Introduction and Speaker Background

Welcome to today's episode of the Mycotoxins and Chronic Illness Summit. I'm very excited today to have Doctor Justin Strand with us. She's the director of clinical education at Biocide, and she possesses a reverence for botanicals, a passion for science, and a vision for increasing awareness about naturopathic medicine.

In her role with Biocide and, she monitors and participates in research, trains clinicians, and is a respected and engaging speaker. Before joining the company in 2019, Doctor Jocelyn was a primary care provider specializing in GI system disorders.

Lyme disease and autoimmune conditions. She graduated from Bester University in Washington in 2005 with a doctorate in Natural empathic medicine. Doctor Johnson lives on ten acres in Minnesota with her husband and two sons, where they are trying their hand at making maple sirup and beekeeping.

How exciting! It is exciting. Welcome, Doctor Jocelyn. I'm so happy to have you here today with us. Thanks so much for having me. I'm very happy to be here.

So let's dive right in. Tell me about when you started using Biocide initially. Okay. I'd love to tell you about that. So the very first time I used Biocide was on, on a pediatric patient.

I'll get to myself in just a second. So I learned about Biocide and from Genova Diagnostics, working with a pediatric patient that had. And I didn't know at the time that mold exposure had chronic tick borne illnesses as well as, dysbiosis, gastrointestinal dysbiosis.

And I think as clinicians, we understand those things often go. All of those things will go hand in hand right. So, yeah, it's amazing. Right? So this little girl, her experience was so remarkable using a biocide liquid that it caught my attention.

We all have those moments. I think as clinicians, we're like, oh, my goodness. This is there's something here that I need more deeply. And she had, life threatening response to food.

She would have a IgG. So a, anaphylactic mediated response in her lungs when she ate food and they couldn't identify a food trigger that, that they hadn't already taken out.

She had a ton of IgG mediated food sensitivities. But when we retested her stool, she had dysbiosis. And when we treated the dysbiosis, she, she did a 180 with her, with her health.

She still has some health stuff, but her mom credits that therapeutic with saving her life because she would have, full blown asthma attacks, hospitalizations regularly.

Prednisone, IV, prednisone, you know, so she was a very, very complex patient. And the one the kind of patient that we're most scared of as clinicians.

Right. Like, I want to prescribe something and it's going to you she's going to react to it. But of course, because I saw it work for her, then I had to try it myself.

First Biocide Experience with a Pediatric Patient

Naturally. You know, in my head I'm like, oh, I have this long history of Candida in my gut, on my skin. And so I, I thought, I'm going to go after the Candida with the biocide and liquid.

And what happened for me when I took it is that I had a full blown mold toxicity, recurrence from mold toxicity that had occurred years before. So I had years before I had had a mold exposure, and I had a very specific constellation of symptoms that were, again, like that histamine mediated, really itchy legs and, neurological symptoms.

And, the whole, you know, you can't mistake it once you have it. Right. And so, yeah, when I started taking Biocide in, I had all of those rise and then fall again over the course of about 3 or 4 days.

And it was just a fascinating thing for me. What, what was really happening is that I wasn't adequately supporting myself. Right. And true to form, I had, I ramped way too quickly.

You know, with the product. And so I had gone straight to max dosing, but it was really educational for me as a clinician to see the effect. And it really stimulated thought for me.

And how is this product working? And what I now think was happening is that I was mobilizing those mycotoxins from tissue and from biofilms that were that were hold up in my body and my gut and my sinuses and my ears, all of that.

Right. And so, it was a really powerful experience for me. And, and it really paved the way for me with my mycotoxins patients as well. It's a very powerful experience, for sure, and it's a testament to how powerful the product is.

You know, that it's you can you can use just a little bit and a little goes a long way. And then you yes, you can gets used to it and you have to finesse the dosage and increase it slowly.

But boy have I ever seen patients really, really responsive to biocide. And it is amazing. And it's such a it's such a benefit to be able to titrate right.

Especially with those complex people with complex, illness, chronic illnesses. So chronic, Lyme and those, those patients are very sensitive as a general rule, Michael Jackson patients, all of those.

And so having having a tool like this that you can ramp slowly, it can be very helpful to get people, to get people on and be able to keep them on and maintain and comply.

Right. I don't really like that word because it means that like like I'm telling somebody what to do and they're not doing it, but it's just word in the industry, right is right.

They can't stick with the protocol if they're so uncomfortable or flaring from it. Right. So it's nice to have that ability to, to titrate. Yes. I had a patient this is back in 2014.

