



Immune Modulatory Approaches In MCAS & Chronic Infections

Tom Moorcroft, DO With
Darin Ingels, ND



Tom Moorcroft, DO

Hey everybody, welcome back to this episode of Reversing Mast Cell Activation Syndrome and Histamine Intolerance summit. I'm your cohost, Dr. Tom Moorcroft. And today, I am super pumped. We are getting to talk to one of my closest friends and one of the most brilliant clinicians I know, Dr. Darin Ingles. And he's a licensed naturopathic physician, author, international speaker, and a leading authority on Lyme disease and recovering from Lyme. He has a unique perspective, because he is a former Lyme patient who overcame his own three-year battle with Lyme. And after really failing conventional medical treatments and becoming progressively debilitated, he found that the use of diet, lifestyle management, and natural therapies were really what worked to help his body heal, and really worked with the natural healing process rather than against it. And he then went on to apply what he learned in his own healing journey with his own Lyme patients.

And he found that they actually recovered a lot faster and with less side effects than that conventional approach. To date, he's treated over 8,000 Lyme patients with his novel approach, and many who have gone on to live really healthy, symptom-free lives. Dr. Ingels has been featured on WebMD, Mindbodygreen, Be Well, Motherly, Thrive Global, and the Dr. Ron Hoffman's Intelligent Medicine podcast. One of the most important things for me, as a clinician too, is that Dr. Darin also wrote a book called "The Lyme Solution: A 5-Part Plan to Fight Inflammatory Autoimmune Response and Beat Lyme Disease." And the reason it's so important is because he's giving you the tools that he uses in his own clinic to apply if you're not able to get with a practitioner or they can guide your practitioner. So I'm really excited that that's out there.



So I highly recommend you pick it up. And Dr. Darin, welcome. Thanks for coming to the summit.

Darin Ingels, ND

Dr. Tom, thank you for having me; always a pleasure.

Tom Moorcroft, DO

Yeah, hey, it's like every time we do this, it's like the list of accolades get longer and longer, but I mean. I think it's really interesting, like today, we're gonna be talking about mast cell activation, autoimmunity, and the use of low-dose naltrexone. The thing that I think that's really important though, is I think I'd love for you to share a little bit about your background, your story, because as in your bio is, as there's so much that you've gained as a clinician from doing that. So I was hoping you could share a little bit more about that so that you can help inspire some folks.

Darin Ingels, ND

Sure, well, my professional background is I was a clinical microbiologist. I was a medical technologist. I worked at a large teaching hospital outside of Chicago, and I did microbiology and immunology testing. And so I worked in a hospital lab for five years and then went back to medical school and became a naturopathic physician. So it was really great having this background in pathology and microbiology going into my medical career. And then after I finished my residency in Seattle, I moved to Connecticut. And for those who don't know, Lyme disease is named after Lyme, Connecticut. I lived about 30 minutes down the road from Lyme, Connecticut, and I got bit by a tick and I had classic Lyme disease. I had the headache and the bullseye rash, the fever. I mean, every symptom you read about in a medical textbook, I had.

And so I started on treatment right away, and within a matter of days of being on doxycyclin, I felt perfectly fine. The timing in which I got bit was terrible 'cause I got bit two weeks before I opened my own practice. And when I first opened my practice, or anyone who's ever owned a business, it's just I couldn't afford staff so I was doing everything. I was answering phones and seeing patients and doing my own books. So it was just a lot of time invested into the business and I was working five, six, seven days a week, long hours. And eight months into that schedule, it really started to wear me down and I started noticing some of my symptoms were coming back. I started getting migraines again, I started getting back pain, I started getting neuropathy. And I recognized right away that this was a relapse of Lyme. I mean, it was February in the dead



of winter in Connecticut. I had no illusion that I had a new tick bite. So I started on treatment again, back on doxycyclin, and it didn't do anything for a month. So then I switched to azithromycin for a month and it didn't do anything. And then I started working with a local Lyme doctor who I'd known, and I started just a regimen of different oral antibiotics in combinations, and really almost nine months into that schedule, I was only getting worse. My gut was a mess, I felt terrible, I was tired. I lost 30 pounds in that time span. So I had known of a doctor in New York city named Dr. Jean and I had seen patients over the years that had worked with him. He's a medical doctor from China and works as an acupuncturist in Manhattan. So I went to see him and he started me on a regimen of Chinese herbs. And in Chinese medicine, herbs are always used in combination. They're designed to work very synergistically with each other.

