Introduction and Guest Background

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And I don't think most people appreciate how much mold allergy impacts a child's brain or an adult's brain. I have some people in my practice. When it's a damp, rainy, humid day, they are suicidal.

It has that effect on their brain. It can cause cognitive impairment. It can cause mood changes. It can cause sleep issues. This is doctor talks. Real talk from real doctors.

Only issues that matter to you most. Hey, everybody. Doctor Nancy O'Hara again. And I am thrilled to welcome Doctor Darren Ingles. Darren is just a wealth of information.

Not just because he's an amazing naturopath, but he formerly had tick borne disease. He was formerly a biomedical technology engineer. He's lectured he's the author of the Lyme Solution.

He's done so many podcast summits. And I'm just thrilled to have him here. So Darren, thanks so much for joining me. Oh, my absolute pleasure, Nancy. Well thank you.

Can you just tell everybody a little bit more about yourself and how you got to where you are today? Gosh, how much time do we have? I know, don't take the whole hour, but but give us a little brief synopsis.

Well, I actually started my career as a clinical microbiologist, and I worked at, a large teaching hospital outside of Chicago and worked in microbiology for five years before going to naturopathic medical school.

I went to Baxter University outside of Seattle and did a residency there, and then ended up in your neck of the woods in Connecticut. And I had a practice there for 18 years and then decided to sell that practice and move out to California.

So I've been out here full time since 2018. So I've been practice now for almost 26 years. You know, my background actually is in environmental medicine.

You know, where we look at all of the different environmental factors that influence health. But, you know, I and I was a Lyme patient in 2002, I got bit by a tick, of course, and we live about 30 minutes from Lyme, Connecticut.

And I had classic Lyme disease. Bullseye rash, headache, fever, joint pain, the whole gamut. And the long and short of it is it took me about three years to get my health back.

So, you know, I started really applying to what I was doing for myself, to my patients and found that they started to get better faster. I wrote a book called The Lyme Solution.

And again, it still comprises a big part of my practice today. Yeah. Well, I, you know, good old northeast for giving you Lyme disease. But as we know, it's everywhere these days, throughout the world.

So and, you know, you and I both, treat children and adults, with pens and pandas. And you have taught me so much about the use of botanicals and herbs in the treatment of these kids.

Can you talk a little bit about your use of herbs, why you use them, the benefits, why they're useful in the treatment of pans, pandas? Absolutely. And I should preface that question.

Just that again, you know, when I had Lyme again, I did the conventional thing. I went on antibiotics. I was on antibiotics for nine months, oral antibiotics, and after nine months I just kept getting worse and worse.

I think I'd lost about 30 pounds in that time because I was my gut was a mess. I was nauseous all the time. I just wasn't eating very well and couldn't eat much.

And I met, an herbalist in New York City. He's actually a Chinese medical doctor, doctor Zhang, and he treated me with Chinese herbs within a month, I felt 80, 85% better.

So, you know, it was kind of interesting, you know, being a naturopathic doctor, I mean, you know, herbs are kind of in our wheelhouse. And we didn't start that way.

But I was still new in practice. You know, you know what? You know. Yeah. But it was my wake up call that, you know, herbs are incredibly powerful. And I think the cool thing about herbs is that, you know, they're plants.

And so I think of plants as, like, food. The way your body utilizes and assimilates herbs is very similar to how we utilize and assimilate food, which means that a lot of these herbs get absorbed in the very first part of your small intestine.

Very little makes its way all the way down to your large intestine, where a lot of your gut bugs live. So we always worry about antibiotics disrupting our normal microbiome and plants, by and large, rarely do that.

Plus, if you look chemically, you know, the more we study plants, we realize that they are chemically complex. And it makes a lot of sense. Like if I'm a weed that grows out in the middle of the savanna, I have to have my own innate chemicals to protect myself from predators, from insects, for things that want to destroy me.

So those things that are built into the plant to protect the plant in many ways help us as humans.

Why Herbs Help in PANS and Lyme

And, you know, you look at the chemical breakdown of any one plant there might be eight, 12, 14, 16, 20 different things that's in it that have biological activity.

So we can utilize that to our advantage where we can really mix and match different herbs, different plants to tailor it to the individual. So for someone who needs more anti-inflammatory effects, we've got plants that have good anti-inflammatory effects or we need to boost the immune system.

Well, we have plans to do that. We need to improve circulation. We have plans to do that. And in reality, what we find is that a lot of these plants kind of do a lot of that.

So there may be one plant like, you know, cats claw. Cat's claw is effective at killing lime. It's also a great anti-inflammatory. It also helps with circulation.

So, you know, I like the ability of being able to really have true personalized medicine with our kids dealing with pans and, you know, kind of coming back to you, I guess your original question about how does this apply to Pans?

Well, you know, we've got this neural inflammation being triggered often by a critter of some sort. So again, we can find the herbs that target that bug if we know what it is.

And honestly, even if we don't know what it is, you know, it's okay. You know, herbs are a bit more forgiving than antibiotics, because with antibiotics, you have to know exactly what you're treating, because if you pick the wrong antibiotic, it just doesn't work.

But with herbs, because there's so much overlap and the different types of microbes they can affect, you know, again, even if we don't know for sure what that organism might be, you know, there's a good chance we're going to

cover it when we start mixing herbs in combination.

And again, a lot of these herbs are anti-inflammatory. So we have a way of calming neural inflammation. We have a way of targeting organism. And then depending on how it's manifesting for each child, whether it's more anxiety, more OCD, if it's tics, again, we've got specific botanicals that might be more symptom specific to help cover that.

You know, I think we're always looking at root cause medicine. So I hate to say we give stuff to cover the symptoms, but in reality, there are times where a child's ticking so bad it's disruptive to their life.

