How Lyme Disease Inflames Your Brain—And What to Do About It Transcript

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Introduction to the Neuroinflammation Summit

Hi everyone. My name is Doctor Richard Horwitz. I'm the co-host of this year's DrTalks Healing Lyme 2026 summit, and the focus of our summit this year is the Neuroinflammation Brain Protection Summit.

And I'm going to be interviewing Doctor Myriah, who is with me today. So I am so happy to have you as my co-host. This is the third year in a row that we're doing this, so this is really great that we have a chance to do this and kind of share things with people so they can get their health back in order.

So thank you for doing this. Absolutely. I'm honored and excited to be hosting this for the third year straight with you as well. So and I'm so happy that we have new information to share.

And you have, as always, a new amazing study that you're working on. So it's going to be so and in fact, well, why don't we just kind of jump in and explain that the reason this summit came about, the way that Maria and I are doing it, is because I started discovering in the last year that, I mean, it probably has at least 50% of the chronic line.

Patients I was checking had signs of inflammation going on in their brain. They were showing low beta amyloid ratios in some of the Alzheimer's markers that we expect to be seeing in Alzheimer's, like Peter 181 Peter 217, neuro filament light.

And these markers just became available in the last couple of years. So I don't even know if you'd even been checking them because I had not been regularly.

So I decided to stop, start checking them. And I was a little bit surprised to see so many of these people had these markers. And then the question became, well, okay, brain fog and memory concentration problems is one of the major problems that people have.

Apart from being fatigue and having aches and pains. But the brain fog is a big issue, including, of course, the neuropsychiatric component. So what could we do?

And this led to my doing a study, which we'll talk about in a bit, but I submitted a article to the Journal of Alzheimer's Disease Case Studies showing we could reverse some of these Alzheimer's markers in chronic Lyme disease, using some of the protocols that we're going to talk today about.

So you're going to be discussing with me today some of the, natural ways that we can help support brain function. I'll be discussing a little bit not so much on this podcast today.

About that, some combination therapy. We'll, we'll save that for another, we can just touch upon it today. But, you know, it's an important topic because, when you look at the rates of dementia, I don't think most people know this.

The rates of dementia, according to the scientific studies, are 42% of people above 55 years old. And it's like, what? And I know people don't realize that when they get amyloid in the brain, Borrelia burgdorferi, Lyme disease is one of the causes of amyloid production.

It was published by Doctor Judith McCloskey. I mean, she did 4 or 5 articles on this years ago, and, Doctor Ivor Shopee published several years ago that and this is autopsy studies.

They found p tau, beta amyloid and biofilm in the brains of Alzheimer's patients and also Parkinson's patients.

How Lyme and Co-Infections Drive Brain Inflammation

So this is really important because knowing that the dementia rates with people having cognitive issues is so strong going forward, we thought, you know, because we have brand new information, this might be a perfect opportunity to share this information and discuss some of the natural ways that we can heal people.

So, right. Why don't we start off with your practice? Why don't you tell us a little bit what is happening in the brain when these people come in and they have Lyme and they say, hey, I've got brain fog, I've got memory concentration problems, I can't think what exactly is going on in people's brains when this is happening.

Yeah. So, you know, it's funny, a lot of people think that it's just from being tired, not feeling well. It's the logistics of having a chronic disease.

But really when we're talking about brain fog, cognitive decline, even mood changes or risk of dementia, we're really looking at neuroinflammation. And so that is simply just inflammation of the nerve cells of the brain.

And one of the key players in this process is a cell called the microglia cell. And it's really, the brain's immune resilient immune cell. So it's a cell that acts almost as a security guard, but also the cleanup crew.

And it's constantly scanning for infection for toxins, for cellular injury. And when we have these vector borne diseases like Borrelia or Bartonella crossing the blood brain barrier, or we get some of these inflammatory cytokines coming into the brain, these microglia actually switch into defense mode.

And in the short term this is a very normal protective process. But when they stay activated chronically, they start releasing and driving these pro and inflammatory chemicals that actually damage the neurons and the brain cells.

And so this is when occasional brain fog kind of switches into persistent. Or we can start to see mood changes, memory changes and really the development of neuropsychiatric symptoms.

So it's so it's so important to recognize that like these chronic Lyme and other vector borne disease infections aren't just an infection. It's actually cellular changes in the body where these cells become stuck in this defense mode.

And this defense mode just keeps pushing inflammation, right. Yeah. These micro glial cells, it's interesting. They they're associated with definitely chronic Lyme, but they do show up in Alzheimer's disease.

They show up in Parkinson's, they show up in autism spectrum disorder. They show up in, ADHD. Whenever you're dealing with, an inflammatory process in the brain, you're right.

These micro glial cells are playing a big role. It's. By the way, I don't know if you take low dose naltrexone, but part of the reason I've been on LDN for as long as I have been is because it's one of those things.