So I started on the herbal regimen and he also gave me my wake up call that you're not really taking good care of yourself. You gotta eat better, you gotta sleep better, do all these other lifestyle factors, which we know are so important in getting well. And once I took that to heart and started knowing the herbal regimen, within a month I felt 80, 85% better. So, from there, I think, to get that extra 15, 20%, it still took another two years, again, of really staying on top of my diet and sleeping better and starting to move my body more. But I eventually got to a point where I was a 100% symptom-free. So it was my own personal experience. Again, I just started really applying it to my patients and realizing that Lyme disease is more than just kill the bug. It's really looking at the terrain, it's looking at the whole person, it's looking at diet and lifestyle and trauma and all these things that stop us from getting well. And now having treated thousands of patients later, I see that this has been a successful formula in helping people get well.

Tom Moorcroft, DO

Nice, I think it's so interesting that like, for me, it's a similar story. It's like you have it, so you understand better. And in our summit now, we're talking about mast cell activation syndrome, histamine intolerance, but also like a bit of autoimmunity. And I was wondering if through both your clinical work, and your personal experience, could you kind of give us some background on how infections might lead to autoimmunity and how some of those other factors that you just talked about may play a role in either creating autoimmunity or helping us to heal from it?

Darin Ingels, ND

Yeah, well, we know that infection as a whole is a major catalyst for autoimmune disease. Now we have mounds of research showing this. There's a concept in immunology that we call



molecular mimicry. And what that means is that there's a molecule on a microbe, whether it's a bacteria, a virus, parasite, fungi, that looks something very similar that might be in our own body or our own tissue. So as our immune system amps up to fight the micro, but accidentally starts targeting our own tissue. And if you look at Lyme disease in particular, now we've got research showing that, there's an autoimmune response to the white and gray matter of our brain. We can have autoimmunity to our peripheral nerves. We can have autoimmunity to our joints, our connective tissue. So Lyme, specifically, we know targets these different tissues. So a lot of the symptoms that people experience with Lyme disease and other chronic infections, sometimes it's really not the infection itself that's causing the problem, it's the autoimmune response that really creates the symptoms.

I think, we're in the era of COVID, right? So again, the virus itself wasn't the problem. It's the immune response to the virus that causes all these symptoms, this cytokine storm that you've heard about on the news, is the immune response to the virus. So again, often the immune response to the microbe is really what creates a lot of the symptoms and the tissue damage more than the microbe itself. And along the lines of that, we also know that microbes can become a major player in shifting the balance of our immune system. And I'm sure you see this in your practice, too, Tom, that we've got these people that know never had an allergy, never had a sensitivity in their life, after they get exposed to Lyme disease or one of these other tick borne illnesses, now they become hypersensitive to their world.

They can't tolerate certain foods, they can't tolerate mold or pollen or dust. And we know that we've got this part of our immune system called Th1 and Th2. So Th stands for T helper cells, and T helper cells are really the conductors of the immune system. And Th1 cells, by and large, are really direct scavengers of your immune system. So if they see a virus or a bacteria, they go right after it and get rid of it. But your Th2 cells don't really do that. They're sort of the ones that stand and say, "Hey guys, there's a problem over here. Somebody needs to do something about it." And often they signal B cells, and B cells are the part of our immune system that make antibodies. So that Th2 pathway is really an antibody-driven pathway. And we know that with Lyme disease, that can shift that balance of Th1 and Th2. I mean, we kind of think of it like a seesaw, one goes up, the other goes down. In reality, it's way more complex than that.

Tom Moorcroft, DO

Right.



Darin Ingels, ND

For our purposes here, not trying to make you an immunologist, but just so you understand that this balance between Th1 and Th2 is very delicate. If we upset that balance and you become Th2-dominant, your disposition towards allergy, towards autoimmunity goes way up. And often we see a little bit of both. We'll see that allergy, we'll see that mast cell activation piece, but we'll see that autoimmunity piece. And really, for both conditions, what's kind of frustrating as a clinician and as a patient is we just don't have a lot of great tests to measure what's going on. And we know from the research that this autoimmune process happens, but as far as I know, there's no commercial lab that measures that. And for someone who's got histamine intolerance or mast cell activation, and by the way, mast cell activation is really just a fancy name for allergy. We've called allergy for years, but what are the things that trigger mast cells? It is some sort of allergen that is becoming a trigger and that allergen could be something like mold or pollen or food, but it can be something like a microbe. So microbes can be just as much of a culprit as anything else in your environment.