And I rather use an herb. Or would I rather use a steroid? Well, if I can get away with an herb, I'd rather use that than something like steroids. Absolutely.

And there's so much to unpack with what you said. I mean, you know, number one, I think why I use herbs is because, like you said, do a lot less harm than antibiotics.

But more importantly, when we talk about a need for a multi system approach verbally, we can get that. And and like you said sometimes, often we don't know what the trigger or triggers are and when there's more than one and when it's not just a bacteria, when it's a virus or yeast or mold, using herbs can be much more fruitful than using an antibiotic I always get. So, I irritate it's too strong a word, but disappointed when I see the, you know, in some of the listeners.

Well, I put him on the antibiotic and he didn't get better, so it might not be pans. No, you you probably just didn't put them on the right intervention.

So, I think all of those factors come into play when you talk about the use of herbals and botanicals. You know, I was at a nutritionist conference years ago with doctor Lee Cowden. Many of you probably know Doctor Cowden.

Yeah. And, you know, he's a Texan and he's talking about these herbs and he's like, well, you know, you talk about that herb that's a keeper. If you or you that's a keeper.

And I keep thinking a keeper. But I'm like, I have no idea what he's talking about. You keep it in the closet. You keep it in the kitchen. I said, well, I don't understand what's a keeper.

If it goes well, it kills everything except people. Yeah. And, I like that because he's right. Because a lot of these herbs, again, they're antibacterial, they're antiviral, they're antifungal. Anti-parasitic.

So, you know, when you give an, you know, an antibiotic, often you have to give an antifungal because the antibiotic is going to dispose to a yeast infection.

I never see that when we use plants because again, we're keeping, I think, the balance of the terrain much better off, even though we can still target and, you know, for the life of me, I guess I don't fully understand how we can be so effective at targeting Lyme and Bartonella and bibs and and plasma and all these things, and not have this major disruption to our, our normal microbiome.

You know, it seems to me you can't kill the bad stuff without killing at least some of the good stuff. But I think that's the beauty of nature. There's a wisdom to these plants that, for whatever reason, they seem to spare the things that we really need and kind of hone in on the things that might be overgrowing or starting to take over in a negative way.

Right? Right. And, and antibiotics are just killing. We need a lot more than killing. You know, if they do that, I mean, we need the support to our immune system.

And so many of these herbs are immune modulating, anti-inflammatory. Is it why are herbs a better option than steroids, than IVIg from your perspective?

Well, certainly from a safety standpoint, we're much safer from a practical standpoint. I mean, I know how it is in our, our both our practices, you know, trying to get kids hooked up for IVIg, even if you can get insurance to improve it.

You know, for a getting a child to sit still for a long infusion with a needle in their arm or a catheter, you know, can be really challenging. And a lot of these kids just won't.

They won't tolerate it. They'll rip that thing out as soon as it goes in. So we've got a practical approach that that's not always possible. Certainly from a cost standpoint.

Herbs are relatively inexpensive relative to something like IVIg and, you know, from an effective standpoint, you know, the steroids are a short term solution when the kids in a crisis, if they need steroids, absolutely.

If they're harming themselves, harming others. But I think they're a danger. They're a risk. You got to do what you got to do to put out the fire, right?

Eating disorders that are severe, etc.. Exactly. So whether it's ibuprofen, steroids, you know, you got to do what you can to make that situation, you know, more tenable.

But you know, something like IVIg, you know, I have had some kids that honestly have done pretty well. I've had more kids where it has not worked or it only worked while they were on it.

And then once they came off the IVIg, they regressed fairly quickly thereafter. So in my mind, you know the story I tell myself is if I'm not really fixing the problem, is that really for the best benefit of the patient?

I mean, again, there are times we have to put on the Band-Aid, but ultimately that is a stopgap to get us to our goal of fixing the problem permanently so that we don't have to keep relying on the supplements or the medication to keep them in a healthy state.

And, you know, I think for IVIg, I also worry that it's a blood product. And as much as we screen blood products for infectious disease, you know, things can. New ones pop up all the time.

The things can slip through. And, I worry a little bit in those since, you know, Covid and Covid vaccines and spike protein getting into the blood supply.

I haven't seen any data on that. So I don't know what the status of that is, but we know that that spike protein can be very provocative for a lot of people.

And I would hate to introduce something into the system that's already very sensitive and inflamed. We don't want to throw gas on the fire. So, you know, I just think there's a lot of, concerns around IVIg.

But again, I've had some kids where we've kind of exhausted our resources of other natural therapies. They haven't responded the way we want. Fine. You know, when I think about medicine as a whole, I think, you know, the difference in your training and my training when we were in medical school, you know, you probably learned a lot about drugs and surgery and all that.

We learned about that, too. You know, it's not the first step. It's usually the last resort. So what else can we do on that hierarchy that might be safer or more cost effective, more natural.

And then we kind of work up. So I'm not opposed to antibiotics I'm not opposed to IVIg. It's just not the place I'd start. Right. And so when you start, what are some of the IRBs that you consider?

You know, obviously it'll matter whether we're talking about a tick borne disease or strep or virus. But what are some of your go to IRBs that that you particularly like in the kids With Pans Pandas?

I'd like to thank Neutral Medics for sponsoring this podcast. Neutra medics is a company specializing in high quality herbs, botanicals and nutraceuticals.

They have formulated research based tinctures critical in the care of children with tick borne diseases such as Borrelia, Bartonella and Bbca, but also important is that they are a company with integrity, with charitable purpose, and with a goal of helping clinicians care for the families in their practice.

If you do not yet know about their practitioner support programs, their lunch and learns, check out more at Neutral Mediacom. And thank you. I mean, Cat's Claw is one of my favorites.

