Introduction to Mold and Mycotoxins

Many of the micro toxins are Geno toxic, meaning they change the genes and rewire you to be immune depleted. Why would it do that? Because it wants to move in.

It's going to impact all of the things that you would need to detoxify. It's going to mess up your detoxification pathways through your kidneys, through your liver, going to change your gut microbiome and gut wall, which is where our immune system is.

And then, just in case that wasn't harmful enough, it's going to rewire your genes to make your immune system not function. This is doctor talks. Welcome to Mold, Mycotoxins and Chronic Illness summit.

I'm your host, Dr. Ann Shippy. And today we get to talk mycotoxins with Doctor Jill Crista. She's a natural, empathic doctor, bestselling author, educator, and she is on a mission to help practitioners and patients heal from very complex illnesses.

Thank you so much for joining us. Thank you for having me. This is such a treat to get to chat. It is. Yeah. We're showing up on a Saturday. Yeah. I loved how you said.

Let's talk about our favorite topic. Well, it really is such an important piece to getting patients. Well, and I know you're so like minded, and, you like the data, you like digging into the science and then coming up with solutions?

Yeah. Yeah. Actual practical solutions. Imagine that. So this is perfect because I'd love you to describe what mycotoxins are. And then we'll start talking about why we need to worry about not just grouping them into one category.

Yeah. So mycotoxins are mold can make us sick with spores. Spore fragments, chemicals. So the off gas chemicals of happily living metabolizing mold. So we can test for one of those called MPX or micro phenolic acid.

And that's just I kind of joke, I call them mold farts because they're just, like, off gassing, just like, yeah. And you may or may not smell them. Yeah, right.

So those they're just part of the the living metabolizing, you know. Oops. My bad. Kind of thing if it bit off gas. But mycotoxins are so unique they're made intentionally by the mold to compete out other species.

So other types of mold, other bacteria, even some other like in between bacteria and parasites that like to live in water, damage buildings. And they're made intentionally to harm those other things, to kill their cells.

It's like psychological warfare between organisms. Yes. And they our military's picked up on that. And there are militaries around the world using these mycotoxins as bio warfare.

Yes. So are they dangerous? Yes. Is everyone affected by them? Yes. Is everyone affected the same? No way. So. And you see this. And I really love that you said everyone is affected by them.

Because I believe that too. I think, you know, it's just like any. It's like air pollution or any other type of environmental toxin. There's a spectrum of how we respond to every.

It's not good for anybody, right? Right. And that's the people that say, well, I'm not affected by them. I'm like, yet until you have the car accident, until you have the stressful thing happen it at work, until you have a food poisoning that throws off your immune system.

There's something that is going that, you know, you're building your cup and that's just leaving you more susceptible. So everyone is affected, but everyone has very different susceptibility to it.

So it's like dose duration, previous exposures, nutritional status. Are you a good detox or a bad detox or are you constipated? Are you not? It's all of the are you a kid?

So kids are much more susceptible than adults. So there's lots of different factors that make that susceptibility. And I'm glad you brought that up because that's an important theme in this series, is looking at how that mycotoxins affect children differently and more profoundly.

And so parent like, we have to be looking at this to keep our children safe. It's as important as, you know, having a roof over their head and having locks on the doors and getting them to school, providing a safe environment is so important.

So important. I mean, it's right up there with lead. We wouldn't have our kids drinking water out of lead pipes. You wouldn't have them breathing air from a moldy building.

It's the same risk factors. So mycotoxins for me, they get they get a lot of attention because of their intention is to harm something. And they're only made they're very expensive for mold to make.

Why Mycotoxins Matter and Who Is Susceptible

That's very hard for mold to make these. It cost them a lot of energy, so they only make them when they're in a competitive environment. So when someone says, it's okay, I only had one.

Mycotoxins come up on my test. I'm like, if you had that mycotoxins, you likely have a layer of others underneath that because these aren't made in a vacuum.

These are made because there's other species around and it's trying to gasp on the other species. So we will find more mycotoxins as we detox somebody.

That's normal. That means we're doing a good job. But so that idea of like, it's okay, you know, it was only Aspergillus and Penicillium that they found.

And like that creates quite a dangerous mycotoxins set up because Aspergillus and Penicillium are in competition and they will make mycotoxins. And those mycotoxins are carcinogenic.

They cause birth defects. They're linked to all kinds of problems. They are toxic to genes, to cells because, again, they're intentionally made to harm another living thing competitively.

So we get I don't know if you're hearing a lot from patients, some people saying, well, you know, I heard that mycotoxins aren't that big a deal. Now, at ten of my seeds are the thing we have to worry about here.

This misinformation or mal information. I agree there's often a misuse there. There's mycotoxins there. They're dissolving them. Yeah. And so you're going to see more endotoxin and acted on my seeds in a greywater spill.

So like a sump pump that went bad or something like that where there's bacteria in the water already. But you're not necessarily not going to see more because it's the same growing conditions.

So for me, acting and my CDs are important to being paying attention to. Same with endotoxin. They're different. Endotoxins are just the the cell wall of the bacteria in that area.

And acting in my series, they emit an, like an antibiotic. So you could be breathing this water damage building air and be kind of getting the same symptoms as if you were taking an antibiotic.

So that's where we get yeast overgrowth. That's where we get some of the gut disruption. So they still though are not doing it on purpose. Mycotoxins are made on purpose, energetically expensive, made to harm something.

