Introduction and Speaker Background

Well, welcome, Dr. Darin Ingels to the MS and Neuroimmune summit. I am so glad to have you be part of this summit. let me, read your bio. Dr. Darin Ingels, and I have known each other many, many years.

we're actually very good friends now. Darin is a licensed naturopathy, physician, author, international speaker, and leading authority on Lyme disease and multiple sclerosis.

Like me, Darin has a very interesting personal story and, deeply personal connection. He had the Lyme disease and then would go on to be diagnosed with multiple sclerosis now.

and he found that a, very thorough diet, lifestyle targeted supplement program, can really help, create a more effective management, of your complex chronic diseases.

Now, Darin's been featured on webMD, mind body green, be well. Thrive, global motherly Voyage, la, and Dr. Ron Hoffman's Intelligent Medicine Podcast.

And he's the author of The Lyme Solution, which is really a wonderful book. so, Darin, did I miss anything that you would like to be sure that we have included?

I think you got the highlights. Okay, so let's get into, some of these questions. But before we do that, what I want people to have, hope. and so, either share your personal story or the story of someone else that you have helped transform, who also suffered with a, infection as root cause.

Well, I mean, I think my own story is pretty, maybe typical in many ways. And I was diagnosed with Lyme disease in 2002 and living in Connecticut, I lived, you know, 30 minutes from Lyon, Connecticut.

And, I got treated immediately, but I got bit right before I opened my own practice. And at the time, I, you know, I couldn't afford staff. So I was doing everything, working long hours, really stressed out, wasn't taking care of myself.

And eight months later, I relapsed and started having a lot of symptoms again. And you know, long story short is that, you know, I took me three years really, to get my health back recovering from Lyme disease.

And you'll fast forward a decade later, I, I started having symptoms come back and I thought this was a relapse of Lyme and ultimately was diagnosed with multiple sclerosis.

So, you know, it was the reminder once again, that, you know, when you're going through a lot of stress, you're not taking care of yourself. It really opens you up to, I think, a lot of different autoimmune conditions.

Darin Ingels' Lyme and MS Story

And, you know, again, having met you and learned a lot about what you were doing to treat your MS and of course, you know, your story is amazing. So I actually implemented a lot of what you did for yourself in my life, you know, following the diet, you know, working with Eastham and, you know, trying to sleep better and do all that stuff.

And, you know, I know maintain I think, you know, pretty good function for somebody living with their MS So you know, this is what I teach my patients.

It's really about this this total over overview of your body, of looking at all of these different pieces that we know contribute to autoimmune disease.

And when you get each of these little pieces in line, you know, you can certainly halt the progression of not just M. S. but really autoimmune disease. And I think in many cases reverse.

Okay. So I think there's some I'm going to unpack this a little bit. You had Lyme disease treated appropriately. you know, initially thought things had resolved in you were doing well, but again, your immune system probably succumbed when you were not sleeping.

Well, when your cortisol was too high. from all the stress that, every physician goes through when we first enter private practice, and, why did all of that happen?

how does that unmask? the late line? Well, you know, I think if you think about what these sort of the first step of MS is, you know, there's a breakdown in the blood brain barrier, and there's pretty compelling evidence that mast cell activation may be a contributing part of that.

So, you know, we know that Lyme, you know, any infectious agent can be a potential mast cell aggravate. Or we know that stress can be a marcelle activator.

We know that. Over time, maybe we should stop for a moment. I bet people don't know what mast cells are. Sure. So mast cells are cells in the body that are mostly in your tissue, that are really contributing to what we typically think of allergy.

So mast cells are responsible for causing, you know, runny nose and sneezing if you're allergic to pollen or mold or dust. But these mast cells can they contain histamine, which most people are aware of.

That's the chemical that causes a lot of these allergy symptoms. But it contains over 200 different chemicals that, when they get released out into the tissue, can cause various type of symptoms and inflammation.

Being one of those now, you know, inflammation isn't always bad, right? It's a protective mechanism our body has for very short periods of time. But when that inflammation goes on and on, you know, that's where we get into trouble.