I just find consistently a cat's claw because of its antimicrobial and anti-inflammatory effects. And again, when you look at the research, no cat's claw is a immune modulator.

Does regulate T cells, Treg cells. So that's almost always in the mix. I think Chinese skullcap is incredibly helpful. Again, it's a good antimicrobial.

It's one of the herbs they studied at Johns Hopkins University that's effective against Bartonella Lyme. But Basia, which, you know, means it's also probably good against a lot of other microbes out there.

And again, also a very good anti-inflammatory. I use a lot of banned oral, banned are all in common to are both made from new dramatics, and they both come from the bark of a tree that grows down in the Amazon jungle.

Again, very broad anti-microbial effects, but also very good anti-inflammatories. I think Artemisia is one of my favorite herbs as well. Artemisia. It's a weed that grows all over the world and there's different strains of Artemisia they've been using Artemisia to treat malaria for decades.

Yeah, so very effective against Berbizier. But again they also use artemisia to treat rheumatoid arthritis. Why? Well because it helps modulate the immune system and down regulates inflammation.

So you know the interesting thing with herbs is that you can even if we don't know what the microbe is, and even if we're not sure that microbe is even the trigger, there's so many other benefits of the herbs because of what they're doing to modulate the immune system and control inflammation, even if the focus isn't really, you know, I need a bug to target.

We're still going to get a lot of these benefits. So I have a lot of kids where, you know, we go through the litany of testing for tick borne illness.

We're testing for scrap or testing for different viral etiologies, and everything kind of comes back negative, but they're still very symptomatic. I'm like, you know, my conversation is like, hey, we can still use these plants in a very effective way if there is something in the background lurking that we don't know about, right?

We might cover that. But because they're anti-inflammatory, because they help with circulation, because they do all these other things, there are still benefits.

And with kids, you know, I'm always amazed. And I guess at this point I shouldn't be how dropped doses of these herbs can be clinically effective. Yeah.

Have some kids and adults that do one drop a day, one drop twice a day. How one to just a few drops a day can make a difference. And on paper they almost kind of sounds like it shouldn't.

But it does. Right. And so, you know, I've had this argument with, you know, mostly medical doctors over the years who are very convinced that if you're not using antibiotics, you're not really treating and the herbs aren't nearly as strong.

I'm like, well, come spend a day in my clinic. I think you'll feel different because we see it all the time that people

will start hurting at very small doses of these plants.

So, you know, sometimes a little goes a long way. Yeah. And we now have research studies behind us that show that, that herbs, you know, when you didn't mention Krypto.

Herbal Favorites and Tick-Borne Treatment

Lepus is one that that's shown very good, not just against Bobo but against Borrelia and others. So yeah, I love all the ones you mentioned. And the other thing is the amount of time, you know, we both agree that the, the doxy cycling for one day or two weeks is ridiculous.

And the length of time in in that is needed to treat these tick borne illnesses especially, it's, it makes much more sense to use herbs for that reason also.

Well, and if you think about drugs like doxy second is that they're mice. And again, I don't think most people understand that these drugs don't actually kill the bug.

Right? They're what they're called bacteria static. They're not bactericidal. So what that means is they stop the bacteria from replicating. So whatever's there, it kind of holds it at bay.

But it's still dependent on your immune system's ability to eradicate it. So if you have any element of immune dysfunction, your body isn't handling it the way it should.

It's not really getting rid of it. So we know that it only like what it used to. Lyme is our example. Again, you know, we know that doxycycline works when it's in its log phase.

That means when it's replicating, when it's growing it stops it from doing that. But when it's dormant, when it's not replicating, it doesn't do anything right.

Well, we know that a lot of these herbs will kill Lyme, whether it's replicating or not. It has bacteria side all effect. I mean, that's completely different.

So I will argue and we have some evidence, doctor. Even shopping at University of New Haven, at least in vitro. When she compared Segmento van der all commanded to doxycycline and rifampin, found that they were more effective because, again, they killed the bug no matter what stage it's in.

Right? Right. And I heard you recently talking about tuberculosis. You know, which replicates every 20 hours, as opposed to Borrelia, which is replicating what, one to every 16 days.

Yeah. And we'll treat somebody for TB for nine months. But we're only treating them with doxy, which as you said, bacteria static. That's idle. It just makes no biologic sense.

I know I'm still waiting for an infectious disease doctor to explain to me why we have no problems giving TB patients three heavy duty antibiotics for 9 to 12 months for an organism replicates every 15 to 20 hours.

But for the organism that replicates every 1 to 16 days, 2 to 3 weeks of doxy cycle. And that doesn't even kill anything. It just, I don't know, I'm a little bounded on that.

I know, I know. Well, you let me know if you find somebody to explain that to you. I'll, I'll be interested to hear. And the other thing, just while we're talking about tick borne disease is, is testing, you know, I remember when we lectured together, we were talking about testing, and I asked you for your pet peeves and your pet peeve, and mine were almost exactly the same.

You know, if a test does not have external validation studies, that test may not, is not, may not be accurate for for use. And I think, you know, the the testing is such a quagmire when we talk about any type of pans.

Pandas. Can you comment a little bit on that? Well, you know, if you look at conventional testing through Quest Lab, any of the big reference labs, you know, we know the sensitivity of the testing because they do it like a line screen first.

If that's positive, it flexes over to what we call a Western blot or immuno blot, which is test for more antibodies against the organism. But we know the sensitivity of the line screens anywhere between 4,346%, which means it literally misses more than half the people that have Lyme disease.

Right. And we know that if you get tested after three months of your tick bite, the likelihood of picking it up goes way down. Immunity wanes with time.

So there is a quantitative value to that test. It's measuring how much antibody is present. So depending on where you get tested in time you know the further you get away immunity wanes.