And we'll get to this in a second that, you know, can help block a little bit of that microglial activation. I still have a lot of work to do in the field, and I'm sure you do too.

We need our brains and interact with us. So so let's go a little bit more into those inflammatory chemicals. So when we're talking about inflammatory chemicals these switches that get turned on which specific cytokines we talking about in this process that are driving it.

Yeah. So I'll get to the specifics in a SoC. I think it's important for the listeners to understand like these cytokines simply are just chemical messengers of inflammation that all have fancy like numeric names.

And what these cytokines do is they act as little messengers in between the immune cells. But they also can influence the development of certain T cells, of B cells, of how they interact with each other.

And ultimately can lead to the immune imbalance, dysfunction, or what I call immuno incompetence that allows these infections to really evade the immune system and remain chronic.

So the ones the pro-inflammatory cytokines that really do a number on the brain are nuclear factor kappa beta tumor necrosis factor alpha. And then we have the interleukins like interleukin one beta IL six, IL eight and IL 18 being the main ones.

But there's others. And when the microglia cell gets activated, they stimulate the release of these cytokines. And now interleukin one beta is particularly important.

Not that they're not all important. And they don't all drive major inflammatory issues in the brain. But IO1 beta is closely tied to something called an LRP three inflammation.

And this is like a fire alarm or a smoke detector inside of the immune cells. And so in a chronic infection that alarm doesn't shut off. And we get stuck in this loop of infection causing microglial activation causing cytokine release causing more microglial activation.

And this loop is really what is driving the sustained brain inflammation, as well as a lot of the other symptoms that these patients are dealing with.

Yeah. No. And you know, when you when you look at the biochemistry of it and we don't need to go into you know too much detail what people need to understand.

And this is really the key. When you get Borrelia burgdorferi you get Bartonella into the brain. It turns on these microglia. This is switch in your nucleus called NF kappa B.

You turn on this switch, here comes all these inflammatory cytokines. And what do they do. They fog you out. You can think you get brain fog. You you can't find words.

You walk into rooms, you forget why you're walking in. Your mood gets affected. It can make you depressed, anxious. Some of the people, of course, with lemon, Bartonella, especially Bart, they get rage.

They can get psychosis. So these inflammatory molecules are underlying, a lot of those neuropsychiatric manifestations, whether we're talking about chronic Lyme or we're talking about Alzheimer's or really because they're all inflammatory brain diseases. Right?

So it's part of the reason, by the way, in my practice, I don't know what supplements you take every day, but I do block NF kappa B with an acetylcysteine alpha lipoic acid in glutathione.

Inflammatory Cytokines and Microglial Activation

So, you know, in the evening when my wife and I are taking supplements, it's part of the reason we take those supplements is because it's probably one of the most important inflammatory pathways, and it's the one also, when you get a hard time reaction when you're killing off Borelli Bergdorf, right, with Lyme treatments, whether herbs or antibiotics, it's also the switch nf kappa B that throws out these cytokines.

And that's one of the ways you block it. Have you found those have been effective in your practice and in helping with hoaxes? The same things we've been basically using.

Yeah, absolutely. Those as well as Japanese knotweed Chinese skullcap are extremely helpful for blocking NF kappa betas. Well, and the LRP three inflammasome, interestingly enough, is also blocked in part by low dose melatonin.

So even though and the limbic haze of course gets sleep issues like you get sleep issues in your foggy. But it's interesting that the Nlrp3 inflammasome is affected by melatonin.

So it's part of the reason and our protocols when we describe it we say, listen, even if your sleep's not terrible, you might want to consider just a small dose of melatonin, a milligram 1.5mg, just because it does act on those Nlrp3

inflammasome.

Sure, you've been using those also in your protocols with the Japanese knotweed and the rest. Yeah, absolutely. Sleep is so important. And you know, one of the things that drives brain inflammation too, like and I'll and I'll get to your point of melatonin.

But you know we have the tryptophan through five HTP serotonin melatonin pathway. And a lot of times the presence of various microorganisms like Borrelia and the inflammation that they cause increases.

This enzyme, called Iddo and Iddo, actually blocks the conversion of tryptophan into melatonin and instead sends us down on a pathway where the body makes a really pro-inflammatory chemical called Quinn folic acid and uric acid.

And so not only are those pro excitatory neurotoxins, but also if you're disrupting the development of or production of melatonin in the body. Now we can't sleep as well.

And if we're disrupting serotonin now, we're going to have, you know, more depression, anxiety, etc.. And so Chinese skullcap actually inhibits that enzyme ID.

Oh, and on top of that, Chinese skullcap contains melatonin. So if we use one of our doses of Chinese skullcap at bedtime, we can get some naturally occurring melatonin.

