Global Lyme Alliance: Strength in Community Transcript

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Introduction to Global Lyme Alliance

Everyone. Dr. Tom Moorcroft, back with you for this episode of The Healing from Lyme Disease Summit. And today, we're going to be joined by Dr. Tim Salata, and he is the chief scientific officer over at Global Lyme Alliance.

And one of the reasons I wanted to bring Tim on today is that he is someone that I met after I got asked to join the Global Lyme Alliance Medical Board.

And what I realized through joining this and working with the team is that most people don't even know what the global Lyme alliance is or what they're here doing and their mission in the background helping patients.

And one of the things that was so amazing when I started to talk with Tim about potentially joining the group and then being part of this medical board is his dedication to scientific research so that we can make sure we're getting the research we need to provide the best treatments to patients available, and then also getting that information out to physicians, other practitioners and the patients.

So we'll talk a little bit more about his background. But one of the things that's really, really cool as a science nerd is that Dr. Tim has been published over in about 50 different peer reviewed infectious disease papers, but about half of them have been focused on Lyme disease and he continues to work in that path.

So Tim, thanks for joining us and I'm really glad that we're going to be able to have this conversation. Tom, thank you very much for having me. I really appreciate the invitation.

Yeah, this is going to be super cool. So we were talking about our talk, you know, introducing global Lyme alliance and really how they're making an impact on the research community and on patients lives.

And so one of the things that I think is interesting is reading your bio like your full bio, like you've been in science for a long time, you kind of had your whole career, good to go.

Maybe you could tell us a little bit about what global Lyme alliance actually is. And then also like, why would you essentially try to, you know, later in your career or mid-career, however you want to define it, like just jump ships and join JLA in their mission.

Okay, so global Lyme Alliance is one of the leading five or 1c3 nonprofit organizations that fund Lyme disease and other tick borne disease research around the world.

And so a very important mission of global Lyme alliance is to fund research to help patients. And the other is to help patients directly by providing patient services in the form of an ambassadors program and also in the form of peer to peer programs that we support.

Why Dr. Salata Joined GLA

And in terms of why I came to Global Lyme alliance, well, it was after a quite long time studying Lyme disease and other tick borne disease topics as an now funded academic research scientist.

So I spent about 20 years studying Lyme disease and other tick borne diseases or CBDs, and I really reached a point in my career where I wanted some new challenges.

I also wanted an opportunity to impact the scientific and the medical research community and especially, you know, people's lives, patients lives in a way that I really couldn't achieve just by continuing to focus on my independent research program.

So I wanted a larger bullhorn and a greater opportunity to help more people. You know, I love the way you put that. The greater the larger bullhorn and help people because like for me, like I'm so blessed to be working with so many people in this summit that are, you know, and everyone who's here.

Thank you so much. Because you're giving us this platform to share this information and get it out in front of other people. And I think that that's the thing I'm I'm looking for, like the amplified bullhorn myself because too many people, Tim, are suffering.

And that's the thing that whenever I meet with the team and I talk with you and the board is like, that's what Global Lyme alliance is about. It's not just about the science.

It's about getting that into the hands of the right people so you can actually make a difference in people's lives rather than just talk about it in a board room.

Absolutely. Yeah. I think one of the if you asked me what are the two most important services that Gillett provides to patients, one, it's that the message of you are not alone, you are suffering, you've got your Lyme disease journey.

Many, many other people are unfortunately in the same boat that you were in. And two, we hear you. We're not just listening to the research scientists at the bench.

We're not just listening to the subject matter experts and the key opinion leaders. We are listening to the patients themselves, particularly the patients that suffer from chronic Lyme disease and other chronic tick borne diseases.

And as you're a perfect example, we're listening to the physicians that take care of these patients. That is one of the driving reasons why we established a medical advisory board in addition to our scientific advisory board, which has all the subject matter experts and the key opinion leaders.

