph Burrascano Jr., MD
She's not treated at all. Right. Told you crazy or you're depressed or you need to take a nap. All the ridiculous you hear or they put in antidepressants made into zombies worse than they were to begin with.

Thomas Moorcroft, DO
What's interesting, I don't know if I actually told you this, but I published for the first 24 cases of Borrelia Miyamoto in the country. And what back in like 2014. And what blew my mind is I'm like, we've known for over 30 years, just like you were saying about a pleasure or Alicea that we knew there in ticks and we just didn't know they're infecting people.

Thomas Moorcroft, DO
It was like, you know, and then it's like we go back and after we changed the minds of people because there's a huge study that happened outside of the United States that got us off. Oh, it

could be. And people all these people, like over the next year and a half, they went back from 2014 to 1992 and found over 300 people where we stored their blood samples and they had actually had Borrelia. Miyamoto But it wasn't Lyme disease. So we got like a 41 and nothing else and we called them It's All In Your Head. And we gave him SSRI as an antidote.

Joseph Burrascano Jr., MD
Or like, you know, we treat them and get ourselves criticized over treating, right? But we knew from a clinical perspective what they had. You know, I mean, let me give you an example. If you were a specialist in pneumonia and let's say you work five days a week and you saw 15 patients a day who only had pneumonia within a very short time, you become a real expert on pneumonia. No more about it than what you read in a textbook. Right. How is it different for Lyme disease? It's not if you know this illness as well as anyone can nowadays and missing people, people come to your office from all around the country, maybe even all around the world. A pattern happens is pattern recognition. And you see what's going on now. You talk about Miyamoto, you know, as I mentioned, set developed this new culture test where they incubate the blood and see what grows out of it. It's so incredibly sensitive in their research, they picked up crazy things.

They found, for example, in Alicea called well, it's actually now renamed to an anaplastic is called and a plasma plate is it's never been known to occur in humans rarely. In fact, I looked up lineages for known cases in the war literature and here a journalist picks it up in a line page where that come from a standard religious test and an unpleasant has to pick that up. But here we have it. They found what looks like and this is just really preliminary but what looks like in a very distant family of the easier it's an AP complex in I mean that's the general term of it but it's not even babies it's not malaria. But if this comes out to be true because they're sequencing it now, but it's a kind of a protozoan found that lives in soil and pond scum. And they grew it in culture from this patient's blood. And you believe it.

Thomas Moorcroft, DO
And in this day and age, I can it's almost like I always want to, you know, I'm a null hypothesis person, right? I old school science. Like I try every day to disprove my belief you if I can't, I keep treating them because that way I'm being objective. But I believe it, you know, it's so interesting when you look at all this stuff, the ticks are carrying like I just did a presentation recently at an autism conference about all the different co-infections and how to pick them up and testament or treat them. But I'm always so surprised how many things like they live in a ticks Texas cesspools. And then the question is what's transmitted and what's not? And now it's just like everybody, Oh, I need an antiparasitic. I'm like, most of you don't have a real gut parasite because we should be to pick that up. But what you probably we find nematodes and ticks now we're finding this maybe and so I'm that when I it's so funny I try to like it they don't think it's funny I think it's funny is not the right word. But I'm being serious. Like when people are like,

this medicine is working, I'm like, great. And they're like, it's because of this. I'm like, that wanted to.

Joseph Burrascano Jr., MD
Know what it's from. Right? Exactly. I mean, great. You're getting better. That's fine. Let's go with it.

Thomas Moorcroft, DO
And now let's find out what's wrong.

Joseph Burrascano Jr., MD
Yeah, that's right. And sometimes you don't know until it's over. Then you look back. That's what it was. Another crazy thing about testing, I mean, we keep going back to testing. What about these other negative patients? If you treat them with Seronegative, but a third of them become seropositive after the treatment has been given. Now, how does that happen? Well, because the germs suck up the antibody they try and test for. And then when the germs get killed off the antibodies and are free to be picked up, well, so the infection weakens your immune system. You don't make enough antibodies. And finally getting better in your system so you can pick it up. So that's why I say sometimes go through treatment. You think, you know, your patient has and to give the appropriate treatment, they are getting better at the end you retest them and then it becomes clear what they had probably right all along because they got better.

