Introduction and guest background

– Hello everybody. I'm Dr. Diane Mueller and welcome to another episode of microbes and mental health. I am so thrilled to have a national catholic doctor colleague with me who is a multiple book published author, Dr. Jill Crista. Dr. Jill. Welcome to our podcast.

– Thank you, Thank you for having me. I'm so passionate about this topic. – Thank you for being here. So we're gonna talk about Pans and pandas today.

You're going to tell us about your new book which is coming out. I'm so excited about it. And let's start just by before we go into that, just tell us a little bit about yourself about how you got into the niches of pans and pans, pandas and mold and you know, all the all the things that you do and treating your practice.

– Yeah, so, so Pans, I got into the way no one wants to have to get into it, being a parent of my twin boys both had pants, so that's how I became an in the trenches, experienced doctor as well as a practitioner with it because I would uh you know, experiment on my own kids and if it was kind of working, I would, you know, help with my patients. So yeah, that's uh I've been at the pans thing for all, almost 20 years Pandas, Pans and then in practice, I was, I ended up in Southern Wisconsin which just like Colorado is a high tick borne disease related area and I didn't really know that that was going to be the center of my practice, but it was just location, location, location and so I became trained in Eilat which is international alignment associated Disease society became a physician trained in their process and it's amazing when you find and treat the cause just like naturopathic medicine recognized it was Lyme disease and co infections treating them and having the training to know how to treat them.

People got better accept this small group patients and it turned out in that group there was one patient where they found toxic black mold and it started to make all of these things make sense. And as I dug into the research I'm like oh that's why this other non responding line patient is is having this symptom and this and you know so when we checked into it all but one had a mold exposure in their history and so that's then I launched into mold just because I was trying to help my Lyme patients.

Um and then we had mold happened in our own house and it duped me. I completely missed it until like the flood revealed itself and that's when I knew the inspector that I loved the re mediator that I love, I knew the protocol to put myself and my family on and I thought I need to write a book so I never thought I would be an author but here we go two in a row now um that you just get kind of motivated to like I wish everyone had access to the stuff that I know and I know in your amazing fantastic book?

Same thing.

What PANS and PANDAS are

You know, it's just like that you have so much compassion in there and just you can tell a real desire to, to make a difference and share what's in your noggin with everybody.

– Yeah, thanks. You know, it's so true. I think so many of us end up in this road just because of our own stories like this and then having Children, you know, I think seeing it in the Children, it's like one of the most heart wrenching things.

It's like hard enough we go through it. But then to watch it in your own Children, it's like a completely different level of intensity. I know. And it's also like also the whole idea of what you're saying, where it's like lime and you're like, oh all of a sudden somebody's not responding. So it's Pandora's box, right?

Sometimes in the patient's right? We think it's one thing, start digging around and it's all these different things. So

tell us then like from a Pans pandas, if it's like if there is all these different things, we're testing people for so so many different root causes what we're treating.

When is another clinician, When are people that are suffering with symptoms? What are they going to look out and consider pans and pandas And as you answer that, just I want to make sure everybody is really clear on what Pans and pandas actually is.

So can you enlighten us a little bit on both? Kind of what pans pandas are, what they are as diseases as well as their symptom pictures. – Yeah, I get that a lot. Like why are we saying two things?

– Yeah. – So together they fit under an umbrella of auto immune encephalopathies, which means auto immune, attacking yourself and cephalopod, the means brain. So the core brain stem something triggers in the body to convert into an autoimmune disease, where now the immune system has lost the distinction between self and not self and starts to attack the brain stem in these kids.

And so you can imagine that, and if your immune system is attacking your brain and its function, it's going to change how you you know how your brain functions, your feelings, your behaviors, all of the things that our brain does for us that can get tweaked in these kids. So what's really important to know about this is this is a body problem expressing as a behavior problem.

So it's not, I would just want to reassure everybody out there, it's not bad parenting, you're not doing anything wrong. You, you know, that would be really hard as the parents of these kids, you go from doctor to doctor and if you're with a doctor that doesn't understand it can look a lot like a parenting problem and the symptoms are more, they tend to be more behavioral at first. But then they have very real physical problems that can show up in the rest of the body as well.

So yeah, that the overarching thing that makes them similar is autoimmune and so apathy and where in the brain the the attack happens if we want to put it that way.

But they're each different in what caused it. They're both pediatric meaning kid do adults have it? They do, but they don't get it as adults, they get it as kids and they are low grade enough that they can kind of adapt or maybe they have like a hippie crunchy parent, like, like us, they can kind of, you know, manage their diet and their supplements and that kind of thing to kind of get along okay, but still struggle with it as adults.

Um, so they're pediatric and pan does is pediatric autoimmune neuro psych disorder associated with strep. So a strep infection is what triggered it and pans kind of opens the window to allow other things to have been the cause such as lime and co infections. A lot of the pan's kids that I work with had got one of either lyme tick borne relapsing fever or one of the co infections in utero.

