



Mold's Role in PANDAS & PANS

Nafysa Parpia, N.D. interviewing
Jill Crista, N.D.



Nafysa Parpia, N.D.

Welcome to today's episode of the Mycotoxin and Chronic Illness Summit two point oh. I am so pleased to have with me today doctor Jill Crista. Welcome Jill. We're gonna talk today--

Jill Crista, N.D.

Thank you.

Nafysa Parpia, N.D.

Yeah thank you. We're gonna talk today about PANDAS and PANS. So Jill would you like to start by giving our audience a definition of PANS and PANDAS?

Jill Crista, N.D.

Sure there are two distinct diagnoses as far as the criteria that there are pediatrics, and I'm gonna refer to children, but adults get it too. So this is two distinct criteria that need to be met for these diagnoses. But as a collective they're referred together a lot because they're so similar in what's happening in the brain and what's like the whole pathogenesis of it so to speak. So PANDAS and PANS are two different diagnoses under the same umbrella of autoimmune encephalitis. So these are



considered infection induced auto-immune conditions where the immune system gets confused and it starts attacking the child's brain. And what I'm trying to expand as well, and I think a couple other you know neuropathic and functional medicine doctors are saying infection yes, and toxin. So that's why we're here talking about this today because this isn't just about infection.

Nafysa Parpia, N.D.

Absolutely.

Jill Crista, N.D.

And. Yeah yeah.

Nafysa Parpia, N.D.

It's not yeah I'm finding it a combination of environmental toxicant's and infections. And we're just gonna stop for a second and tell the audience what PAN stands for. So PAN stands for pediatric acute onset neuropsychiatric syndrome.

Jill Crista, N.D.

And PANDAS yeah.

Nafysa Parpia, N.D.

Go ahead.

Jill Crista, N.D.

Oh I was gonna say, PANDAS is the same idea but it's associated with streptococcal infections.

Nafysa Parpia, N.D.

Yes. And so in the past, in the not too recent past, people thought it was only about strep. And then over the past 10 years they've come to realize that it can include many other infections. And what we're gonna talk about today is yes it can include many other infections, we see that all the time in our practices, but we also see that it includes environmental toxicants.



Jill Crista, N.D.

Yep like mold. Imagine that.

Nafysa Parpia, N.D.

And so Jill a lot of people think that mold is just about the spore, but let's talk to our audience about the toxins that molds create, the mycotoxins, and how that can contribute to PANS and PANDAS.

Jill Crista, N.D.

Sure, so mold secretes mycotoxins when it's trying to defend its territory. So it's trying to defend against other microbes, so it might be fungus, it might be bacteria. And it's or actinomyces, there's lots of things that the mold is trying to defend its territory. Once it finds that sweet spot of extra humidity, its perfect food that it likes which is carbohydrates, or the way I like to think of it is previously living organic material. So what do we build our houses with? Previously living organic material. You know we build it with wood, we line drywall with paper, one of molds favorite foods 'cause it's really easy to digest. So when it finds that sweet spot it will start secreting these mycotoxins to defend itself. The mycotoxins are designed as a bio weapon by the mold. We are not the target, but we are affected by these just like the other microbes are.

And these mycotoxins are known toxicants to the nervous system, to the immune system, and there is that you know cross over to something that can cause an auto-immune disease. We see that one of the mycotoxins called trichothecenes, it's like the toxic black mold. Or trichothecenes are also from a mold called fusarium which is in HVAC ducts and furnace coils and things like that. Those mycotoxins in particular can affect the blood brain barrier. These immune cells that are there to keep our, this blood brain barrier is like a selective membrane that only lets certain things into the brain. And it allows waste to the leave the brain, but it's very selective about what comes in. And there are immune cells called astrocytes that line that area. And trichothecenes hit those really hard. So there isn't a repair part of the blood brain barrier. So then they can get into the brain. And that's where we start to see all of these changes that we're gonna be talking about today. But mycotoxins also



wreck the gut, the gut microbiome, they affect kidney function, liver function, anything that is involved in detoxification, it can cause skin problems. They're basically designed very smartly from the mold to impede all of the metabolic systems of another living system because it wants to have its own lake front property.

Nafysa Parpia, N.D.