And that's when we start getting more tissue damage. So, you know, this idea that mast cells are really just around allergy is, I think, kind of a myth.

It's much more extensive than that. And again, we've now got no mounds of literature showing that mast cells do get triggered by Lyme disease. Strap, you know, any number of different infectious agents.

And so when they get triggered, what why does that make the MS either, you know, become more symptomatic, more severe? Well, basically, you know, we, we hear about leaky gut, think about having a leaky brain when your blood brain barrier, that protective membrane that's supposed to stop certain things from coming in and out of the brain breaks down.

You get this massive infiltration of immune cells that start basically attacking the myelin. So you've basically opened the floodgates for that immune process to get worse.

So the mast cell gets activated, in. Then what we see is the, blood brain barrier gets leaky. More of these immune cells come into the brain, making the, inflammation levels in the brain much higher.

Absolutely. And we know as Lyme in particular, that there's research showing that Lyme directly targets the gray matter and the white matter of your brain.

So there's a cross reaction in the immune systems, effort to try and get rid of Lyme disease. It accidentally starts attacking your brain in your nervous system.

So it can really just add another layer of, neural inflammation when you've got this autoimmune process happening.

So you've got the one part of, you know, these, these cells that get into the brain that start going after the myelin.

Now you've got this other immune response that's attacking other parts of the brain. So you can see it's just literally like throwing gas on the fire.

It just makes that inflammation of the brain so much worse. and help our, listeners understand what's gray matter, what's white matter? So the gray matter in the white matter is the really the two parts of your whole brain.

If you take a kind of a cross-section of the brain, you'll see, you know, the gray matter on the outside, the white matter, the inside and the involved.

You know, the different neurons that help with language and memory and and movement. But again, all of that is the, the, the first part of the network of the brain.

And all the nerves extend out from that. So when that that first part of the white matter in the gray matter breakdown, you know, it's going to affect what we call the peripheral nerves.

And that's the nerves that go to your arms and your legs and helps you smile and move your hands and move your feet. So, you know, breaking down at the most central part of your nervous system does have this impact on the the outer part of your nervous system.

You know, you know, the myelin, of course, you know, that's the part around the nerves that's like the sheath. That's what allows the electrical conductance to move through the neuron.

So we're we're really kind of getting attacked at all different levels of the nervous system. And as you you impact more of the central part of the brain, you know, that's going to have a certainly a negative impact on our peripheral nerves.

You know, I'm going to expand on that just a little bit.

Mast Cells, Blood-Brain Barrier, and Neuroinflammation

again, for our listeners, in the white matter, it's white. and that's where all of the, myelin is, that's where the wiring, is going and connecting to other brain cells, the greatest concentration of neurons, that's what we think of as the brain cell.

That cell body is in the outside of the brain. That's what we call the gray matter. and then in the spinal cord, we have, something very similar, the white part of the spinal cord, which has all that myelin and, the outer part of the spinal cord, which has, the, brain cells, in this case, the spinal cord cell bodies.

Yeah. And I think you were telling us that, with, limbs that as we are working at killing off the line, we're damaging the cell body. So that is the gray matter.

and then we're also damaging the myelin, that I that I was like, well. It's really that the organism itself is triggering this autoimmune reaction. So we have this concept in immunology called molecular mimicry, where there's a molecule on the organism.

In this case, it's a bacteria. That's something very similar to what might be in our gray matter, our white matter, our other nerves. So as the immune system gears up to fight the infection, it's not discriminating the infection from our own tissue.

And so these antibodies get sent out into the tissue. And again, in the effort to try and get rid of Lyme, that accidentally, these antibodies bind to our brain and our joints and our other tissues.

And that tells the immune system, hey, there's a problem over here. And then there's another part of the immune

system called the complement system that then starts breaking down.

You know, hopefully the organism. But sometimes it's also, again, attacking our own tissue. And, you know, again, this is true not just for us. This is true for a lot of other autoimmune diseases, is that there's often this infectious underlying cause that if it's rheumatoid arthritis, it's the joints.