So, so like you said in in the beginning, now that we've scared everybody, this is very treatable. Yeah. Thank you for that. That's why we're here to provide solutions and understanding.

Exactly. And you would ask, you know, what about why are we why should we not see them all the same? There are things that are the same in all of them.

They all deplete mitochondria function. They all deplete glutathione in the cells. So when people say, oh, well, that micro toxin doesn't detox through the glutathione pathway, that's fine.

And it is depleting good around in the tissues, which is making mitochondria go, you know, and then you feel like you are constantly walking up an escalator, going down while the rest of the world is like riding the escalator going up.

You know, I mean, it's just like mitochondrial dysfunction and depletion is so fatiguing. And that doesn't that's not just muscle. That's how does our brain work, how our metabolic functions working, our digestive juices are all of the things, you know, making hormones, all the things that enter the system or it's part of what we need to be able to have the the body repeat itself.

Yeah. So yeah. So all of them do that. All of them are neurotoxic which means toxic to the nervous system. This can affect the gut and the even if you're not eating them that's the distraction by insurance companies is oh if you just stop eating mycotoxins food.

This isn't from the environment at all. This has nothing to do with your health issues. Total destruction, total totally. Your environment matters. And even if you're inhaling them in animal studies, we see that it affects the gut wall.

So you don't have to be eating them to have gut wall effects. And if they're neurotoxic, that gut wall runs off neural programing. So there's reflexes and all of this neural neurological communication that's happening.

And then communication from our vagus nerve up to our brain that says we just eat protein. We just date fat. You know, send those juices down so we can digest more gets in the way of all that communication.

So then it creates this whole malabsorption problem. And that's a big problem because then you get more nutrition. The question if you can't, you know, you can be eating your food.

We may not be taking it in very well. Yeah. It gets to be such a vicious cycle. Totally. Yeah. And many of the micro toxins are Geno toxic, meaning they change the genes and rewire you to be immune depleted.

Why would it do that? Because it wants to move in. It's going to impact all of the things that you would need to detoxify it. It's going to mess up your detoxification pathways through your kidneys, through your liver.

Going to change your gut microbiome and gut wall, which is where our immune system is. And then just in case that wasn't harmful enough, it's going to rewire your genes to make your immune system not function.

You know, I mean, it's so profound how many different mechanisms that mycotoxins affect in the body. It's, it's actually kind of amazing that we can even survive with them because there's so many different aspects.

Orderly. Yeah. And that makes it really hard to recognize. So that's how it's getting missed all over the place. Because depending on the mycotoxins that you're exposed to or the mycotoxins soup and depending on your own susceptibility and I'm not shoemaker trained, but I've heard him say this is a multi-system multi symptom illness and that makes it really hard to pick up.

And that's when I developed my questionnaire because I was in practice working with Lyme patients. And I'm like

how can I get I found out a lot of my chronic Lyme patients had mold, and that was the reason they had chronic Lyme.

And they weren't responding to the line treatment. I thought, how can I get to the mold answer faster. And so that's when I created the questionnaire that I have in my book.

It's just like I was trying to find a way to quantify how do I figure out if it's Lyme or mold or both, and how do we get to the mold thing faster? Because if we're not addressing the mold, we're not going to make progress on the chronic Lyme.

So the symptoms are completely variant and they overlap. So it's such a complicated fashion. And do you find a lot of times that the line goes into remission once the once the mold is dealt with the answer to do yeah do.

Yeah yeah yeah. When, when the, the body's not being immunocompromised like oh wait is that.

How Mycotoxins Disrupt Detox and Immunity

Let's get rid of it. Yeah. Right. It can recognize it. It can pull it out of hiding. It can do all the things it needs to do to get rid of it. Yeah, yeah.

So then some mycotoxins, though, each one kind of has its special sauce, its special thing that it does. And, Doctor Neil. Nathan, it's not your feature.

Yeah. There you go. Signature feature. Yeah. So sources. That sounds tasty. We don't want it. Yeah, it's a restaurant, right? Yeah. We are. Yeah, yeah.

So, doctor, Neil, Nathan and I are working on a questionnaire project right now to. He's helped me refine my questionnaire, and we're going to be doing a study that takes a look at the questionnaire.

And hopefully from that, what we can determine is, first of all, is the questionnaire valid. But also are there a signature symptom patterns that we see with certain mycotoxins being quite high at that time.

That time you're detoxifying it, that time you are loaded with it. And that'll be interesting to see because I have, some fact sheets where I've kind of taken that from my practice, and I've listed the symptoms that I most commonly see with that type of mycotoxins.

And in deep diving into that, I learned that you know, certain mycotoxins that we see a lot. I've kind of I kind of have like little nicknames for them because they all kind of do something a little bit different on top of the stuff.

We talked about how they're common. So like okra toxin is a persist or mycotoxins. That's what I'm calling it. It's the persistent, Zarrella known as an endocrine disruptor.

But it's so much more than that. And glia toxin, one of my jokes is that it lays the red carpet for fungus to come and take over. It's it just opens the doorway to fungal infection.

And so we can talk about each one of those. I mean, I think it's just really good for people to realize that each of these are a little different, not only in the symptoms they're causing, but then what we do to get that healed from the master plan.