Before before the liposomal was available I believe. And she came in with a diagnosis of Lyme disease. And she had severe joint pain. She was in her, early 40s at the time, walking with the cane.

Well, and, I mean, very, very sick. And I wanted to get more diagnostics on her. And while I was getting more diagnostics, I decided to have her start with Biocide in because she was having issues in her gut, of course.

And we'll talk more about this as well, how dysbiosis contributes to toxicity, which then contributes to, inflammation and joint pain. Yes. Yes, exactly.

Patients are familiar with it. So I thought, well, let's start with her gut here. And and I did and I didn't see her for about three months. And, and she comes in and she's healed and oh my gosh, wow.

All she had was biocide in. I also gave her all of our x okay bio tonic, and I had it a whole tox protocol for her with binders and support for the organs of elimination. But, it it was amazing to me.

Isn't that. It's so remarkable when you see that happen. Oh, yeah. The cane was gone. She was hiking. She was running again. As if this never happened to her.

And it's why we go into this, right, is because we want to help people heal in that way. And so that's, you know, I said this to you earlier, but this is why I'm in the position that I am as the director of education for this company is because I want every clinician to have this as a tool in their pocket.

I want to get the word out to patients and practitioners alike about the efficacy and then the fun, geeky side of me gets to study and research and understand why.

It's why what we see happen does happen. And, and what was her what was her diagnosis or what was what was going on for her? Do you know the underlying, though?

She had a diagnosis of Lyme disease and Bartonella? She had dysbiosis, I forget, which, was a potential autoimmune trigger.

Personal Mold Toxicity and Clinical Lessons

I forget which one I was. I'm still, it might have been Klebsiella. Okay. Yeah. There are so many. It was it was klebsiella, actually. Okay. Yeah. Yeah. Like I'm reading your mind.

You are. Yeah. So I wanted to start with the dysbiosis and all its ation. Yeah. It's one of the, you know, some of the beauty of working, I think, with botanicals in general.

But the research that we've done with Biocide in is that, it is very broad acting. So we may be, like I said before, going after Candida in my own body.

That's what in my head when I was treating it. But I ended up working with my mold toxicity as well. And so which, by the way, was still creating symptoms for me.

And, and the clearance of those mycotoxins, then all of my histamine mediated symptoms resolved after that. So gratefully, I could drink wine again. No, I mean, that looks like the least of my worries, right?

You know what I mean? I couldn't touch it and, fermented for a long time because of the the histamine. My body couldn't tolerate his me. So it was an amazing thing to to clear that and have it healed.

But, it is the that broad acting nature of a biocide and and botanicals in general. I love the fact that botanicals and when it says that I have a reverence for botanicals, it's because the more you learn about them, the more beautiful it is that you think.

An example would be milk thistle, which is in bioscience, right? We think of milk vessels to paddle protective. Right. So this helps heal protect the liver and heal the liver.

But it's also antioxidant and it's also anti-microbial. And it's also anti-inflammatory. So it has multiple layers effects. So not only does it work to help balance the microbiome, but then it also supports host immunity and activity.

Oh it's immune immune supportive as well. Right. And so it's this beautiful, synergy that works with the body. And then you think about adding, there are 17 botanicals in biocide, and they all have different activities, a lot of overlapping activity.

And it's not a case of one plus one equals two. It becomes much more powerful than that. And so I think the easiest way to think about it is that you, you know, if we have biofilms in the body, which are a source of antibiotic resistance or antimicrobial resistance, you can use antimicrobials all you want or antibiotics all you want, but you're not going to kill all of the microorganisms or restore balance the way that you could, if you address the biofilm.

So when you include botanicals that that break down biofilms with antimicrobials, it's a much more powerful and long lasting, longer lasting effect. So it's it's just a very cool you know, obviously I'm biased, but I'm tall and I'm geeky. You know, science.

It's so much fun to understand more about why what makes it so remarkable, you know, as a, as a clinical tool. Yeah. Let's stop and tell our, our listeners a little bit about biofilm.

So okay. So it's a carbohydrate rich matrix that all microbes are bacteria, viruses, parasites, fungi. They they produce and they and they it's like they, they create a house, a community for themselves, a protective matrix that they all live inside.

And, and it's a way to, to subdue our, our immune response. And not only that, but unless we use substances that break up the biofilm, the bugs can become resistant to and, antimicrobial action, whether it's herbs or antibiotics that we use.

Tell us more about biofilm and bioscience, activity against it. Okay. So biofilms, I think the easiest biofilm to identify for that, for the average person is the fuzzy teeth.

