Lyme in Disguise: When Tics, Anxiety, and Depression Aren’t What They Seem Transcript

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Introduction to Neuroinflammation

You're having this chronic, you know, constant inflammatory response. And that's when you start getting damage to, you know, your neurotransmitters to things that are protecting the neurons to certain areas of the brain related to anxiety and depression like the hippocampus.

Uh, prefrontal cortex, which we know helps with decision-making and especially for younger people, it develops up to you prime age, what 26, I think. And that's all part of the decision-making.

So if you're constantly having inflammation, how are you going to make quick decisions or are you going to make poor decisions? Um, are you going to make irrational decisions?

All of those things will get worse from having that constant inflammation, which causes that activation of the microglia that affects those brain centers.

This is Doctor Talks, real talk from real doctors on the issues that matter to you most. Hey, everybody, it's Dr. Nancy O'Hara, and I am so thrilled to welcome Dr.

Jacquel Patterson to the podcast today. Jacquel is right down the street from me, but more than that, she is an internationally renowned speaker, naturopath, and author.

Dr. Jacquel Patterson's Lyme Journey

I highly recommend her book, Women in Lime, and I'm really happy to have her join us today. So thanks for coming, Jacquel. Thank you. Thanks so much for having me, Dr.

O'Hara. I'm looking forward to our conversation. Absolutely. So just tell everybody, our listeners, our viewers, how you got to where you are in treating these very difficult chronic diseases.

Yeah, so I've been practicing for, I can't believe it's already been like 16 years now. And I, a family history of autoimmune conditions, my mother having lupus, rheumatoid arthritis.

So basically like chronic disease, inflammatory conditions and autoimmune conditions have always kind of gravitated to me since I was in school. And I, when I started practicing or when I was actually in naturopathic school, I did find out, you know, a little bit later after testing that I had Lyme disease.

as well as Bartonella and my symptoms were fatigue, I had anxiety, I had like a lot of night sweats and I also had, yeah, I would just, and joint pain.

So at the time when it was getting worked up because I had a family history of autoimmune conditions with my mom, my aunts, they assumed it might have been going down that path.

And nothing was coming back. So just like my patients and the patients like we all have, you know, you're seeing like seven to nine doctors, rheumatologists, I even went integrated medicine realm and nobody could figure it out.

It wasn't until like, it's funny, I started practicing seeing patients and I'm like, a lot of these. that had Lyme disease. I'm like, these symptoms all sounded, sounds like many of the ones I had.

So I tested, was positive for all of them, did a lot by way of like integrative medicine and a lot of self care too, to be

honest at that time, like doing all the proper basic things that you need to do, which is hard to do after coming out of school or when you're a student.

And yeah, so since then I've been, I've been focusing more on infections like Lyme disease. I do see a lot of kids too with about 30 or 40% of my practice is kids with Lyme disease, PANS and PANDAS as well.

And it's just still, as many people as I see, it's just amazing how still a little information is out there or getting diagnosed soon enough continues to be a constant challenge.

So that's one of the reasons I always enjoy being on podcasts and putting information out there because it will just allow for people to get treated sooner than later, basically.

Absolutely. And really, that's why I'm doing it, because we need to get all of us out there and just saying this exists. We need to treat it. We need to treat it fully.

And one of the things I've heard you say before is Lyme is the great imitator. And you're showing that in your own person. We see that all the time in the kids and the people that we treat, that it imitates psychiatric illness, rheumatoid illnesses, cardiac illnesses, and it gets missed so much.

And I remembered at that time having, you know, one day my shoulder would hurt for like three days. The next day it was gone and it was some, you know, a pain in my knee.

Lyme as the Great Imitator

So you start really feeling like you're kind of making it up until you learn more about Lyme disease. And that's pretty normal. That's pretty typical.

But of course that can look like a lot of different things if you're having symptoms like that, that are coming and going. I'd like to thank NutriMedx for sponsoring this podcast.

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So let's start with what role tick-borne disease has on inflammation and specifically its impact on the brain and on mental health. Yeah. So initially when I actually started working with patients with Lyme disease, one of the things that I saw the most, I'd say almost like literally almost half of my patients, especially my younger patients, What often get also like anxiety depression mood irregularity or mood changes after getting a tick-borne infection.

And so I started doing a lot more like research and looking into it. And then also got additional training on just like functional medicine psychiatry to have a better grasp of, you know.

not only treatment, but how this was coming about. And then in terms of the research for neuroinflammation, there's a lot of reasons why it can happen.

So one of the top ones is bacteria, viral infections, Lyme disease.

Tick-Borne Disease and Brain Inflammation

And then there's obviously other ones like traumatic brain injuries, chronic disease conditions, if someone has chronic diabetes or just the process of aging.

So all of these could be triggers up for neuroinflammation. But if you have chronic inflammation related to infections, What can happen is you have what's called your blood-brain barrier, which protects you of your central nervous system, you have your blood-brain barrier.