Yeah. So let's dive in. Let's yeah. Let's start with okra toxin there. So okra toxin being a persist or what that means is it has really high affinity binding to albumin which is a protein in the blood.

And I'm explaining this for your listeners. I know you know this stuff. You know, it's like you're doing great. So there's protein in the blood. We have to have a certain amount of it to maintain our blood pressure.

It also carries around things like calcium. And so it's a delivery system. Unfortunately it delivers a toxin because it has such a high affinity. It's like a magnet, like a super magnet to that blood protein.

And such a super magnet, it'll actually bump off things that albumin should be carrying around in the blood. So that's where we get into the Potts picture, because the calcium and magnesium can't get delivered to tissue.

So the whole goal is to try to get that out of our body. And the mycotoxins have a couple of pathways to get out of our body. When we breathe them in, they go into our bloodstream immediately and they can get carried anywhere in the body. That's why we can see symptoms anywhere.

The way that we get it out is we can pee it out, which is why we can test urine mycotoxins. So the kidneys are the job. They're we can package them in bile in the liver and that is carried to the colon where we're supposed to poop them out.

Unfortunately, we recycle a lot of that bile. So we have to interrupt that with binders or things that block the reabsorption, like taurine. It's a beautiful amino acid we can use for that purpose.

Or we can do some detoxification with our gut microbiome. So Oka toxin preferentially uses the kidney pathway and then the gut pathway. And then third is the liver.

So focusing on liver detoxification with Oka toxin is sort of like, you know not paying attention to the primary pathway primary pathways kidney. And it will if it can't bump it off in the kidney because we have to have some amount of this albumin in our system.

The kidneys will take the damage. So they'll take it into the kidney tissue so that it can contribute some bile flavonoids to denature it, bump it off that albumin, put that album back into circulation.

But unfortunately that mycotoxins is hanging out now in the interstitial tissue of the kidney, which means the kidney, the stuff of the kidney. So that's how we get kidney cancer.

That's how we get nephrotic syndrome. That's how we get IgG nephropathy from Oka toxin. That's how we get ADH resistance, meaning the the kidneys. Stop listening to a hormone that says, hold on to water.

And because it says, no, I'm not gonna hold on this, this is a problem. We gotta get rid of this. The toxin here. So bile flavonoids are the, like the super power for okra toxin and two favorite ones.

Yeah. So the research shows it Zanten and asked to Zanten. So any I figure because there's not a whole lot of research on these mycotoxins like there's no human research because we can't purposefully poison someone to figure out what to do to get you better.

Because if it's a poison, just don't don't expose the poison. Right? So we have to take animal research and translate that into humans or molecular. But when I saw the two were Zanten and acids.

And then if if you have a patient who is or anyone listening is allergic to fish, that may not be a source that you can tolerate, because a lot of that comes from their sources.

There are plant sources, but I'm like those those are common because they're both orange. They're both the color orange. So all that beta carotene would work.

I'll bet that vitamin A would work. I'll bet quercetin probably a little bit because it's close to that. Probably a little bit of lycopene would work.

So that's what I will do for my patients who can't tolerate the anything in the Zanten, Astiz, Anthon. We just go for beta carotene. And it is amazing to see that a toxin level just, you know, just drop because we're now supporting the way primary weight at the body.

Let's get rid of it. Beautiful. Yeah. So that's my big tip for okay. That's yeah that's a great bios I have no idea. But how do I know? You know, what are you going to be taking anyway.

They they're helpful for so many aspects of the body. Yeah. And you know a lot of people with Okotoks enough skin problems because of this whole we've been not, you know, the persistent part of it.

And because the kidneys are trying to grab as much of the bile flavonoids in your blood as it can to, so it doesn't take on too much damage and the skin takes a hit.

So if you can support these by if I have an Aids, I have people who chronic psoriasis, you know, age spots, these kinds of things acne, acting rosacea.

When we get the bile flavonoids going, we get the okra toxin out of their body. Then the skin says, thank you. You know, I needed that. I knew that was powerful.

I have a nice but of course, body in its wisdom, if it's being poisoned, it's going to prioritize getting rid of the poison over having beautiful looking skin.

Ochratoxin: Kidney, Skin, and Detox Effects

Well, and I think a lot of times it's engaging the skin to try to help with whatever little detox they can find that the skin can provide to. Right, right.

So when I say that, you know, every time with psoriasis, you know, and so I'm glad you brought that up because it is an autoimmune. So the immune system's gotten confused and attacking the skin.

But I think it's it's partly because the skin has really been trying to be that fourth or fifth pathway to get rid of the toxins. Absolutely. Yeah. Yes. That's why I love it.

It's it connects like the toxin tips. Should we go to. Let's take like a toxin. These I just love that. Like I want this to be so actionable and helpful for people, you know, that they can take this and run with it.

And I really love how you're, you know, pulling the science. And then have an action plan. So that's great. Yeah. Thank you. Yeah I mean we that's the best we can do.

And and with functional medicine and naturopathic medicine we know these tools already. So when I see XYZ and then I'm like oh I know. How do you know that?

I know the dose I know you know. So I know the safe area. You know, I'll use up to 24mg of that. No problem. Because I have a I already have a friendship with these things, so it's just very easy.

There are tools in your toolbox that you use for other things already. Yeah, right. Yeah. So glia talks and data behind us. Does anthem like great data rate data.