And they really understand the nuts and bolts of how to conduct research. But we we need to listen to the physicians as well, because this is such a complex, difficult problem to solve.

Right. How best to treat chronic tick borne disease patients. The Ph. D. scientists like myself, we don't have all the answers. The physicians, they don't have all the answers.

We really have to pool our intellectual resources to the benefit of the patients. Yeah. Yeah.

Listening to Patients and Physicians

And Tim, I think one of the things that's so impressive is there's this like separation of the research scientists and the medical people, but then all that information is brought together in a really unique way because we're making sure that that science can get done well.

And what I really love about the medical board is like you've got people who practice differently. You've got people in different areas of the country and the world, and we get to come together and agree and disagree in the way that science is supposed to be done.

Like everybody's opinion is valued. And then if we have an opinion where we all agree or some disagree, we actually talk about it. And that to me, like that's one of the things that's missing in so much of medicine these days is the old school way of you get a bunch of experts together.

You talk about a lot of things, but then you do this amazingly crazy thing called compromise, which is like where everybody bring, you know, we're not looking for one person to win and then everybody jump on their bandwagon.

We're looking for a consensus that allows the patient to win. Right. Right. And then and actually, that's that's how serving as Glaze chief scientific officer.

Really allows me to make a greater impact. I'm actually in a unique position to listen to all of these different voices. Right. The researchers voice, the patient's voice, the physician's voice.

And that helps me craft a vision and define and set goals and really develop an overall strategic plan for GLA. And the research funded by UCLA around the world is really specifically dedicated to improving the lives of patients that are suffering from chronic disease.

A For instance, you know, where we're just now emerging coming out of the consequence ounces of the COVID 19 pandemic. And we really are beginning to appreciate that there are some features of long haul COVID that are remarkably similar to chronic neurological Lyme disease.

And so Jilla is very interested in funding research that helps us better appreciate what the similarities are between long haul COVID and what some are now terming long haul Lyme or long Lyme disease.

And I think there's a potential for learning from one field and studying one patient population and having that knowledge and those tools be applied to the other to help patients that are suffering from chronic tick borne diseases.

I think it's so interesting, and one of the things that caught my ear is like the long line thing, people like we already know how to treat chronic COVID or long COVID because it's actually probably more long COVID than chronic viral.

But that's a whole nother conversation because we don't really even know. That's just what the latest research shows. And I want to talk about truth in a second, so I want to throw that out there, if you remember.

But it's like everyone listening, like whether or not we call it post-treatment Lyme or persistent Lyme or long life, don't worry. Let the researchers argue about the names.

Like even if we look at the new herbal research, we talked to Dr. Zweig about, like they call it, growing and growing logarithmic, exponential. Then we have 75 different names for PERSIST or forms or stationary forms.

They mean something in research, but people like Tim and the Global Lyme Alliance are here to not have that fight, but to get stuck on the label, but to really just kind of guide the conversation so that we can pull all the information, get it in front of practitioners so that we can get you the best treatment possible.

And sometimes we have to play that, that unfortunate thing. Tim Like where you have to just like go with whatever the words the other people are using so that you can and you can insert the, the, the most important opinion is under the label.

Scientific Method and Challenging Dogma

So one thing maybe you can tell me a little bit about this and because I want to there's a few more questions about Glee itself, but there's this concept of true right in science.

And one of the problems is there's also this concept of dogma. But I would love to know, like how you view it and how Glee is working. Because to me, the beauty of being a doctor is that what I know today may be correct or may not be, and that there might be some new information in a week, a month or a year that actually allows me to change my dogma and change my opinion based upon new research.

And I mean, like, how how should we be looking at this in the Lyme field? Because it's a shit show to be honest. Person that precisely. You just you just answered perfectly the question you just posed to me.

I was exactly going to say the same thing. When you talk about truth or evidence or dogma or what is a hypothesis, what is a theory, what is belief versus what is known, I can tell you what I believe at this point in time today.