If it's mass, it's the nervous system. If it's lupus, it's different tissues. So this this nondiscriminatory immune effect, is really kind of an accident of the immune system that it's just targeting the wrong, the wrong thing.

So, would it be correct to say that there's some genetic component? so you have to have some genes that increase your risk? so maybe that's step one and then step two is this infection.

And in this case you mentioned Lyme disease. and is this, from your perspective, a requirement that everyone with an autoimmune disease had some infectious infection that was part of, the process?

I don't think it's everybody, but I think there are a lot of people that that is at least a contributing factor. You know, bugs are all around us, and we live in a world where we're surrounded by bacteria and viruses and fungi and parasites, and this is a normal part of our world.

It's just there's something in our immune system that's changed that when we get exposure to these organisms, you know, we don't have that normal immune response.

You know, if you get strep throat, your immune system should have the wisdom to get rid of it in a matter of, you know, a handful of days. And then that's the end of that.

But then something happens with a lot of people that that doesn't happen. There's something that, again, goes on longer, the inflammation perpetuates, and then there's more tissue damage.

And then depending on what organs affected, that's kind of the end result. But what's really fascinating is when you look in the literature, is that a lot of these immune reactions are the things that are part of our normal flora.

You know, it's not even necessarily something like line that's kind of an external pathogen. You know, people react to strep. And we we all learned in medical school, you know, rheumatic fever and rheumatic heart disease is an autoimmune complication of strep.

And it has often nothing to do with even having strep throat. And strep for most people is a normal part of their gut flora. It's on your skin. It's in your nose and throat.

You can have autoimmune reactions to Candida yeast, which again is part of your normal flora. So I think it speaks to the deeper level of understanding that honestly, I don't think we truly understand what is it about our immune system that really loses tolerance to these things that are our normal part of our world?

do you think there's any relationship to age, at which when we get these infections that, you know, I'm thinking about, for example, chicken pox, we we I was taught that if you get chicken pox, when you're really young, it's a very mild disease.

most kids will bounce back. it is not a problem if you get it older. it's a bigger problem. And then if you get it for the first time when you're pregnant, it is a, you know, it's normally a big problem, both for the for the mom.

in the developing, baby, it is, is, is part of this, that we're not getting exposed to these infections when we're infants and toddlers. I think that's very possible.

I think there's compelling evidence to that. The lack of beneficial parasites. you know, back in the old days, you know, we used to get exposure to a lot of different parasites in our food that weren't necessarily pathogenic.

but, you know, we would ingest them, and they would pass through us, and they probably had some protective effect. We know from some of the research that getting, you know, measles, was protective against getting cancer later in life.

So getting these early infections probably had some protective effect later on to certain degree, probably with immune tolerance. Doctor William Parker at Duke University, he's been looking at certain types of parasites called HDC.

Infections, Genetics, and Immune Tolerance

He's or I'm in the lab system, which is a rat tapeworm, which is completely innocuous to humans. And again, it used to be in our grain products. So when we would eat bread and these kind of grains, we would get exposed to these wasn't pathogenic for us, but probably helped, you know, with our our gut ecology and maintaining a certain degree of immune tolerance.

And it's kind of interesting when you look at most places in Africa where, you know, parasites are still endemic, a lot of people get sick from them, but their rate of autoimmune disease is practically zero.

So is it really that getting exposure to all these bugs is really for our benefit and not to our detriment? And of course, certainly in the United States, you know, we do so much to our food supply with, you know, chemicals and radiation to try and prevent infection and food poisoning.

And I understand that, but it may be that we've sterilized our food to the point that it's actually working against us. super interesting, you know, and, you know, from evolutionary standpoint, we co-evolved with the bacteria, in the parasites, living in our environment.

and so it would make sense that over thousands, you know, millions of generations that, we developed a cooperative relationship. yeah. but we also know that sometimes pathogens can, worsen the autoimmune disease.

how do people sort out is the parasite helpful? The harmful? Well, I think it depends on the parasite, certainly. You know. True. I mean, I was a clinical microbiologist before I was a doctor.