And for the most part, your blood-brain barrier keeps everything out like 98% of the time. But you have these solutes that can go through. And what happens if you're having this chronic inflammation, this barrier becomes weaker, just like how we see people with like leaky gut, where if you constantly have these attacks, and your system isn't strong enough, you'll start getting food allergies, food sensitivities, gut issues.

The same can happen with the brain where it can get more leaky or more permeable. When this inflammation gets activated, it'll cause this whole down your regulation of inflammation and these inflammatory cytokines.

There are very specific ones that get impacted, but all of those have also been connected to increasing rates of things like anxiety, depression, and even schizophrenia as well.

Yeah. And let's talk a little bit more about the blood brain barrier. Cause as you said, you know, we hear a lot about the leaky gut, gut permeability, but we're really talking in these cases about the leaky brain.

And from your perspective, what are all the things that are impacting that or causing that? So you have these these continual traumas or continual so inflammation I always say is is always it is a good thing because you need inflammation so your body knows to repair and there's healthy levels of of of inflammation in the brain because Initially, sometimes you have inflammation that helps with like neuroplasticity and memory and focus.

The challenge is if there's like a chronicity, it's the significance of the event. If it's a significant event, like obviously like a concussion or a head trauma, acuity is one.

And then the other is the chronicity of it. So what happens is if you're having, you know, chronic infections, especially not manage of things like Lyme disease, you will have this activation of what's called microglia.

And so microglia are essentially these macrophages that I always say come in and like clean things up. And so that's good. That's part of the repair, the inflammatory process.

But the challenge is if it's getting over-activated. So it's constantly getting activated. You're having this chronic, you know, constant inflammatory response.

And that's when you start getting damage to, you know, your neurotransmitters, to things that are protecting the neurons, to certain areas of the brain related to anxiety and depression, like the hippocampus.

Prefrontal cortex, which we know helps with decision-making, and especially for younger people, it develops up to age 26, I think, and that's all part of the decision-making.

If you're constantly having inflammation, how are you going to make quick decisions or are you going to make poor decisions? Are you going to make irrational decisions?

All of those things will get worse from having that constant inflammation, which causes that activation of the microglia that affects those brain centers.

Right. And I think we both talk a lot about, you know, all the other impacts of our lives, our toxic world, our total load, you know, our poor gut health, our poor diets, all of that.

That's not just impacting our guts, but impacting our brains. 100%. Yeah. So it's the, I love what you said, leaky brain. I guess that should be a book, leaky brain, leaky gut, but there's also often.

I'll let you write that one. So there's often a huge connection between that too, because as we know, a lot of the neurotransmitters are also in the gut.

And so now you're having both of those areas affected negatively, specifically things like GABA, serotonin, which all help with, with, with also with anxiety.

Right, and they're starting in our gut and affecting our brain. Now, talking more specifically about, you mentioned the hippocampus, the regions of the brain that are most impacted when we have anxiety or tics or OCD, as we see in our kids with pans-pandas.

So some areas, so the hippocampus is actually related to the memory center.

Blood-Brain Barrier and Microglial Activation

So that's why you'll see people with anxiety or depression actually really debilitating depression is ranked even higher than people that are like paraplegic, like in terms of like complete.

inability to be physically active because of the fact that there's just like complete lack of motivation. You can become like catatonic and not wanting to do anything.

So hippocampus also related to the memory center, you'll see like a lot of forgetfulness, cognition issues where they're just zoning out, not able to focus, but it could be so bad that there's just like complete like loss of memory.

So hippocampus is for memory. Then when you look at like anxiety, the amygdala is affected and the amygdala is that that kind of initial when they look at like evolutionary brain to like for immediate emotions and reactions.

So That's something when you're, you know, on the road, driving, you're upset, you have that complete, you know, either fear response or immediate reaction.

That's really the amygdala. And the challenge is like with the amygdala, especially with anxiety, you start, you start not knowing what's safe and not what's safe and what is safe and what's not.

And things that are safe might feel not safe because it's that fear stimuli. that gets affected there's something called anterior cingulate cortex ACC that gets impacted prefrontal cortex which is continuing to develop especially for younger people which helps with decision making and so those are the ones that get most affected but the inflammatory markers that have been most connected are called something called IL-1 and IL-6.

And those are pro-inflammatory markers that will, that raise up. And actually, in fact, when you look at some studies, you'll see CRP, which is C reactive protein is elevated even prior to a psychotic event early on.

So sometimes the first psychotic event. you'll see an increase in CRP levels and an increase in IL-6 for different disease conditions like schizophrenia.

Depression, you'll see chronic depression, CRP levels in the blood work higher than three that are chronic. So some of these markers will go up that shows some kind of acute inflammation that is affecting those areas of the brain.

Yeah. And I don't know about you, but I've seen a lot more elevated CRPs in the last few years than I had previously. For sure. I've seen it after, with the abundance.

And if you look in the last year, everybody has gotten flu. I mean, so many people have gotten very, very ill and then post COVID. We had that, plus we had chronic viruses, people with long COVID symptoms.

And so you're just having this continued burden of infections on the system that are constantly what I talked about earlier, like the chronicity of infections, the body is never having a chance to recover and recoup so that it can really

actually be stable.