And that's just that. It's a belief. It's mine. Okay. I can tell you what I know and what I know only holds true for today. Tomorrow through a week from now, six months from now, six years from now.

What I think I understand about Lyme disease, about the bacteria that causes Lyme disease, about how to diagnose it, how to treat it, that could all change.

And so from a research scientists perspective, I've always taught my trainees, physician scientists, postdoctoral fellows, graduate students, technicians.

You can like your hypothesis, but you cannot love it. Okay? You have to be willing to toss your hypothesis out the window. If your experiments, the results of your experiments invalidate that hypothesis.

So it really comes back to the scientific method, which I know kind of falls in and out of favor. But you make an observation, you develop a hypothesis that tries to explain what you observe and then you try to design and execute experiments to either validate or invalidate the truth of whether that hypothesis is true.

And that's what we have to do. We have to be open to changing our minds depending on the new knowledge that we gain as we move forward. You know, I love it because like I know another thing that's gone out of it.

I think Favre or it comes in and out is the null hypothesis, which is essentially my goal is like if I have an opinion, someone has chronic Lyme disease.

My, my goal is to disprove that like every time I work with somebody, I'm just trying to figure out something else that they have that I may have missed.

And if I can't, then I maintain my hypothesis until something else comes in. But I'll be honest with you, I don't really give a crap what anybody has.

People come in, they have Lyme. I'm like, I don't really care. Stop telling me what you have. Tell me what you're experiencing. What are you? So as a physician, I want to hear your symptoms.

I do value what you think you have because that's important too. But why don't you tell me what you think you have? Remember that I have, like, you know, in order to be a physician, my brain has got to work at a certain level.

I get that. Now, tell me what you're really feeling so we can get you better. And I think that that like you just highlighted in the scientific method, where that's when we look at the differential dose diagnosis in medicine, it's a very similar type of thing.

Absolutely. Absolutely. I think it's a misconception to think that intellectually or how you approach problem solving, it's very different in the academic research world or scientists do it differently than physicians do.

No, they really should be doing it the same way and kind of focusing on that null hypothesis. You have a hypothesis and you try your darndest to design experiments that tried to disprove your hypothesis.

You know, you don't just focus on designing experiments that will support your hypothesis. And if you get an experimental result that argues against your hypothesis, you try to explain that away.

Oh, no, that there must be something wrong with that. No, you have to try your darndest to play devil's advocate and see whether or not your hypothesis stands the test of time.

So from a scientists perspective, we want to understand how things work. How does Borrelia burgdorferi work? The bacteria that causes Lyme disease? How does it cause Lyme disease when it causes Lyme disease in a patient?

Why is it different in one patient and not another? Why is it easier to diagnose in some patients and not others? Why do some patients respond more favorably to antibiotics than others, so on and so forth?

But ultimately, coming back to, you know, don't get hung up on on labels, on names or words. A patient is just looking for relief from those symptoms.

And a doctor wants to help that patient achieve whatever level of or regain whatever level of health that they can possibly regain. So patients and doctors don't care about the intricacies of what's going on in the disease process.

If they feel better, then that's all they care about. Now, scientists, we have to better understand.

GLA-Funded Research and Personalized Treatment

Well, why do you feel better? Right? How did you get sick in the first place? And how do we get back to a healthy state for you? And the reason for that is because if you want broader except instead of what you know as a physician by the mainstream research and medical community, ultimately, if you want the medical insurance industry to cover more alternative treatment options, you have to provide the evidence.

And so this is what Glaze Research Program is really geared towards doing. Let's listen to the anecdotal understanding of why a patient is sick and how I can make them better and sort of bring in this more critical thinking approach and experimental approach and move it from anecdote to evidence.

Because the evidence is what's going to change minds is that students. Oh my God, it's so, so well said to him. I'm just sitting here going, yes, yes, yes.