I used to do parasitology, and I think true parasitic illness is a relatively short term problem for most people. you know, it's very unusual and rare unless you're truly immune suppressed to have this chronic parasitic infestation.

But, you know, again, a lot of the parasites we used to get exposed to weren't harmful to humans. They were harmful to other animals. But we would just accidentally kind of get exposed because it was in the dirt.

It was, you know, back when we were truly farmers and we went out and we grew our own food and we pulled it out of the ground and we just kind of, you know, wash it off a little bit, knead it.

You know, we would get exposure to all these things that were naturally found in the soil or in around the plant or, you know, even the animal that we were eating.

So, again, our food has changed a lot. You know, when you talk about age, too, I have to think, you know, the longer you walk the planet, the more potential toxic exposure you get to.

So how much of what we're really seeing in this sort of rise in autoimmune disease is really just an accumulation of toxins that our body isn't efficient at clearing?

How much does that change our immune tolerance? How much is that aggravating our immune system? I think we have a very difficult time as clinicians measuring anyone's toxic load.

You know, we know from the research that, again, to the average American anyway, gets exposed to over 88,000 chemicals a year. Less than 200 of them have actually been studied for their long term safety.

So we, you know, we're we're walking around in toxic soup and we don't really understand how much that potentially affects us. And certainly for those of us living with autoimmune disease, I think it's just another layer that makes it more, more difficult to overcome.

Well, that's pretty sobering. I want to give people another round of hope. do you have any other, sort of fun recovery stories that you can tell us? I have a woman I've been working with who was diagnosed with rheumatoid arthritis.

she came to see me from South America. She lives down in Uruguay, where there was just no help at all. I mean, all of her blood markers were off the charts, had, you know, terrible joint pain.

She was a runner before, she's in her mid 40s, and, she came to see me. we did a lot of testing. We found out she had a lot of food allergies, a lot of allergy to mold down where she lives.

You know, it's moldy everywhere. Everything's old, everything leaks. So she had toxic mold exposure, and we test her. We found out she also did have Lyme, and she had an organism called Anna plasma, which is another bacterial infection.

So, you know, again, we worked on cleaning up her gut. We started treating her infection. We started, you know, working on getting her out of a moldy environment and doing things to help, you know, her body, mobilize mold and mycotoxins out of tissue.

And it's now been seven years, and she's been pretty much symptom free for about 3 or 4 years now. She runs every day. She's active, she's healthy, which really interesting though, is that her rheumatoid factor and the CCP antibodies, these are two blood markers that are very common for somebody with rheumatoid arthritis are still high.

They didn't change, but she's doing well. But she's clinically doing very well. She has no symptoms related speak of. she says she gets a few little aches and pains every now and then.

And she says, I'm a runner and I'm getting older, but that's about it. But she's functionally doing incredibly well. She's very diligent with her diet.

She's dealing with her sleep, she's diligent with her exercise regimen. So, you know, she's really a great testament that, you know, when you kind of stick to the program, you know, you can make things.

And also, you know, you can't constantly look at your blood markers as a a way of knowing how you're doing, the way you feel tells you how you're doing.

And in her case, again, her blood markers didn't change at all. Whatever that process is, there's still going on the background, but it's not affecting her.

And I think that's a huge win. Okay. Well thank you so much, everyone for joining us today. I hope you found this conversation insightful, engaging. And if you're a summit purchaser, stay right here because we're going to dive even deeper into this captivating discussion and talk about some of the natural, processes to better manage these issues.

Recovery Story and Clinical Hope

Now, if you're not, click on the button below, or to the side and get access to a world of information, get ready to reclaim your health. Now, if you're watching this, thank you for being a valuable member of our community.

And let's, dive in and keep on going. So what are, we've already talked somewhat about, the importance of diet, sleep, moderate exercise. What are some of the other, parts of your protocol for managing these patients?

Well, for me, I think, you know, immunotherapy is one of the biggest things I've seen. Move the needle for people

who are struggling with various types of autoimmune disease.