Yes. I'd like to stop and talk a little bit more about the brain. So the mycotoxins and the mold spores and cells they're also triggering inflammatory cytokines. Bradykinin, Interleukin 6, histamine. Those also travel through the blood brain barrier via the olfactory nerve and through the cribriform plate in the brain. So we see issues with people's hormones as well because it then goes to the pituitary. Which helps regulate our hormones. So. The brain is affected, but as doctor Crista was saying, the gut as well. So we have a highway of nerves from the gut to the brain as well. So inflammatory cytokines can travel up through the gut brain access also. So there's so many vehicles by which the toxins themselves and the inflammatory cytokines that they produce can travel through our system causing immune dysregulation.

Jill Crista, N.D.

Yeah you know an auto-immune disease is not something that just happened overnight.

Nafysa Parpia, N.D.

No.

Jill Crista, N.D.

It was that the immune system was worn down over time, and we consider that like an immune depletion, sometimes to the degree of immune deficiency. And we can see that on lab testing. And when you see immune deficiency, meaning the person has low immunoglobulins or low natural killers, cell count or function, the known consequences of that in medicine, number one is getting more infections, and number two is getting more auto-immune diseases. And so when you look at PANDAS and PANS as being an infection slash toxin induced auto-immune problem you just married those two top things that can happen from immune deficiency. And



what lowers our immune system the best? Mold mycotoxins. And the mold spores can do it because it's so, it induces such an inflammatory reaction that it kinda wears our our immune system over time. All of those immune cells trying to defend the spores from our sinuses and our lung tissue. Our whole respiratory tract is lined with these immune cells to denature or take apart the spores so that they can't become an infection. Well that's gonna wear you out over time if you're breathing moldy air all the time.

Nafysa Parpia, N.D.

Yeah and what I'm seeing is a lot of immune dysregulation. So I'm seeing people with a hyperactive immune system on one hand, and a weakened immune system on the other hand. So on one hand there's hyperactivity in that there is auto-immunity, there is mast cell activation syndrome, and so it's the immune system making too much noise, overreacting even attacking the self as we know with auto-immune disease and with PANS and PANDAS, the brain. And then there is immune weakness simultaneously because the patient isn't able to mount an appropriate immune response to kill off the infection. Whether it's strep, or any other associated infection causing the PANS or PANDAS or for that matter any other auto-immune condition. And there's research that shows that, that these toxins and mycotoxins cause such immune dysregulation.

Jill Crista, N.D.

Yeah for sure.

Nafysa Parpia, N.D.

And so doctor Jill and I are here today to talk about the combination of the toxins and the infections. Let's talk about how we get from breath to brain.

Jill Crista, N.D.

Yeah so these, you had mentioned it earlier, the nasal system, we have little nerves that reach from our brain cranial nerves through that little bone and into our sinuses. And that is a way that these toxins are sort of riding an easy highway back into the brain. And not only affecting the pituitary but affecting the area of the brain that we



see having the auto-immune reaction or you know attack we might say, which is the basal ganglia, some of the limbic system. So we can see these sorts of, the attack we wonder if it was a load up of toxin and now you get an infection that looks a lot like that same tissue like in the basal ganglia case. That's why we focus on strep so much because it has a protein that's really really similar to the basal ganglia. And so if you have a worn out system, you have that hyperactivity that you were talking about, and reduced activity, I see the hyperactivity as a response to reducing activity ability. So then the body is just like no discernment, I don't know, but I don't feel safe, and so I'm just gonna attack anything that looks like a bug. And so you get this it's called bio mimicry. So when we breathe in these toxins, those mycotoxins can ride up those nerves, that's one of the few places we don't have a blood brain barrier. There's only four places in the brain we don't have a blood brain barrier, and that's one of them and that's how, because we can breathe it in, and it can ride. And mycotoxins are fat soluble which means they're don't need a transporter or a door man or anything like that to let 'em into these cell types these tissues here, it just moves by gradient. So if there are a bunch, I think of it kind of like the Minions in these movies you know like "Despicable Me", that they're just like boom boom boom boom boom you know like bumping down the way. And so pretty soon boom boom boom boom boom you get the more mycotoxins you breathe, the more they move to the lower gradient, and they're gonna get all the way into the brain stem and affect the basal ganglia and the organs of the brain.

Nafysa Parpia, N.D.