And one of the things like I know that we had Dr. Sanjay Zweig on here, who publish with Dr. Zhong and Dr. Leoni and others the botanical medicine paper on some of the herbs that a lot of us use a lot for BBC Duncan.

And they've also done it with Borrelia Burgdorferi and Bartonella Hensleigh. But this is something that was, you know, funded, you know, together through Glee.

I'm just wondering if maybe you could highlight two or three different things that Glee has been funding. And I think one of the things that's interesting is everybody is like, Oh, they did this at Hopkins.

I'm like, Well, where do they get the money? Oh, GLA is actually the one who supported one of the most. I mean, to me, the paper on the ABC, Duncan is one of the game changers in what we do and I want people to understand where it's coming from.

But I think there's probably you guys have funded so many cool papers, so maybe you can let us know a little bit about what you did fund so people can be aware and then a little bit of what's coming down the pike.

Because as you said, I mean, a lot of the like to me, like all these herbs we've used before, but now we know how to use them more specifically, we know what they work for and also, more importantly, maybe what they don't work for.

And a lot of our high powered previous hypotheses based on traditional uses of those herbs probably were not as accurate as we thought. So they work. They just work for different reasons on different things, which then if no one, if you hadn't funded that, we wouldn't know and patients would be more hit or miss.

Right? Right. No, that is actually the perfect lead in to telling you more about what types of research JLA does fund. So we fund projects that really range from basic and translational to clinical studies and trials.

So the basic research you can think of it, that's the research that happens inside a test tube or a petri dish that really helps us better understand the biology of Tickborne pathogens and the diseases that they cost.

The next step up, you know, in complexity and cost and time invested, is a translation of research. So this includes animal studies that try to mimic what happens in a sick patient and experiments that use or rely on human patient blood cells or tissues.

And then all of this knowledge that we gain from supporting basic and translational research, this all gets funneled into our clinical research platform and that really allows us to evaluate the effectiveness of new diagnostic tests, new antibiotics and alternative treatments.

And since you brought up the question or the the issue of of Dr. Zhang's work with the with the herbal medicines, I see the end game value of that board for me, again, as a Ph. D.

basic research scientist, that translational research scientist, I think there are still some question marks in the middle there. So I know from listening to physicians such as yourself or from patients that some herbal medicines work for some people and not for others.

We don't quite know how or why some herbal medicines or essential oils are effective against Borrelia and not Propecia or against Babesia and not bartonella or against Bartonella and not really.

And so. So there's still a level of complexity there that we haven't been able to wrap our heads around. And so there's more work that needs to be done, say, at the translation or the animal studies level so that we can better understand why it works and when and in whom.

And the reason for this is because we need to move the treatment of chronic Lyme and other chronic tick borne disease patients into the realm of personalized medicine.

Because every individual patient and you know this as a physician, every individual patient is essentially an and of one. They are their own, you know, built in experiment.

And no two patients, I would imagine, respond the same way because they don't come to you with identical diseases. They're not at the same point in their Lyme or Tickborne disease journey.

Does that sort of resonate with your your sense of of treating patients? Oh, yeah. I mean, I think it's one of the most important pieces. And I find this is I'm always so pleased when I hear like people like, you know, the organizations like GLA and people like yourself are tackling that.

Because for me, like, this is where I live, this is what I do every day. It's like I say to people like, Look, I can teach a monkey the foundations of treating Lyme, but the thing I it's harder to teach is sitting down, creating a relationship and then putting it all together and having this interaction with the patient where we not only apply general knowledge to the unique individual, but we start to learn what those unique aspects of their lives are.

Because, you know, like you said, I mean, some herbs work for some people, not for others. Well, is that a genetic component? Is that because somebody had a previous trauma?

Is exactly. And if it is a previous trauma, is it a perceived trauma or a physical trauma? Is it an emotion like I mean, the questions are ones that really we can't answer, but I think a lot of people think one of the reasons I wanted to have this conversations, I want to give people hope that there are actually people out there making sure the necessary because most people are the government's not funding the right research.