And as the name suggests, it's immune therapy. We're trying to help retrain your immune system to better tolerate, you know, your world. You know, if we believe that part of what's contributing to M. S.

and other autoimmune diseases are really a loss of tolerance of your immune system, you know, how can we rebuild that? And we can do that for any number of different triggers.

We can help. But if you've got food sensitivities, we can help it. If you're allergic to pollen or mold or dust, we can do it. If you're having immune reactions to line two strep, you know, this idea of microbes being allergens instead of just pathogens has really become evident in the last decade of research.

So we know that, you know, you can get exposed to different microbes and not necessarily, your immune system doesn't necessarily treat it as a pathogen.

That part of you for a moment? yeah. Let's let's explain allergen, and pathogen, because I'm not sure our audience will appreciate that nuance here. So allergen is a substance that you get exposed to that triggers some sort of allergic reaction.

So probably the stereotypical thing is hay fever. You know, if it's a high pollen day, the trees are pollinating, your nose itches, you sneeze, you start coughing, you get itchy ears, watery eyes.

That is an allergic reaction to, in that case, pollen. But it could be dust. So the nature of allergens is that you get exposed to these substances and they trigger usually some sort of reaction involving a chemical called histamine.

we know that mast cells release a lot of other chemicals, but that's the one that if you go to an allergist and they do testing on you, they're really looking for histamine reactions or what is called IgG immunoglobulin E.

That's an antibody that's associated with allergy. So it's a very specific immune mechanism that causes this collection of allergic symptoms. A pathogen on the other hand is something you get exposed to that's really not part of you.

It's something that the body identifies as foreign. Often it's a microbe. It could be a bacteria, a virus, a fungus or a parasite. And so when your body sees and says, hey, you know, I know what's part of my normal microbiome, my normal flora, that's okay.

But I don't recognize you. I don't understand who you are. You don't belong here. And then you'll get this immune response to trying get that infection under control.

So, you know, this idea of pathogen is usually something that's coming from outside the body that doesn't belong. And the immune system starts to respond.

And, so you have pathogens. We have the helpful health promoting bacteria and viruses. but we also, sometimes we can have this allergen, this abnormal immune response to, are you saying that some of these, bacteria and viruses could elicit a allergy response?

That's independent of, whether or not they're pathogens? Right. So maybe a better way to explain this is to think about how part of our immune system works.

We have the cells in our body called T helper cells. T helper cells are kind of the conductors of the immune system. And there's T helper cell one and T helper cell two.

Diet, Lifestyle, and Low Dose Immunotherapy

Well it's very complex but there's make it simple T helper cell one generally our cells that when they see something

foreign they just go right after it and they break it down.

Then they eat and they try and get rid of it. Where T helper cell two cells are really more of the cells that alert other parts of the immune system that there's a problem.

So the T helper, the TH1 cell says, hey, you don't belong here. I'm going to get rid of you. We're two cells kind of way. Their hands and go, hey guys, there's a problem over here.

Somebody needs to do something about it. And that usually activates what are called B cells. And B cells make antibodies so that U pathway is really ultimately a way to try and instigate some sort of antibody production, which is our protective immune effect against these different things.

So a lot of pathogen, immune reactions are one driven where a lot of allergy reactions are driven. But you can imagine if you get exposed to a pathogen and you're expecting at one response for the body to get rid of it, but it accidentally stimulates too.

Well, now you've got all this accidental antibody production that's engaging a completely different part of the immune system, and it has a different physical reaction in our body.

So, you know, ultimately, what we're trying to do when we see that happen in the body is we're trying to tamp down that two response to the pathogen. It's an appropriate response to an allergen, but not to something like, you know, Lyme and Strap and other viruses and so forth.

Okay. So now the most important question, so how do we do that? Well, the most, effective way that we found recently is something called LDI or low dose immunotherapy.

And the idea is again we treat it much like we treat allergies, except again, now we're treating these pathogens. So we basically take, you know, organism that's been killed.

It can't reproduce, it can't cause infection, but it maintains all of the little pieces and bits that our immune system needs to recognize it. And we dilute it out and we mix it with an enzyme called beta glucan, which is actually an enzyme that's found in your white blood cells.