And we can also help to shut off that enzyme and help give our body back the ability to produce our own melatonin and serotonin and sleep. Because sleep is so important, you know, it's not just a mental break.

It's literally when our body is repairing, right? And we're doing lymphatic drainage and we're actually cleansing and detoxifying the brain and all of the nerve cells.

So melatonin has so many greater benefits. It's neuroprotective. It does so many things to help with the immune system and heal the body. Yeah. It's again, of the 70 supplements that I swallow every day, it's the reason before bedtime, I take just a tiny bit, you know, just knowing that all these environment, I don't think I'd have chronic Lyme.

I got rid of it 30 something years ago. But just knowing the dementia rates and how inflammation is now affecting so many people, whether you're talking again about chronic Lyme mood disorders, Alzheimer's, autism, ADHD, brain inflammation is a big problem.

And, you know, it's affecting large swaths of our society. And as you know, when you have Lyme, you don't fall asleep easily and you keep staying up in the middle of the night, which again pushes the microglial activation and the Nlrp3 inflammasome.

So, so regarding sleep just for a second, because it it's so crucial your favorite sleep herbs I've loved for example Gabel Theanine and you know valerian root kit because I think in this conversation about turning off brain inflammation it's important to talk about it.

What are some of your favorite herbs that you like? So so obviously, for the reasons that I stated, Chinese skullcap ashwagandha is also lovely. Helps to balance the 2217 branches of the immune system, protects the adrenals, helps to level out cortisol.

So that's a favorite fast food title serine. So fast food title serine can help you to keep your blood sugar and cortisol steady overnight. So especially if you're having like that, waking at 3 a.m.

when you feel like you know you're going to open your eyes and it's going to be light out, but then you find out it's 3 a.m. that sort of early cortisol surge, if you're deficient in the title serine, that can be very helpful.

And Borrelia, as well as a lot of the other vector borne diseases, they need our phospholipids, and they're breaking

them down out of our cell membranes and robbing them from us.

So phosphate title serine is something for me. That's a must. And again, that will help with sleep. Obviously if thoughts are ruminating and we feel a little more anxious, we can use the Gaba and the Theanine.

I do love passionflower, valerian, things like that as well. California poppy I mean, there there are a host of different herbs. And I think if we can kind of figure out, okay, why aren't we sleeping, you know, is it a cortisol spike?

Is it anxiety and rumination in the middle of the night? You know, is it because we're simply not making enough melatonin because of Iddo? If we can kind of figure out the root cause, and usually with vector borne disease, it's root causes, you know, then we can pick which herb or nutraceutical to use to try to address that.

And magnesium, you know, magnesium is is probably my number one go to, especially if the patient isn't having regular bowel movements. He's CMll three and eight for the brain versus magnesium malate or glycine eight.

So it depends what else is going on. So if it's more for the brain three and eight for sure. If I'm looking for a really good well-rounded magnesium, that's not going to cause any bowel issues.

I'll typically go for like a glycine or glycine eight. So so usually a combination of those 2 or 1 or the other depending. Yeah. No I've and I use exactly the I do the same thing.

Exactly in that way. Figuring out because the malate is also good for magnesium for mitochondrial function. But the glycine aid also is perfect for it.

Great. So the other thing about sleep, by the way, which is important in protecting your brain because it is a cause of dementia, right? People not sleeping from whatever cause.

It's interesting in the chronic Lyme patients I've seen that. I don't know, maybe 10% of even the young thin women had sleep apnea, and we didn't expect it until we did a sleep study.

You know, the men I would have looked at benign prostatic hypertrophy, some of the women in menopause, they needed some hormone replacement with bioidentical because the estrogen was just too low and right.

Change a little progesterone to hit the receptors and get them back to sleep. But you bring up a good point, which is it's not just the Lyme that's getting a problem with sleep, which is contributing to the brain inflammation.

You have to figure out is it line, is it barred? Is it from the ideal pathway in melatonin. Is it benign prostatic hypertrophy. Is it menopause. Is it too much cortisol.

We need phosphate little serine. You need to break those down. And you're right.

Sleep, Melatonin, and Brain Protection

So it's a good point I think people need to don't just take a drug or just take the herb for it. Get to the root cause of course. Which is always what what is the best way?

So how does this fit into, beta amyloid and pito? Because we are starting to find this part of the reason again, this summit, I think, for people is so important is because, and as far as I know, I've not seen any other doctors talk about it.

Our summit is the first one that's releasing it. And I submitted a paper to the Journal of Alzheimer's Disease Case Studies, which was accepted with revisions.

I sent it back. I'm waiting to hear back from them. But hopefully it will be accepted. But it was exciting because it was a PTL patient rash Eliza positive C6, Elisa positive IgG, CDC positive, Western blood positive CDC positive

IgG, Western blood positive, immuno blah.