At the end of the day, that's a biofilm, right? And or like if you go swimming in a, in a lake and the rocks are slippery, that's a biofilm. Right. And so it is exactly what you said.

It's a it's a mechanism that protects those microorganisms. And it's often not just a single microorganism but multiple microorganisms underneath that biofilm.

And a couple of things happen there. They are much higher in what's called the efflux pump. The efflux pump is one of the mechanisms, just one of several mechanisms for and identified for antibiotic resistance.

But it also pumps out, lipopolysaccharide which are an inflammatory mediator. So it increases inflammation. And it also it's part of the quorum sensing, which is the establishment of the, of the biofilm itself.

And it's just, it becomes if you can't address those things, it becomes very difficult to get sort of a longer lasting therapeutic.

Lyme Patient Recovery and Broad Botanical Support

There are botanicals in biocide many botanicals also that aren't in biocide, and that act at all of the different phases of biofilm, creation. So it starts with quorum sensing, right?

And that's quorum sensing is is just like, we're going to have a party. So I'm hanging out. I'm fine by myself, but I'm also or like my chickens, I could use them.

Right. Don't like hang out one by themselves because they're vulnerable. Right, right. So you get in a, you get in a group, and then basically the, the mediators or the signaling molecules that they're releasing, say, to the adjacent microorganisms, we got enough of us here.

Let's create this matrix that you're talking about, the extracellular matrix. But the problem for us is that that matrix houses it's very, very sticky.

And it houses all sorts of things. Mycotoxins is just one of them. Right. And that was my experience when we broke down biofilms in my body. I had this mobilization of that I didn't support adequately a mycotoxins, but also every other toxin that your body that comes comes floating past that biofilm could stick to it.

They're so sticky that they're actually use. One of the beneficial uses of biofilms is that they're used for bioremediation. So they'll put them in a toxic waste site or where oil is filled in the ocean and they will actually consume.

They absorb and consume the toxins. So the same thing happens when it's in our body, right? It hangs on to that. And not just toxins from the outside world, but the toxins that are being produced by those microorganisms that are underneath the biofilm as well.

Oxalates, other metabolites, right? Salicylates everything that can irritate or annoy our immune system. It gets stuck in that biofilm. And I think for me as a practitioner, it's the reason now.

And you know, a lot of hindsight is 2020, right. It's it's that a lot of my patients did so much better on detoxification protocols in general when I included, antimicrobial therapeutics with the detoxification.

And I didn't understand until more recently why why is that happening? You know, but I just, you know, it's it's part of your anecdotal. Oh, let's look this looks different, including.

Right. Right. So yeah, it's just it's so fascinating, you know, and I think the other thing about biofilms, like in the mouth, they become a source of refractory or receding, pathogens.

Right? So if you don't address them, then you can keep that that population underneath the biofilm will break away. And recreate dysbiosis. You know, so that unbalanced or pathetic growth of, of the bad guys in the gut.

Right. So tell us about, dental seitan. I love that product too. Okay. So dental seitan was actually made in response to the the desire to work in the oral cavity, dysbiosis and biofilms.

And we have some really exciting pilot research with that product. With so not the toothpaste we have, is a biocide liquid. It's 20% biocide in. And then a natural toothpaste base, has other nutrients for for healing the gums as well.

But the oral cavity is really important to address for a number of reasons. The first is that just oral health in general carries if you if so, 75% of the population over 30 has either gingival.

So the gums will get inflamed or even more progressed would be periodontal disease periodontitis. And that happens when there's inflammation down between the tooth and the gum.

The basically what happens is that the gingiva gets inflamed so the gums get inflamed. The immune system comes in and fires away at those biofilms, but it cannot penetrate them.

And then it becomes like collateral damage. Right. So that all of the the gum tissue and in the surrounding area starts to get inflamed and damaged, and you end up with developing a periodontal pocket at that point.

And so that then is associated with things like cardiovascular disease, Alzheimer's disease and dementia, joint pain, pregnancy outcomes that are poor, all sorts actually, of gynecological or pregnancy related conditions.

It's really fascinating. I mean, I get so all I mean, it's all like a rabbit hole. I could go down every one of these topics. It's a huge, overlooked piece, I think, of how close the jaw is to the brain and, yes, the inflammatory cytokines, the toxins, the bio toxins that are created by the the infections can, can, can cross the blood brain barrier through the olfactory nerve or, down through the organs via the vagus nerve.

And so there's this, that this entire, the free way of, of, of transportation, the that not only the infections but the inflammatory cytokines can use actually the nervous system, you know, you're talking about it exactly how I think about it, too, which is that sort of two main things, right?