But we found that when you mix it with this enzyme, it has this immune modulating benefit. And, basically we give little doses, we put it under people's tongue.

And so we can do it for any number of different microbes that we've identified as potentially being triggers. So if we do blood test and we see high strep titers or high Epstein-Barr virus titers, or maybe we do a stool test and we see overgrowth of Klebsiella.

So there's different ways that we can ascertain what might be a trigger for you. And in that, you know, this therapy's been very effective at helping modulate the immune system against, you know, these various microbes.

So you identified the microbe. That's the problem. You then, used, a killed organism, from that species. And you begin this, dilute therapy under the tongue.

and I'm guessing in gradually increasing doses. Yeah. I mean, you think about, you know, if you go to an allergist and, you know, they do allergy shots with you, you know, they take if you're allergic to dust or ragweed dust and ragweed is diluted out.

And then they inject it into your arm. And then every week you get that injection as a way to build your immune tolerance against the the allergen. It's the same concept here.

We're just now trying to rebuild your immune tolerance to the microbe. So we're not interfering with your innate ability to fight infection that stays intact.

But again, we have that possibility of turning off that other mechanism. If your immune system's against really treating it like an allergen instead of a pathogen.

And how long does it take, then in your practice to, achieve this goal of restoring appropriate immune tolerance? Yeah, it really depends, of course, on the person.

It depends on the state of their immune system. And it also depends on, you know, whether it's really, truly one trigger. Sometimes we find people it's multiple.

You know, they might be aggravated by lying. They might also be aggravated by Candida. So sometimes we have to do multiple no pathogens to get things under control.

But what's fascinating, what I've seen over and over is a you hit the right target, you'll see changes often within 24, 48 hours of of doing this therapy.

I mean, my own personal experience, you know, when I was early in an MS, I had terrible brain fog. And I actually, again gave myself the Lyme antigen just because I have history of Lyme disease, and it didn't really do anything for me.

But then I gave myself the Candida antigen, and within 24 hours, my brain fog was almost completely gone. So clearly there was something in my interaction with yeast that was triggering the brain fog.

And again, this has turned it off. and so how long is this then, a lifelong commitment to keeping these, But you called it, immune, low dose immunotherapy going.

Yeah. The idea behind any immunotherapy is not designed to be lifelong, but it may take some time to establish immune tolerance to the point that you don't need the therapy.

So often we give the therapy. Sometimes the benefit lasts for a handful of days. The second dose lasts a couple weeks, the third dose that lasts longer.

So we'll see often this progressive length of time. And then we can get to a point where, you know, we see stability, you know, then we're able to stop the treatment.

So no, it's not designed to be lifelong, but sometimes it takes several months. And I haven't seen people who have been in this for a couple of years, to get to a point where, again, they don't need it at all.

well, this is, just so exciting. Darin, yeah. And, often or is it rare that you have to do a couple of different, allergens at the same time, or how do you sort that out?

Yeah, it's more common that people have more than one trigger.

Finding the Right Triggers and Closing Remarks

We may find clinically that one has more of an impact on the symptoms that get expressed, but, it's not uncommon that people have a couple of different things that are affecting them.

again, I've played with different antigens myself, and I've tried Epstein-Barr virus because that's a known trigger for MS That's helped me a little the candy to help my brain fog and my other patients I've seen often.

It's it's often more than one, I'd say more than 50% of people. It tends to be more than one. So you're probably doing some investigations to see probable culprits.

And then, you start testing those culprits. and, watch for the clinical response. Yeah. Usually when I first meet with patients, you know, we're doing fairly extensive testing to try and help identify what are those potential triggers

between blood tests and stool testing and urine testing.

You know, we can get a lot of information about what your exposure has been. And then once we get that information back, that gives us a better idea about where we need to start with this kind of therapy.

Okay. Well, this as always, a wonderful, wonderful conversation. Darin, can you please tell our audience, where they can find you? The best place is just to find me on my website.

It's just dariningelsnd.com Okay. Thank you so much Darin. All right. Thanks Terry.