Like every criteria for chronic Lyme. And she had elevated markers where her Peter 217 one. This is a biomarker by the way, that anyone now can get through question lab LabCorp.

It was elevated and I spoke to her about doing some combination therapy because we needed some way of lowering down the brain inflammation, explained to people a little bit about, you know, ketone, beta amyloid and why this is a problem for the brain.

Yeah. So, I mean, I think most people that have heard anything about Alzheimer's understand or, you know, have heard about this, the beta amyloid plaque, right, theory.

And so the interesting thing is that there's growing discussion that this might be just a normal part of the innate immune system. So there's many researchers that propose that the development of the amyloid is actually like an initial protective measure, where the body is trying to make like an antimicrobial net to help to trap these microbes.

So in that framework, it's not just pathological, it's actually protective. But again, like when the microglia are constantly driving this inflammation and this inflammation is inhibiting the brain's ability to function normally, we can't clear the amyloid.

And then that's when it becomes a problem because we can't resolve it. So then it becomes pathologic. So it starts out as this totally normal immune event to protect the brain but ends up causing issue.

And then the situation with tau protein is is very similar. So tau acts as a scaffolding inside of neurons but under inflammatory stress. The Tao becomes abnormally phosphorylated.

And then that's where the P comes from with pito. So it's for phosphorylation. And the p tau disrupts neuronal transport systems and contributes to the tangle formation.

So again, like a lot of other things that we see, it's this infection driven inflammatory loop that's driving the amyloid and the tau pathology. But that's further stimulating the microglial activation, which worsens inflammation, which causes more of like this neuro immune response.

And it's just this feedforward vicious cycle. And you know, the problem right now, because I'm also accepted to be a reviewer for the Journal of Alzheimer's Disease.

And I'm looking at a study now that they sent to me. The problem with it is, is that any infections and it doesn't have to be bacteria like Lyme or Bartonella, viral infections, Covid herpes virus one and two.

Herpes virus seven eight. Parasites toxoplasmosis, Candida species. Believe it or not, that get in the brain. These have all been associated with beta amyloid and petal formation, but also so is environmental toxins they found in people exposed to pesticides.

They found the same amyloid production in the brain because, again, of the microglial activation, the analog P three inflammasome, the same inflammatory pathway, whether it was infections, whether it was infections and toxins.

So the problem is most of us are exposed to these things. And that's why I think this summit is going to be so important for people. Because the question is, what can you do about it? Right.

You're right. Beta amyloid is a naturally this is what the medical research is showing. It's not just there. It's there actually to try and protect you.

But the problem is it it ends up hurting you after a while because of you know, the the amyloid, as you said. And the p tau just stops the communication between the neurons.

And that's when you start having the memory concentration problems. How do we intervene. So for example is as linfox we're doing different things from my perspective, we'll talk about DAPs on it a second.

How are you intervening in this inflammatory cascade. What are you doing to help your patients with it. Sure. So I guess starting upstream for me is is most important.

So with one of the most upstream pro-inflammatory pro-inflammatory cytokines being that nuclear factor, kappa beta, we can look to various herbs to shut that down.

We can also look at herbs that are going to decrease the Nlrp3 inflammasome. We can look to herbs that are going to turn off galectin three. And then everything else from there is is kind of downstream.

And I want to make sure that we talk about nutrition, the microbiome, things like that before we end, because it plays such a crucial role. And there's such a connection between the gut and the brain.

But my go to botanicals are, like I said earlier, Japanese knotweed because it's shown to reduce that and all our P3 activation and calms the microglial inflammation, as well as a host of the other inflammatory cytokines.

Chinese skullcap modulates specifically nuclear factor kappa beta and has regulating effects with most inflammasome we have that supports mitochondrial function in the brain and also down break regulates inflammatory signaling.

One of my favorite is lion's mane. This is something I just more recently started using and have become fascinated with, not only for its ability to inhibit all of these inflammatory cytokines, but its ability to protect the brain from so many different angles.

And then we have curcumin, we have quercetin, we have an acetylcysteine, as well as a host of other bio, bio flavonoids. And, you know, each one of these herbs and what I love so much about them is their multi-faceted benefits, that go far beyond a lot of their antimicrobial actions.

Yeah. You know, when I was learning about Japanese knotweed in Chinese sculpture, it was initially regarding like the BSE had done, can I that the parasite was resistant and you know, there was a fact a ABC had done canning with these herbs.

But really the point you're making is these really need to be used regularly in line treatments. And by the way, I take cordyceps and I take lion's mane as part of my like, you know, some of these supplements.

One of our neighbors who's actually not that far away, I, Sharlene Chai, came probably about six months ago and told me about Go Mushroom. She she bought a mushroom farm up in Hudson and just it's all organically.