We have the inflammation that's produced by that that becomes systemic, damages the blood brain barrier and central nervous system tissue. But there's also translocation of the actual pathogen.

Right. So you can actually get those microorganisms into the bloodstream. And they're found in lots of cardiovascular plaque. That's been I think it's actually the one study that I read.

It was in every cardiovascular sample. There were, microorganisms that were creating a biofilm, in the, in the coronary artery. So it's just I haven't done extensive research to know that it's every time.

But in this one research piece of research that I read, it was the case. So, and we know that that's a result of that will result also in inflammation.

Right. And so and all of the downstream effects of that, the other thing about what's happening in the mouth is that so we have seven over 700 microorganisms that grow in the mouth.

We swallow, a liter of saliva a day. And in every milliliter there's ten to the eight microorganisms and they go down, it goes right. And so if you have dysbiosis in your mouth, then it results in dysbiosis in the gut, too.

And there's medical research showing that, and also the lungs.

Understanding Biofilms and Oral Health

Right. So the lungs are most closely associated with what's growing in the mouth as well. The thing with this is I'm often finding a correlation between the infections in people's sinuses, as in the gut as well.

Fascinating. Yeah. So fascinating. Can we nebulizer, small amounts of biocide in. Have you, have you tried that or is that do you think that would be too hard there there are practitioners who have done that.

We cannot make a recommendation on it as a company. You know, it's so, it's something that we've had reports on and we've had, mixed response, when, when talking about it.

But I've never had a reported adverse response to using it in that way. And, I used it that way. I'm about a year and 3 or 4 months ago I came down with very, very Covid like symptoms after I had traveled to New York and then LA for conferences.

And before we knew what it was. And I that was my go to for it was the only thing that sort of soothe my, my pulmonary tissue. But again, that's not a claim by the company.

And I hope that everybody here can hear me talking as a clinician and know that the company itself will probably have a different company line from what I'm saying on some of this stuff.

And I'll I'll tell you where we have research and that's where we can make claims. Right, right. And then talk about my clinical experience with the product is good as you can we can you can we just, like, take a left turn for a minute?

I'd like to hear about the research. If you can tell us your Bible technical research has the research. And then and we can go from there, launch from there.

Okay. So yeah, we have two pieces of published research. One is a human clinical trial, single, blind, placebo controlled clinical trial. And that's on the bio side and throat spray and actually the bio side liquid as well.

But the the throat spray outcome was, was significantly better than the liquid at increasing IGA. So immune mediated activity in the oral pharynx after seeing after a single dose, which was three pumps of the biotite and throat spray.

So IGA went up 66% and one hour. So 60 minutes after administration. Wow. So I know myotonic as well. Or just with the biocide it's just the biocide and throat spray.

That's amazing and remarkable. Yes. So that was on college athletes and they, they're used, use typically used for anything related to IGA because they are suppressed in IGA as a typical or as a, as a general rule, because they're working out so hard.

So there's suppression. They get IGA suppression that results in upper respiratory infections more often. And so for sports teams that that's like the end of the world.

We can't miss training days and games you know. So right. So they're used often in that research for IGA. And they also looked at another anti antibiotic or what is antimicrobial peptide which didn't change which was better defense in or alpha defense. And but anyway so but IGA went up dramatically.

And it's why again it explains why we all see what we do. You know when we're traveling we all carry this with us. Right? Right. It's obviously very timely right now as we're opening back up as a, as a country, you know, is to be able to support that.

The cool thing is because it's botanical, it's adaptogenic. So we also see people with elevated IGA in their in their stool will often come down. And that's I think result of restoring balance in the, in the microbiome.

And so the immune system can relax. Right. And it stops having to produce so much in the body. Audience. Will you define for them what adaptogenic herbs are.

Yes, I sure will. So an adaptogen this is again one of the most beautiful things about botanicals, right? Is that they, our bodies have been interacting with these botanicals for thousands of years, and we and our body knows that what the signaling means, right.

And so an adaptogen works with the body to restore function. And if it's true, if a function is too high, it will help to lower it. And if it's too low, it will help to increase it.

And so there's some really beautiful allies in the herbal community that are adaptogens. And the bio tonic, which you've mentioned a few times, is a really nice, formula blend of adaptogenic herbs as well, that there are quite a few adaptogenic herbs in Biocide, but I think more of the bio tonic as the as our adaptogen in our line.

Great. Thank you. And then do you see there's another piece of research. There's more research. Yeah. So the other published research is on Borrelia. So that took one year.