We're not leaving it up to the government. But, you know, you've been funded by now. There's a lot of stuff that people don't even know is going on in the background to help them.

Yes, yes, absolutely. I think two areas where GLA is focusing most of its attention in terms of funding research is in the development of better diagnostic tests and alternative treatment options.

And so, you know, you have the CDC two tier test and you have a myriad of other diagnostic tests out there. And you can argue this point back and forth.

But I think there is a fundamental need for an accurate diagnostic test for Lyme disease. And what I mean by that is as few false negative results as possible and as few false positive results as possible, and you need a diagnostic

test that can tell the difference between someone who is actively infected with Borrelia Burgdorferi or another tickborne pathogen like Babesia Carney or BBC, a mike Brody, and someone that has prior resolved disease.

Right. You may still be producing the antibodies against the Berala or the Babesia or the Bartonella, but that does not mean that you're still actively infected. So.

So there is a need for better diagnostics and then there's also a need for alternative treatment options.

Diagnostics, Persistent Lyme, and Alternative Therapies

Because while the vast majority of Lyme patients may remember a tick bite, but the vast majority do not. When a vast majority of patients may have a classic bull's eye rash or an atypical bullseye rash or nor no bull's eye rash.

Right. You get into this you get into this scenario where you don't quite know if you have Lyme disease or not. You need better diagnostic tests to try and differentially diagnose them as quickly as possible, because we know for a fact.

Now, here's where you get to in fact. The fact is, the quicker you diagnose a patient, the quicker you get them on the appropriate treatment, the better the long term prognosis for recovery, for cure.

Okay. So, so, so that's really important. And then, you know, I'm talking about those individuals that they get diagnosed early, they get treated early.

Let's say docs are cycling and they have no lasting consequences. Even if they are diagnosed early and treated early, a large percentage of them, anywhere from 10 to 30%, will go on to develop chronic Lyme disease, post-treatment Lyme disease syndrome or post-treatment Lyme disease, or long Lyme, whatever you want to call it.

Let's not get hung up on the language. The thing is, they are going to suffer persistent symptoms. We have to figure out how to better treat that patient population and antibiotics are not going to help them.

So we fund research that looks for alternatives and and moves our understanding of alternative treatments that work from anecdotal evidence to hard scientific evidence.

Empirical evidence. It's really interesting to me, too, because as you summarize all that, I'm just like, I want to bring everybody together. I'm sick of this post-treatment.

Lyme not chronic, Lyme not this. It's all a bunch of baloney. People are suffering and we actually don't know. And for anybody who wants to take a little offense at the the antibiotics don't work.

I'm pretty sure Tim was talking about the standard approaches to antibiotics that we all know. That's why we're all here. But JLA funds antibiotic therapy trials.

They fund trials on Disulfiram as well as ERV. So they are they have very specific criteria for funding research. But it's not just the word alternative that Tim's using, it is other than the conventional standard of care.

Whereas a lot of people in medicine use alternative to mean like, you know, autologous urine and homeopathy. You know, it's like this is just looking for something to do a better job.

And what's beautiful is like, yeah, and Tim, I've got like the GLA research publications funded here think it's impressive. It's impressive in a lot of the all these papers that you guys all listen to me and all these other folks in our field talking about are actually came to fruition because of GLA.

So one of the things, Tim, I could talk to you all day about this. We've done that for I just love this because I love the part of me becoming a doctor is I'm a science nerd.

And I think that the art and science of medicine and coming together to treat that unique individual is so critical. But we can't just make it the art because the science hasn't kept up and we can't just make it science because then the people keep suffering.

And that's what I love about GLA. So one of the things I would love to say is how can we help? What are things that people who are listening, maybe and maybe how can you help and how can we help?

One being like if you're a patient out there, what kind of service, what kind of things can GLA help them with? And then if you're someone who may be in a place where you could help support some of the work, you know, can you get do you guys take donations or what other things do you need from us?