So I'm taking her her dropper so. And lion's mane by the way. And this is really important. It increases brain drive. Neurotrope factor DNF. They've shown that lion's mane I, I can't get the Latin name her curriculum or academy.

You know what I'm talking about. It increases those brain derived neurotrophic folks just like exercise helps to increase it in your brain. So does lion's mane.

So again, I think these are great clues, things for people who have chronic Lyme who say and cordyceps, of course, for energy in general, not general mitochondrial support but brain very important.

Beta Amyloid, Tau, and Alzheimeru2019s Markers

And and by the way, in this hypothesis of why people get brain fog and cognitive issues and even go towards dementia, the amyloid hypothesis is only one of the hypotheses that's out there.

They have found in some people, when they take out the amyloid with amylase that that low, they still can have

PTL. That is a problem that's causing these neuronal miscommunications in the brain.

So I think it's really important to use a lot of the tools in the toolbox. Getting the mold and the heavy metals out of the body, right, which drive the inflammasome right in the brain and turn on the microglial activation when when you're talking about the gut.

When I did the research for this article, and I this will be published hopefully soon. I showed that all 16 factors infections, environmental toxins, the gut with the microbiome of the gut, leaky gut.

They showed that with leaky gut, when you get lipopolysaccharide LPs that gets across, it affects the blood brain barrier and makes it leaky or what? All this gut stuff is getting into your system.

And now the blood brain barrier is leak here. As you said earlier, you're getting these inflammatory cytokines that are getting across into the brain, making it worse.

But it's the same thing with lack of sleep, vitamin mineral deficiencies, mitochondrial dysfunction, autonomic all 16 factors that I have talked about before.

They're all associated with Alzheimer's disease. And we all see them in these chronic Lyme populations. So you're right. I mean, it's not just a question, of course, of of taking herbs and hitting the bugs.

The gut is extremely important in there. What else with the gut specifically, what else did you want to say about the gut? Because it is an important the gut brain connection.

I think people don't realize they I think many people know most of your serotonin is made in your gut, right, with Pires patches for the immunity, but they don't really understand the relationship.

Why don't you talk a little bit about the source? I think I mean, my gosh, we could talk about this for hours, but I think, you know, the biggest point is that these inflammatory cytokines loosen what are called the tight junctions.

And so the tight junction is like the cement that holds the cells together and gives the gut the ability to be selectively permeable, meaning it's letting in the nutrients, letting in, you know, things that we want to bring into the body once it's been appropriately broken down and digested.

But it also keeps out other pathogens that were being exposed to, you know, through our food toxins. You know, our lymphatics dump into our intestines so that we can clear all of that waste product out of the body.

And when the gut becomes leaky, we now are re absorbing all of these things that we want to keep out of the body. And sometimes we're letting foods in as polypeptides instead of their individual amino acids, for example, with proteins.

And then the immune system doesn't know what this is and it starts making various antibodies to it. And so I always say, you know, we only have so much reserve for our immune system.

We're already busy, hopefully fighting all of these infections, plus the viruses and everything else that we're being exposed to. The last thing we need to do is to be wasting our immune reserves, fighting foods that we're eating.

So I think it is so helpful to know what our immune system individually has decided that it's not going to like and make antibodies against and temporarily remove those things from the body during treatment because they for sure are driving immune confusion as well as inflammation in the body.

And at a point they will actually inhibit your ability to repair the gut and the gut lining. So I think that so that we're not having creaks, crazy hexes, so that we're not more toxic than we need to be working on healing that gut barrier is crucial.

And I usually spend about a month trying to do this before I actually get someone on there. I call it sort of the killers of their protocol, and that's because when you have, a higher permeability with your intestine, you are way more likely to hurt because your toxic load is already high, you're already more inflamed.

And as your body's breaking, or as the organism is breaking down its outer cell wall and releasing this LPs, it's going to drive inflammation and acidity and make the body hurt.

So the better the body is detoxing and the better the body is able to deal with and eliminate LPs from dysbiosis, as well as LPs from killing, for example, Borrelia.

The less inflamed you're going to be, that more, able, you are going to be to detox and not have these crazy inflammatory reactions. So moving from beyond, like the leaky gut in the dysbiosis, you know, most people, I think, have heard that over 70% of your immune system literally is in your gut and that our immune systems can't function properly if we don't have, our microbiome that is healthy and diverse and balanced.

So our microbiome and all that good healthy bacteria actually can shut down inflammation, or it can drive it and it can either support a healthy immune system or it can lead to more immune dysfunction.

And so there are specific probiotics like Lactobacillus, Romanos, Lactobacillus plantarum, and Bifidobacterium long term, as well as some other species that actually support gut barrier integrity and help to calm the inflammatory signaling.