And each of the parameters, they ran three times over the course of a year. It's in vitro. And so I don't know if you're familiar with Happy's work, but she looked in in vitro at doxycycline.

And the response, of, Borelli aspire Keats to exposure to vaccine cycling. And it created a polymorphic shift. It's called where the shape or the, the, I guess the type of, form or its form change.

Right? It changed from Spider Keaton to what's called a round body form. Spire is like a little spiral single cell. The round body becomes sort of like, almost like a spore.

You know, where it hangs out in the body until the time is ripe for to re inoculate the tissue. And then it can it can become a source like biofilms. It can become a source of chronic infection.

I'm I'm just setting the stage here. I know I'm not talking about smooth, articulate, perfect, but but, What doctor Sapi showed is that I think it was either 10 or 20, so I can't remember which one, but a certain for a significant percentage of the spider kids shifted to the round body form when they were exposed to Sparky or to Doxy cycling. Which makes sense, right?

Because they're trying to preserve their lives. Right? But that only a morphic shift did not happen when it was exposed to biocide and, and the other thing that happened is that and killed this parakeet.

And so 97% cell death in ten minutes with when exposed to nine on site and and at physiological doses. Right. So it was 1 in 50. So it's a dose that we can achieve in vitro or in, in vivo if we, you know, in the human body, if we, if we dose at the, at the correct level.

Right. So, so, what we saw was it killed parakeet round body and biofilm forms all of them. So it's really important for our listeners to know because it's very honest and that people don't need antibiotics for tick borne illness, for tick borne illness when it's a chronic what's been a chronic disease.

And I've seen biocide can help people a lot. I mean, a lot. It's really remarkable, you know, as a clinician and really, in all honesty, watching this product and how it works with people, not just chronic but also acute tick borne illnesses in my practice.

Yeah, is what really, really stimulated me to start working for this company because I, I saw I live in northern Minnesota. We are endemic, like one of the highest areas in the country for tick borne illnesses.

So I have watched children and adult patients with. So here's the conundrum. Right. When you're or the the dilemma that we have as clinicians and also as a person with a tick borne illness exposure is that don't even know what we've been exposed to.

Right? We can test it. So you get it. If you get an embedded tick, you don't even know. Is this Borrelia? Is it Bartonella? Is it a Busia? Is it Mycoplasma?

Is it usually virus? The all of them. Yeah, exactly. It's all you're like you know what. What is it. Right. And so, this is such a broad acting product that.

So without fail, every human. And I'm not supposed to say this, but dog. All right, I've seen dogs, and I mean, there's one of our dogs is a golden retriever, Gordon Setter, and he, he, like, goes sweeping for ticks like we cannot keep ticks off of him.

And he tested negative for Borelli, and there's, like, no chance. No chance that he hasn't had exposure. He's had probably 50 embedded deer ticks in his life.

And, and so there's like zero. The odds are zero that he hasn't had exposure. So but he's, he's doing he's ten and he's doing great like. No. And what I've seen this and again not a claim by the company but this is just what I have witnessed.

Because we haven't done clinical research with our product. So just so that everybody knows this was all in vitro is in a test tube, right? The research was.

Research on Immune Support and Lyme Activity

But what I witnessed in my own practice was, almost immediate response to the use of the biocidal liquid. Also, even though that's only under duress when I don't have the life example where I've used the liquid, because the liposomal form get better penetration and topical use on that actual tick area and the erythema, like the red, the red circle, that bull's eye lesion.

Yeah. And then also oral dosing and I, I like how you included Olivia Rex as well because that's also what I would do because you don't know, we don't again we don't know.

It's like we want to pull out all the stops. Right. To prevent long term illness if we can for the patient. And so that's that that's been really remarkable.

And it's in every one of my patients, it was a recommendation to have the liposomal bio side and in their, medicine cabinet or their first aid kit, right, in case there they get exposure and, and would you double it up with oral doxycycline and oral deferral max for the month or.

Well, I might if I had prescriptive rights in Minnesota. But as a natural I think doctor in Minnesota I do not have prescriptive rights. And so that's and it's probably in a way, you know, the reason that I lean so heavily on bio side and learned it's efficacy in my patient population is because I had no, I had no pharmaceutical alternative.

I mean, I could I had doctors, I would work, I could work with, but, you know, I found myself not needing that. That's great. Yeah, yeah, yeah, I know that's kind of a long question, but.

Oh, the other things that we looked at in that research. So the research, showed 97% cell death and ten minutes. It also showed the disruption of that efflux pump that I was talking about.