It's just you're chronically activating it. Exactly. Yeah, and I think COVID is reactivating some of these chronic viruses, BBB, herpes, but also our tick-borne diseases, our Borrelia, Bartonella, Babesia, people that we thought maybe was gone for life.

It's been reactivated after a COVID infection or other triggers. Yes. And I've seen that early on because one of the books I wrote was on long COVID and beyond.

And the reason I wrote it was because I, it was the first case we had with COVID and I hadn't seen one of the patients in like years and it was for Lyme disease.

And the person had like Bell's palsy, all the classic neurological symptoms. had got COVID or had COVID and then three days later, every symptom they had from when I saw them three years ago was exactly the same.

And so they were like, I don't know if it's me, but it feels like I got Lyme again. And so sure enough, and it was in the dead of winter was unlikely that he got, that the person got exposed also was like literally within a couple of days of getting the virus.

We checked and everything I did blood work was IgM positive. It was like the person just got Lyme disease. And so the cool thing was that we just really treated them the same way and they were really honestly back to themselves in two or three weeks.

But we also found a lot of other factors were lower, like vitamin D was significantly lower, zinc was lower, vitamin A. So a lot of it was on increasing up their nutrients.

But then I also got COVID in like November 21. And so I did the same thing. I was like, let me just, I'm just curious to see like, you know, what does my lab test come back?

And one of the other doctors in the office, it was exactly the same. Lyme was IgM positive. It completely was active. My EBV early antigen was active and I had mycoplasma IgM.

COVID, Reactivation, and Chronic Infection Burden

And the reason I tested was because I kind of responded to COVID okay, but it was almost like two or three weeks later, I started getting tired. And I'm like, why am I lingering with this fatigue?

So I was fine after I knew what it was, but it was like that was why I tested. And then the other thing I noticed for a lot of people was, and I don't know if you're seeing this office, I feel like everyone is iron deficient.

And infections have been connected. Like ferritin is also an acute inflammatory marker. And so we saw a lot of people during that time to a COVID or just infections where they pretty much have no ferritin levels.

And obviously that'll contribute to fatigue as well. Yeah. So, so much to unpack in all of that, but a couple of questions before we get to all the lifestyle and dietary and all of that, you know, people will say to me, well, I'm going to have lime for life.

I'm always going to have it. There's nothing you can really do. It's just whether I can live with it or not. And, you know, there are so many factors that go into this, but how do you respond when somebody says that?

So I have had, you know, I have had patients that have come in that have had Lyme for 10 years, 20 years, or since they were a kid. But I've also had many patients that have had it for 10 or 20 years and they've gotten complete resolution and they're fine.

And I haven't seen them in years. I mean, my goal, I always say in price sure is like to graduate you or to kind of

get rid of you, even though I like seeing you.

so because then that that means we both won so i've definitely seen and that's hard because i think sometimes in the lime community there could be a sense of even though we say we want to have hope but there could be this hopelessness that like i'm gonna suffer with this for the rest of my life i find usually when people are getting in getting well the typical like turning points or the points of Potential like relapse or having issues is when they get sick.

So lots of times we just talk about like, how do we prepare for that? Okay, you're well and when you get sick, what do we do to like after you're finished with treatment to keep your immune system strong and then and not to be scared if like, okay, I'm herxing and my symptoms come back.

That's fine. Maybe instead of two months like you were before it's four weeks and then the next time it's two weeks. So that's all progressive improvement.

But sometimes there's a to be honest, like a PTSD of like, oh my gosh, am I gonna get all that back again? So there's that fear piece. So it's like you have to constantly remind yourself and everybody like, wait, this is remember what it was like before.

So there's that. And then I also find women and why I did the thing on women in line, like hormonal shifts, like, oh, right before my period, it feels like everything comes back or they go through menopause and also rates of autoimmune conditions are higher right after menopause or after a pregnancy.

So those are all points I'm trying to manage to is like, are hormones factoring in because as you know and as you said the great imitator hormones can be everything brain fog fatigue forgetfulness like literally all the same symptoms too so we have to figure out like tease out what is where which is more of the piece or what's factoring into what so right and you even mentioned the fear piece i mean stress itself increases inflammation Yep.

And that's actually one of the pieces for neuro inflammation. Yes, that's true with cortisol for sure. Yeah, exactly. So with PTSD, the stress of thinking, oh my God, it's coming back, influences the inflammation and the symptoms, neuropsych or otherwise, that you may have.

So I talk to parents a lot about that, how their stressors, their PTSD, their worry that, okay, we got rid of the pandas, the strep, everything's taken care of.

And then the next time they get a virus, they're worse again. Give it a second, as long as we're supporting their body, supporting their gut, supporting their immune function, this one should be less.

Exactly. And that's what you'll start seeing. And then it's harder because you work with more families than I do that also when a child gets well. if they've been, let's say, especially mentally, like anxious or having a lot of like aggressive behavior for a while and they no longer have it, the parent, it's like, it's almost there needs to be, the parent needs to recover from not being on edge or expecting it.