Tom Moorcroft, DO

Well, and I think what you're saying, if I hear you correctly, Darin, is that once you get, say maybe an infection, this can trigger an immune dysregulation that leads you to having that sensitivity, having like this, almost like a mast cell dysregulation. So it's not to say that mast cell activation syndrome is not this really important title that gives us a place to look, but it's just saying, let's look back and say, hey, these infections are triggering dysregulation of the immune system, which in turn, the mast cell system is part of that. And that's potentially why we're getting this increased sensitivity and increased reactivity.

Darin Ingels, ND

Absolutely, and what what's really kind of messed up in this whole process is that even if you're successful at eradicating the infection, often, you're still left with that dysregulated immune system. So I find in my practice, we're often having to go back and still doing other things to get that immune system back in better balance. So, it's almost like, the way I think of Lyme disease is if you're standing on the lake in the morning and it's a nice, quiet lake, and a motorboat goes blowing by, the boat can be long gone, but the waves are still rippling. And I think Lyme does that to our body. It creates this swath of destruction because it can dysregulate our immune system. It can dysregulate our hormone system. It can dysregulate our nervous system. And even if we get that bug under control, often we have to go back, we have to fix the hormone system.



We have to fix the immune system. We have to fix pots and these other neurological issues. So this, of course, is what makes our job terribly complicated, is that we're trying to put out a thousand fires at one time. Obviously, we want to target the organism 'cause we know that continues to perpetuate a lot of these other issues. But even if we're successful at that, we still have to go back and again do all these other things to get the immune system functioning better.

Tom Moorcroft, DO

I think the point you bring up is so important. Like so, yes, folks, you've heard it here. One, you can treat and annihilate Lyme, and yes, even if you are successful at doing that, you could still have other symptoms, right? And MCAS can be a huge piece of that. But a lot of times you're having a little bit of each. So Darin, like in the situation where we have Lyme Bartonella persistence and maybe even mold, like, we have a mold exposure, we can't burn our house down and rebuild it from the ground up in a completely dry building. So we're having ongoing exposures, whether that's an external exposure or an internal exposure. If this is triggered, this dysregulation of the mast cell system, are there things we can actually do? 'Cause it's, I mean, like some people are like, "Oh, you gotta treat the Lyme and the Bartonella first, or then you gotta treat the mold first. Oh, you gotta treat the MCAS," but they're also intermingled. How do you even start?

Darin Ingels, ND

Well, I think, for me, it's really individual. I think we have to look at the individual person and set the priority of where do we see are the biggest stressors on the body? And I know in the Lyme world, we tend to hang our hat that everything's related to Lyme disease. Again, we know between Lyme and mycotoxicity mold, there's an 80, 85% overlap and symptoms. So it's very difficult to distinguish which symptoms are related to which condition.

Tom Moorcroft, DO

Well, and also you're saying like in the Lyme world, we say, it's the Lyme and the Bart we have to do first. But if you're a mold person, you have to do the mold before you can do anything else, and if you're MCAS, you gotta do that first.



Darin Ingels, ND

Yeah, and I will, I guess, maybe respectfully disagree with those out there that feel like you have to do-

Tom Moorcroft, DO

Clearly I will too.

Darin Ingels, ND

My feeling is you gotta deal with all of it, because if it's all creating a problem for you, again, you're trying to put out multiple fires and there's no reason you can't do them simultaneously. So if someone's got microtoxicity, we're working to mobilize that tissue, get it out. If someone's got Lyme or tick borne illness, we're dealing with the infection, we're dealing with the terrain. If someone's got mast cell activation, in my practice, we do a lot of immunotherapy to help modulate the way the immune system responds to the trigger. So we're trying to do it all simultaneously because they're all impacting your health at different levels. And I think this idea of just deal with one, well, let's be honest. I mean, dealing with Lyme disease alone, that could take a year, it could take longer. And if you're gonna wait to treat all these other things for another year, in my mind, anyway, it's just really delaying getting your health back faster. So again, I've not really had any issues in my practice of doing multiple things at once.