Right, and so I wanna stop and take a moment to talk about the symptoms of PANS and PANDAS. So most usually it's supposed to be, according to the diagnosis, acute onset of personality changes. OCD. As well ticks like motor ticks. What I'm finding is it's not always acute onset, in which case it doesn't fit the exact definitions for PANS or PANDAS, but the symptoms are very similar because it's that part of the brain that's being attacked by the auto-immune antibodies that the body's creating from seeing the infections and the toxins. So I'm seeing this more and more in my practice, this not only sudden onset but definitely more insidious slow onset. And then the parents tell me but she or she is not what they were five years ago. This is not really my child. So there's irritability, hyperactivity, mood swings, sleep



disturbances, OCD is the big one. Another symptom I'm finding of course is the sinus infections, a lot of pain in the sinuses, a lot of clogging up of the sinuses because as doctor Jill was talking about, the mycotoxins. I love your minion explanation. Right so the Minions are they're bumping they're way, bump bump bump right? But they get stuck there, and they travel up through the brain and cross the blood brain barrier. So now we have sinus issues and all of these changes in personality and behavior as well as the motor ticks.

Jill Crista, N.D.

Yeah. And you know we can also see regression. You know so you have a teenager who all the sudden is doing baby talk, or you have a third grader who can't their hand writing looks like they're a kindergartner. But I agree with you, in my practice as well I don't see the acute onset as often as I'm seeing a more gradual onset. And I think it's because we don't really, we need to change how we're thinking about OCD when we think of it in a child. When you know from my standpoint when I first think of OCD I go to the movies you know with the open the door, close the door, open the door, close the door. You know this kind of like repetitive kinda thing, but in a child if we look at what that OCD means obsessive compulsive disorder, it may be an obsession but it may be a compulsion. So it doesn't necessarily have to be both. And in a child that can look like they're obsessed about keeping their room orderly.

And you think what a great kid. You know so if you had a kid who all of the sudden becomes very fastidious you as a parent are giving yourself a high five, like yeah I nailed this. You know I've got such a great kid. And if they have that, and we see a lot of urinary frequency and urinary pain in kid with PANDAS and PANS. So if you see a kid get you know suddenly fastidious, has urinary pain, kind of vague abdominal pain is pretty common, and maybe a tick. And the tick the child knows is abnormal, so they will work it into something that makes it look normal, or they'll try to hide it. And that tick is a compulsion. So that's how an OCD can look in a child, where it was sudden onset, but it was mild enough, and the child knew it was different because they know, you know they can tell that their brain is inflamed. They knew it was different, and they're masking it in a way so that they can you know kids wanna do be good kids, they wanna do the right thing. So it can start very mild like that until



you get to the place where you're getting the rages, you know all of the things that are a little more frightening and can disrupt a family. You know it's great when you have a fastidious kid.

Nafysa Parpia, N.D.

Right.

Jill Crista, N.D.

Nobody's complaining about that. You know?

Nafysa Parpia, N.D.

Yeah until time goes on and then they become rage-ful and it becomes very difficult on the family. And then the child gets sent to a psychiatrist, I understand why, but what happens is that this isn't explored, PANS and PANDAs and underlying infection, underlying toxins, it's not considered for the most part. You have to go to a very specific doctor, a functional medicine doctor who's trained in these things that would include a naturopathic doctor of course.

Jill Crista, N.D.

Yes.

Nafysa Parpia, N.D.

It's a different mindset. So. You know if you're seeing something different in your child, different behavior, slow onset, or sudden onset.

Jill Crista, N.D.

Right.

Nafysa Parpia, N.D.

You wanna really wonder if there's a bug or a toxin underneath that and take your child to the appropriate doctor.



Jill Crista, N.D.

Yes. Yeah. And parents also need to know that they don't have to have a lab test to prove it. The diagnoses for each condition PANDAS and PANS has very specific clinical criteria that are just about their symptoms and their behaviors. So you don't have to wait for some magical lab test to say okay that's it, that's what we have. They're still considered clinical diagnoses, which means you don't need a lab test to have the diagnosis, and you don't need a lab test to have the doctor be able to start treating your child. So you can get right on the treatments and get going.

Nafysa Parpia, N.D.

Exactly. I do like to use the Neural Zoomer Plus and the The Cunningham Panel just to check. It's like it's confirming what we already know, kind of like using genetic tests as well. But yes we can get clinical diagnosis and treat.

Jill Crista, N.D.

Yeah yeah because I've seen so many parents that I work with, their doctor doesn't feel comfortable ordering tests that are out of this system. You know if they can't get it from Quest or something like that. And I mean we have kids, it's when I first started in this field, the estimate was one in 500 children. And then a few years later it was one in 200 children. And now the estimate is one in 100 children that this is happening to.