So they actually had their exposure as a, as a fetus and then their immune system doesn't develop all of the way and now they're more susceptible to something else, like a mycoplasma pneumonia infection or some of the common infections of childhood can be the triggering event. So that's how they're different.

But the area of the brain is the same and the the symptoms look similar, they do have a slightly different clinical criteria. So if a doctor is going through they can look up the clinical criteria on the Pandas network website. Um So there's slightly different different aspects of them that that we then get into the weeds that specialize this in.

Okay that's more of a pants case. So that's more of in this case. Um but it doesn't matter which condition you have strep can then be the thing that triggers it over and over even if it's pants, even if strep wasn't the thing that started it, strep exposure. There's strep is very uniquely notorious on these kids because of the way that it can affect inflammatory markers in the brain and then they can get these reactions. So symptoms are going to be looking like O.

C. D. Which I kind of wish we wouldn't call it that I think I kind of wish we would call them compulsions or obsessions because that's obsessive compulsive disorder that when we think of it like from the movies that we've

seen, you know opening and closing a door opening and closing door opening and closing door or hand washing which can show that way in a child but it looks a little bit different in a child than it does in an adult because they don't have control over all the aspects of their life. So it can look more behavioral because that that obsession is leading which is a thought is leading to a compulsion which is the behavior and they may not have control over their life. To say I don't I can't get in the car today to go to school and they get you know picked up and put in the car and that's where you get the behavioral thing. You know they're backed into a corner kind of rabid animal kind of reaction because they've just been forced to do something that their their obsession is telling them is not safe. So the big message with the symptoms are so I should go back. So O. C. D. Anxiety.

You might see ticks. Um We do see generalized abdominal pain and more in a pans picture. We're going to see behavioral regression. So you have a teenager start doing baby talk or a grade schooler starting to wet the bed or something like that when they were perfectly fine.

Before we see handwriting changes. Um There can be some food restriction and a lot of this has to do with multiple factors which might be fear of eating fear of germs.

But I see it most often because the swallowing mechanism is quite complex. You know it takes a whole lot of nerves to make swallowing work. That's why stroke patients have such a you know they have to actually go through swallowing retraining.

Symptoms and when to seek evaluation

Um Because it is it involves like four different nerves from two different nervous systems. So that's a really complex um process. And I think that because of where the brain stem is being affected I think they're swallowing mechanism has a little hiccup in it and they know that and so they don't want to choke on food and they don't want to get exposed to germs. And so there can be some food restriction as well. We also see urinary frequency that's really common and especially if you have mold as the cause.

Yeah so there's kind of a I mean I can go through the clinical criteria if you'd like but I didn't want to get into the weeds too much. – Yeah. Yeah. Yeah before you I mean that might be a valuable before you go there.

Like one of the biggest things I wanna make sure people understand is say when. So it's like they have a child with some of these behavioral disorders.

Maybe it's some of these O. C. D. Ask whatever we're calling them tendencies or anxiety or A. D. H. D. At what point in with your research and your experience are you recommending for parents to say okay this is you know this is something that could likely be a pans pandas.

Type of situation and we need to seek out somebody who has the type of experience to be able to properly diagnose and figure that out. Like when does that come in for the say the average person that's never heard about any of this before.

When do they need to advocate for their child that way. – Yeah I think of a few things that really make it stand out. The first thing is it has to be really disruptive to daily life to the point where they cannot get to school or they cannot leave their bedroom.

It doesn't always have to be that way though. So I'm a little careful about saying That um when we see not just the o. c. d. the obsessions and compulsions but we see it in tandem with some of these other symptoms that I mentioned.

So it's looking at that's why the clinical criteria has multiple criteria that you have to meet. There's also an age of onset. So if this has been a problem since 18 months old that's probably more a congenital stealth infection situation. Or you know obviously kids have abuse issues as well. So this is something where it's not explained by some life experience um that you know that is disclosed anyway And it is disruptive enough to daily life that is really affecting activities of daily living.

– Okay so then maybe it would be valuable. Let's go through this criteria real quick. Just sure that everybody is aware of this I think would be helpful.

– Yeah and I'm gonna read them just, I know it's gonna be boring but like I want to make sure I don't miss anything. Okay so category one is the presence of obsessions O. C. D. But I'm careful to say obsessions and compulsions and or ticks particularly multiple complex or unusual ticks.

So we do see eye blinking as a really common tick but typically it will be eye blinking, shoulder shrug and it might be they work really hard to control that because it's a compulsion.

Um So you may not see it when you're looking at them but then they kind of get it out of their system when no one's looking. So the key with those that has to be severe enough to meet the criteria for O. C. D. Or a tic disorder and interfere with the patient's ability to function at pre illness levels.