And so it's like, they're preparing too. So there's a whole dynamic shift that everyone has to do. And sometimes the kid has kind of moved on from it, but the parent is like, when is this going to kind of come back?

It's very interesting. I was one of those parents, you know, my son was many, many years past this and we were together for four days and he said, mom, I'm just, I'm not feeling good.

And I'm like, oh God, is it the Borrelia? Is it the Bartonella? Is it the strep? Is it the viruses? Is it the mold? I was up for four nights straight in my head, all the different things that I needed to work on her chest for.

And at the end of four days, he said, you know, mom, it's about a girl. And that was what reminded me that we as parents need to take care of our own stressors, our own PTSD to be able to really help our kids, whether it's to get over a girl or whatever it is.

Hope, Relapse, and Hormonal Triggers

That's really funny though, it was something completely different. And that happens. The other thing I think when people say I'm always going to have Lyme for life, I always ask, you know, how did you treat it?

And so many of our families have just treated it with antibiotics and maybe not three antibiotics, one antibiotic, or maybe three, but not for a full amount of time.

And I think one of the things that both of us do so much and talk so much about is all of the possible lifestyle, dietary, and other recommendations that help to treat not just tick-borne diseases, but all disease.

Can you speak to that a little bit more? Oh, yes. Yeah. So if you look at some of the lifestyle ones that have been studied more on the mental health frame, it's a little hard, trickier for pans and pandas because there might be restrictive eating.

So oftentimes, you might have to have them also, a child work with a nutritionist or somebody to help with that, because there could be some challenges there.

But in terms of the studies, there's one diet called the MIND diet, which is a Mediterranean diet, but it's similar to the Mediterranean diet, just a little less fish.

But the studies have shown high amounts of flavonoids and bioflavonoids are just more anti-inflammatory diet, which tends to be more obviously colorful, like vegetables and fruits and things like that.

higher amounts have shown to help with like stress resilience and and also just helping to decrease that inflammatory component. So the ones most studied have been Mediterranean and then something also called the mind diet, which includes more omega-3s, DHA, things like that, which are also supportive of the brain, you know, walnuts that are all omegas that are also supportive.

So that's one in terms of diet. The other thing when you look at like exercise and sleep. So this is actually a really interesting study because sleep also is a challenge for kids with tick-borne infections and pansympandas.

Definitely in terms of like sometimes disturbances, more getting worsening behavior at nighttime. And they've even had studies that shown sleep, not getting lack of sleep as an adolescence can also be like a predictor actually for depression later in life.

So if a child is not getting sleep consistently at a younger age, much higher rates of mental health issues. So I thought that that was interesting. And there's actually a lot of like bi-directional relationship between sleep and mental health state.

And the reason is like you have melatonin that helps to like a hormone to help not just with sleep, but also your immune function. That's why I remember having a professor that had said, if you ever notice, like during final exams, you'll hear everybody in the room sniffling and sick during college exams because Cause nobody got everyone is like on one hour of sleep and you'll hear, you know, the whole auditorium, you're taking exams like sniffling or sneezing, et cetera, because sleep people really take for granted, but really helps your immune function.

If you're getting less than like six hours of sleep, it's hugely going to affect you, but definitely for adolescents being a huge connector for depression.

Inflammation too, like children with higher inflammation, inflammatory markers like CRP has also shown to increase risk of mental health issues. So for lifestyle exercise, typically the studies have been, well, for younger people, it's definitely longer.

You want to have at least like an hour, but it's about 45 minutes in terms of mental health that have been studied three to four times a week. And more than that could actually be problematic for mental health and cortisol

regulation.

So you have to be mindful of if someone is under a lot of stress, you don't want to be doing like HIIT workouts and intense The workouts I like to do that I know I probably shouldn't do all the time.

Like if you're the type A people want to do like the HIIT workouts and they're really supposed to do walking for an hour, which is shown to be as effective.

But there is an inverse of your exercising too much, like two hours a day actually negatively impacts your mental health. And then patients, and I know you see with tick-borne infections.

Lots of times they feel worse after they exercise more than 20 minutes. So we have to like build up slowly because you could just have a lot of acidity.

Your body doesn't know how to detox properly, get rid of things. So you might feel good in it. And then after you don't feel good. So that's a common thing.

So I try to start off with basic things initially. And then also things like sauna, if you have access to it, but there have been tons of studies that actually obviously less likely for kids, unless it's a really short period of time, like 10 minutes.

Um, but in terms of like for adults, you'll see that saunas have shown to decrease the RP levels and flame inflammatory marker, but also in some long stale studies of adults for over something, like over 2000 adults that were studied over the course of 25 years, that the more regularly they did sauna, the less likely they were to have a schizophrenia and depression or anxiety.

So there was a connection to, to, to even sauna above 165 degrees. So yeah. Yeah, and I think sauna is very safe for children. As you said, less time, building up slowly on temperature, but any way we can help our kids naturally detoxify, getting out in the dirt, getting the exercise, eating a healthier lifestyle, sleeping are all really important.