The amount of antibody is going to naturally go down, even if the organism still present, because it's almost like your immune system says, hey, you've been here a while, you must be part me.

And so you don't get this robust immune response. So you know, that by itself is problematic. It's compounded that there are labs out there now that are using technology that honestly just isn't validated.

And if you don't validate your technology to know that your positives are truly positives and are negative or truly negative, you know, you don't know.

And unfortunately, a lot of labs go to a lot of conferences you and I both go to, and they cater to the functional medicine community and make it sound like they're the latest, greatest, lab out there.

There's one lab in particular which I won't mention, but I, I laugh every time I see them at conferences because, you know, one of the things a lab does to ensure, quality is there.

Cap certified cap. That's the College of American Pathologists. And what they do is they send blind samples to labs. Known positives, no negatives. Or if it's a test that's quantitative, you know, you have to be within a certain range.

So it's a good validation thing for you as a lab. It ensures that your tax, your machine, your reagents, everything's working appropriately and you should get the right result.

So this lab says we are Cap certified. Well they run regular things like blood counts and metabolic panels and lipid profiles. And on that part I believe they are Cap certified.

But then they run all these other tests for Lyme and mycotoxins, which is not been validated. Right? I know they're not Cap certified in that, but they don't tell you that.

So it's a little, misleading. And so as a certainly as a practitioner, I think, you know, you have to understand the lab you're using, what is the data they're getting?

And again, how have they validated that data to ensure that it's accurate? At the end of the day, you know, even according to the CDC, if you go to their website, Lyme is a clinical diagnosis.

It's not a lab diagnosis. The lab testing out there was designed as a surveillance tool for people who had the bull's eye rash and the high fever and all the classic symptoms.

So in 40 plus years of understanding Lyme, we've never really changed the testing criteria. You know, we know that some antibodies are very specific to Lyme.

Some are not. Well, why don't we just focus on the ones that are specific and maybe ignore the ones that aren't as

specific because they're not as helpful, but, you know, it just it just hasn't come to fruition.

And, you know, in our government, you know, they started this tick borne disease working group, which was I think started in 2016 or 2017. Maybe it was earlier.

And I know Doctor Richard Horowitz is on that panel, and their whole purpose was to come up with better guidelines for testing, treatment. And to date, as far as I'm aware of, there has been absolutely nothing that has come out of that working group that's been helpful for the Lyme community or the community.

Right. And I think, again, so much to unpack. But I think, you know, one Pans Pandas is a clinical diagnosis, whether we're talking about tick borne disease or anything.

Because what also happens is that at least 30%, not more, especially with tick borne disease, are immunodeficient or have immune dysregulation. So if we're looking for antibodies or titers, some of these children and adults can't mount that response.

The that we're looking for, you know, and and then I think the other thing, although we're talking about Lyme when we talk about tick borne disease, what you're talking about is really just Borrelia that doesn't even scratch the surface with Bartonella. But, that I find in our kids with pens that, that that's even more prevalent.

A cause of the neuropsychiatric issues. Do you find that also? Absolutely. I know, I know, we used to called pandas because we thought strep was the biggest driver.

And honestly, yeah, between Borrelia, Bartonella, I find them probably more commonly, certainly in my California patients than strep as triggers. Yeah.

And you know, I think we can take it, you know, one step further and say, okay, well you've got this microbial trigger. But again, why what is it about that organism is triggering.

And again, we find usually there's this whole other plethora of of toxins, allergens, things that have kind of gunked up the immune system that we still need to deal with.

So again, it's easy to say, well, yeah, just treat the bug. That helps. But I find, you know, to get long term stability. You know, we have to deal with all these underlying immune dysfunction areas.

You know, whether it's, you know, again, you know, we do a lot of immunotherapy in our practice to desensitize people against the food allergies. The mole, the pollen, the cat, the dust, the dog, the chemical, whatever it is.

But again, there's no detox pathways that usually don't function very well. So I know you and I both take a much more global approach to this than just targeting the organism.

That may be the first step, but we've also got to deal with all these underlying factors that made that thing able to do what it was doing to the immune system.

Yeah. And and we're going to get to the low dose immunotherapy because I really want you to talk about that also. But you you mentioned mold. And I do want to touch on that because I think it's in the background if not the forefront in so many of our kids.

And and one of the things that I think you taught me was, about looking at mold allergies separate from micro toxin disease and, and looking at, at some of the antibodies, etc..

Can you just touch on that? I did talk to to Jill. Doctor Krista has been on this program. But but just touch a little bit of that on from your perspective Darren.

Well you know mold can be really there's two problems with mold. You can have mold allergy. So this is an immune

reaction to mold spores that are in the air.

And know that could be any species of mold where micro toxicity is very specific to water damage. There are certain very specific mold species that secrete these chemicals called mycotoxins, which are chemicals that are fat soluble.

They like the fatty parts of our body, like the brain. But that's again very specific to being in an area where there's been water intrusion. So whether it's your home or school or whatever.

So you can have one or the other or both. But I think what ends up happening in the mold world is people focus so heavily on the mycotoxins, just because, again, they're known to cause all sorts of really bad health issues that people really skirt over mold allergy.

And I don't think most people appreciate how much mold allergy impacts a child's brain or an adult's brain. I have some people in my practice. When it's a damp, rainy, humid day, they are suicidal.

It has that effect on their brain. It can cause cognitive impairment. It can cause mood changes. It can cause sleep issues. So because there's a lot of overlap in what mycotoxins can do to your brain versus what an immune reaction to mold spores, and of course, if you think about, you know, MCUs or mast cell activation syndrome, you know, probably a lot of the mold allergy component is triggering that kind of, you know, mixed situation where now you've got this broad, again, inflammatory process in the brain as a reaction to the mold spore.