It's one of those supplements that if you're going to like do a top ten or top 15. Like what what what do I want to prioritize putting in my body? It's a really great thing to be prioritizing for prevention and anti-aging and all those things anyway.

Yeah, yeah. And then you think, well, how is it really helping with anti-aging? It's probably detoxifying you, you know, helping your just get rid of all of the load.

Yeah. That's so amazing. Right. Connection. Good job. Good I should get that on my it's a good point. You know even if I don't have a toxin it probably be good to put in my rotation.

Yes for sure. Prevention. Yeah. Thanks doc. Well I'm having so much fun with this because I'm like, getting

takeaways from every, every one of these sessions.

So this is great. Thank you. Yeah. Yeah that is the fun thing isn't it? I love to watch the summits too. And I loved it. You know attend medical conferences obviously, but with summits, just the contemporaneous chatty, you know, so much comes out there, so many pearls where it's just like, oh my gosh.

I first of all never would have thought to ask that question. And then second, like, I, I didn't know that about this or that. So yeah, thank you for doing this.

Putting the puzzle pieces together. So fun. And yeah, just makes us all better. Right? There's there's so much to know. There's so much to learn. Know I could just nerd out every day.

Like the, the practical part. And seeing patients get better is the even the most fun. So great. I know there's no problem getting out of bed in the morning.

You know, it's like, I love what I do. Yeah. All right, so glow toxin Leo toxin lays the red carpet for fungus, particularly Aspergillus, which is the one that can become pathogenic and infective in our lungs.

They're seeing it in sinuses. Doctor Dennis in Atlanta. He's seeing Aspergillus fungal balls making mycotoxins, in the in the sinuses. And I am sure it's also colonizing the gut.

I mean, absolutely, or even infecting the gut, you know, because we're able to see, you know, when people pass a biofilm, it is it I, I want to get a fungus test of these things.

I haven't done that yet. But, you know, it's just like a whole load just takes off their body, you know? So I'll tell you, just lab core has been a great way.

They do a four week stool culture. A lot of times I can pick up the gut aspergillus with that, and it's usually covered by insurance. Oh, fantastic. Thank you. Yeah, that's a great tip.

Yeah. So easy for patients. They don't have to deal with test kits or anything. So and and they're not perfect, but a lot of times if it's there, they will pick it up.

They'll get it. Okay. So thank you for confirming that because I'm like, I know it's in the gut. I know for sure every time you swallow, you know, if it's in your sinuses, it's in your gut at this course.

Yeah. Especially if you think about how small grows. It's like contiguous taking over. Right? Yeah. And if you're if it's neurotoxic and immuno toxic, you know, if it's in your sinuses and able to make mycotoxins as well.

And even if you're breathing mycotoxins, we know it's affecting your gut ball. So of course it's going to be easily easier for it to set up shop. So the clea toxin is a a virulence factor which in in normal person language that means it's assisting the Aspergillus in being more infective and able to infect.

So it can take it from a spore to an active, you know, where it's invading from. Just a surface level. It can take it to an invasion. And that's where we get infection rather than colonization.

And glia toxin is really tricky because the the it creates, if you have a high a toxin, it creates sort of a Goldilocks situation with sulfur. And what I'm saying, it is sort of this middle window.

If you don't have enough sulfur, you can't kill the Aspergillus. If you have too much sulfur and not like a high amount of sulfur. So if you have that middle where Goldilocks like it, that can actually be helping the Aspergillus make more galena toxic.

So glia toxin or sulfur fuels, Aspergillus is ability to make more glioma toxin. It's a highly unique mycotoxins because it has disulfide bonds which is similar to our IgG three.

So if you have patients that have a low subclass IgG three, that's likely a toxin problem. You don't even have to test it. We know it. I know it from my practice. I'm like, oh my gosh.

So these kids are hypo gamma globule anemia. I'm like, I need to see your subclasses. If I see the IgG three low, I'm like, you're in mold. I gotta get you out of mold.

So this disulfide bond, when you take just enough sulfur to help the Aspergillus but not you, and just enough to not overwhelm the Aspergillus and help your immune system kill it.

Because too much sulfur is toxic to Aspergillus. It's like it gives it way too much of its favorite food. So there's this weird little thing that you have to do with a toxin.

If I see a toxin on any kind of mycotoxins, testing, it gets my attention. First, because we can be, unfortunately, making the toxin situation or the ability to make a toxin situation worse.

If we try to address some of the other mycotoxins. So we're going right into glutathione, alpha lipoic acid. These are all fire based molecules that contain sulfur.

We see a lot of patients with high glo toxin not tolerate sulfur. And typically also then what you see is they don't tolerate oxalate foods. Salicylate foods.

This is the sulfur component or connection. So if I see high aglio toxin I take my patients off sulfur foods. I take them off sulfur supplements as much as possible, get the bile flavonoids onboard and get the antifungals going as quickly as possible in any way that we can get it.

Nice starting in the nose. If it's, you know, anything. Because if we can get that Aspergillus low down, then we can come in with the sulfur containing dioxide and they feel better.

They can tolerate the foods, they can eat garlic again, they can eat onions again. And the reason they couldn't is because the glia toxin was or the sulfur was helping the aspergillus out before.

So their body was saying, don't do this. I don't like it. Our bodies are so wise. And then when we get the antifungals on board, all of a sudden you can eat these foods again.

So what are your favorite antifungals you mentioned? And, nystatin, nasal spray. What else do you see? It's helpful. It's it's all over the board. It depends.