And specifically with ticks, you know, not ticks that give us the tick-borne diseases, but ticks, the abnormal verbal, vocal, or motor movements, Good studies on high-protein diets, as well as exercise, like you said, the 45 minutes, even decreasing those.

Lifestyle Foundations for Healing

Yes, and then the protein has, we have the amino, to your point, amino acids, which are all the building blocks for the neurotransmitters. So a lot of kids with pansypandas not only do they have to work on the infection, but what do we do to support the neurotransmitters?

Because those have now been depleted or negatively impacted. If you look at dopamine levels, something called interleukin-10, which is an inflammatory, it's actually an anti-inflammatory marker that will actually go down when you have more inflammation.

And that's actually good for dopamine and to protect the brain. So these things that help to protect the brain will actually go down. And so those all help with mood.

And it's why I love playing video games and technology, it's the dopamine kick. So more information reduces the levels of dopamine too in your body, which is really, really helpful.

Right. Right. And let's talk a little bit more about hormones. You know, I don't like adults. I am, you know, least taken care of. I'm biased. I'm biased.

I'm biased. But hormonal levels also affect our teenagers. And I think it's a big factor, you know, when we talk about the total load That's a huge factor in taking care of our adolescent girls.

Can you speak to that a little bit? Yes, and that's a factor too. If you'll see a young person or anyone whose estrogen is really low for a period of time or there's low progesterone, also, and I know you see too, is low testosterone.

I'll see males that are 18 or 20 and their testosterone level is the level of, you know, a male at like 60 or 70. And oftentimes, unfortunately, those don't get tested because, first of all, a lot of women get put on birth control pill, or sometimes their cycle is not regular initially, which it can take a couple of years for that.

And then for, let's say, a young boy that's tired, they wouldn't normally test the testosterone. It's just not the first thing to look at. And those hormones actually help with infection.

So estrogen helps with infections, progesterone does. testosterone is an anti-inflammatory so you'll actually see those numbers go down or get affected with infections as well and those protective factors so you'll see some with a lot of infections like a male their testosterone will be really low and so what are you going to have less physical stamina less energy lower libido other kinds of things but you'll see with younger women menstruating women like cycles are more irregular or you'll see really bad like Lyme symptoms or herxing symptoms a week before the cycle, because that's when the inflammation increases because of the prostaglandins and the uterine shedding.

And so you'll see this like really, really bad symptoms where they're like down and out for a week. And so we have to do things to help support that. But some of my patients just like getting the cycle regulated that keeps the Lyme symptoms to it, because that's what causes them to kind of go up and down, so.

Absolutely, absolutely. And then the other one I see also, also premenstrually is the yeast overgrowth, especially with those exposed to mold. Yes. Yeah.

And so we'll have to do antifungals for that. And also, yeah, a lot of young people, especially in the school systems, unfortunately, have tons of mold exposure and that will also affect your ability to heal.

And also mentally, I mean, we've had some kids that that was the primary factor was the mold in terms of like focus and ADHD. So that definitely causes immune dysregulation, which ends up being an extra layer on everything else that's going on.

Yeah. And I want to talk a little bit about, we've talked about lifestyle and diet a little bit, but I want to talk a little bit more about some key nutrients, nutraceuticals that you look at and ones that have been well studied.

So ones I've been studying, and it's a little trickier for kids, right? In terms of dosage and things like that. So ones have been studied, things like artemisia has been one, cordyceps, Cryptolepsis.

Stevia. Stevia is a great one I also use with kids because it has things that help with biofilm and that's been studied against like triple form antibiotic therapy.

Huda tunia is another one which they've used for Bartonella. And then some gentle ones I might look at for kids are like things like astragalus which has also been studied for tick-borne infections but helps with the immune system.

I look at things like berberine, goldenseal which helps with pans and pandas but has also been studied for infections. I might look at things like angiographis, which is pretty gentle.

It helps with respiratory function and helps with tick-borne diseases. Cordyceps is like mushrooms, so that's a little bit more gentle too. And there's different protocols that will be for children at different dosages, but those are some really common known antimicrobials that have been heavily studied.

Yeah. And I think one of the advantages that I've learned with working with so many great naturopaths like yourself is the benefits of herbals, more so than just as an antimicrobial, but also as an anti-inflammatory.

Exactly. And people don't know, I mean, if you even look at so many of the herbs and even adaptogens have not

only anti-inflammatory benefits, like you said, like immune system benefits.

If you look at something like rhodiola, rhodiola versaia is an adaptogen. That one has been actually studied for ADHD to help increase norepinephrine dopamine levels.

It's also, and this was something I had learned not even that long ago, it also is an anti-inflammatory for COX-1 and COX-2 and helps with those neurotransmitters.

So it's like, well, you wouldn't think an adaptogen is just more so for anxiety and energy, but it also helps with inflammation.

Movement, Sauna, and Detox Support

So many of them have, like you said, like so many different functions. And that's why even things like ginger, ginger helps with serotonin levels. But ginger is also an anti-inflammatory and ginger also helps with the gut.

You know, people think of it for digestive support, but many of these things, that's what I like to see is like, can we give you one thing that might help with three or four symptoms that you're having at the same time?