Thomas Moorcroft, DO
Yeah. Oh, my gosh. It's true. I see it. I see it so many times and I wish we had days to keep talking because we've got treatment guidelines you worked on. You've done so much, like I said, like literally without you and Nick, I wouldn't be here. So thank you from the bottom of my heart. And I just know all the people that you've helped by just sticking up for a couple of people in your small little town of 600. Yeah. So one of the things I love asking people as we kind of close their interviews are really like, you know, if I don't know anybody better to ask this question to you, but like you've seen it from the beginning all the way through the current time. How are you feeling about people getting better and living great lives? I mean, are people have been sick for a year, three years, six years. I mean, is there hope? How what kind of message of inspiration?

Joseph Burrascano Jr., MD
Oh, yeah. You know, things happen for a reason. Don't get sick for no reason. And it's up to us and the patients with their help, because they're the ones who really dictate things to get them better. Rich Horowitz has a great analogy. He says, if you have ten nails in your foot, you pick out nine of them, you serve an hour and your foot is still hurting. So the job is through. The job is to find all the different things wrong. Yeah. Ticks are nature's dirty needle. They're the sewer of the world. You can get, in fact, a whole bunch of different things. And we haven't even talked about

the viruses, you know. But also when you get sick like that, your body's healing ability is impaired. Your body's ability to remove toxins is impaired. You know, probably every chronic Lyme patient, if you test them appropriately, you can find toxins among kinds, mold, toxins, insecticides. I the list goes on and on. Heavy metals. So treating the Lyme patient is identifying the different infections, looking at the damage that's been done, supporting the immune system, supporting the metabolism, getting the patient a little bit better habits. Sometimes it's part of the picture and yeah, you can get the patients better, you know, that's that's the beauty of it. Well, being thorough and having the patients stick with it, you know, having the patients have a good attitude knowing they're going to get better because they will, then it's successful. And, you know, I mean, I see patients come to the door with a defeatist attitude. I'm sick, I'm never going to get better. And those are the ones who sometimes aren't always compliant to medication because they're depressed or the sick and don't want to do it. And they don't get better. The ones who come and say, I'm sick, but I'm going to get over the stupid thing. I want to get my life back. And I always do. So positive attitude is important.

Thomas Moorcroft, DO
There you go. Well, Dr. Joe, Burrascano, I mean, man, always such a super honor to talk, love to do it again soon as we can bring even more great information to people. But I want to thank you again. I thank all my guests so many times, especially people who have actually like as someone who's knows the positive attitude and getting the right diagnosis and treatment does make a huge difference. And I've been symptom free for over 12 years after 13 years of illness. Right. So I didn't know anything about it and I even eight years in got that right diagnosis and had people like you doing all that hard work in the beginning so that I could not only personally get better, but now help others do that. I mean, it's just such an honor and everyone, it's an honor to have you here with us for this chat to learn more about what Dr. Burrascano is working with, with that genetics and actually watch some of his you know, some of his trainings you can head over to I Gen-X dot com we'll have that on the show notes in the summit resource page but yeah just like keep your eyes peeled and you know Dr. Joe it's kind of thank you so very much.

Joseph Burrascano Jr., MD
Well, you know, you thank me several times, but I have to thank you to look what you're doing now. You take care of your people, your patients, everyone which spreading the word, educating people. And that's so important. You're not going to find your knowledge in the textbook. You are the one giving it out to the world. And I really thank you for that. And the patients, I hope they appreciate it.

Thomas Moorcroft, DO
I appreciate hearing that. And everyone, thanks for spending your time with us. I hope that you got as much out of this as I did. I always learn from every interview I do and all the lectures I

hear. So I hope you're enjoying the summit and you really love this episode. And until next time, we'll see you in the next episode of The Healing for Lyme Disease Summit.

Joseph Burrascano Jr., MD
Good luck, everyone. Stay well.