Right. So that pump that that is produced on the that microorganisms used for antibiotic and antimicrobial resistance and is produced in large quantities in biofilms.

So we were able to disrupt that. So much so or that's important because the killing dose offset reaction in this reach, the research which is subtraction is an antibiotic.

It's pretty commonly used for chronic, Lyme disease patients. So it went down to one eighth its normal killing dose when it was used along side by side.

Yeah. So from that research that's really exciting because we do. Yeah, we do use Vo seven. And so to, to to bring that down, to bring the dosage down.

Right. So the effective killing dose diminished by a really significant number which is great news. Right. If it works for that like that. And and you can let us know.

Actually it would be great. Maybe we could do some research together. Let's do it. Yeah. Yeah. So let's do it. We have we do case studies so we can we can absolutely, support you in doing the case studies.

And that would be great. I wasn't going to be involved with research in the past, actually, with the cell danger response with Doctor Robert Navajo. Oh my gosh, how exciting.

Yeah, very very exciting. So we sure. Yeah. So, the other the other information that we got from that research is that the liposomal form, which so for the audience, the liposome is a is a chemical structure that allows direct tissue penetration from the mouth or wherever you put it on the skin, right across the cell membrane.

And that allows access to the bloodstream and to the lymphatics and also to the central nervous system. And so that's why the liposomal form is so, extremely important for or vital really for treating systemic.

If you're, if you're after a systemic therapeutic, then that one insulin you're, you're going to want to reach for is that of form. And if you're not looking for systemic, if you're looking for mainly gut treatment, would you use the the liquid.

Just the. Yeah. And we were able to see in that research that there was a 75% better intracellular penetration with the Biocide and liposomal. And as you know that's important because all viruses are intracellular.

Right. And Borrelia is intracellular. Right. And so mycoplasma but chlamydia these are all which chlamydia I think is like oh my gosh, stigmatized right.

As a as a sexually transmitted, oh. So just sort of I lost you there for a second. Oh. Excuse me. That's okay. Where did I end? That chlamydia is thought of only as an associate in a disease.

Okay. Oh. Last you again? Jocelyn. See here. Oh, last you again. Can you hear me now? We'll have the team edit. Okay, let me just look at the time, okay?

So I can, So. Yeah. I'm sorry, I forgot to tell you that at the beginning. I live on ten acres in the middle of nowhere, and so I have a satellite. So anyway, so I'll hop back in to wherever.

Wherever I was at there. So just switched satellites, and. And now we should be good to go. Okay, great. Okay. So, so we know as clinicians now that chlamydia is just it's much more common and commonly transmitted than we

used to realize.

And that it. Yeah, a lot of people have had exposure to it. It's another sort of opportunistic pathogen. So there are so many of those. And if you're working with something that's systemic, then you would want the liposomal form for that, right?

So people who have tick borne illness typically also have mold and mycotoxins and illness, and they have a variety of other infections. It's it's usually not just, if they end up in, in my clinic, it's not just that they have Lyme, it's that they, they have chronic Lyme due to the fact that they have many other, chronic infections.

They have a high environmental toxicant load. And so they've got a lot of immune dysfunction going on. And so I love Biocide and because of its broad spectrum properties, where it will actually go for killing a multitude of infections.

I also want to talk to you about the immune system and, and toxicity, the toxicity that, that the infections can create in our microbiome. Tell us, tell us about that. Okay.

So, Michael, are a toxicities or excuse me toxicity but mycotoxins also and Borrelia, all of these things we're talking about, are immuno toxic, meaning that they actually are toxic to the immune system.

And what results from that is sort of a, a split, right? We can end up being immune suppressed in some areas. And then if inflamed or hyper reactive in other areas.

And it's such a strange dichotomy as a clinician to see. Right. We see and what this looks like is people who catch every cold or flu that comes, by, they have difficulty kicking it.

Cancer can be a result of those, high toxin load as well as the immune system alters. Or is the toxins alter the immune system's ability to get on top of, and, to, to, I guess, identify and eliminate any kind of cancer cells that are roaming around the body, which, you know, that happens all the time for all of us anyway.

Right? So we depend upon a healthy immune system to stay to stay healthy in that way as well. And then the the swing, the pendulum on the other side as well is that we will end up more inflamed.

And I kind of spoke to that a little bit earlier with my own experience. Right where we had, you know, I had this histamine mediated. So that's an allergic type, hyper reactivity in the immune system.