Well, mold spores are way more common than mycotoxins. You know, with mica toxicity. You know, you have to be in that environment that has, you know, certain types of mold.

Now, granted, that's a lot of people out there and there are a lot of water damage. Buildings. But, you know, where can you go in the world that doesn't have any mold spores?

I mean, maybe. Have you found it? Okay, maybe Antarctica, where it's just too cold long enough, maybe, I don't know, but most of the world has, you know, mold spores.

And again, I've seen this consistently. So as important it is to deal with, you know, water intrusion and water damage and mycotoxins very, very important.

Testing Challenges and Clinical Diagnosis

But I think it's equally as important to help identify the child that has mold allergy. And again, you know, we'll typically see this in the history. You'll hear about the rainy days, the damp days, the humid days, thunderstorm forms, you know, changes of weather when you start to see their mood, their behavior, their cognition.

You know, as a parent, you know, start tracking those days. What was the weather like that day? And when you see that clear pattern, the other thing, especially when I lived in Connecticut, I see it more there than here is.

I would hear about kids just absolutely losing it at school, and then they get home and on the weekend they were relatively fine. You know, I think every school when I lived in Connecticut had a mold issue.

Yeah. People's homes. So was it micro toxicity? Was it mold allergy. But again, this can be a clue that leaves mold as a whole and maybe part of your child's problem.

And to do that investigation you'll get them tested for mycotoxins. But you probably also want to get a testing for mold allergy. Now the twist to this is that a lot of mold allergy doesn't involve IgG.

What does that mean? Well, it is the immune mechanism that we think of with allergy. So typically pollen allergy dust allergy cat dog that's IgG. So you get exposed to the dander the dust your body makes these Ige antibodies which bind the mast cells which then create all the symptoms the runny nose, the Aggies, the sneezing and so

forth.

Well, if you look at the package insert for mold race testing, which is blood testing, it says that, you know, the sensitivity is relatively low, which means a lot of mold allergy is not IgG.

And again, I've seen this for people who go to the allergist, they do scratch testing or prick testing and they do the blood tests. And they said mold came back completely negative.

But again, they'll tell you every time it rains, every time it's damp, I get a headache, I get nauseous, I get whatever. So again, the history I think is equally as important as testing for mold allergy, because again, a lot of mold allergy doesn't involve IgG.

Now again, I was trained as an environmental medicine doctor. So there are other ways to test people that don't involve IgG. Right. You know we used to do something called SCT or serial endpoint titration and provocation neutralization.

And in our practice we do some things that are a bit more esoteric, but there are other ways to try and help figure out if someone's having mold allergy.

And again, if you can identify that and start desensitizing them, it makes a huge difference. Yeah, absolutely. And I know you do that in your practice.

And you also do a lot of of low dose immunotherapy for the practitioners or parents that are listening or watching. Can you describe that in more detail?

Because I've learned so much about that from you and how it might help our kids with pans and pandas? Yeah. So Lotus immunotherapy was actually developed by a colleague and friend of ours, Doctor Tai Vincent.

And now it's probably been it's been well over ten years. And I can remember when he first did his first patient, it was a kid with strep. And I can remember arguing with him about what dose we thought was going to be the right dose.

But basically, you know, if your immune system starts looking at these microbes and treating them as allergens and not pathogens, it engages the wrong part of the immune system and we talk a lot about these T helper cells T helper one L or two T helper one cells by and large or direct scavengers, they see foreign things, goes after and gets rid of it.

Where two cells T helper two cells are really the ones that kind of alert the immune system but don't directly get rid of it. They're the ones like, hey guys, there's a problem over here.

Somebody needs to deal with it. Yeah, though, you know, if you think of it being kind of a seesaw and of course, it's way more complex than that. But for our purposes, as one goes up it's suppresses the other.

So for people to have a lot of allergies and certain autoimmune conditions, they're more too dominant. Well, by suppressing one that disposes you to being more susceptible to infection, and those who are one dominant hardly ever get allergies or other types of autoimmune issues, because that's suppressing that part.

So interestingly, I have AT1 autoimmune disease and I don't get allergies. Good for me, but the idea behind LDI or low dose immunotherapy is that you know, much in the way that if you're allergic to dust or ragweed, your allergies, your doctor can desensitize you against us and ragweed using different types of immunotherapy.

So Doctor Vincent realized that a lot of the ways that people were responding to particularly strap, you know, it seemed to be it's like an allergen. It's not pathogenic as well.

If we can treat allergies with immunotherapy, why can't we treat the immune system as if it was like an allergy to

strap? So basically you take strep, you irradiate it, you kill it so it's dead.

It can't reproduce, it can't cause infection. But it has all those little bits and proteins we need for the immune system. You dilute it out hundreds, thousands, millions of times really even into the homeopathic ranges.

And now this is where Doctor Vince and I, we kind of parted ways where originally it was just done. We would mix it with an enzyme called beta gluconate Ace.

And this is an enzyme that's found in your white blood cells. So it's part of you and doctor McEwen, who's the ENT surgeon that develops something called LDA or low dose allergy therapy back in the 1960s.

And LDI is really just a hybrid of LDA. So doctor McEwen was only treating regular allergies, mold, pollen, dust and animal landers. And so Doctor Vincent had been doing LDA.

And again, that's where he got the idea to say, well, if it works for allergies, let's try it for pathogens. So the way it's diluted, the way it's delivered is very similar.

But the idea is that, again, by giving this antigen at the right concentration, it starts to build your immune tolerance and at the end of the day, that's all this really is.

It's loss of immune tolerance to that particular thing. You know, you're you know, why are some people allergic to cats and other people aren't. Who knows?