But again, if you've got someone who's really hypersensitive, you just have to go in with kid gloves, start small, work your way up, make sure people tolerate things first. We know with mast cell activation, that a lot of these folks with histamine intolerance that, herbs we use, other things we might use might set them off. So again, it's just really about being delicate with each person. But I think, for people who are watching this and tuning in, you really have to look at you and don't compare yourself with other people. I see this all the time. It's like, well, "I read online that so and so has been doing this and the other person doing that." It's like, you are you, your experience is your experience and it's gonna be different than other people. And what one person does for their Lyme disease or mast cell activation might be very different than what you do. So again, I really try to tailor it to the individual and meet their needs at the highest level.

Tom Moorcroft, DO

Yeah, I think that that's one of the... You really hit the nail in the head there with meeting the person's needs as a unique individual using a strong foundation that's based on this



understanding of what commonly happens in these patients, but also not comparing yourselves. I mean, when you compare yourself to other people, the difference is, genetically, they're different, their environment is different, their life history is different, the treatments they've had are different. So funny, everybody talks about MTHFR and all these other things like it's this holy grail, but technically, all these things are different between you and the other person. And you have to keep in mind, they've gone through such a different path to get to where they are. That a lot of times that last thing you did that looks like the thing that fixed everything is actually just looks that way because you actually had to do the 12 other things that you previously did to get for that one to work. So I think it's really important.

Darin Ingels, ND

Yeah, well, and again, I see this happen a lot when people go online and again, they're reading about what other people are doing in their treatment. And again, we're just so unique biochemically, we're unique genetically, and we have to honor that what works for one person may not do anything for you and vice versa. So that's why I think it's really important that you have a relationship with your healthcare provider. You're having this conversation and that you're layering in things slowly and going in gently, but there is a way to do it that I think you can address this multitude of health issues simultaneously without rocking the boat so much, that it makes you feel terrible. I'm not in the camp that you have to get worse to get better.

Tom Moorcroft, DO

Right.

Darin Ingels, ND

That does happen. But I think if you're being mindful about your approach and again, going in things very slowly, make sure you tolerate things, that there is a way to do it, that you can move forward without necessarily having to feel terrible in the process.

Tom Moorcroft, DO

Yeah, and I mean, I think it is an individual approach and really saying, hey, like, telling our patients that it might take a while. And sort of taking a while, and for me, I feel like the beginning is the most important part. And then after you get past the beginning, all the rest is the most important part obviously. But it's so key to set a really good groundwork and start to allow time for your practitioner to actually understand how your unique physiology expresses



itself under the duress of all these different environmental toxins. So I think it's important. When you are looking at folks, I mean, in this day and age, we talk about so many herbs that help in mast cell activation. We talk about so many herbs to treat Lyme Babesia Bartonella. We have a lot of research showing that these herbs now are actually great persister treatments, so helping us better get at chronic Lyme. But are there any herbs that you would just say, these are really histamine-promoting or dysregulating that you might avoid, or is that just unique to the individual as well?

Darin Ingels, ND

Yeah, it really seems to be, I mean, I have some patients that some herbs that just seem to set them off for whatever reason. I think sometimes isn't the herb, sometimes I think it's the way the herb is prepared. I might find someone who's really histamine intolerant. Maybe they don't do as well with tinctures because of the alcohol base, and maybe they might do better with capsules or powders. So there are some herbs that tend to set people off for reasons that, honestly, I can't well explain. So again, if I've got someone who's really hypersensitive, my preference is always again, start small, working with establish tolerance first. I tend in that point to use single herbs versus using combinations for that very reason. There's an herbal combination. Like we know in the Lyme world, there's a lot of great companies that make herbal combinations that might have eight, 10, 12 different herbs in it. The problem with that is if they have a bad reaction, I don't know what it is, it might be one of the eight. So this is where I try to use single herbs, if I can, just so that we can really isolate and know if there is a problem, which one is it? Okay, yeah, you did well with these two, you didn't do well with the third. Let's swap that out for something else. So again, it gives us a lot more latitude to get to really tailor what your body tolerates.