That's also a result of exposure to in, in my case, mycotoxins. And but toxins of all kinds can be causing this dysregulation of the immune system that results in, in inflammation.

And then the other piece, sort of mediated by a different part of the immune system is autoimmune tendencies. Right? So we think of rheumatoid arthritis, multiple sclerosis, psoriatic arthritis, Crohn's disease, ulcerative colitis.

All of these autoimmune conditions are the result of an immune system that's out of balance. Right. And so whatever as a as functional medicine or naturopathy doctors, we we our our goal is to support healthy function so that the body can do its own work, restore that function so that it finds balance again on its own.

So I witnessed this every day in my patients. They've got on one arm, they've got a hyperactive immune system. And on the other arm, a weakened immune system.

So meaning in this patient population, I don't see many people with cancer at all, but mostly with, complex, chronic illness, chronic tick borne illness, chronic mycotoxins, illness and environmental toxins.

They have hyperactivity in their immune system. They've got mast cell activation syndrome and autoimmune conditions. So this hyperactivity in the immune system, and at the same time, they're not able to mount the appropriate response to kill off the infections that are roaming their system.

And so, thanks for the work you're doing. I know, I mean, I just it's such it's so people really need you and practitioners who are willing to work with patients like that.

And, you know, I just think it's so to me, it's so moving and I if you, if at the end, if you want, I'll share my own my story about my, my husband as well because he, he has Ms..

And experience with all of this. So it's been really remarkable with him as well. So it was love to hear that it's life altering for the, for the patients.

They get to work with people like you. So, thanks for the work you're doing. Thank you. So much. Yeah. So they have hyperactivity and and under activity going on simultaneously.

And the the research does show that environmental toxicants as well as toxicants that that the bugs in our microbiome or the rest of our system create can, can cause this immune misfiring, this immune dysregulation.

So tell us about about Biocide and how it helps to regulate the music. So, I think we are all familiar with toxicants from the outside world. Right.

Immune Dysregulation, Detox, and Gut Balance

So I think of air pollution and water pollution and roundup and all of the things that we constantly get exposure to plastics and petrochemicals and heavy metals and all of that stuff that is coming at us all the time from the outside world.

And I think, that's really where the focus has been. But as you spoke to in the medical research, metabolic endotoxin. Mia right, is endotoxins are toxins that are produced in our own body.

And especially when our immune system gets out of balance, we can get overgrowth of those microorganisms in the gut that are pathogenic. There are certain conditions, like Sibo where we'll end up producing more and lipopolysaccharide, which is a long term LPs for, a very, very toxic molecule that, that, is, is released by some of the bacteria that grow in the gut.

And it's so important that it's I think what I found as a clinician, just anecdotally or accidentally, right, is that when I think I might have said this already, but it made such a difference in my detoxification protocols when I included an antimicrobial therapeutic alongside of it.

And I didn't. Again, I didn't really understand at the time what I was doing necessarily. I just I just started to see that in the patients where I included that.

And now what we understand is that those biofilms hanging on to toxins, the metabolites, those toxic metabolites that are produced by imbalances in the gastrointestinal tract, if you don't address those, you're missing a whole a whole area of toxic exposure in the body.

And what's interesting is that it all goes right from the gut to the liver, right? Everything that that's existing there goes to the liver, the liver basically does these life saving measures of removing it from our from our, bloodstream.

Because if it did in just nanograms of LPs, actually creates symptoms of septic shock. So it's it's really important. But when the liver clears it, it creates inflammation in the immune cells of the liver.

And then our hepatocytes are those cells that are responsible for detoxification become the collateral damage. And so we can't detoxify as well. And then that becomes a feedforward cycle where we're not releasing enough file and we're not detoxifying well enough.

And so we don't kill the microorganisms in the gut with bile salts. And so this is the gut, the gut, liver axis, which was a new concept for me. A few months ago when I was reading an article.

There's some really great research out there right now. But it becomes this feedforward cycle where then the microorganisms overgrow in the gut, and then you produce more LPs, and then it damages the liver more, you know, so becomes this if you don't address it, it becomes, you know, an obstacle to, to healing.

Thank you for that. Can you talk about the different, bio botanical research products in, in how they fit in which with, with killing off infections and balancing the immune system in as well as detox.

Yeah. So, so, you know, we can't make any claims on killing infection. But what I can say is that when you what we can what we can easily say, is we have pilot research showing that biocide restores balance in the gastrointestinal tract.

So a couple of reasons that, that the reasons that that's important is that it brings down those microorganisms that are responsible for producing those toxic metabolites.