Because we're we're here to give people information. But I also want to let them know who you guys are, because a lot of the information that's changed people's lives is because of you.

And we need to support what GLA is doing right. So so that's that's a fantastic question. So global I'm Alliance is a nonprofit organization so we depend entirely on the generous donations of individuals philanthropy to fund all of our research, even though we have a very small group, we have fewer than 12 employees, individuals associated with Global I'm alliance.

We really have an outsized impact on the research community and the medical community and helping patients. And one example of that, coming back to listening to the patient's voice and then talking about alternative treatments.

We have been hearing from many, many patients and you may have as well about the benefits of ozone treatment. Okay. And when that was first brought to me as so, you know, Tim, you know, you're a scientist, what do you think about this ozone treatment?

Um, well, I don't know that sounds kind of crazy. I mean, to be honest, I didn't. I thought, wow, you know, that's that's kind of out there, Tom, you know?

But I sat down, opened my mind a little bit more and thought, well, how could this possibly work? Well, ozone, highly reactive oxygen species. You know what?

Microbes don't like that reactive species. Those are very, very toxic for microbes. So maybe that's why patients feel better when they're on ozone treatment.

So I decided to work with a physician that treats patients with ozone and coupled them with an academic research science group at Tufts University. And they started doing the experiments.

They're doing the base experiments in test tubes, in petri dishes. Now they're doing experiments with mice. And what they discovered was the ozone is not directly killing the BORELLI of bacteria.

It's actually altering the type of immune response that the line bacteria elicit. So it actually the ozone causes our cells to have more of an anti inflammatory response to the barrel.

Yeah. Than your cells might have in the absence of ozone. So the ozone is perhaps having a systemic anti inflammatory response in individuals. So now as this research evolves, as it matures, we're now beginning to understand that this ozone treatment has the ability to affect our immune response.

The same way epigenetics does. So epigenetics very simply, is you can have two people that are identical twins, and they can both be infected with Borrelia.

They can both contract Lyme disease, and one person can have very mild symptoms and they're easily cured and another person not. Okay. So we're now beginning to understand what is it at a personalized medicine level that might explain why some people have very chronic Lyme disease journeys that they're traveling down and others

don't.

So having that open mind and not simply, you know, discounting this as as a as a crazy alternative to doxa cycling is what glaze all about. And that's the type of research that the NIH would never touch with a ten foot pole because it's just too out there for them, but not for us.

I don't know what that says about us, but. Well, but Tim, I mean, the thing that drives that drives me crazy is when people say ozone kills Lyme because then someone else tells me ozone kills mold.

But then other people say, well, ozone doesn't kill mold, but it kills Lyme.

Patient Support, Donations, and Getting Involved

And then somebody else is well, it doesn't kill line, but it kills mold. I'm like, I really don't give a rat's ass. I know it works in some people. I know it doesn't work and others I want to know who I should be offering it to and why.

And so that's what that's why I wanted to have this conversation because it's not that I'm saying you're not symptomatic. I'm just saying your label may be wrong or it may be right.

But I want to know as a clinician, how the hell to get you better right? You know who else wants an answer to that question? The medical insurance industry.

If you could tell them that this treatment option, alternative or otherwise, it works for this group of patients and not that group of patients. Then they're willing to cover it so long as you fall into the category where that treatment will help and you're not trying to treat a patient where you know what's not going to help because everybody has limited resources that they have to work with.

And so for us, we want to get the biggest scientific bang for every donor dollar that's provided to July. And so when individuals say have the wherewithal, have the inclination to want to really drive forward on some of these really exciting research discoveries, great funded investigators are making, they can help support our research program in that way.

I love it. So everyone, the website is global Lyme alliance dot org if you do have the means to support it when you get there top right hand side it says donate.

Now you can create you can make it donation. I will make sure that both of those links are on our Summit Resource page if you just want to click instead of writing it down.