So because this is they're both considered acute onset. Typically the typical picture is going to be an overnight or over a week kind of change in the child. They a lot of parents I feel like our kid just got stolen overnight. I don't know what just happened to them.

Um With pans it can be a slower onset. And I think it's because that first inciting event was mild. So there was an overnight change but it might have been mild enough that you thought wow our kid is suddenly like taking a shower and lining up their shoes and um organize their closet and you give yourself apparent high five and you're like awesome. You know and really that was the first moment where they went into O. C. D. So that could you know we often can miss it in pans. Okay so category two in pan does has an age requirement. So that's going to be between three years old and puberty. Category three is an acute onset and or episodic relapsing remitting. And so that would be the third thing I had mentioned about the confluence of symptom interfere with daily life and also relapsing.

Remitting is really common. That's normal for autoimmune diseases. And very very common with pandas and pans. Even if the child didn't have an exposure.

Something else which I talk about in my book. Some of the other things like pesticides, mold mercury you know there are other the E. M. S. Some of those things that we don't necessarily measure in medicine that are not infection can be the thing that causes it to wax up again.

Category for association with. Associated with strap or group a strap in particular. Um So we would see we want to see evidence of a group a strep infection which could be Farage itis but quite commonly is perry in itis and it gets missed because it's you know who's looking at after you're done with diapers who's looking at their kids bottom that often you know so there could be a red rash they could have a little bit of irritability but they just might keep it to themselves because it may not be that bad. So that's a little note.

Make sure everybody's swabbing bottoms are checking anyway and category five is associated with neurological abnormality. So I'm going to read the specifics abnormal results on a neurological exam moto or IQ hyperactivity.

So that's like ticks and advantageous movements such as Korea formal movements or ticks that are particularly common. So Korea form would be something that has more of a a circle kind of to it.

And I've noticed just a little tip in practice those kids who have beryllium which is a spiral key tend to have spiral type ticks and it makes sense. It's probably when the spiral kit is kind of what we know is that it can move through tissues by spiraling through soft tissue tendons, ligaments into joints through blood brain barrier that kind of thing. So it does make me think you know is that a moment that that the kids is telling us like this is this is a bacteria this is a Marilia.

Yeah. So interesting isn't it? Yeah very very cool. So for pans the criteria there's only four criteria with pandas. There's five. So category one is an abrupt or cute or dramatic onset of O.

C. D. Or severely restricted food intake. And again that is you know a lot of treating docs will say the parents don't have that acute or abrupt because they kind of missed it. It happened But it was mild.

Category two is concurrent presence of additional neuro psych symptoms was similarly severe and acute onset from at least two of these following, which is anxiety, emotional ability and or depression, irritability, aggression and or severe oppositional behaviors, behavioral regression, sudden deterioration, school performance, which a lot of times as handwriting, motor or sensory abnormalities and then somatic signs and symptoms that we see with both with.

So, like sleep problems, they can get the circadian rhythm flip flop because the area of the brain where they're being affected is in the limbic system.

Uh, and your ISA. So wetting the bed and urinary frequency, Category three is symptoms are not better explained by any other diagnosis. So it's not child abuse. It's not, you know, they just got there a refugee and they just got pulled from their home or something like that.

And category four is, there's the age requirement doesn't really have any accepted speeds. So it doesn't need to be on set when they're pediatric. Yeah, I hope that's helpful for people.

– Great. That's super helpful. And then so a couple of things to clarify. One is when we're talking about pandas and strep is one strep infection enough to start this and trigger this whole sequence of events.

Diagnostic criteria and brain involvement

So it doesn't have to be recurrent strapped at all. – No. And that's what's wild. Is that any strep is our most um, it's how do I want to say this? It is the bacteria is the most prevalent in our respiratory passages. So it's the boss of the earth ways is what I call it. Yeah. And so we live with strep a lot but there are more pathogenic species and less path species. And when you have had a strep exposure I think a lot of times we are fighting it off and we don't even know it.

But having immunity to one strain does not give you immunity to another strain. So that's why you have to re fight it off every single time you meet it.

And so I believe that the first strep infection was one that the kid conquered and didn't even know they conquered it and it was the next one that was symptomatic that they then can trigger into an autoimmune.

– Yeah it's interesting sometimes we see that with lime and other things too. That's a similar similar thing that way. And then also another thing I wanted to clarify is so you said the limbic system is part of the brain that's really affected with this. Can you go into that anymore?

And is it more than just the limbic system? Can you just talk about the brain impacts a little bit? – Yeah. And there's there's a lot of research going on now that we had we didn't have before. Um and there's still it's almost like everything we learned new brings up a whole set of new questions.

So what we know as of today which could be completely disproven by tomorrow is that the basal ganglia is one of the main targets. And that kind of makes sense because of the how I call it, going from breath to brain. So you've had this exposure to to a respiratory pathogens such as strep, it could again could be mycoplasma, pneumonia, could be mold mycotoxins that sets it off our our brain stem. The olfactory bulb are smelling smelling nerve that is in our brain is one of the few places where we don't have a blood brain barrier.