And it also restores the probiotics in the gut, which is new for us. This is new pilot research, super exciting. And we're actually replicating this in publishable form with an IRB approved study through Pacific Skin Institute in California.

Can you say that again about the probiotics? Yes. So it increased. It increased Ackerman Sia mRNA Hila, which is, a keystone species in the gut, and it's an obligate anaerobes.

So it's very difficult to get into a probiotic form or a capsule because it, it dies as soon as it's exposed to, to oxygen. Right. I think a lot of people who are low in that one in Sia. Yes.

So this is so exciting. It's very it's massive increases what's called metagenomic richness, which means that it's a placeholder for other beneficial microorganisms to help increase the, the, diversity of the microorganisms in the gastrointestinal tract.

So not only does it kind of bring down the bad guys, but in our pilot research, it actually increased what we're calling probiotic abundance. So the total and this was our biggest question.

This is the single biggest question we get at the booth right now. Conferences. What about the good guys or when I'm speaking what about the beneficial.

Does it kill the probiotics. And there are practitioners who assume because it has antimicrobial effects that it just wipes out everything. And that is not the case.

So very, very exciting for us to see that research we are able to see not, you know, just for Kelly bacterium, which is another really important one for reducing systemic inflammation.

It's it's we were able to see that come up too. So it's just you know, it's very exciting for us as on our research team is very happy about what we've seen.

And it also. Well, you can you can probably attached to it too is I don't see that same you know, a lot of people, if they're on things that wipe out their gut entirely, then we have after we're done with that, then we have to rebuild.

It's like you wipe it out and then you have you have all this work ahead of you to reestablish health. And again, I never had that issue with patients on Biocide and when I was working with them.

And so now now again, I understand why that's the case. Yeah. I haven't had that issue either. I think that's really important to be able to explain to doctors and in patients, because it is a question.

Well, if I'm wiping out the, the, the pathogenic bacteria, how come how can I not be wiping out the beneficial bacteria? And why is it that that these IRBs are not acting the same way?

Isn't it that biotics in, in the, in the non beneficial way. Right, right. And we don't necessarily understand the mechanism. I mean, I think if, if I was going to take a stab at it, there are two things.

One is that these are these botanicals. They are producing these antimicrobials as a way to survive themselves. Right. So it's not just coincidental that oregano is antimicrobial.

It's what keeps oregano healthy too. Right? So right. And what that means is that they they also need beneficial microflora. Right. And so they're, they're they've evolved or been created.

Whatever your belief systems are to support to support beneficial is on their on their surface of their leaf's leaves without but not the pathogens right.

And so that's one thing. The other thing is that when you when you suppress the pathogen, then it leaves space right for the beneficial to grow. So that might be part of the reason why we saw that come up too.

But I mean, I think I just kind of find myself firmly and sitting back firmly into the paradigm. And we've been around these plants for a long time. Like there's an innate wisdom here.

We've been using them for millennia as therapeutics. And I think that it's easy to get into a place where we think they're not as powerful as pharmaceuticals.

But once you start to see their activity, I think what I have found clinically is that they're gentle and effective, and it's such a remarkable tool to have for that reason, where you're I think it's I would say it's a little bit more in the way of feminine, right, in terms of its activity.

It's like, here's some support for you so that you can heal yourself instead of kind of going in with a machete right now or like a blowtorch. Does that make me.

And yeah, it's very powerful. Yes. Like we are powerful, just like us. Here's hoping. Right? Right. Okay. Thank you so much, Jocelyn. Is there anything else you'd like to share you'd like to share with our viewers today? Oh, gosh.

Closing Thoughts on Botanical Medicine

I think that kind of the way I just rounded it out is, is really the most important piece for me is just under understanding. I mean, I think that I'll, I'll, I'll leave it with this.

I think this kind of medicine, it's the time has come for this kind of medicine. Yes. Where we are, where we are providing that support. And in a way that works with the human body and that takes into account the well-being of the botanicals, the earth, the, you know, the the body, all of it.

A college ecology in general of the human body. And it's so related to the ecology of the planet. And, you know, so I just I feel really so grateful to be a part of a company that, that holds that sort of as a core belief or a core value that, that the healing power of, of nature and those botanicals.

So thank you for doing what you do, and thank them for being so in touch with the herbs from from the holistic, from the national Catholic point of view and from the research point of view that's so needed.

You're bridging those worlds together. Thank you. That's my goal I love it. Thank you for doing this. Yeah. Thank you so much. It's it's been really such a pleasure to speak with you.

Such a pleasure to speak with you. Thank you. Thank you.