Tom Moorcroft, DO

Yeah, I think I feel the same way. And it's like, you get that better control and you can individualize it a lot more. Once the people have more stability, maybe move into some of these other things. When we think about treatment, I mean, where do you start? And then I know that, will you want to talk about some low-dose naltrexone today, 'cause you're also an expert in that? But you also mentioned immunotherapy. So maybe if you can give us an overview of where you might start with some of that, if you're looking at someone with mast cell activation, if there are something beyond just the completely individualized thing. And then how do you use immunotherapy and what the heck is it?



Darin Ingels, ND

Well, I think in terms of where we start, for anyone with mast cell activation and/or allergies is the gut. So much of the immune system is derived from the gut. We know that up to 80% of your immune system comes from the gut. So if the gut's not functioning well, it's gonna be hard for the rest of your immune system to function well. So first and foremost, gut health is, of course, what you're putting in your mouth, diet is critically important. But if you've got leaky gut, if you've got other types of gastrointestinal problems, making sure that you're working to optimize that. Beyond that, immunotherapy, there's different types of immunotherapy. That term is used in a lot of different ways. I mean, they do immunotherapy for cancer treatment. They do immunotherapy like allergy shots. If you go the allergist 'cause you're allergic to dust or ragweed, that's a type of immunotherapy. In our practice, we tend to focus on really two types of immunotherapy. One's called sublingual immunotherapy. So sublingual just means under the tongue. So we do different types of testing to help determine what people are allergic or sensitive to. Then we make up drops that they put under their tongue. So the concept is very much akin to doing an allergy shot.

Tom Moorcroft, DO

Okay.

Darin Ingels, ND

We know in a hundred years of doing immunotherapy, that by giving you the substance that you're allergic or sensitive to at the right concentration, it actually starts to build your immune tolerance. And if you think about allergy at its core, however, you're defining that, allergy sensitivity and intolerance, it's really an overreaction of your immune system. Aside from the enzyme issues like gluten intolerance or lactose intolerance, that's a different problem. But these other reactions is an over expression of your immune system. Your immune system's not tolerant to the world around you, which doesn't make sense, right? We're all exposed to pollen and dust and things like that. So why do some people react and other people don't? It's really loss of immune tolerance. So what we're really trying to do is reestablish that immune tolerance, retrain the immune system and say, this is part of my world, this is normal. We don't need to overreact to it. And so often over time, what we're doing is we're basically slowly building your dose. We give you a little bit, then we give you a little bit more. We give you a little bit more and we keep increasing it until we get to that threshold where your immune system basically just stops to react. So what I like about this therapy is that it has the potential to really cure the problem.



Now, granted it often is a long-term therapy. Like if you go to get allergy shots, they'll tell you usually it's about seven to nine years of doing allergy shots before your allergies are cured. I find with sublingual therapy, it happens a lot faster.

Tom Moorcroft, DO

Seven to nine years.

Darin Ingels, ND

It is a way. And, look, allergies, mast cell activation, sensitivities, these are miserable for people. They just completely becomes disruptive or can be disruptive to your life. So I like the fact that this is one of the few therapies out there that I don't see as a bandaid therapy. If we're using antihistamines, if we're using mast cell inhibitors, if we're using leukotriene inhibitors, whether it's natural or prescription, these don't fix the problem. They stop the symptom, but they don't fix the problem. But immunotherapy has the capacity to actually fix the problem. So sublingual immunotherapy, again, it's been widely used throughout Europe. There's almost a thousand studies on it, very well researched in adults and children for various allergens. And then we do another therapy called LDA, or low-dose allergy therapy. And this has been around since the 1960s. It was developed by an ENT surgeon in the UK. His name was Dr. Len McEwen, and he originally coined it, called enzyme potentiated desensitization, or EPD.

And what he really did is he took these allergy extracts and he diluted them far more than what they were using in conventional allergy. If you get allergy shots, they use a 1:100 and 1:1000 dilution. Well, he started doing one to 10 million, one to 100 million, much, much more dilute. And he found that he mixed it with an enzyme called beta glucuronidase. This is an enzyme that's naturally found in your white blood cells. So the combination of two, he would give as a little intradermal injections of just underneath the skin. And he found, again, it was helping people with their allergies. So we now have a pharmacy in the United States that makes these mixes. So the mix is the same for everybody. So there's food mixes, there's an inhalant mix, and there's a chemical mix for people that are chemically sensitive. And the nice thing about LDA therapy is that, again, the goal is the same. The goal is to help retrain the immune system not to be so hypersensitive. But with this therapy, you only do it every seven weeks.