If they handle plants, I'd love to have plants as the foundation.

Gliotoxin and Aspergillus Overgrowth

And because they have the wisdom, they have the you know, they know the kind of the instruction booklet and then that drug can come in with a single action and you've got now a wide and a high activity.

So I love to start with time. Timers vulgaris. It's, it's, you know, like a garden weed for a lot of people. And it is amazing because it has this property where it actually stops the, the mycotoxins, production of the molds.

So what mold will do if you start to add antifungals? We see that if you give amphotericin B to Aspergillus, it will increase its production of a toxin to defend itself.

It's getting attacked. Yeah of course it would. Right. So that's its bioweapon. Stop doing that to me. I'm going to poison you. What time does is it comes in and it shuts down that mechanism.

So if you preload with time, sometimes you'll just need the time. Typically I use time and then you know for a couple weeks and then add in some other plants like oregano or neem or powder aka it kind of depends on what

they have going on today.

Arco is great for deeply embedded mucus. So if somebody who saw this or like this, we're talking to you, I'm like, you keep on arco. I love that I actually got to, taste some pad arco when I was in the rainforest years ago.

Where did you go? And for us, it was way, way deep into the Amazon in Peru. I think it was an overnight boat trip on a rickety boat with about 16ft full.

I can't believe, looking back, I did that now, but it was so amazing to be with the ship people, people, and have them show us some of the different plants that I was, you know, there.

It's the medicine they use, right to, so many things. Yeah, not just the fungus. Oh, my gosh, we have so much to talk about. I did a no botany study in the Peruvian Amazon.

So I guess when you meet these plants, like, he's like, I'm just chilling. I have children too. Oh my gosh, they're just so benevolent and they're so present.

You know, they're they speak to you, they are there and they're. Yeah. So I just love I love to pick the plant kind of the person. A lot of times I'll just kind of go to my medicinal shelves and be like, okay, who wants to play? You know?

Well. And so and for those of you listening, this is how pharmaceuticals were, evolved. And even, you know, back to some of these known toxins, the, you know, that's where penicillin comes from.

And it's where, you know, micro phenolic acid is being used to do immunosuppressant for transplant patients. So with the whole pharmaceutical industry is based on these, you know, the mechanisms of plants.

But when we use them in the whole plant, a lot of times they're much more in alignment with the body than just taking that high dose. One mechanism, there are lots of mechanisms in the plant.

So I just wanted to clarify that in case we sounded a little out there. Yeah. So we'll put and yeah, I can definitely sound very out there because I like that, because I think I do the same thing where I really when I'm making these choices, even, you know, whether it's a medication or whether it's a, you know, from our anti fungal nutrition status, like a I don't do the same thing for every person.

I just kind of tune in and see what I think is going to be the most gentle but effective. Yeah. Right. And then they all have their different mechanisms.

And those mechanisms are pretty well studied now, which is nice. You know, you can kind of get the idea that a clove is more resinous. It's going to act like a pot, aka it's going to act on that.

Really. Mukasey thick Flemmi. And there's a whole lot of research that can that on the alkaloids and on the components of the plant that the pharmaceutical companies said, oh, here's the active component, that's antifungal.

We'll make a drug out of that. But like you said, it was so well put. You know, when you have all of it, then the body knows what to do with the debris and the detritus from the dying and the off and anti antioxidant and the anti-inflammatory part.

And, you know, it's more than just that one action that we need to do the cleanup crew. So the plants have all that stuff in it. Yeah. It sounds like you have a really similar approach to like with the pharmaceutical approach.

It's just like one mechanism, but especially with these, I'll just call them fungal infections or fungal overgrowth. I find that I have to hit multiple pathways to really get the infections down.

Yeah, definitely. So I'd like to that's you know, my kind of secret is with glia talks toxin. Start with time because we know that the glial toxin is probably being made in house, not just in your house, but then the aspergillus gets into your sinuses, into your gut, and it's going to start making it in-house.

And so we can take the time and say, we're going to shut down the mechanism for you to be able to make more clear toxin so you don't have that burden, the body that gives us a window to start some of the other ones.

So quite commonly, like a really sick patient, I'm using Ivy Neistat or intranasal nystatin. It recon is all within a blend of plants to kind of hold the space if there's garlic.

And my favorite plant to use for that is garlic, because it's safely used with every single antifungal pharmaceutical there have been great studies on that.

So, you know, I, I use a lot of tinctures so I can kind of just mix and match what I want, which is really I've been very lucky in, is that how you do the time to get in a tincture or what do you what is tincture?

Capsule? Tincture I find works better because I think that it doesn't. The capsule doesn't open up early enough in the gut process to catch where the first seeding of the Aspergillus ended up in the small bowel.

So I love to use the tinctures or glyphs, or it's for kids. And then just, you know, say, here's your two weeks of just time. Now, here's your bottle for the next, you know, period of time, which is usually, I mean, it's fungus can take a while.

They're very tenacious. Might take three more months. So here's your next bottle with time. Plus, you know, and then we'll add whatever we need. If it's going to be like for women, it tends to be more things like sage rosemary for kids, you know, more of the resins like the cloves.

And again, just whatever their symptoms are, if it's if they're Sibo, I throw oregano in there, if there's, you know, powder arco if there is asthma or, or, deeply embedded mucus.