Nafysa Parpia, N.D.

That's a lot of children.

Jill Crista, N.D.

That's a lot of kids, and that's a lot of pediatricians that they're going to see. And pediatricians that are within a model that ordering a lab that is out of something that they can enter into Epic or something like that, is uncomfortable for them. And so that's why I wanted to point that out to parents is that this is have your doctor go and look, this is a clinical criteria, he or she can start treating your child without having a lab test. We would love a lab test to get a baseline. And then that lab test tells us is our treatment working? You know are we starting to see these antibodies



reversing? And it's not just about antimicrobials, we have to modulate that immune system, boost it back up again, and that's a very scary thing for doctors to hear when we're talking about an auto-immune disease. That they think oh no no we have a hyper active immune system, we don't wanna boost. But it's only hyperactive because it's so worn down it now has no discernment. So when we modulate the immune system that's like giving it a big bear hug and all of the resources that it needs. You know what do you need? We're here to support. And then it can calm down those exaggerated reactions.

Nafysa Parpia, N.D.

What are your favorite immune modulators?

Jill Crista, N.D.

Oh my gosh. Well I like to start with IDG, just like things like colostrum, lactoferrin, you know things that will boost the natural IDG if we can. Peptides if the person is needing to that level. I think peptides are gonna be a really important thing with this condition. Yeah.

Nafysa Parpia, N.D.

One of my favorites are TB4-FRAG for calming the immune system, KPV, for support and BPC-157 for bringing down inflammation. I find when I start with those three peptides and colostrum I'm able to it's like being able to go in through the back door.

Jill Crista, N.D.

Yeah.

Nafysa Parpia, N.D.

Way quicker so treatment becomes quicker. And I'll even start with pretty high doses of the peptides like even three or four caps twice a day for the first three weeks, and then bring the dosages down. Now we're not giving you dosages and medications because we're wanting you to treat yourselves. We wanna make sure that you're if you're hearing us talk about certain medicines that you bring this up to your naturopathic doctor or your functional medicine doctor, that's really important.



Jill Crista, N.D.

Yeah. I came from ranch country where they let cattle go to salt licks. So whatever mineral they need they go to the lick. We've done that with some of the kids with colostrum. Just let them eat as many as they want until their full. And it is amazing how just like three days of going on a colostrum chewable binge, these kids just like they don't need as much anti-inflammatory help, there's a deeper sense of self that happens. Which makes perfect sense. When we think about the gut, microbiome, brain connection you know this now there's actually a term, you know the MGB access which is the microbiota of our gut, gut, brain access which you talked about earlier. We used to think everything came from here and went down.

Nafysa Parpia, N.D.

Right.

Jill Crista, N.D.

Now we're learning that no they communicate! You know this is bidirectional.

Nafysa Parpia, N.D.

Exactly.

Jill Crista, N.D.

Yeah yeah. So I call it the notorious MGB. I'm like we're not doing anything without the microbiota we're not getting at the brain. The way out of this brain problem is through the gut. So yeah it's so fun to watch this kind of free choice immune modulation. The child will tell you what's working and what's not if you give 'em the freedom.

Nafysa Parpia, N.D.

Yeah. Yeah. Let's talk about other infections that can cause this. I know strep is the buzzword right around PANDAS, but there's a diagnosis of PANS now which doesn't include strep. What infections are you finding?



Jill Crista, N.D.

Yeah so Lyme and associated tick born infections for sure. I would say the one that sticks out the most there is Bartonella.

Nafysa Parpia, N.D.

I was about to say that.

Jill Crista, N.D.

I think Bartonella is highly highly underdiagnosed, under recognized. I actually was talking to my local vet and she said that there is no canine test for Bartonella, only a feline. Which means we have a whole bunch of people that are dog people and not cat people, where we're not considering that as a possible diagnosis. You know Bartonella comes from cat scratch fever but it can also come from a tick bite as we know. But it can also come from a dog scratch you know? From and so many dogs have Bartonella and so many kids have Bartonella, and it is the perfect storm infection for setting up a PANDAS type infection, or PANDAS type condition because of the kind of tissue that it likes, the way that it can infect. It is transmissible through gestational, so a mom can have it and give it to her baby. So that same with the Lyme Borrelia. So that brain never developed under the influence of a normal immune system, it developed under the influence of an inflamed immune system which primes the glial cells in our brain, which is the immune cells in our brain, it primes them to be very inducible. So all it takes is another infection or toxin exposure and boom you've just kind of finally hit the last flame or the last straw. I talk about it in my book that it's the last straw. You know all the other straws are the toxins, you know mycotoxins, EMF's, mercury, and the big one is glyphosate. This round up is bad bad news for brains, bad news for kids brains yeah.