I, I use exactly the same strains, and it's interesting, when I was doing the research again on brain inflammation, whether it was ADHD or autism, Alzheimer's, it shows up that these wrong bacteria, basically all these environmental toxins, people normally think like they get into your cells, they get into your brain.

But the other thing they do is they destroy the microbiome of your gut. And what they discovered in each of these different diseases, whether you're talking about chronic Lyme or not, it you're have the wrong type of microbiome.

You're losing short chain fatty acid bacteria in the gut that are needed to lower inflammation. You start to get leaky gut. You get cell activation from some of these foods getting across in sensitive people.

And again, because of this gut axis, and even gut, brain, liver axis where the liver's not functioning properly from all these toxins, it's overloaded.

You're going to get end up getting brain inflammation and it's all going to get worse. So, I use similar probiotics. In fact, I take them myself as part of the supplements, I mean, the ones that I use.

But you're right, those are some of the most key probiotics that we use in our practice. When I'm when I'm doing the adaption protocol, the reason I designed it with the probiotics 350 billion from is imagine is has 18 different acid resistant strains with a REM gnosis which exactly.

And longevity all the ones you were talking about are in there with Saccharomyces bility to stop, you know, C diff, but also crowd out the Candida. I used the author biotic, Sarah Clarke.

I mean, you're right, we need those good bacteria because of the gut brain connection. So, what are your favorites for healing leaky gut? I mean, I've used bovine immunoglobulins and different things.

Do you have some favorites? Because I found probably leaky gut is at least in 50% of our patients dry? Absolutely. Yeah. What what what are your favorites for for healing that.

So actually I, I love aloe and my very good friend, Doctor Jill, that's one of her favorite, immunomodulators. So I didn't even realize how much it's able to modulate the immune system in the gut.

It also binds mycotoxins. It's a very powerful binder for mycotoxins for LPs, and it's just so soothing. So that's

actually one of my favorite things for healing the gut.

I definitely do the eyes. I also like ESP, we have to make sure that the levels of EPA and DHEA are what they should be, because we cannot heal the intestine if we're deficient in those too Omega three fatty acids.

And we need vitamin A, we need vitamin D. I'm just trying to think of like the foundational pieces. Beyond that, I would say getting into using glutamine and again, making sure that we're not driving glutamate, but using glutamine, especially if a micronutrient panel shows glutamine deficiency from an intracellular perspective.

I like Jim Olson. Herbs like slippery, marshmallow. I'll use diglycerides.

Herbal and Nutritional Strategies for Brain Support

Glycerin is, I would say those are my big go tos. But really, you know, following that functional medicine for our protocol, where the first are is you are removing all of the things that are driving the inflammation.

And so, you know, this comes down to various toxins, food sensitivities, whether they're opportunistic or commensal infections or if they are stealth infections like Lyme, Bartonella, Bartonella loves that.

Got right. Borrelia loves the gut. It wants to break down the collagen. So identifying all of the things that are drivers and removing them. Then step number two, repairing the lining.

So some of the things that we talked about, like Alo, DL, slippery L, marshmallow, glutamine, etc., then we want to re inoculate with all of the healthy probiotic materials.

You know that we spoke of. And then it's funny, I usually don't have to get to step four if I've done a good job with steps one, two, and three. But step four would be to actually replenish, any digestive enzymes, right?

So if someone has hypochlorite hydra, or they're not able to make the stomach acid, we can't expect their pancreatic enzymes to be released properly because our body actually elicits the release of bicarbonate and pancreatic enzymes in response to a very, very acidic chyme moving into the small intestine.

So a lot of people want to move right to pancreatic enzymes. But if we don't go upstream and start with the hydrochloric acid, right, like we're bypassing our body's own chance to just appropriately release the bicarb and the enzymes so that they can work.

But really, I try to always think through like the four hour protocol in steps to restore gut function, because you can throw people on a bunch of soothing herbs, but if you haven't addressed the first step and you haven't removed, you know, the microbes and the foods and the toxins and all of the things that were driving it in the first place, it's like pushing a boulder up the hill.

Yeah. So a couple of questions regarding that. So in your patients, because, you know, David Perlmutter speaks a lot about getting gluten out of the diet and the rest.

And sometimes, you know, the local labs, you do an anti-glare at an antibody or, a TTG, you can always find it, but you do a Syrah panel right there, three x or four x, and all of a sudden you find there are these gluten markers.

And it's not so easy for me to get these panels. How do you advise your patients regarding gluten? Because a lot of people ask this because, you know, David has brought it up a lot.

Do you strictly avoid whether they have the markers or not or, or you feel like if, for example, the local markers are negative, but they haven't done six panels, it's enough?

Where do you lie on that kind of spectrum? So I will tell you, and I think you know this about me by now. I make very, very few blanket statements. I believe wholeheartedly and passionately in personalized, individualized

medicine.