So we have these, it will stretch way back from the brain stem and it's it's a very circuitous one because what we're smelling needs to be reported to many parts of our brain.

It needs to be reported. The safety part of our brain needs to be reported the hungry part of our brain. You know, there are lots of different things that a smell needs to be communicated.

So this is one of the few nerves, it's just like wraps around a lot of different things. But it also comes all the way forward into our nose and then sends bare nerve fibers right through what's called the cruciform plate, which is in our sinuses down into our nasal mucosa. So we can smell stuff and it's wild for people realized, but smelling is a form of physical contact.

Like we smell stuff by a molecule literally in the air and coming and meeting that bare nerve fiber and normally we have snot enzymes and salts and stuff like that that dissolves that or d natures that and so it just becomes part of this not you know, so we can just blow it out. But in the case of certain things such as strep such as mycotoxins from mold um that can the strap when it interacts when the body says oh we know what that is that strap. It causes a bunch of inflammatory cytokines and those cytokines move back into the brain and the cytokines are reporting.

So th 17 all respiratory respirable infections preferentially increased th 17 which is kind of known as like the auto immune antibody. So all of which is wild like it doesn't have to be strapped right? But strep is uniquely notorious that way.

So it will ride that back. And the first thing that it's encountering is the basal ganglia and we don't really know yet if there's bio mimicry going on or if the cytokines are preferentially irritating inter Colinergic neurons which you talked about Colleen a lot in in yeah so it can affect acetylcholine.

Um So we don't really know yet what the mechanism is how it's happening but what we're seeing is destruction of the dopamine one and two receptor in the brain.

What that means is that these are kids with a ton of dopamine hanging around in the synapse waiting to be used. So it's sort of like their brains are flooded in dopamine in the very center where dopamine is active, which is the basal ganglia, which gives them all of the agitation that we see also kind of extremist behaviors sometimes too.

That might have gone too much into the weights. – But I love it. I love it. I think the dopamine part is like a super interesting component of things like that. And so in we might be getting more in the weeds with this. But then I'm like in adulthood, like if this is contracted in childhood moves into the adulthood, do we?

Or like risk kind of seeking behaviors and that kind of thing. – Okay, betcha Yeah, absolutely. Like joy seeking on steroids. – Yeah. – Joy and risk. Yeah.

So they're kind of hedonic. Yeah. And it's so important to know this about the dopamine. I don't feel like that's being addressed much. I don't, I feel like there's a lot of like fight the infection part.

But the reason why I was so compelled to write my book is I thought, wait a minute, wait a minute. You know, and I did this to my own kids before I really understood it was a dopamine issue. I kind of knew because of our training in neurotransmitters and I had run some urinary neurotransmitter.

So I knew dopamine was high and I knew glutamate was high. So it was, it's a total excitatory brain situation that's why they can't sleep. That's why their circadian rhythm was flip flopped.

That's why they don't want to eat. You know, like there are lots of reasons why. But those neurotransmitters, if we give certain things that are quote good for the brain or really relaxing for kids, if they're relaxing because they're increasing dopamine, that kid's going to have an opposite effect to that.

And I learned that the hard way. – Hard nights. Yeah. I mean, you know, you think, oh this one is good for the brain, so turmeric, that's one of them. I do not use in a kid who's in a flare when they get out of there flare, they can then hit the dumps with dopamine and they can get very despairing lot of depression. And so there's an art form to using the things and we have to understand how they're impacting the brain chemistry.

– Yeah. And this is I think a huge thing too, I imagine for even adults that are experiencing this whole thing of taking something like melatonin or you know, or like turmeric and they have, it's like why do they have a different reaction than all of the mechanisms are supposed to, you know cost.

So some of maybe the root of, you know the situation for people that have those completely opposite reactions as most people. – Yeah, you bet. And that's, you know, I have the no, no list for myself and it's all the things that are dopamine ergic that we that means for normal people increases dopamine. Um because I and it's not no, no, it's be really careful, you know, and know at what stage you're using that and for what purpose and so it's going to be the boswellia you think, oh wow, you you know, it's good for the brain turmeric.

You know, the it's just it's it's astounding. When I sat down and I was I looked at all the dopamine ergic herbs to think, you know, what should I warn people about in my book And I thought well yeah, I remember giving that to my kids and that was bad.

I remember giving that one to my kids love it when things come together like this. – Okay, so you've hit on quite a few things like from a cause perspective, I want to make sure we're really going into that.

So you've mentioned mycoplasma and mold and pesticides and obviously strep and lime. So some microbes, some toxins like go talk to us a little bit more about what are these causes that really can lead to the situation. – It's so important for people to understand that this is not just a bug problem.