Exactly, especially in children, you know, because you're not, you don't want to add 20 things. Exactly, very limited options. And you mentioned so many great herbs.

And one I wanted to highlight just for a minute is the stevia, because as you said, it's a great antimicrobial, it's a great biofilm buster, which is very helpful in children, because if you can add that herb, in with the other ones.

You're doing some biofilm busting without having to take an enzyme, you know, in the biofilm protocol 15 minutes before, which in our busy lives is often very hard to do.

And then the other thing… Especially with kids always sneaking in so you never, you don't know or you're not going to tell them. there's specific times of eating necessarily.

Yeah and plus as far as herbs go stevia is one of the better tasting ones. Yes it tastes better for sure. It can take it can help everything else to take taste a little bit better for your kids.

Yeah. And I used to like them. I know NutriMedics as a company and I know use them a lot that the taste is pretty neutral too. So I always try to look at like liquid form that we can do that are palatable.

Um, but that's always the tricky part. And that's why it's good if you can get something that covers three or four things, because we know that we might not be able to get too many items for a child that they'll actually take.

Yeah. Sometimes I'll ask for, I don't know if you see that too, like I'll have kids that I know also they're doing better because the parent will say they ask for X, Y, and Z.

And so I'm like, that's a good sign. And it's almost like when they get better, they'll stop asking for it. So they know it's doing something, but they don't necessarily know how to communicate that the little kids.

Yeah, absolutely. And even the bigger kids, you know, they'll do that. And also, you know, I think it's a really good point to help kids be part of the decision.

To help them, you know, do you want this in a liquid or you want to try to swallow pills? You know, because we can, we can do that with a lot of these things.

I'll take it. Like sometimes I'm like, okay, are you going to take it because I don't want you to get it. And then you're not going to take it and asking them.

I completely agree. Having them part of it helps a lot. It definitely helps a lot that you're not talking around them. Yeah. And using the best form of parenting, which is bribery.

You know, take the shot glass of the herbs and then I'll give you something. You know, I do a handshake too. Sometimes I'm like, OK, for the boys, like, are we going to are you like for technology?

OK, we're going to cut it back a half an hour. I'm writing it down in the note that you were going to stop. You said that you agreed to this. It works a lot of the times.

I'm like, yeah, we do this by the next visit. So, yeah. And then one of the others that I really like and I know you do, too, is curcumin. You know, whether it be in diet or supplements, really decreasing inflammation, but also decreasing anxiety.

Yes. And it decreases some of those inflammatory markers. I mentioned IL-1 and IL-6. Those are two of the inflammatory markers, tumor decreases. And I learned only about this too, not that like a handful of years ago that I didn't know they had the most studies were for like tumor and depression.

So I always knew of tumor, obviously for inflammation and for cancer. but the most studies have actually been on turmeric's use for depression, mental health.

And it really is because of the inflammation. And I think we're still talking about it, but it still hasn't reached like mainstream of looking at inflammation and its role in mental health at large.

I think people in the functional medicine space are and have been, but not necessarily in the conventional space. So it's just important to like, how is that actually factoring into the mental state?

It's not just, it's not disjointed, it's all connected. Right, exactly. And I think, unfortunately, in medicine or conventional medicine, the world that I used to be in, we almost disconnect the head from the rest of the body, you know, and we've separated out psychiatry and neurology and And it's very hard, but I think we're moving in the right direction to see that these infections can cause an antibody response and then those antibodies and that immune system response cause the inflammation in the microglial and in those areas of the brains you're talking about.

Exactly and I mean before you look at like oh your higher rates of depression if you had diabetes and if you have thyroid conditions well why is that you know like because there's look at thyroid cortisol which we talked about dysregulation if you look at diabetes there's chronic inflammation so is it just that you have depression and diabetes or is it just this chronic inflammation stress that's causing it so I'm glad that this is just much more of a conversation point.

I think after 2020, when we saw people long COVID, it became ruse to the surface more because they're like, wait a second, I forget what the percentage was.

Hormones, Mold, and Immune Dysregulation

It was like almost 20 or 30% had a mental health effect after that had long haulers. So that also got people to say, well, what's the connection there that has to be mediated?

That must have been instigated from the virus itself. Right. And in kids, we see much more of the neuropsychiatric, 25% with neuropsychiatric differences as opposed to the long COVID.

They may have the brain fog, the processing delays, those sort of things, but they're really having the persistence of the neuropsych symptoms in about 25%. Yeah.

What about other key nutrients, not just herbals, but other nutrients, nutraceuticals that you use and have found helpful? Iron is one I like to always check.

Many of the kids are iron deficient because they just don't eat enough. They're eating mac and cheese and pasta and no protein. So iron is one and like amino acids to make sure they're getting like the core amino acids that are the building blocks for the neurotransmitters.

But I want to first test to see if they're actually low in that magnesium. So one that I like is magnesium three and eight, which crosses the blood brain barrier.