And, so it's just really, you know, mixing and matching with the patient. Not everybody likes to take the tincture. So there are some blends there. Yeah, I can say a lot easier.

Little strong they are. Yeah. But if you if you can tolerate them and just like to have the conversation in your head to this is really helping to get my microbiome back.

And positive rather than, oh my God, this is so strong or taste so bad. Yeah, right. I know that some kids from my practice, when I run into them, as you know, younger adults, they're like, oh yeah, we remember when we had to take those tinctures, you know, it's like you've become part of, like the, the, the mythology or the stories of the family because they're like, oh yeah, we are parents.

You have to pay us to take that. Okay, well, whatever you're feeling, you're allergic to get. You better, right? That's awesome. Yeah, it's kind of good.

I this is so good because I think this is such an important piece of, of understanding the impacts of mycotoxins. So for those of you listening, like, just if you were wondering it all, like, is this real?

To to be able to delve into this, level of detail and science and making the connections is like, it's just there's all doubts should be removed. Well, what's happening, though, is because this is such an evolving understanding in science, you get brilliant people, like Doctor Crista putting really important puzzle pieces together that help us out.

Yeah, yeah. Oh, gosh. Thank you so we talk about zero in on. Yes. That's okay. What am I to. Yeah. So I'll just recap on Gaia toxin short term no sulfur diet.

Getting on the antifungals as soon as possible and then moving in to high sulfur to try to compete out that basically

it makes the Aspergillus spore blow up swell and blow.

So that would be the high sulfur things are thilo's is the category alpha lipoic acid and acetylcysteine glutathione. And those would be the things that can can help with, healing to get all that glial toxin out and the Aspergillus presence.

Yeah. Hear from. Yeah. And then when you're on glucose so much that takes care of so many more mycotoxins. Yeah. Yeah. I'm sorry I cut you off. Oh, I was saying, I think this is so much more common than we think, because it is a little challenging to test for.

You know, you don't always get the, the easiest way to test, to see, to find the colonization. Right? Right. Yeah. That's there's some definitely some limitations on the testing strengths and weaknesses with every lab you know.

So really. Yeah. Yeah. The zero also known is an endocrine disruptor. But it's so much more than that. It's also toxic to the heart muscle. And that's what a lot of people are missing.

And they're like you know focusing on the estrogen part which is really great. You know I love that people are paying attention. The fact that, oh, this mycotoxins is a little different than these other things that we've been talking about called mycotoxins.

So helping the estrogen piece through, i3 C, that's indole three carbonyl. And think about that was and so I don't even know what Dam stands for. I couldn't even say it right in the middle of of of of yeah.

They're like very similar molecules, a few molecules apart from each other. And using both assists because some people can't move the, the pathway. And so they need help on both sides of that metabolic pathway to get the estrogen detoxified.

There aren't great studies on calcium gluconate. I went and I, I dug and I dug and I dug and I couldn't find anything more recent like 1993 or 95. So I know that some people are using it and are seeing the level go down, but I don't know if it's as efficient as either.

Easy. And and those are what I, I usually use a combination. Okay. So I'll just start with the, with the dam. But then I just find people get where they need to go quicker.

If I do the combination. Yeah I follow the labs. Yep. I love it that you wanted to research. Thank you. That's what I do. Yeah I just I just get on these like a, like on a scent in our own.

Just like I want to really know. As I was seeing in practice that it wasn't coming down as quickly. And I was thinking, oh, it's estrogenic. I'll use calcium d fluke, right?

Like things aren't moving. And what if I did it like my estrogen dominant patients where I use them and I3C and things are moving faster. So then I went out to the research to see is there validity to that.

You know first I practice on my patients and then did the literature dive later to understand. And and I don't know what that is.

Zearalenone, Hormones, and Heart Support

I'm sure people who really understand that, metabolism, estrogen metabolism, people who specialize in women's health, I'm sure they could just right now tell me exactly what that is.

But, that's what I'm seeing in my eye. From what I see, I just think that the, recirculation of the estrogen, the reabsorption is diminished with the, CDK, reabsorption.

That makes sense. Then. Because if you're Elena, it's already in the system. It also binds to albumin with high

affinity, not as strong as oak or toxin, but it's a binder as well to the albumin.

And so using the the things that I was saying, you know the Astiz Anthon zeaxanthin with zero unknown because you know, you want to try and bond that off.

But there's a little bit of a hack there, which is because they're all unknown as also toxic to the heart muscle. We can use hawthorn, which contains a lot of those bile flavonoids and nourishes the heart muscle.

And what I love about hawthorn is it it helps the heart feed itself first, because that the heart doesn't do that. It feeds itself second, and that's that, you know, feed our hearts first.

Well, I think especially, you know, as, parents, we often or like it it's kind of how we do things where we're in that giving mode more than the receiving mode.

So right now that would be, just what the heart does, right? That's what the heart does. And so I don't know that Hawthorn so has. Oh, I love hawthorn. Hawthorn.

I like to use it in a solid extract. Ideally, I find that it's more effective that way than in a capsule. But, you know, if someone's like, can't do the taste to me, it just tastes like you're eating jam, you know?

So I have a lot of patients who are just like, oh, yeah, I'm picking my hawthorn. You know, I'm just licking it off the spoon. But for kids, some kids are like, I don't know if I want to do that.