What is it that sensitized these people in the first place? We could have a 20 hour discussion on. But when you get to that point where you're sensitive, you know, really outside of avoidance, you know, we need to do something to build your immune tolerance, to not become so over responsive when you have the presence of that, that allergen or antigen.

So, you know, this becomes a huge problem with patterns because a lot of the things our kids are responding to are part of us. So it's not necessarily something like Lyme.

I mean, if it's strap strep is part of you, you're never, ever, ever going to not have strep in your body. It is part of your normal flora. So this idea of again, killing our way out of the problem doesn't work.

So what else can we do to modulate the immune system? And this is where LDI can be incredibly helpful. So again we've got dead strap. We dilute it out.

We mix with the enzyme. We squirt it under the kid's tongue. It tastes like water. It's only about a drop and a half. And then we try and find that right concentration or right dilution that neutralizes that our immune system.

And what's really cool with this therapy is that once you hit the nail on the head, you will usually see results within 24 to 48 hours. Yeah. I mean, I have seen kids and full blown pans, tics, OCD, anxiety in less than 24 hours.

All those symptoms go away. Now, that honeymoon period may be very brief.

Mold Allergy, Mycotoxins, and Brain Effects

I say sometimes just a day or two, or sometimes a few days, and then they seem to go back to square one. The parents go, oh my gosh, we had this great time where they were just they were so amazing, and now they're back to where they were.

It didn't work. No, it absolutely worked. It just didn't last. Well, what ends up happening is we start giving it about every seven weeks because that's how long T-cells are in your circulation.

We're basically think of it like bootcamp every seven weeks, a new recruit comes in, we train them and we put them

out into the forces. We're doing the same thing with T cells, and hopefully we get to enough of a threshold where we've trained enough of your T cells to stop overreacting so that eventually we get to that point where now you just don't need the therapy anymore.

So the practicality is the first time you give it. And once you find the right dilution, maybe it lasts for a few days. The second time it's a week or two, the third time it's a month.

So we see a prolonged effect each subsequent time we give the dose. Once we find the right dose and again, sometimes it's more than one antigen. That's the problem.

I never want to hang my head. That's only one thing. And I have a lot of kids where we gave them the Lyme antigen they got so far, and I've got 50% improvement.

Then I gave them the strep antigen. Well, that gave them another 30% improvement. Then I gave them the candy, the antigen they got. I mean, we can see that once you've been sensitized to one microbe, it's possible you've been sensitized other.

So, you know, we kind of just have to work through the process of finding what is the right antigen, what is the right dilution. And, you know, in reality it can take sometimes several months to go through that process.

But, it can be, again, incredibly powerful when you see this quick change in your kids and eventually get to that point again, where hopefully they don't need the therapy at all.

Right? Okay. So first of all, you're starting with because many of our kids have more than one trigger, many of them, it's not just a strap or there are multiple ones.

So when you're doing LDI, are you starting with the one that you think is most problematic, most recent, most you know, best guess how do you decide which one to start with?

And then how soon do you add the other ones when there's more than one trigger when you're doing LDI. So the one I start with, yeah, is based on clinical history.

If we've got labs that show obvious evidence of a high strep titer, high line titer, it just seems likely that this is the probable antigen. Sometimes we do get bamboozled.

And I'll just give you a quick example. When I lived in Fairfield, Connecticut, I had a eight year old boy come in who had classic pandas. I mean, overnight OCD, anxiety ticks all that.

I did a blood test. His Aso strep titer was through the roof and I'm like, hands down, this is pandas. So, we started treating him. I started him on herbs.

I gave him the strap. LDI and I kind of cycled through a series of dilutions and nothing was really changing. I was kind of surprised. And then the mom says, well, you know, four years ago he had Lyme disease, but no, he was treating as far as I know, you know, it was fine.

I gave him the Lyme antigen. That night she called me and said he had a really bad headache. And the next day, all his symptoms were 100% gone. Yeah. So I think what happened is that he had Lyme in the background.

It was probably never completely eradicated when he got exposed to strep was the catalyst, really wasn't the thing I need to focus on. It was just the thing that set the Lyme off.

So but again, that would be very easy because his blood test was so high. You know, strep must have been the problem, but it was clearly the catalyst.

So we have this idea that some things, you know, like foods or moles or things can be catalysts and may not

necessarily be the core problem. But again, this is why often know we're treating different things.

So I have no problem using multiple antigens. I tell parents to wait at least a week in between, just so you can observe how your child does on each one.

And then once we find the right combination, then we can give them all at the same time. So if he needs a strap 18 C and A Lyme 14 C and a candy to ten.

See, once we've got that sorted out individually, well now I can put them together because I know what to expect. Yeah. So it makes it a little bit easier.

But initially if we're doing multiple antigens, I used to be a little bit more, I'll say cowboy ish when we first started doing this, I was doing a lot of antigens, and I realized it was just kind of a cluster.

It was hard for parents to keep track. It was hard for me to keep track of. So I generally don't do more than 2 or 3 absolute max, but I always like to start one if we can.

To be clear. But sometimes there's two very what seem apparent triggers, you know, if someone's got a mycoplasma IgG, that's really high and they're Asos high, I'm like, I know clinically I can't tell the difference.

Let's do both. But let's just not do them at the same exact time, right? So that we're not wasting time trying to figure it out. But we've got enough space that we can be clear how the child's reacting.

Got it, got it. And you mentioned when you were talking about LDI homeopathic doses, and certainly there are similarities, between homeopathy and LDI.

But but talk to our listeners, viewers about the difference in the use of of both of those. Yeah. So in homeopathy terms, if you're a purist, we would call this especially.

It's not really homeopathy. The principle of homeopathy is like cures like in this case it's like here's same. So the antigens used like again, you know, homeopathic poison ivy Russ talks we don't really use for poison ivy.