But I have one blanket statement no gluten, no dairy, no sugar. And I will say it over and over and over again. And I and I have my reasons and I mean, to get a little bit more in-depth with your question, I have had patients that have no movement on, like, you know, a celiac profile where we're looking at the you know, the antibodies against gliadin as well as the others.

And then I will do a flat out like antibodies to glue and antibodies to wheat, etc.. I've had it come back negative, and then I've had patients who have wanted to do more in-depth panels like Cyrus or like the Wheat Zoomer, for example.

And holy cow, the things that you see come back and these markers are coming back, showing in a lot of patients the driving of like an auto immune response in the body do not only to gluten like there's so many other components of wheat for example, that drive inflammation and like an autoimmune process.

And unless you're spending hundreds of dollars doing these tests, you know you're not going to find it. You know, I was always taught that gluten increases online.

It's one of the main drivers of Sonya Lynn. And Sonya Lynn breaks down those tight junctions. And I mean, for me, just for that reason alone, I think that that's enough to warrant not having gluten.

And I don't mean go out and buy all of the expensive cookies and crackers and breads and pastas and nonsense, because none of that stuff is good for you anyways, whether it has gluten or doesn't have, you know, the the carb load on those gluten free, you got to be really, really careful with it.

But I think you're making a good point because you can get non celiac gluten sensitivity right. It's those markers will not always show up. And because of the gut brain axis because of what we're talking about today of protecting the brain, you've got to make sure that there is no major inflammation going on in the gut.

I mean, look, we've we've had people even with candida overgrowth that we treat the Candida who say, my brain fog gets better, that it wasn't just the Lyme, it wasn't just the bite.

It wasn't just the mold toxins. It was because the gut was off with too much candida, right. Producing some of the toxins. So it it's tricky. The gut the gut brain axis is, is an important one.

So I'm glad we brought that up. And you sometimes also do like the GI map Kids Aid. Do you think it's necessary to really check this in most people? Because not everybody of course has the finances to do the full panels.

Yep. And again, that was my point. Just don't eat the gluten. It's free right? We don't need to do a fancy bells and whistle test. So I will do various whether it's, you know, the GI map or some things.

Some are similar. And only when indicated. And so let me explain. I feel like I'm pretty good at making a hypothetical, you know, sort of educated guess as to what's going on gut wise, just from, you know, doing this for 20 years at this point and knowing what these infections due to the body and then going through, you know, their various treatment and knowing how that harms the gut potentially as well.

So sometimes if someone is having such severe gut issues and I really need to get a handle on okay, we've tried circulating through the probiotics. We've tried all of these other things.

And it just like is it feels like the gut health isn't improving. I will use certain GI tests to look and try to see the species of the various probiotics.

And what we're missing specifically in that patient, because, I mean, we can take the top ten most useful probiotics, but if that patient already has sufficient levels of those, and maybe they're missing some of the other less well known species, then it's like we have to look at that person and what they are missing, you know?

And that's what we have to focus on getting into them. It doesn't matter how high quality the probiotic is, if they already have enough of that genus and species of organisms knowing it.

And I found sometimes you may have found the same that adding prebiotics like the molecular fiber. I find adding soluble and not soluble fiber is really great as providing a food for the probiotics, but also at the same time, it's finding some of the toxins and getting them out of the intrahepatic circulation.

Right? So I mean, there's there's multiple benefits of it's not just probiotics, it's prebiotics. And even in some cases post biotics PDC activate, which has some killed bacteria, helps to stimulate those Pires patches in your gut your immune system.

So you are fighting your natural killer cells. Kick up your immune system works better with interferon gamma. The gut is really, really important when we're talking about even protecting the brain.

So that I think is important. So good. I mean, I think we've covered it. So let me just I'll have one final comment on this. So the reason we're doing this summit, specifically about the Neuroinflammation Brain Protection Summit is because the rates of dementia are rising dramatically and it has been published in the literature that Lyme is a potential cause.

A Briley Bergdorf, right, has been found in the brain creating amyloid.

Gut-Brain Axis and Leaky Gut Repair

And I would say right now, it's one of the big areas that my colleagues and including myself, by the way, until recently, we were not really looking at it because we didn't have the markers to be able to check.

I would encourage people who were listening to the summit, if your doctor has not tried getting you these markers to look for inflammation like beta amyloid 42, Patel 181, Patel 217 neuro filament light.

If you have a family history of Alzheimer's, you can get an AP gene to find out. Like if you're 44 and you've got a higher risk. But the point being, there are things you can do to reverse your risk.

One of them is getting rid of Lyme disease and getting rid of Bartonella and getting rid of mold, because all 16 factors drive brain inflammation. And it's important, as Maria talked about earlier, you've got to shut off those inflammasome.