That's again why I was so motivated, right, my book because I'm like, oh we're not really talking about this other environmental piece the number one bad boy environmental toxin for pandas and pans is glyphosate pesticides roundup and there's tons of research about why that is, it's terrible to the microbiome of our body.

It changes because it's based around the glycerine molecule it changes our brains chemistry kind of butt slicing out and and it fits in its spot but it doesn't fit right.

And so it's got this whole other mushroom on it that it can't get through doorways, it's supposed to get through. And so it becomes a real problem for kids.

So that is my I hope I would love to scream from the hilltops of just we got to stop using that stuff. I mean not only I'm, for me I have I have young men you know we know that glyphosate can actually lower testosterone it can degrade the testicles. So Children who are raised in places that are where Roundup is sprayed have smaller testicles like why do we have an infertility problem.

How about some round up? You know I worry about these guys that have them on their have it on their back and they're just you know out there spraying.

And I'm thinking yeah so not only that but the whole the whole microbiome peace and to me that's the fundamental root to autoimmune disease. We understand autoimmune diseases lack of distinguishing what self and not self and so the body can attack self and we get it that not self is like an infection.

Dopamine, flares, and treatment cautions

What we don't understand is self is determined by the microbes in our gut. There's more D. N. A. And there are more cells related to the microbes in our gut than our in our own flesh.

And when we start to think about that it's like what impacts the gut really impacts our bodies and with with roundup they did do the due diligence to see if it was going to affect humans. Um They looked at the pathway and said oh no humans don't have that pathway. We're good to go go to market boom.

Well it turns out it's really hard on the microbes in our gut. So is it does does it affect humans in a roundabout way and in a very severe way. But when you're using pesticides when you're when you're exposed to mold and mycotoxins when you have a very strong E. M. F. Exposure. Those are things that change our ability to define what self and so self to non self gets a little fuzzy.

So those are my big my big four like bad guys is pesticides, mold mercury and E. M. F. Those those are if we can reduce those we can make a huge difference in a kid's life and prevent siblings from having the same problem.

– Do you feel like the mike bio and other areas of the body? So it's like our sinuses and that sort of thing. Do you feel like that's a problem too with states in this whole picture? – Yeah. Yeah that's why I do treat the sinuses and kids.

I've kind of a core four of treatment. Um And the fourth corps is guard the gates because this area can become both a susceptibility area and an interference field. So if it gets inflamed chronically or it's chronically dealing with, remember those old nerve fiber if your snot has become ineffective and your mucosal linings are just swollen and they're toxic and they're not communicating appropriately. That becomes a major area where you become a Petri dish. You know some kids, one of the treatments sorry about that, one of the treatments of um in normal conventional medicine, you know, that is antibiotics and prophylactic as well because we do, they are at risk kids for getting infection and so they do need a little help for a while.

But another one in some kids is tonsillitis or tonsillectomy because the tonsils can become just a Petri dish and then, you know, as an naturopathic doctor we so many tools for that, so I won't consider a tonsillectomy until I have proven something's true.

First thing is that they don't have peri anal strap because if they do have a chronic parental strap, they're continuously sharing with the tonsils. So the tonsils are continuously having to deal with that every time they eat food they go to the bathroom, you know, all of those things. So and then if we've done all of our things and and it's not working, you know, we're not seeing an improvement sometimes tones like to be, it's like the last thing that's just a miracle, But it's not for every kid because as you and I know that's just the top of the immune chain and you don't want to cripple a kid either. – Unless that's the only the only option to really start making change we want.

– Right. Right. Yeah. That's a great question because a lot of times mold is the tripping exposure. Um, and that's part of my protocol for mold is to treat the sinuses too because this whole area just becomes pathogenic biofilm.

– Yeah. And I've seen the same. It's really hard to get somebody well without treating this area. And this area is problematic. And almost everybody with these chronic situations. – Yeah. Yeah. And you can't necessarily spray nasal sprays into kids that's not necessarily, um, I don't know, not only kind, but like for some of them they're still developing their sinuses and so we don't want to disrupt that microbiome too much.

So that's where things like, you know, essential oil diffusers and essential oil inhalational sticks. We can use probiotics in the nose and kids. It doesn't take as much of a bump to get the benefit and silver, you know, there's lots of things that we can use that help.

– Yeah. You use a lot of time I remember from your. – Yeah, time steam inhalations, – Working with your stuff, which is amazing. – Yeah. Yeah. Time is so cool because it's anti strep and it's antifungal. So it takes care of two things well for things that's anti parasitic and you know, so it takes care of many things with one plant and so it's just easy and a kid with pandas and pans is really ticking.

They get a nice calm of doing the steam inhalation and I have for anyone listening, I have a whole how to video on my website, you can just go to my website and search time and there's a how to their… – How awesome. Yeah, thank you for that.

And then we'll have just so everybody knows and all of the information on Dr. Jill will have all of her links on how to get ahold of all of this stuff too.