Um, we'll often do that at nighttime to also help with sleep. Zinc is another one you like to look at vitamin D definitely. So I look at all of those nutrients, but those are one of the, those are often the most key ones when it comes to immune immune dysfunction and dysregulation.

Absolutely. And magnesium, as you said, for sleep, magnesium 3 and 8 for getting into the brain. I've also seen it be very helpful with chronic headaches, migraines, and then it's my go-to for kids with tics.

Yes. Yeah. And also restless leg too. You see that with a lot of younger people that have the jitteriness of their legs at nighttime or the need to move.

So, and then the ticks as well. So, yeah, yeah. And when we talk about vitamin D, you know, I've come across this and had conversations with physicians a lot recently, you know, there's a big difference between the amount of vitamin D we want to take to prevent, you know, very severe diseases and the vitamin D amount that we want for good general health, for decreasing autoimmune disease, for all of that.

So what are you looking for when you look at your vitamin D and how much do you see our kids and adults being deficient in it? Oh yeah, so especially in the Northeast, I feel like a majority of our patients are deficient.

Ideally, I like it around 50 to 60, but if you look, a lot of the studies have shown more of the issue for people that are below 40. Like even when they've shown individuals that have had more symptoms like post flu or post COVID, typically it's below 40. So I try to make sure it's above 40, optimally like 50 to 60, but in terms of like studies, it's been really like anything below 40 is problematic.

Also, if it depends on the person, too, because you'll see some people that retain it, some that don't. So we have to keep retesting. If you're a person of color, we actually will get rid of it faster through the liver.

People don't know that. So you don't attain it as much. So I find it's harder to get to 50. So that's why my goal is like, OK, let's have it at least above 40, because it's like metabolizes out of the system faster versus somebody that's like in Finland from Finland.

They will hold it forever because genetically, you know, there was less exposure. So their body has adapt, keep it at 80 for a long time. But the goal typically, yeah, the optimal is like 50 to 60, but definitely no lower than 40. And many people, especially the Northeast, I have a lot of people 30 to 40, typically.

I mean, we have 85% of the kids in our practice were vitamin D deficient, and that Oh, wow. Yeah. That's a huge number. And how do you, when you have somebody, for instance, someone of color that metabolizes faster, are you using larger doses?

I do higher doses. Yeah. So it might be 10,000. I'm definitely having them in the sun more. And that's really because it's like culture.

Herbals and Nutraceuticals for Treatment

Like I said, if you're in Finland and you're only, you're not getting sun for huge parts of the year, your body evolutionary has learned to retain it versus someone that's in the sun all the time you know you're you're always going to be getting vitamin d so your body has learned to like i don't need to hold it because i'm going to get it tomorrow But that's not the current state.

So that I'm trying, yeah, it's usually much higher. I might have to do like 10,000, but it's amazing because I've had even kids that have come to me and they were on like 10,000 from before and their number is still like 40. I know.

And they're on it for a year. So it's kind of, it's really interesting to me to see the difference. So it's good to also retest, but I've only had maybe one person that's ever been above like too high.

Everybody, everybody has been, yeah, I've only literally had one or two people. I had one dad recently who I had said one drop, one drop. Oh, they did a dropper full.

And he did a dropper full. And the level was 234. Oh my gosh. That's my math. That's a little too high. Yeah. Child was fine. Everything was well, but we took it away at that point.

But I think, let's go back to iron for a minute because, you know, so many parents ask me about iron supplementation. And for me, I like to get iron naturally through food, blackstrap molasses, through good organic proteins, nuts, nut butters.

What's your strategy in raising the iron? And the same spinach. I mean, fortunately, you get higher amounts of heme in terms of like, you might only get like, you might get like 80%. You don't get the full amount.

And it's a little bit less for like non heme foods, which is like vegetables and things like that. So I try to, I definitely try to encourage that. And then other than that, we're doing like maybe the liquid irons and even that's hard.

You have to monitor because it's supposed to be now they're saying like one hour before food, two hours after eating food like i'll have some people i put on iron we have to split it up throughout the day to help with the absorption but i'll see that like the number barely raises it might go up 10 points after four months so that i agree with you so as much as we can get through diet is going to probably be ideal and then like how they're taking the iron if they're taking the supplement Right.

And the thing I see in kids a lot is constipation and really trying to avoid that as we're giving everything else and trying to get their gut function better.

Yeah. So you might have to do vitamin C with that. And that is true because with kids, that's one of the top things is constipation. Or just digestive issues like constipation is a top thing.

So that also has to be thought of because people will just start taking iron and they'll get it from the store and they don't know the piece about the constipation that you have to have something that's either, you know, buffered or gentle on the stomach.

So there's no issue there too. Yep. Yep. And then with pans and pandas specifically, and autoimmune conditions in general, are there other herbals, dietary supplements, other things that you specifically like that we haven't talked about?

I think I mentioned like, so Usnia is one herb, USNEA, which is a natural antibiotic. Goldenseal is one that I like a lot. I do actually, when I mentioned Artemisia and Cryptolepsis, one of the reasons I like that and also Cat's Claw, those three I've been studying to be helpful for tick-borne infections, but also have been studied heavily, like two of them as almost like anti-malarials, very similar to autoimmune medications.