We use it for people who have a skin rash that might look like poison ivy, where in the case of LDI, we're actually giving the thing we think is, causing the problem.

So, you know, there's different ways of using homeopathy. The fact is, when you look at the dilution, you know, if you remember from high school chemistry, this thing called Avogadro's number, you guys remember Avogadro's number.

Low Dose Immunotherapy for PANS/PANDAS

It's by the way it's six times ten to the -20 third in case you forgot. So what that. Means. Thank you Darren I had forgotten. So it's what you know you think about.

It's like as you keep diluting anything out. And if you put a pinch of salt and water and then you keep putting that into a clean glass of water, you take one teaspoon out and put it in next cup.

At some point there's not going to be any salt left in the water. And that's Avogadro's number at that point. There's no salt. You there's nothing left.

And so that happens at 12 C homeopathic lea. So anything beyond 24 x or 12 C is beyond Avogadro's number which means there's no original substance left.

Well we find we get people line 20 C line 24 C and they react. There's no lime in it anymore. So you know we could probably have another longer discussion about, well, why does homeopathy work? Does it work? Is it real?

I can tell you, having used homeopathic in my practice for 26 years, it works incredibly well for a lot of people. Can I explain it? I have an understanding of what I think it does.

You know, you've got all this stuff in between your cells called water. We call it ground substance. And we know when you look at cell biology that the way cells communicate with each other is through the ground substance.

You know, nerves and hormones and chemicals are relatively slow in processing where you know, you imagine you drop a toaster in a bathtub of water. It's a great conductor of information.

And in that case, electricity. So for cells to be able to communicate to each other through the ground substance, that's a very efficient way that all your cells can kind of talk to each other.

So we think that, you know, like acupuncture and homeopathy and these things we don't really understand, it's probably doing something at that ground substance level that conveys information to the cell that induces the cell to change.

So that's my best explanation. But you know, sometimes with LDI, we're in the homeopathic range and sometimes we're not. Sometimes we're getting sexy.

It's dilute, but there's stuff in it. So there may be a combination, we'll call it true physiology and some maybe energetic mechanism to how it works.

I think the beauty of LDI is that it's pretty safe, be the worst thing that can happen with LDI is if you have the right antigen and the wrong dilution, you can make kids worse.

And any of us who do us have had the experience of giving, dilution to a child, seeing them flare. But the good news with that is that you've now just proven whatever you gave them is what's triggering the symptom.

So if there was ever a question about, well, what is it? Well, if I give a child Lyme and Mycoplasma and Candide and the mycoplasma and Candida don't do anything but man, I gave him the line and their OCD went through the roof.

Well, I've now just proven lines. What's causing the OCD? So now I need to figure out, you know, refigure out my treatment plan or maybe figure out the right dilution that's going to neutralize the immune system to Lyme instead of being provocative.

So and, you know, we often see Horkheimer die off reactions with lots of our treatments with herbs, etc.. But when you see this kind of negative, obviously the next time you give it, you're going to give a lower dilution of the idea.

Correct? But is there anything that you give to counteract that negative, or is it just time? I mean, for instance, will I ibuprofen or skullcap or other things decrease that negative reaction while you, figure out the next best dose to give?

Yeah, I mean, I found try salts works incredibly well. We have a seltzer. Gold. Alka seltzer is not on the market anymore. Claire Labs now SFI has one called bicarb formula.

But when you analyze the body, it can really help down regulate that inflammatory response. So I'll have, you know, kids take tri salts 3 or 4 times a day.

That will usually help mitigate that die off. And it gets really bad. Again, we could use ibuprofen or I don't think I've ever had to use it. I know other doctors will use steroids to try to shut off that reaction, but try salts usually does the job and sometimes, yeah, we just use more anti-inflammatory herbs.

More cement, more Chinese skullcap. Little. Yeah, yeah. Fascinating stuff. And I, I have had several children that we've shared or that I've shared with the person to whom you sold your practice, Gail Patterson, who I will be

speaking with, in the coming weeks.

And, and it really is remarkable when you hit on the, this low dose immunotherapy, you can see that improvement so quickly. And, and it's, it's fascinating to me and an eye opening for me as well as several of my patients.

So thank you for bringing it into to my world as a clinician. I wanted to also just touch on just going back for a minute, because I've heard you talk about this.

You know, we talk a lot about the treatment of all of these things, but also, you know, the the prevention, you know, for instance, with tick borne disease, with climate change, with deforestation.

I heard you talk recently about, permethrin, which is toxic when wet, but but okay, when dry, using it, reducing the risk of a tick bite by 70%. Can you talk a little bit about that too?

Because I found that fascinating. Yeah. No, there was a study done. You know, we figure especially with tick bites, most tick bites come through the feet.

You know, the tick crawls of your shoe, your foot. If you're walking barefoot, obviously that's the lowest point, right? It's possible, of course, to get a tick bite if you're walking through a forest and, branch hits your head or your shoulder, but it's mostly through your feet.

So, yeah, they found that if you spray your shoes and socks with permethrin, which, again, is very toxic when wet, but once it dries, it's actually very safe to touch.

It reduces the risk of a tick bite by over 70%. And I think, again, if you live in a tick endemic area, that's good information to know. I think that can be one of the best things you can do to protect you and your children.

So I tell my patients, it's like when it's a nice day, you know, have a dedicated pair of your outdoor shoes and socks and go out there and wear mask and gloves and protect yourself.

Whoever's the sprayer, and you just spray it, let it dry overnight. And then afterwards, once it's dry, you can touch it and all that. The one thing I don't know, and I've been trying to find is, like, with socks particular because you're going to wash your socks, you're not generally washing your shoes.

At some point it's going to wash the permethrin out. Right. Don't know how often you might need to apply it. And obviously it's going to be a function of how often you wear the socks and wash the socks, because I know they sell clothes you can buy online that are already permethrin coated, right?