So moving on, just like talk to us a little bit more. So we've talked about glyphosate mold. I feel like we've touched on a little bit, I want to talk a little bit more about mold and really the gut brain connection of mold and how that fits into this whole pans pandas picture. – Yeah, mold.

The reason why it's number two on my list is because it's and I really struggled. I'm like, should be one or should it be too. And I just found so many things that, that the added licensing part of roundup makes it much more of a brain problem, mold is a body problem that can express as a brain problem.

But the way that it gets at the brain is those mycotoxins, some of them can, so we should explain mycotoxins are a toxin made by mold to defend its territory if if there's a water damage environment or even just too humid, it can even just be humidity. I mean a lot of there's a lot of mold in Hawaii just because it's humid. You know, people's leather belts get moldy, people's purses get moldy, their furniture gets moldy just from being in that environment.

So keeping the humidity down is really important.

Environmental triggers and root causes

So when that mold, which is ubiquitous in our air, comes into an indoor environment where it doesn't have all of the other nature forces controlling it like airflow and sunshine and you know, other microbes and the mycelium network telling it what to do that comes into that indoor environment gets its favorite food, which is dust or previously living organic material, cardboard, leather, those kind of things gets fed some humidity and says I live lakefront property, I have no controls and I've got this sweet spot.

And so if another sport comes into its environment, it'll start to kick up these mycotoxins to intentionally harm that other living thing. So if we think about that, it's intentionally trying to harm another living thing and ideally kill it. We're not the target, but we get the same effects as that other microbe. So mycotoxins are ultra small, they're a nanoparticle and they're fat soluble or oil soluble so they can get into our bodies really easily, They don't have to have like a transport protein or anything like that.

And because they're oil soluble you can't just drink a lot of water and get rid of them. You have to get rid of them through certain other detoxification strategies that the body has and they can bio accumulate which means they can build up over time in your body.

So they, one of the places that's really high in oil soluble or fat soluble tissues is our gut. So the mycotoxins will go into that gut into the lining of our gut and starts to disrupt the patent C.

Or the strength of that lining. That's how we get into leaky gut problems. And there have been many, many studies that show not just eating them. So a lot of people say oh that's just from eating them.

No, actually when you breathe them in they and also into your lungs they can seep into those capillaries and get carried in the blood anywhere in the body.

So if we have a leaky gut that's happening from the back end because you have micro toxin laden blood and our gut gets a lot of blood because it wants to get those nutrients out of there.

Now you've just deposited those mycotoxins in your gut from something that you breathe which is wild to think about isn't it? You didn't have to eat it to end up in your gut now that it's on the back end, it's disrupting these tight junctions and you get more and more and more leaky nous.

And what we've seen is the more leaky your gut, the more leaky as your brain. So then those mycotoxins can end up in the brain and they accumulate in the fattier parts of the brain which is the glands and that's how we get a perfect storm for a single strep infection to then there it goes. – So that single strep infection you're saying in some ways because of the leaking of the blood brain barrier is more easily able to enter that part of the body, right? – And leaky brain barrier means now there's more cytokines agitating the immune system of the brain. I call them the monkeys.

Of the brain, their microbes is their official term. But there um like the we have something called macrophages in our body which are the eaters, they're really big cells and they eat and we have that in our brain.

I call them monkeys because when they're normally surveilling the brain they have little appendages and they kind of swing around the nerve branches, you know, just looking for stuff to chew up and eat and get rid of and when they find something that really irritates them, they lose their appendages and they get really inflamed.

So I think about a monkey just like screaming, you know and getting really bad and then those monkeys start to fling poop, they start to fling out these cytokines which irritate the brain and that sets up a perfect storm then for one little strap side a keen you know inflammatory messenger to come back here and if you haven't already mad monkey flinging cytokines you gotta really inflamed mess. So then brain chemistry doesn't work.

The body starts to say well then maybe and the monkey starts to think the tree that it's sitting in is the problem and attack that. I know monkeys. – So so relatable and understandable, you know and… – Yeah, well that's good to hear because I had a colleague and they're like really Jill monkeys flinging poo, is that where you want to go with this?

And I was like absolutely like kid isn't going to get that, you know? – Yeah it takes something complicated and makes it like very understandable. So I really really like the misery a lot.

– Yeah. Yeah and it keeps it you know, all we have to do is calm down the monkeys and that's a lot of what like you talk about in your book, it's all the I called taming the flame, it's the corset tins and the Dolan's and nettles and you know the things that can really d a oh it can just calm that situation down so important. – Yeah, I mean it's a it's a couple of things right? It's the infections, microbes, Mercury, the e. M s all these different things that you're talking about the glyphosate but then it's also all of the downstream inflammatory effects and the dopamine and all these other imbalances. So it's not just about getting rid of the toxins and infections right? It's also about cleaning up the mess, right? – Absolutely. Yeah.