Tom Moorcroft, DO

Not too bad.



Darin Ingels, ND

Yeah, so it's not terrible. Dr. Butsch Raider, he's now retired. He was in Santa Fe. But he's the one that brought EPD over from the UK back in, I think, the late '80s, early '90s, and started really teaching doctors here in the US how to do it, so. Between low-dose allergy therapy, LDA, sublingual immunotherapy, again, we have a lot of noninvasive safe tools to help retrain your immune system to not, again, become so hypersensitive to your world.

Tom Moorcroft, DO

It almost sounds like the LDA, it is almost like homeopathy combined with beta glucuronidase. But with the sublingual immunotherapy, you're actually giving like a little bit more, 'cause they've been doing a lot like with allergy, right? Like full on anaphylactic allergy, like giving people like peanuts, if they're allergic to peanuts, in smaller doses and increasing it and seeing they regain their immune tolerance.

Darin Ingels, ND

Right, yeah, so that's called oral immunotherapy. So in that case, they're actually giving you the substance that you're sensitive to. Often they're doing it for nut allergy, peanut, almond and so forth. And they know they do it for other foods. So again, the difference really is dose. So often with sublingual immunotherapy, we're using anywhere from one to a hundred up to one to about 80,000 dilutions. So sublingual, more dilute than what you would use in conventional allergy shots. The nice thing about when we put it under the tongue is that you don't have a lot of reactive cells in your mouth. So because they go under the tongue, they don't go down the throat. There's a very, very low risk of having really any kind of serious adverse reaction. And again, we've got a lot of data showing that it's an extremely safe therapy for children and adults.

Tom Moorcroft, DO

That stuff sounds really good, I think. It's nice too, because it's like you said, anytime you can find something that's actually potentially able to cure these conditions and to reboot the systems that your immune system can get back and be re-regulated, improve your immune tolerance. I mean, getting someone off of medications is amazing like that. The other thing that we wanted to really touch on, because I know that there's textbooks on low-dose naltrexone and you happen to be one of the authors in the said textbook. But so what is this whole LDN thing? And why do we want to talk about it potentially in patients with mast cell activation or histamine intolerance?



Darin Ingels, ND

Yeah, so LDN stands for low-dose naltrexone. And naltrexone itself is a medication. It was actually originally designed to help get people off drug and alcohol abuse. So naltrexone at full dose, basically binds to opioid receptors in the brain, helps block it to get people off that kick of needing to use drugs or alcohol. But what they found at very low dose is it has a very different effect on the body. So low-dose naltrexone, it'll bind to the opioid receptors in your brain very temporarily. And then afterwards, once they come off that receptor, it then stimulates your brain to make your own natural opioids. So it's been very helpful and people to have different types of pain syndromes. We've got several studies showing it helps modulate the immune system. So at very low doses, it has this very kind of broad effect on our body between the opioid effect, sort of the natural opioid effect, and this immune modulating effect.

And that's probably the most important use of LDN for a lot of us in clinical practice is that if there's a way that we can modulate a disrupted immune system, so you can imagine that the application to mast cell activation, the application to really any autoimmune disease is there. And indeed we see it's been, there's studies on Hashimoto's disease, there's studies on inflammatory bowel disease. There's studies on autism. There's studies on different types of pain syndrome. Unfortunately, to date, there's no studies on Lyme disease. So it's one of these things that a lot of us is used in clinical practice and we see good results based on what we know the medication does and based on what we know Lyme can do in terms of this autoimmune disposition. So I'm hoping someday somebody will actually spend the money and do a study on LDN in Lyme. But the beauty of LDN is that, the safety profile is excellent. We get very few people that have really any kind of serious adverse effects.

The biggest side effect most people experience if they do get it is they'll say they get really wild, wonky, vivid dreams. And we find that that happens. Sometimes people adjust to it after they've been on the medication for a little bit. Other cases, we just have to have people take it during the daytime instead of taking it at bedtime. I mean, I'd say in my practice, I've got, maybe less than 1% of people have to stop it for whatever reason. Again, they just don't seem to tolerate it like anything out there. There's never everything's great for everybody. You always have those people that just for whatever their sensitivity level is, don't tolerate it. But by and large, I find this is a very well tolerated medication. Again, it's typically compounded by a pharmacy. You can compound it in whatever dose is deemed necessary. So often we'll start at very low doses and then titrate up slowly as we feel like people need it. The other beauty of it is that it's a very inexpensive



medication. So many people, particularly with Lyme disease or even mast cell activation, are spending tons and tons of money on supplements and other medication. And I know the pharmacy that we use that makes our naltrexone here in Southern California. I think a three-month supply runs about \$45. So it's very cost effective. So it's nice to have something in our toolbox that isn't gonna break the piggy bank.