Nafysa Parpia, N.D.

Let's talk more--

Jill Crista, N.D.

So.



Nafysa Parpia, N.D.

About that doctor Jill. Tell us about glyphosate and kids brains.

Jill Crista, N.D.

So there is that notorious MGB connection. So two things that glyphosate is doing, and I wanna credit our colleague doctor Nye, and Stephanie Seneff at MIT just brilliant.

Nafysa Parpia, N.D.

Absolutely.

Jill Crista, N.D.

That they brought this out that the glyphosate has glycine, part of its molecule, and it can in theory, we don't know this for sure, but bump away the glycine amino acid from the other things that glycine does. One really important thing that glycine does is it's a calming neurotransmitter, a calming brain chemical in our brains. We make the majority of our brain chemistry in our gut, that's the we make it and then it probably travels that pathway that you were talking about.

Nafysa Parpia, N.D.

Right.

Jill Crista, N.D.

So. When you have an inflamed brain that's been attacked at the basal ganglia, the basal ganglia the receptors that are being affected are the dopamine receptors. Dopamine can go either to an excitatory or an inhibitory, meaning a flaring or a calming direction. But under the influence of inflammation it's gonna go more to the flaring side of it. So these kids are swimming in too much dopamine, too much glutamate, brain chemistry, those are very excitatory that's why we see the ticks. And what is supposed to bump up and match that to calm it down is GABA but also glycine. Well if you have glyphosate in the way then you are not only getting too much inflammation brain chemistry you're getting not enough calming brain chemistry. And glycine is also part of the glutathione molecule. And glutathione



helps us detoxify toxins, so it brings it back around to mold that mycotoxins deplete glutathione because our body has to plow through so much glutathione even in the cells in the mitochondria. In every tissue in our body we become glutathione deficient. And so when if you're asking the body to bump up its production of glutathione because we all the sudden have all of these mycotoxins floating around, but Roundup is in the way and you can't make glutathione then you become more sick from that exposure to the mycotoxins.

Nafysa Parpia, N.D.

Thank you that's such a great explanation.

Jill Crista, N.D.

Right. I know try to bring it all the way around.

Nafysa Parpia, N.D.

Love it, perfect, that's exactly what happens. And. Glyphosate is something I do like to measure that's for sure. And I'm seeing it really high in my patient population. So. You know I'm finding it often ninety-fifth percentile in my patients. And. I'm finding mercury very very very high in my patients. So I'm finding many toxins, but glyphosate in particular. And once I pull the glyphosate out of the system with glutathione and with phosphatidylcholine, usually that works. Sometimes it doesn't because the person doesn't have enough mineral status, doesn't have enough amino acid status, and so we have to shore them up with the co factors of detoxification first. Then they'll be ready for glutathione and phosphatidylcholines to detoxify the glyphosate and other chemicals and finding in their system. But I will measure the labs three six months later and inevitably the symptoms are shifting. But of course not only am I detoxing, I'm sure you're doing the same thing too, but killing off infections.

Jill Crista, N.D.

Right.



Nafysa Parpia, N.D.

At the time continuing to modulate the immune system at the same time. But yeah.

Jill Crista, N.D.

Yeah and the other thing that glyphosate does going back to the notorious MGB, is you know when it was tested and it was approved for use it was because it was affecting a pathway that humans don't have in our tissues, only bacteria do. And so they were, well bacteria and the other, the pesticide, so the pests. But they said oh this is gonna be perfectly safe for humans because we don't have this pathway, which Stephanie Seneff has been really you know she's championed this message, this shikimate pathway. Guess what uses that pathway? Our gut microbiota. So now you have we're getting a massive extinction I feel like, of our gut microbiota. We are inverted planets. You know there are more cells of our gut microbiota than there are of our own body. So when you talk about auto-immune being the lack of distinction between self and not self, what really makes up our sense of self? If there are more cells in our body that are that microbiota than ourselves, then really aren't we really determined as self by the critters in our gut, by the inhabitants of our body planet so to speak?