Yeah and you do have to do the first two steps, you know if you didn't you wouldn't wouldn't be getting anywhere but then or you just be cleaning up mess continuously.

Um But if you don't also clean up the mess those one mad monkey, if that monkeys poo hits another monkey that's just swinging around, that monkey is going to get mad and now it becomes a poo flinging monkey.

And so they can just recruit and recruit and recruit um more micro glia. And we have more mass cells with more problems going on in the brain. It can become kind of a self fulfilling cycle. – And it's also this vicious cycle right?

Because the micro glia are there to do things that are positive for our body. But if we get to the cycle, you're talking about this poo flinging cycle all of a sudden they're not doing their job of cleaning up the mess right?

– They're supposed to be out there cleaning up debris right? Not causing debris. Yeah and that's where I like things that are going to help nourish the fatty part of the brain as well that have a calming like S. P. M. S resolve in those kind of things because it tends to kind of put a pillow around that monkey like you know it's okay you can go I've just seen like really hitting a kid in a flare with some of those flame tamers like I was just listing off. It can really stop the cycle and you can get a kid who can finally then calm down enough to take their antimicrobial stuff to take the immune boosting things or immune modulating. I'm careful about saying immune boosting because people get frightened with autoimmune disease, they're like we don't want to boost the immune system. But I think if we understand that an autoimmune condition is an immune exhausted condition, it's not the immune system being hyper, it's an immune system that's so exhausted, it's lost discernment so it doesn't need a little boost but we have to in the right way like. – So many things like so I'm gonna ask you another question before I do that. I just want to go back and just make sure everybody really heard something you said because I also think it's a slightly off topic but I think it's super important to understand which is about what you're saying around mold and the micro circulation and the gut because I think it's so common, it's like the gut is so important with the treatment of all of these conditions and I think it's so common that we're just looking for cibo, we're just looking for parasites or things that are rooted in the gut.

Mold, gut-brain effects, and sinus support

So I just wanted to circle back around because I think it's really important for people to understand that these systemic things like mold that don't necessarily start there can actually cause problems there. Is there anything you wanted to add that would feel more complete there. Does that feel good to you before we move on?

– Well, I think also if I would like to thank you now that you've asked that I realized I didn't talk about the

neurological part of the gut, which is such an important part.

You know, we talk about having gut feelings for a reason. You know, our neurotransmitters, the majority of them are manufactured in our gut and when I was talking about coming in the back door through the bloodstream, that's also impacting the nervous system of the gut and the brain chemistry things that we're making in the gut. So the nervous system can get impaired.

And then the normal squeezing that happens with peristalsis can get disrupted. And sometimes if you have a kid that's refusing food, they're trying to tell you something.

You know, either my swallow is off, I'm afraid of germs, so my swallow is off. I need some, you know, brain flame reduction, I'm afraid of germs. I need some immune help, you know, some antimicrobial help or I can't eat because I get full after two bites.

That could be histamine for sure. But it could also be a gastro praecis and lack of peristalsis. So we have tools for all of those things. I think listening, my big, big picture to parents is like listen to what the compulsions are telling you. There's a message behind all of them.

Is your kid handwashing like crazy. Are they hand washing for you? Is your family? As everybody being careful handwashing because a lot of times they're handwashing like crazy because everyone else is not and they're getting exposed to things that their body can't handle and that we can state.

So there's lots of ways that you can be helping a kid by not being so um scared of the compulsion and really listening to what they say. – I love that advice that you know what's happening is just a way of communicating when other ways of communicating something are not available.

It's like because their age, – You know, they can't they can't put words to what all is happening on the inside. – Absolutely. Yeah, well this is so great and I think we should move into your top core for treatment strategy if you want to go there for us.

– Sure. Yeah. The top four so we have to tame the flame. We gotta beat the bugs regulate immunity and then guard the gates. So that's kind of the There's a lot in each one of those but that's kind of the organization.

I try to make sure we're doing something from each of those core four and I joked that I could have called it core 20 core 50 because so many tools, you know, that we could use. But as I thought I sat down with all my tools, I was like, okay, this kind of fits into immunity.

This kind of fits into the, I've called it guard the gates forever because that's the nasal gate, the dental gate. You know, a lot of these kids have smoldering tooth infections or tooth problems. That is the constant tweaking to the immune system um, and then throw, you know, we can do a lot to manage that and manage strip exposure and then the other gate is environmental, which, you know, I harp on a lot in the book.

– And then do you with these core four, do you go through them? Do you recommend like a certain order, is that more like all of these have to be addressed all at one time, I'm sure you go through it in your book.

But. – Yeah, I think typically, um, it depends on how how affected the kid is and how long standing this has been before. How long did it take them to get a diagnosis?

Because a lot of times again the parent feels like they're bad parents and so they kind of don't seek more care because they're working on like parenting skills.

So it can be years that this has been going on if it's kind of more sub acute, but if it's more acute, um, we may have to hit all of them at the same time.