Tom Moorcroft, DO

Yeah, I think it's a huge point 'cause it's like improves compliance. You gotta take it once a day. Cost is so much better when you can afford to actually take it, and it works. Yeah, and I think our pharmacy's 54 bucks. So you guys got us beat for 90 days. But it's interesting there, I look out for LDN pharmacies that do a lot of it, 'cause everybody can make it, but I find there's a difference when you go to like the higher level ones that do more and have better quality control. And so, but some of our local pharmacies, they're like 75, \$90 a month. And I'm like, so not that that's the be all end all, but I think like you mentioned, it's helpful. And for me, I find LDN has, like you said, such a good safety profile. And after that first couple of weeks, maybe where the dreams may or may not be present, so well tolerated and so safe. And I've used it a lot actually like in people who are say, maybe on a different type of immune replacement or modulation. Like I've had people on IVIG who got an initial benefit were no longer having a benefit, tried to stop it. And then their symptoms flared up and I was able to have them stay on their immune modulator, get 'em on LDN, and then remove the immune modulator they previously failed coming off of. So \$15,000 a month versus 50 bucks for a 90-day supply. So I think it's a really potent medication to be using. So is there anything you don't use it in, I mean like?

Darin Ingels, ND

Well, yeah, I mean, again, I really kind of keep it for the people, again, who are having some element of pain syndrome, any kind of autoimmune process. Again, I've used it in kids with autism. So again, it has a very broad application. But like anything else, it's one tool in our toolbox of a lot of things. But I think because of its excellent safety profile, cost, my experience with it is, that there's some people who try it, they don't get any benefit. They've been on it for several months. We've tried changing the dose, they don't feel any different. Okay, great, we've tried it, move on to the next thing. But the majority of people I use it with get some element of benefit that warrants continuing on. I don't ever have anyone who's only on LDN and nothing else. So again, it's just one piece to help manage things while we're working on all these other



foundational gut issues and terrain issues. But again, it's just a nice thing they have in our toolbox given the effectiveness and the safety of.

Tom Moorcroft, DO

I have some folks who, they give me a call and they say, "Hey, Dr. Tom, like this LDN stuff. I mean, I can't handle it," right? They're like, "I'm so tired when I wake up the next day." And then they're like, "And it's because I'm up all night dreaming." So and I have my own opinion about it, but like what are sort of, like that to me is a fairly common experience, but so what's going on there?

Darin Ingels, ND

Well, again, this is the one thing we know about LDN that happens is that some people get these really crazy, wild dreams, and I've heard people say, "Yeah, I felt like I was dreaming all night long." Again, often I'll just have people take it during the day and that seems to kind of take care of that problem. If they take it first thing in the morning, usually by the time they go to bed, they're not experiencing any kind of, wild, vivid dreams anymore. In some cases, we do have to lower the dose. I mean, there's a whole nother faction of the LDN camp that's ultra low-dose naltrexone. So I think the standard dose of naltrexone, I think is 40 milligrams, if you're using at full strength. And we're typically using anywhere from half to about maybe 4 1/2, six milligrams. So that's low-dose. Now I've got some people are using 0.025 milligrams. So, again, there's a lot of room to play around with the dose to see if something agrees with you better. So even though low-dose, if you feel like you're having a bad effect from it, you could always talk to your doctor about trying ultra low-dose. And again, see if you have a different effect. Again, I find with anything, whether it's medication, nutrient herb, I'm always surprised at how little sometimes it takes to move the needle in the right direction. So it's not like more is better. And it may be for you, particularly if you're a sensitive person, a little goes a long way.