So that's one of the ones I like because I feel like a lot of the patients I have will have Lime and they might have let's say rheumatoid arthritis. So we're getting like two or three conditions met at one.

Um, yes, those, those are three herbs I frequently use. I also like some fibers like a Rabinogalactin, which is larch, which is actually an immune. regulator and helps with natural killer cells.

That's one of my faves that I'll do is like a prebiotic. So I do a lot more gut health things. I might do like soil-based probiotics and things like that for like GI support.

Vitamin D which we talked about before. People with they've shown rheumatoid arthritis, mixed connected tissues disorder that have more progressive symptoms have lower vitamin D levels.

So you'll see worsening like outcomes for people with autoimmune conditions if their vitamin D is less than 40. So there have been studies on that. So that's an important one too.

So lots of times there's some more like gut support might be doing like glutamine for GI support and people with autoimmune conditions might just have more like gut issues that we have to support too as well to decrease the inflammation.

Right. But as you're saying, I love things that have more than one improvement. For instance, you mentioned Cryptolepis, which is great for, we have so many studies now, not just for Borrelia, but also Babesia Mycoplasma.

Wonderful study on that and the anti-inflammatory effects of all those that you're mentioning also. Now, what about the I heard you recently speaking on the shocking rise in mental illness.

From your perspective, what is driving that and what can we as clinicians do to help decrease that? Whether it's PANS, PANDAS, tick-borne disease or whatever, what's behind it and what can we do about it?

Well, I think two pieces is the a lot of what we're talking about is the inflammation and this this high rise of like infections. If you see the percentage in the past, you know, handful years like quadrupled in terms of number of viruses, infections people had compared to before.

So that's one which increases all the cascade of events that we talked about. The other is just like environmental factors in terms of our food quality, in terms of our exposures.

Inflammation, Mental Health, and Environmental Load

If you look at things, you know, like arsenic or air pollution or water when I mentioned have shown even poor water has shown like well water increasing rates of even like even juvenile delinquency like that if a child is having bad water the rates of aggression and likelihood they will go to like you know and having juvenile delinquency even goes up higher and the reason is higher levels of lead and these metals as well so I think that that is kind of something, and that's not something we test regularly.

If you go to a functional medicine doctor, we're testing for it, but that's not going to be something you're going to see in the conventional men. I just think there's like way more environmental exposure burden, like mold and things like that, that we had to handle from before.

So between those all cause inflammation. Yeah. Your total load is too significant that the body can only do, but so much to be able to manage that. Yeah.

Yeah. And I think it's also, increasing the leakiness of that blood-brain barrier that's meant to support and protect our brain. A lot of these toxins are decreasing that blood-brain barrier protection.

Exactly. Yeah. Yeah. So, well, Jacquel, you are always a wealth of information. not inflammation, but inflammation. And I so appreciate it. And you have written the book, Women in Lime.

You've also written the book on long COVID and one other one that I saw out there. Yeah, it was because I help integrative providers. Initially, I have an interesting background because I also had like was worked corporate.

So I had a business background before. So sometimes it's just like on on opening your practice and really it was like for new docs of how to get started or people into the functional medicine space.

Yeah, you do that very well as somebody who has admired that from down the street. You really have it all going on, so I so appreciate that. So I know you're so busy, but if people want to find you, how do they find you?

Yes, our practice is you could check out at Fairfield Family Health at Fairfield Family Health on Instagram, Facebook, and then our website as well. And that's the best.

That's the best way to connect in. I also have, if you go on to website, womaninlime.com, I have a you call like a place for you guys to get if you want to register, it'll actually give you a checklist of like blood work too to consider.

When in terms of like your hormone test, your cortisol test, like what kind of blood work you want to actually look up if you suspect different like Lyme disease or an autoimmune condition.

That's great. That's great. And I think when we come to that, we have so many similarities on the tests we recommend and the things that we do. So thank you for that.

And any last words of hope or wisdom or anything you want to leave our listeners and our viewers with? Yeah. So what I think is great about this podcast and a lot, there's just a lot of information out there that's free to get some education.

Finding the Right Practitioner and Closing Advice

So that's good. But with that being said, you always want to, you know, you want to then connect the dots of, you know, getting into to see a doctor who has expertise in there or being in a program to actually understand how to, cause we, we did talk today, but you know, what kind of tests do you run?

What's specific to you and getting worked up so that you feel that you're getting all of your all of the concerns you have are all addressed. So you want to the saying is like guests don't test but also making sure that you continue to advocate until you get the right answers and you're really on the right journey to getting back to back to health.

Yeah, such great points. And, you know, we're here to have a conversation. We're here to open your mind to some other ideas that you might not have. But yes, please do find a practitioner that is willing to listen and willing to help you because they are out there and it really is important for your health.

So Jacquel, anyway, thank you so much for talking today, for being on the podcast and for all you do for children, our families, and our adults too. Thank you.

Thanks so much for having me, Dr. O'Hara. Thank you. Thank you for tuning into Dr. Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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