Um ideally what we would do is start with tame the flame because if we can do things like resolve ins perilla um you

know mast cell stabilizers that we know that work like audio and um those can be things where we can get the the agitation down which helps then everything else after get into them. A nice one for when it's mold and Pandas Pandas, resveratrol all because it has some specific protective things for mold and mycotoxins and also some things that it does specifically in the area of the brain where the kids are affected. Yeah so typically I would try to get some of that stuff on just to get calm, calm, calm nights.

– Yeah everybody. – Yeah. Right I forgot to mention P. E. A. That's another one I really like. – Okay. – Yeah I mean it's all the stuff you and I you know probably already.

– And then what was I gonna ask you? Oh perks timer. So how often do you feel like this is something when you're dealing with pediatrics with the pans pandas and you're starting to actually treat infections or detox people from things like life? Do you have to worry about die off or detox type of reactions. Are you generally going fairly slow for most people. What does that look like?

What do people to watch out for? – Yeah I think that I haven't seen her Cosby as big of an issue in pandas, pans, kids as I do in straight mold or Lyme like lime mold that.

Yeah. But again, I think because I'm starting with reducing inflammation in general and sometimes that's drugs, sometimes that's anti histamines, you know, I mean I'm were trained in integrative Medicine.

It, it doesn't have to be plants alone. Um, but because I think we're chilling it out a little bit and we're addressing cause then we moved to beating the bugs.

That's, that's just um, it's almost like the body needed it so badly that it handles it better.

Core treatment framework and closing advice

The force is the infection is stronger than the force of the die off, if that makes any sense. – Yeah, that makes perfect sense. – And I don't always, you know, people say, well do you do you only use herbs do you only use antibiotics? I don't only use anything because it depends on the kid, you know, and in some cases they are so affected.

We have to get them on 23 antibiotics at once, just like in lime and a lot of them have, you know, low grade line, um presence and so you know, it just kind of depends on the kid.

– Do you and I share that philosophy. Like why block anything from the toolbox? Because this is going to respond differently. – That's right. Yeah. Yeah. And I have what I call my favorite botanical avatars for pandas and pans, like I call it an avatar because I was like in a perfect world.

And as I got all the mechanisms figured out it would do this, it would do this, it would do this, do this. And then I went and managed the brain chemistry, you know, and immune module not just killed bugs, you know.

And then I went to our books and I was finding all the things that I was having success for had all those mechanisms, you know, scooter, leiria, baikal, Insys Oregon, grape root. They have all of the mechanisms.

So sometimes simply adding a single plant like that because it has so many mechanisms of action, we don't have to go any further, you know, it's addressing all the rest of it.

– Yeah, that's plants are so amazing for all the different functions. They have. So many of them are so much more widespread that way than a lot of the pharmaceuticals. You bet they're always better.

But they are they're very broad and what a lot of them, which is really cool. – Yeah. And in my book, I do have it and it's on my website. So if anyone wants to get a hold of it a medication compatibility chart because I don't I tend not to pull the botanical avatar if I'm going to add pharmaceuticals. I want that broad spectrum.

I want that plant wisdom, that nature intelligence on board. So the antibiotic is sitting on top of a strong foundation, we all do better sitting on top of a strong foundation right? Family and you know, all that support. So I feel like the botanical avatar gives all of this for foundational support. So then when you add that pharmaceutical antimicrobial you don't have to use as big a dose, you don't have to treat as long you don't get as much of a die off. You know, all of those things work so much better. So I do have that chart.

So you know which ones are okay to play with each other. – I love that. It's such an amazing resource and you guys again you'll find all of that in her bio and Dr. Jill's bio before we wrap up and before we let you tell people about how to get ahold of us or hold of you and your new book and all of that.

Is there anything else you want to make sure that we covered today? Anything you feel like that's important that we missed. – Good question. We got to talk about monkeys in the mind.

So that's pretty great. No, I think just a reinforcement message that you know to parents, you have a great kid, your kid is sick and you're a good parent, this isn't bad parenting, your kid is sick and so finding and treating the cause and addressing it, you can get your kid back. – Thank you for that.

I think that's one of the most important. Take home points of this whole conversation. – Yeah. – So tell us a little bit about your book, A light in the dark.

Tell us about are you taking clients right now? You're seeing patients? Your room in your practice for new people. – Oh I wish I was. Yeah but I'm just not able. So yeah I have a book coming out.

Who knows when when the supply chain allows it to print. Uh it's called a light in the Dark for pandas and pans. Um and then I have a membership because I am not able to take all of the patients.

It was my way to kind of serve a group at one time and then help more people. So I hope so. I have a membership. You can find more information about that on my website.

– Okay perfect. Thank you so much and thank you so much for being here again. Everybody for information will be in her bio Dr. Jill. It's been a pleasure again as always.

So thank you and we'll talk to you soon. – Bye bye.