You got to shut off the micro glial cells causing the inflammation. Because the more amyloid in the more detail that you get in the brain, the worse the memory concentrations going to be.

As time goes on, I will be discussing and in a future episode that you'll be interviewing me, the details. But the exciting part is we did find that we at least have one case study in a pure, chronic Lyme PTSD patient where we reverse these Alzheimer's markers and her beta amyloid ratios improved.

There was clearly less beta amyloid, and the PDL level reversed to normal, which, by the way, is unheard of. It's not even reported in the literature like you can normally do it.

The drugs that are out there right now for Alzheimer's, like Lecanemab, these monoclonal antibodies, they're shrinking the brain, because brain bleeds, but there's no proof that they're actually stopping the dementia.

They may be slowing it down slightly, but it's not stopping it. What we're discussing today is how do we get to those root causes, right. How do we protect your brain going forward.

So and I'll, I'll talk about the study on Daptone and why I think it's so important in a future episode. So hang in there. So sum right. Any final thoughts? This this was great.

I think we gave people up a good idea about some of the mechanisms, the importance of the gut brain axis, the importance of the microbiome, these micro glial cells, inflammasome changes.

We went through the basics of it. What else do you want to share with people at this point in time that you think is important? And, and for example, I gave you some ideas.

Some of our patients with Lyme, the B12 levels are borderline. They don't meet like the methyl melnick acid may not be necessarily high, which is a called B12, but they're borderline with it.

Or the folic acid levels are on the borderline side or their mineral levels. Their red blood cell levels are just a little bit on the low side. You want to talk a little bit about like, what else we can do to protect the brain here?

Because I think there's a lot of things out there that people are just not doing. I mean, you keep sugar out of your diet, you want to stop diabetes and metabolic syndrome. You need to get to sleep.

You need to exercise. There are things you can do to protect your brain with lion's mane, Cordyceps, all that stuff we talked about. What else? From a, you know, point of view of daily living, what else do you recommend to people to help protect their brain from neuroinflammation?

I think the only thing that we've really missed is mitigating stress, working on the nervous system, you know, addressing disorder. Nami. Meditation, gratitude, getting out in sunlight, grounding, doing all of the things to step away from a very, very busy, toxic life for a lot of us and just taking the time to be still and to be quiet and to just take a moment to really soothe our own nervous systems and connect to nature.

Yeah. No, it's it's a good point. And in fact, on the 16.6 mark associated with dementia and Alzheimer's, autonomic dysfunction is really part of it. And you probably see the same thing I do, which is most of our patients coming in are highly stressed.

We see a lot of PTSD with people who have had trauma, abuse from different sources that keeps that system. You're right in an inflammatory mode. And some of that disorder Nami is due to lime, it's due to Bard, it's due to mold.

There's a lot of reasons why it happens. Long Covid is part of it also. But you're right, I think that lifestyle of exercise, diet, sleep and including the stress pieces is really, really important.

I tell people five minutes three times per day just to start doing basic breathing techniques through the nose. Following the breath. If you get distracted, come back.

There's some really simple techniques. That we use to use some of the apps. Do you like some of the newer ones that have come out for people with this?

So I don't have an app that I love. I do really like the brain tapping system. It's a headset with a light shield that has like binaural beats and different sequencing of flashing lights and just really beautiful music and soothing like guided imaging anywhere from seven minutes to like, you know, there's ones that are 45 minutes long.

Stress Reduction and Closing Thoughts

So I love that. I love various deep breathing exercises. And then lately, my big thing, I went to a seven day intensive meditation retreat with Doctor Joe Dispenza, and that was honestly life changing for me.

So my go to is listening to, you know, a myriad of his various prerecorded meditations that are on his website. No. That's great. I mean, he's very obviously very well known in the field.

And, you know, for me, I've been I've been blessed, of course, because I've had Tibetan teachers for 45 years that I've been able to be following. So. Right.

This was great. I want to thank you so much for joining us today. So I think people again, it got a lot of it as far as like how do we start to approach this problem of brain inflammation.

And we'll talk in other episodes about treating Lyme and some of these co-infections. But I think it's important to take that perspective that this is a big problem that we now present.

Yeah, we can't just assume our brains will stay healthy right, as we age at this point. So so I think it's important to integrate a lot of the herbal and natural things we talked about today to, to protect.

So thank you. Thank you for taking the time. Again, my name is Doctor Richard Horowitz and with my co-host Autumn Rae Hinchey. Today we're co-host for the Doctor Talk Healing Line 2026 summit.

And we're focusing specifically on the neuroinflammation brain protection aspect, of how we can protect ourselves going forward so we can have a healthy and happy life and brain so we can keep keep one of the most important organs going as we keep getting older.

So thank you so much for joining me today. And we'll see you again soon for another episode. All right. Bye bye bye bye.