Nafysa Parpia, N.D.

Absolutely.

Jill Crista, N.D.

So if we're killing this off we basically have a mass extinction because of the Roundup happening in our gut, now we've lost a whole half of ourselves. No wonder this becomes an auto-immune disease.

Nafysa Parpia, N.D.

Very very insightful.

Jill Crista, N.D.

Thank you yeah.



Nafysa Parpia, N.D.

I love that, I love that.

Jill Crista, N.D.

What makes up the definition of self, you know? When you really think about it, it's our critters. Yeah so when you asked about immune modulation, obviously same thing with mold and mycotoxins, avoidance avoidance avoidance you know of things that are going to be reducing your immunity. But probiotics and getting the gut flora repopulated and giving them their favorite food which is butyrate. I'm finding butyrate to be so critically important for regulating the brains in these kids.

Nafysa Parpia, N.D.

It is, I find that as well. Let's talk about treatment. What are your core four for treatment for PANS and PANDAS?

Jill Crista, N.D.

So. Yeah so the core four is guard the gates, anti-microbials, anti-inflammatory's, and gut slash immune modulation. So those are like if we can get those four in place a lot of the symptoms go away. And then you're just doing fine tuning of the things. So if ticks are really a problem, even though you have the core four in place, there are little things you can do. There's research that sweeping helps to reduce ticks. You can get your house clean and your kid can be. Have reduced ticks. I like that. Or you know so then you can do the little things. If it's sleep problems, if it's eating and food avoidance, you know there are other tweaks that you can make. But with the core four what I mean by guard the gates is if we know that this is infection slash toxin induced avoidance of the toxins, getting the toxins out of the body, but also there are particular gates that we wanna guard for the body that we know are problems. One thing that makes strep very unique is that so strep can even if it didn't induce the infection or the auto-immune disease, 'cause we talked about you know tick born illness, I didn't mycoplasma is another huge one. And--

Nafysa Parpia, N.D.

You.



Jill Crista, N.D.

Influenza.

Nafysa Parpia, N.D.

Chlamydia pneumoniae. Also.

Jill Crista, N.D.

Yes yep.

Nafysa Parpia, N.D.

Plasma.

Jill Crista, N.D.

Influenza. COVID.

Nafysa Parpia, N.D.

Yep.

Jill Crista, N.D.

You know so even if it wasn't strep that was the inciting infection, strep can cause a flare in both conditions because of how unique it is. It's unique in its ability to change the immune system of the nose and the throat. And basically for its own survival. So strep still has to be part of the focus, but it's not the only part of the story. Yeah so when we're guarding the gates we wanna make sure that we're paying attention to respirable infection. So with a lot of my kids we're doing essential oil diffusers in their room, or maybe a silver sinus spray if they're old enough to do that, or iodine swabs. You know it can be really simple. And then making sure that you're using some kind of toothpaste or mouth wash like a dental Dentalcidin or a xylitol mouth wash that is maintaining that oral cavity. So that we're reducing that infection burden on the body.



Nafysa Parpia, N.D.

I think of the oral cavity in adults I'm finding there is quite a mess underneath root canals, old wisdom teeth that have been pulled, mercury amalgams in the mouth it's causing a lot of immune dysregulation. A lot of the times in fact with my patients if the mouth gate isn't guarded first they're not gonna get anywhere in treatment. Luckily it's not as bad in small children because usually they don't have root canals or mercury amalgams. And for children using dental Dentalcidin as an appropriate toothpaste or oil pulling. Adults usually I have to dig a lot deeper about that regarding the dental. And same with the sinuses. I have everybody do a sinus swab where I'm looking for MARCoNS and bacteria and fungi and biofilms. And I'm finding more and more molds now in people's sinuses Doctor Jill than I ever did in the past. More molds and more mercury just floating around the blood unprovoked and more aluminum and arsenic. And I believe it has to do with the fires in California, particular my patients here. Wow. And I do believe I don't have evidence for it, but I have clinical experience that would say that the higher the metals are the more molds I'm finding in the sinuses. And of course--

Jill Crista, N.D.