But the other thing is you can go there. You can learn about Lyme disease, can learn about all the research that's being funded, been funded. You can get involved, be part of fundraising.

If you really if you maybe you don't have the ability to personally share the financial resources, you can be someone who helps garner the financial resources and they have ways for you to get involved there under conveniently the Get Involved tab.

If you're a health care practitioner, obviously you can always reach out to me for education, but they also have other educational resources on the website and then one of the things I love to talk about, what GLA is done is right next to the donation button is a thing called patient support.

So there's a patient support area, there's way there is a practitioner locator function, clinical trial information, peer to peer support that's like patient to patient type of things, other resources for you.

And one of the most important things is the final financial support submenu. And that really gets you to a page where some of the bigger name groups that are out there are there.

But there's also some really interesting groups that are able to potentially support people of lower financial means at the moment in getting their diagnosis and treatment covered.

And a lot of them, to be honest with you, I didn't know. So when somebody asked me, I'm like, oh, these are the people I know really well. And then we go, my team goes over to GLA to say, Hey, is there anybody new there?

So definitely go check out the patient support area if you guys need any help. And Tim, especially. The peer to peer program, I think that's really incredibly important because so many of these patients have gone from one doctor to another doctor to another doctor with Lyme disease, neurological complications, brain fog, migraines, memory loss, cognitive deficits.

And they're told, oh, you know, you're making it up or you're lazy or you're seeking attention or, you know, it's all in your head. And I want to tell you, yes, you moron, it's in your head.

The lime bacteria can get into your brain. It can cause neurological complications. It can elicit inflammatory responses. I'd love to get one of these nut jobs in the room, and I could talk to them for hours and hours and hours.

How the presence of the bacteria in your brain is a problem. It causes inflammation. And as you know, as a doctor, inflammation anywhere in your body left unabated, causes more and more serious problems over time.

And so the patients that come to us, they need to get connected with other patients that are on this same journey so they don't feel that isolation that their physicians may have made them feel or sometimes even family members make them feel right.

And so I love it. Tim The so again, that's the peer to peer support thing and you can actually apply to be a mentor or you can ask to have a mentor. So and Tim, again, I would just want to say from the bottom my heart, thanks for making the time and your super busy schedule to have this conversation.

You know, we could talk all day about the science and maybe as we go further and further down this road together, we'll have you in the mentorship program where we're teaching other physicians how to think about this critically.

Because my goal is really to not tell any of the patients here or the practitioners how or what to do. It's to share the information, help you think about it maybe in a different way, hopefully a little bit more objective, hopefully a little bit more broad, and also give you the tools to remember with our patients, like take back that control over your own health.

We're telling it and in this conversation, I not only want it to inspire you that there are out there, people out there helping you, but but that know that you can make small changes like being a mentor or asking for help when you need it from a mentor or sharing with a friend that you run into or somebody who is like you run into somebody in the airport, at the supermarket who might actually have a few extra dollars that they want to share, because that could be the thing that allows you to help someone else get better and so, I mean, I think I'm going to when when we do the during the summit during the we're doing live effort cuz Tim and one of the things I, I hope somebody watching will will call me on this throw it in the chat, make sure we talk about early persistent Lyme and late persistent Lyme because Tim talked about it a little bit.

A little tease there for you guys to drop in and talk live about the the research. But Tim, thanks again for being here because this is such an important thing.

And to me, when I think about Glee, I think about hope because you're driving the research that needs to get done. Like you said, the NIH probably wouldn't fund that.

But what we're going to find out in another couple of years after you publish one or two papers, is now they're funding it because of GLA and all the scientists and doctors working with you.

So thanks for being here and thanks for all you guys do. Thank you. Thank you for having me. All right, everybody,

Dr. Tom Moorcroft here. We really appreciate you taking your time to be here for this episode of The Healing from Lyme Disease Summit.

I hope that you've found something that inspires you to take that next step in your healing journey. And we're all here for you. Lots of love. Until next time.