Tom Moorcroft, DO

I think it's also like catalyzing. I mean, everything I've heard you talk about today is about helping the body be re-regulated so that it can just do what it's naturally supposed to do. And a lot of times I think of it as a catalyst, you just need that little push and you may not need a huge push 'cause more is not necessarily better, like you said. And one of the things I've noticed with the sleep thing is I find that people sleep deeper. And so a lot of times that fatigue does wear off, and just so people know, if you are dreaming, you're not awake. Which so a lot... It's just one of those things, it's like, hey, that actually lets you are asleep. And I just wanna share a quick, little



personal thing for some of the people who are doing it is, I've always been very sensitive to my sleep cycle and I'm very aware of what's going on. It's like there's times where I lose the awareness, but then I'm aware I'm dreaming, I'm aware of when I'm really light. And if I'm really deep, I'm aware when I come out of it, like I'm not just almost awake the whole time. But I tried LDN just because I wanted to see what my patients were going through, 'cause I didn't learn about it until after I had actually recovered from Lyme and Babesia. But I was so aware of how light I was and it's I'm looking at your background and I feel like where your mouth is just out of the water and your nose, and everything else is underneath. That's kind of how I felt sleeping, not in a bad way, but like I was almost, I was so close to being awake, but I wasn't. And so, I didn't really need it. So it was just like one of those biohacking experiences so that I could share with my patients. But I just thought it was interesting and it's always nice to share with folks what your experience has been so that if you feel like that would be someone where, and I also just did full dose, right? 4 1/2 right out of the gate, just because it was an experiment. That's somebody where I might bring down the dose, or like you said, even take it during the day. So it's a cool drug.

Darin Ingels, ND

Yeah, well I personally take it, and I have multiple sclerosis. And again, it's very well indicated for autoimmune disease and I've tried periods of stopping taking it. And I do feel a difference if I stop it. So I've been on it now for years and no intention to stop it. Again, I haven't had any adverse effects. It doesn't interfere with my sleep at all, but personally again, I find it works well.

Tom Moorcroft, DO

It's awesome. I hope everybody understands why we have these conversations because it's like, when you look at it, what you're hearing about molecular mimicry and the immune response, thinking about immune tolerance and the loss of it and immune dysregulation, I mean, it's all scientifically based and there's so many simple things we can do to start to move the needle. Kind of as we wrap things up, I mean, for folks with mast cell or activation syndrome mold, or even some of these other things where we do have this deluge of everything, I mean, I find it like when I speak with you, you combine the hardcore science, the naturopathic approach, but then also there's this element of understanding how they all weave together in hope. And so if you're gonna share something with folks in terms of their hope for healing through all of this, what might that be and how could you guide them?



Darin Ingels, ND

Yeah, you gotta be like a dog with a bone. This is your life, this is your health. And don't be shy about... Find the right team of people to work with you so that you're getting the results you want. I see so many people sometimes, they just get stuck in a rut. They keep trying the same thing over and over and it's not working. And it's just, if you've been sick for a long time, it's really easy to get frustrated and kind of feel like nothing's working. And again, all you've learned is that, whatever you were doing isn't working for you at that moment. That doesn't mean you can't find something that will work better for you in the future. So, there's a great organization, the American Academy of Environmental Medicine, that trains doctors, practitioners, how to do immunotherapy. So reach out if you don't have someone currently in your team that can help you, 'cause again, this is such a powerful treatment that can really help get rid of these sensitivities.

Tom Moorcroft, DO

Nice. And if people are interested in learning more about LDN, what was that book that you are co-author in?

Darin Ingels, ND

Yeah, it's written by the LDN trust. It's volumes one and two, and it's available on Amazon and all book retailers. And yeah, I wrote a chapter on Lyme disease and LDN.

Tom Moorcroft, DO

Nice, so hopefully someone will pick it up and go, "Hey, we need to do research in that avenue," right? And if people are interested in grabbing your book or learning more about you, how can they go about learning about those things and potentially working with you?

Darin Ingels, ND

Sure, easiest place, just to go to my website. It's just darininglesnd, N as in Nancy, d.com, and all of my information's there.

Tom Moorcroft, DO

Awesome, I love it, brother. Thank you so much for making the time to come and share both your scientific knowledge and your street knowledge and bringing it all together as you always do. Just wanna say thank you. And everyone, I wanna say thank you for joining us for this episode



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Summit

of the Reversing Mast Cell Activation Syndrome and Histamine Intolerance summit. Until next time, I'm Dr. Tom Moorcroft.

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