I went to, Belize years ago and bought a pants and shirt that already had it infused in it because I'm a mosquito magnet. But again, it can be incredibly helpful.

And it's a very, I think, cost effective way to reduce your risk. Certainly of a tick bite. Absolutely, absolutely. I just find that fascinating because I think, you know, we want our kids to be outside.

We do not want them to to be indoors because of the fear of tick bites or, or any type of exposure. And I think having ways that we can decrease the risk.

And that was that was really that study was fascinating to me because it was such a big decrease of 70%. Yeah. That was amazing. Yeah. I think when people can use tick tubes around the house as a way to trap tubes.

When I lived in Connecticut, I used to spray my property with garlic oil, which is a great safe, natural anti tick thing. I find most of the big chemical companies that say, you know, we'll spray your yard for ticks are usually using something either very toxic or even what they say is natural.

A lot of them are pyrethroids which really aren't that natural. Right. Yeah, garlic oil actually works pretty well. Great.

And, and also just, you know, like you said, it's a lot around the ankles.

But also I see a lot of kids where they're getting it behind their ears and their scalp, etc.. So something like that on a handkerchief, you know, around their neck and, and also, one that really worked because I still live in Connecticut is three feet of, of, more of, woodchips around the property because, you know, we're not just talking about deer, we're talking about field mice, etc., that are coming into the yards.

And I think that was another one that that really helped, in prevention. And one last thing. Jared, you know, we've talked about herbs, botanicals, LDI, but often in our kids, whether it be whatever the reason for pans pandas, their nutrients are depleted.

Prevention, Nutrients, and Practical Tips

And using things like magnesium, zinc, are essential to what we do. Can you speak to that a little bit to. Yeah. I mean, we know that our food supply is just devoid of a lot of nutrients.

You know, with our farming practices, we don't really practice regenerative farming. So the soil gets depleted. And of course, the more they use pesticides and herbicides, in particular, those deplete the soil of a lot of especially these trace nutrients, things like selenium and zinc, silica and boron and so forth.

So, you know, even if you've got a child who's a good eater and you're eating organic, fresh food, locally grown, I mean, it helps a lot. We know that, you know, organic produce as a whole has a higher nutrient content because of less pesticide use, but it's not perfect.

So, you know, we're kind of in a situation now where most people, not just children, need these excessive nutrients because we're just not getting it through our food supply.

And, I'm hopeful we'll see, you know, changes in our farming practices in the years to come so that we get more nutrient dense, nutrient rich soil so that we don't have to depend on it.

But, you know, we find some to our kids need these, particularly the trace minerals, just because they're not in food. But if you look chemically at what they do in the body, I mean, my gosh, magnesium and B6 are co-factors in almost every metabolic pathway, mitochondrial function, you know, selenium for connective tissue and our immune system, you.

Know, fibroid. Thyroid. Yeah, exactly. So, you know, we they're so important for normal functioning that, you know, as much as difficult as it can be to get some of these kids to take stuff, it's unfortunately kind of where we're at.

Yeah, yeah. Do any tricks you found in getting kids to take stuff? Well, you know, hide it as much as possible, try and make it fun for kids. As much as you can. Make it a game.

Depends on the age of the child as well. And a lot of our kids are so taste texture oriented. Anything that looks, smells or they perceive. I'm always amazed.

Like like zinc drink is a ton of zinc drink which I taste. Nothing tastes like. Oh, yeah. And you put it in, you know, juice. And the kids are like, now if there's something in it and they won't take it.

So it can be challenging. So for kids who are really taste averse, as much as we can get in through, you know, skin, sometimes transdermal application works better.

Sometimes Ivy, if you can get a kid to sit for an IV. But as much as we can try and get it through food so they don't have to take supplements is always preferable.

But I have kids who are picky eaters and we can't get greens in them. But you know what? If you mash up a bunch of greens and you put it in a meatball, they'll eat the meatball and as much as we can, be creative in the kitchen to

find ways to hide things.

So, you know, for supplements, I mean, liquids and powders as a whole, there's usually creative ways that we can find, to get in. I have some parents who just kind of do a little shot, and then they get a syringe and they just kind of squirt it and then give them a juice chaser afterwards.

You know, every child so different, you just kind of have to find what works best for them. Yeah. And don't forget about good old bribery. Best bribery? Yeah.

I have a lot of kids who get a lot of toys, but. Yeah, yeah, for time with mom and dad or that, that's when they get that extra treat after they down that shot glass, you know, they they get that dark chocolate or, you know, something even a little bit better.

But, any other treatments, assessments, anything else with regard to pans, pandas tick borne disease that you want to leave everybody with that we haven't talked about?

Well, I just want to give an extra plug for, you know, not just LDI, but I mean, there are other types of immunotherapy. We also do a lot of I said, low dose allergy therapy, sublingual immunotherapy, again, to help take that pressure off the immune system for all these other distractions, whether it's food, pollen, dust, animals, chemicals.

I have a lot of kids that are reactive to their own hormones and neurotransmitters, and we desensitize against that, you know, to maybe find an environmental medicine doctor who can do that evaluation for your child and really figure out all these different things that are becoming immune distractions.

Yeah. Because they're all treatable. Absolutely. And and, you know, you're an amazing clinician, author, everything that I could say about you. But if somebody wants to find you, Darren, how would they find you?

Best place to just my website. It says Darren Ingles and is in Nancy adcom. Okay. All right. Darren Ingles hdr, I and I and GLSEN is a Nancy D is in doctor.com.

And Darren you are always a wealth of information. You are such a great clinician and and I so appreciate being able to talk to you lecture with you and just know you as a person.

So thank you. Okay. Thank you Nancy. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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