Then I can use rose hips, solid extract or rosehip sirup. And what that's doing is that's giving the lycopene, which we know has its own mycotoxins protectant, but it is also, full and rich in those bio flavonoids that can help the denaturing.

So you can kind of take is that multiple mechanisms of action and multiple modes of benefit with reducing the total pill count. And, you know, how many things someone has to take.

So I will combine that. That combined I threw seeing them with some hawthorn solid extract or rosehip. So if it's a kid who is like, you know, I don't I think it's really yummy.

But I'm a weird herbalist. So, you know, there have been some kids that don't like the Hawthorn, but Hawthorn specifically has that heart feeding mechanism where it's, and I always get it wrong.

It's isotropic and Chrono Tropic and what it's doing, but it's helping the heart muscle have a more complete contraction and then expansion to feed itself first.

Beautiful. So if it's if I have a kid who doesn't like the hawthorn, I have the parents try to mix it in with the rose hips so that we're at least getting some hawthorn so we can prevent the myocarditis.

Yeah. Because you look for those. Oh sorry. Finish up and then I'll ask you know as you know in the last few years there's something circulating that's pretty hard on the heart.

Extremely. Yeah. So I've been just plowing through Hawthorn. Yeah. Okay. Do you have a brand that you like. Because that's a new one for me. The herbalist and alchemist is one and then wise woman has I think they still have it.

I'm just looking on my shelf real quick. My wise woman one is still in stock but those were two that I use. I think I'm right now because I'm doing mostly tell them and then people can get herbalist and alchemist and, and it doesn't matter if you're male or female for that one.

Like if you have this little exposure, it isn't really bad on men because not only is it estrogenic, it is toxic to the Sertoli cells in the testes. So you get actual destruction of the testes.

So when in families when I a kind of a classic picture is mom and kids are sick. Dad is not dazzle irritated and is this really mold. And I say that's that's true testosterone.

And if there's a rella known in the house, the testosterone is, you know, below 300 easily. Yeah. And so when I, when they say it's not affecting me I'm like yeah it is actually and it's going to show up in loss and muscle mass insomnia irritability you know libido issues, hair loss.

That's not what any guy wants you know. So it's affecting them. But not in a way of like an allergy. And that's the that's the thing we have to get people over is that we hear about mold allergy.

But it's so much more than that. And if, you know, we've just talked all this time about these mycotoxins, that's not an allergy thing. That's a toxin.

Yeah. Yeah. Which I think, you know, or I think most people understand about lead now, so yeah, it's just as toxic or more than an LED or cyanide or less this.

Yeah. It's just that common things that you hear about wanting to avoid. And to me, these are even more toxic. And those things because they do they're genetically toxic.

So it's a it can be a heritable trait basically to be immune deficient. Yeah. And it just sets kids up for autoimmunity. I mean, there's a huge my second book is on Pandas and Pans because mold is so often the that core exposure is so often a contributing factor to developing pandas and pans because mycotoxins, because they're fat soluble, they like to go to the fat of your tissues.

And one of those is our brain, brain, bone marrow, gut. You know. Yeah. So these kids, then they're totally treatable. You know, once it becomes autoimmune, then we're dealing with a little bit different situation.

But you know, you can kids can be treated for mold. I mean, I have a whole course called Molding Kids because not everything that we would do for an adult, we do for kids.

You know, there are certain things we want to make sure we're not detoxing them too hard. You don't bind them too aggressively because we could cause nutritional deficiencies.

So there are certain things that we need to modify when we're working with kids. But it's completely treatable once you've been exposed. I mean, you're living proof of that.

You and your family. Yeah. That's, I think that's really what's inspired me to, you know, be able to hold space for people is you can tell you can recover and be even better than you were before you got sick, I guess.

So do you hear this from families? I hear families say when? Now that we're past it and we're looking back, this is probably the best thing that could have happened to us because we decluttered our life, we simplified, and we became so health conscious that, you know, it probably is setting us up for not having the diabetes and hypertension and, all those things later.

And I really feel that that's the case. When we implement what we've learned and stick with it, you know, the lifestyle changes and the most important supplements and really learning better how our detox pathways work.

Yeah. Yeah. Right. Are there any other, mycotoxins that you find, particularly important or interesting? Any of the trikafta seen family any the typical person?

Is there anything else you want to add on any of the other toxins? Yeah, the oh my gosh, those get scary. So I was okay. Yeah. But the cheddar glow vison is it's from Kotomi, which is a water loving mold.

So if you have ketone meum in your, in your environment, you have a water problem and it doesn't mean flood, that means a consistent slow drip somewhere.

That can also be in your refrigerator filter. I tested a bunch of refrigerator refrigerator filters and I found ketone meum in them. Took them out away.

Yeah, that's a good tip. It's like. So I have a little video on my web on my website. I do these short little video blogs like a minute or less. I try to keep them, you know, because more muscle brain is a real thing.

It's a very real thing. It's a very, Yeah. So I, I was just curious, and so I, I tested, refrigerator filter because I was in the mode of, you know, let's test everything so I can learn.

Where do you send them? I work with a my inspector, so I just said, I want to test this, send me some stuff. What do I need? And she said, just I'll send you some swabs and some containers and whatever.

So I, I started testing galore on that, and they. So I found ketone or Globus and keto meum in the filter. And then I also found keto me. I'm not try to go I wasn't on that first one.

So I'm like call my parents. How long have you been using your filter? And they were like, oh, 2 or 3 weeks.