It makes sense! That's how they do mycoremediation. You know Paul Satmets in using particular spores on oil spill areas or places that are made toxic from like a former gas station and they wanna remediate it they use fungal spores to bio transform that. So when you can actually add these certain spores, and where there was either petrol or arsenic, you go back and they test the soil and it's gone. So they've transmuted it. Fungi are they're amazing. I mean that's the problem that a lot of people think I'm all anti fungal like I'm against all fungi. No I'm not, I'm against molds that make people sick. But then I love, and that's what I teach in my doctor course, is at the very end we do mycoremediation of the body. We use these brilliant fungi to help bio transform whatever is left over. And so it makes perfect sense. And I didn't think about the arsenic. I'm not seeing arsenic increase, but I'm not in an area that had the fires so that makes.



Nafysa Parpia, N.D.

And I'm seeing a lot more of my California patients a lot more other chemicals, industrial chemicals, because in the fires well what else is burning?

Jill Crista, N.D.

Right.

Nafysa Parpia, N.D.

All kinds of things.

Jill Crista, N.D.

Right.

Nafysa Parpia, N.D.

Plastic tires. You name it.

Jill Crista, N.D.

Yeah yeah.

Nafysa Parpia, N.D.

So.

Jill Crista, N.D.

Yeah. So I'm glad, like in my book I talk about the dental gate. That is such a big deal for kids but also because the brain stem is affected, these kids can actually get more swelling there. They do get, and we can see it on a neural quant, where they have and kids will describe it, they're like no my head's too full, I can't move my neck right. And that's all happening right here at this occiput area. And if you have them go to a dentist and they're in that position the whole time now you've caused brain drain problems. So I try to have my patients set any dental care that needs to be done, have a cranialsacral appointment done right after so that the brain can drain. Cause otherwise you will get more swelling after a dentist.



Nafysa Parpia, N.D.

I'll also give people neural therapy right after to help with lymphatic drainage. And brain. Drainage.

Jill Crista, N.D.

Nice.

Nafysa Parpia, N.D.

You know I'm gonna bring up Doctor Alireza Panahpour. Actually he's a systemic dentist and he's incredible. He works with doctors like us. Actually I'm gonna refer him to you to work with your patients as well. He's opening up an office at our clinic actually to come in and work with our patients. Yeah he lives in LA but he's gonna come once every, once a month or so for a couple weeks. And our patients need it, they need functional dentistry.

Jill Crista, N.D.

They definitely too. I hope that he teaches, I hope he's doing.

Nafysa Parpia, N.D.

He does.

Jill Crista, N.D.

Teaching and mentoring as possible 'cause we need dentists that know this.

Nafysa Parpia, N.D.

Yeah he does. And he needs doctors like us because he knows that with the dental work he's doing he needs functional naturopathic doctors to help support that.

Jill Crista, N.D.

Right.

Nafysa Parpia, N.D.

So we work in tandem.



Jill Crista, N.D.

Yeah that is something I'm seeing in my mold patients that they need a little extra binder support around their dental. And a little extra microbial support even if they're not somebody with mitrovalve prolapse or something like that, it just seems like whatever is being freed up from that oral microbiome it seems to be really flaring people. So I think our teeth are a really important reservoir for.

Nafysa Parpia, N.D.

They are.

Jill Crista, N.D.

And we better be paying attention to.

Nafysa Parpia, N.D.

Yeah and overlooked the same with the sinuses. It's they're both a big deal.

Jill Crista, N.D.

Our gates.

Nafysa Parpia, N.D.

Our gates.

Jill Crista, N.D.

Yeah guard your gates, yeah.

Nafysa Parpia, N.D.

Yeah. Yeah. So anything else you wanna tell us about? Your book?

Jill Crista, N.D.

I think we covered a lot.



Nafysa Parpia, N.D.

Your book?

Jill Crista, N.D.

Yeah my book it's coming out in May. It's "A Light in the Dark for PANDAS and PANS". And it's a lot like my mold book where it gives very specific recommendations. So it gets people started so that they can work with their doctor and you know having support as a parent is so important. I'm a mom with twins with PANS. So from a congenital Lyme infection which I was told you know was I had fibromyalgia. You know everybody has body pain, that kinda stuff that you get told when you have chronic Lyme. And so I didn't know I had Lyme. Was one of the things, other than my wonderful sense of humor, that's one of the things that I gave my kids is Lyme. Yeah and then they developed PANS. So yeah. It is a road. And.

Nafysa Parpia, N.D.

Doctor Jill can you talk to our moms for a moment here, because you've been through this. And a lot of moms they say it's my fault, I did this to my kid, they take that blame. And I tell them no, it's not your fault. As since you've been through this, if you can offer some words of wisdom to the moms out there.

Jill Crista, N.D.

Sure. You would never have done this to your kids if you knew, of course. So no I think that is don't give that any more thought. And spend all of your focus and your energy on solution and getting your kid back. 'Cause yeah it does happen. They do come back and they come back stronger. And you're probably setting your child up for a healthier adult life 'cause you and I see adults that have not listened to their body, who haven't, you know when you start healthy you can beat yourself up for a good 40 years before you really fall apart and then that's when people come to see us. You know? Right? So what you're actually doing is through this experience the beauty of this experience is that you are getting invested in cleaning up your environment. We're just gonna help the whole planet. And you're getting invested in a clean diet, and healthy eating, and movement, and probably you know a lot of family bonding that you never really would've had the depth of if you didn't go through this



experience. So keep your focus on solutions. And you actually are setting your kid up for a healthier adulthood because they now understand the importance of all of these things.

Nafysa Parpia, N.D.

Thank you.

Jill Crista, N.D.

Sure.

Nafysa Parpia, N.D.

Yeah that's beautiful.

Jill Crista, N.D.

Solutions. I'm all about it, yeah.

Nafysa Parpia, N.D.

Absolutely.

Jill Crista, N.D.

For sure.

Nafysa Parpia, N.D.

And knowing there's a silver lining.

Jill Crista, N.D.

Yeah. Well and that's just from watching you know kids that I have worked with. And you know I mean mine are 21, but I started seeing kids with PANDAS before we knew there was a thing called PANS that were you know 19, and now they're healthy adults. You know are they always going to be a little bit primed, do they always have to be a little bit careful? That's gonna be different for every kid and how whether it was gestational exposure, or whether it was not. But I you know these are very committed, they tend to be very committed to their health and to clean living and



being clean and gentle on the planet. And I think that that probably is the message in all of this.

Nafysa Parpia, N.D.

Yes it's true. In the end they're healthier than they ever would've been, and they're kinder to the planet than they may have ever been. And so there is a silver lining. Experience healing.

Jill Crista, N.D.

Yeah. And I guess one other tip would just be you know, if you are going through this with your child then you're in that place where it's just like you know we just found it was mold in our house, what the heck are we gonna do? You know like that whatever you can do, take the little bitty baby steps and listen to your child. Because if they are avoiding a sibling, or the pet, or they're being mean to the pet, or they're avoiding one of the parents, parents get yourself checked for being either strep carriers, or mold colony carriers. That child is telling you what they need. If they're repeated hand washing, they're telling you guess what's the best way we're hearing with COVID to prevent COVID? Wash our hands right? So if your kid is repeated hand washing they're telling you my gates are not protected, I am susceptible to infection, I need more antimicrobials and immune modulation. You know they're telling you through their behaviors what they need. And trust that, trust your child.

Nafysa Parpia, N.D.

Yes and then parents when you see this and you remember doctor Jill and I saying this, no you're not gonna get this kinda support from most doctors. And don't worry about it because there's a bunch of doctors we're interviewing on this summit that know what to do, that know how to help you. There's doctor Jill, there's myself, and there's 30 other doctors I'm interviewing here. And. There's a big support network so.

Jill Crista, N.D.

You know your child. You know your child. I've had parents be told, you know well you know ticks happen in kids, they just need to sleep more. Or you know, kids refuse food all the time. Have you tried ice cream? You know and it's like really? We came to



the doctor, that's how they've tried everything. So if you're getting blown off as a parent, like you're saying, just don't give it any more time. Go and find the care that your kid needs. And you know your kid better than anybody.

Nafysa Parpia, N.D.

Exactly.

Jill Crista, N.D.

Yeah.

Nafysa Parpia, N.D.

Yeah. Well thank you, thank you doctor Jill.

Jill Crista, N.D.

Yes. Thank you, thanks for letting me spread the word about PANDAS and PANS and mold and glyphosate and all the Lyme and Bartonella, all the story.

Nafysa Parpia, N.D.

Exactly.

Jill Crista, N.D.

Hopefully we didn't overwhelm everybody, hopefully we empowered.

Nafysa Parpia, N.D.

I think we did.

Jill Crista, N.D.

Okay.

Nafysa Parpia, N.D.

Thank you.



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Jill Crista, N.D.

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