Other Mold Sources and Practical Detection Tips

I'm like, can I test it? I'll buy you a new one. So I tested theirs ketamine. I tested a friend's ketamine. I keep testing, like I said, I think it's coming in the water.

Or do you think it's already present in the filter? Where is it coming from? I have no idea. But there's no standardization on any of those refrigerator filters.

First of all, and so I think because it's stagnant, holmium loves stagnant water, so it's not going to be one from a flood and then it's dried up. It's from a drip, drip, you know, slow drip trap water, which is the situation for a lot of our families because they didn't know it was the problem.

You know, like the refrigerator line in the back of the fridge can just have this slow drip leak. Yeah, that happened to my dad. Like, not enough, but you could actually see it behind the wall or under the floor or anything.

But yeah, it's creating a pretty massive meltdown. And so that's why I try not to even connect the water filter I recommend to people don't because what do you you're going to run it through a filter that has ketamine, which has a micro toxin called Globus N, which runs, which can cross the blood brain barrier.

It's one of the few. Any often is a trick of the scene can do it to a lot of them can ride our olfactory bulb back up to our head. But could try to go over some can cross blood brain barrier.

That's so fun. That made me so sick. And it was in my air conditioning system, and I thought I was going in Texas. It's like we just get condensation in our AC systems, you know, like running through the attic.

Even if they're insulated, they just condense. So. Yeah. And so if you're not managing that, that's the thing is like maintenance is the key. Running to humidity and having the right sized air conditioning system.

And so that actually dehumidifiers. Yep. There's so much science to it that we know, you know that that I, I don't know Hvac I think is is a very important specialty to have.

Right. And, and hiring the right people. So I had somebody have a huge Aspergillus problem in their coffeemaker. They had like one of those really fancy $3,000 coffee yogurts, and it was full of Aspergillus cure eggs, anything it has sitting water.

So that's why I just I tell people, don't even hook up the line to your fridge. Just go old school ice trays, you know, because anything has sitting water.

We have a problem. CPAp machines. I had a patient with dementia completely cured by making sure she cleaned her CPAp machine. We got her a new one after it was tested with, ketone meum and aspergillus and high endotoxin.

Very high endotoxin because they're she's like, that's bacteria. Probably, you know, from herself that was able to kind of set up in her CPAp. So I like the system.

It's called so clean. It's an ozone cleaning system for CPAp. It does really good tip. It's so great. It's a closed system. So you don't get ozone out into the atmosphere because that's toxic to lungs.

So it closes it in and it runs it even through the fan and the, the air handler part of it. Because that's where a lot of the mold is, is on the little fan.

And it will degrade valves and things like that. So you need to know there's a risk factor that it's going to age your CPAp machine a little faster, that's going to get dementia, you know.

So although that's not a bad idea to replace that something regularly anyway. Agreed. Might need to be an annual purge purchase. Yeah agreed. Help with the the so clean though people are it's testing really nice and clean even years later.

Yeah I know this simple like and it's such an easy system. You take it off, you plunk it in, closed, you don't even think about it. So it's awesome. So what other places do you look for mold when it's not obvious?

Well, baby bath toys. I've, Yeah. If there have a little hole for, you know, the aeration. That's a place for mold. And then baby's taking a bath, then molding mycotoxins and goes right through the skin.

These mycotoxins can go right through the skin very easily. So checking baby bath toys, making sure you don't have anything. It has that little air hole in it that it if it's a plastic it's just whole.

And I've had parents, you know, cut them open and send me pictures as like yet there we go. You know, there it is. And then really great detective work.

That's a we're. I'm obsessed. I think it's probably a problem because it's really is. You know, sometimes it's challenging to to find the sources. Yeah, I know, and they can be so weird.

And now are those. I mean, a baby bath toy is a big deal because it's a little person with a big, you know, bath water. And, and our scan is so efficient at taking in mycotoxins.

But, you know, some of the other ones, like the, Michael Rubino has great he has a great Instagram at the Michael Rubino he has all these little things where they found mold, like at the bottom of your if you have toothbrushes, if you have a toothbrush holder like that should be make sure that's drying out.

You know, it should have air in it, not, holder with a contained air space because that's wet every day. And I just had one with my, toilet bowl cleaner.

Oh yeah. Yeah. Is it have everything made over the top of it. And it like I balanced when I just wanted it to look nice. So it was totally sealed. Yeah.

And then there you go and it'll grow. And a little tip too is people say oh doesn't every toilet tank end up moldy? And I can say in, in my experience so far, if your toilet tank grows mold, you have mold in your house somewhere.

It's not natural for that to grow mold in most situations. You know, there may be a situation where you haven't used that toilet for months, and maybe that makes sense.

But now if you've got it growing with, you know, the frequency of flushes that happen in those family homes, there's

mold in the environment and there are a lot of spores available to that.

Yeah. So just little things like that. And then try go to scenes. My, their, their main thing that they do is protein synthesis inhibition. So I like to use the any kind of amino acids that we can get into their body like the essentials, either a branch chain amino acid or a mixed aminos.

Because it just all the systems in our body are enzymes and everything runoff, protein runoff, amino acids. And if they're not, if the triclosan scenes are sitting there saying, no, you can't make that protein, that's going to slow healing, especially the gut wall.

Yeah, yeah, that's a great tip. It's just such an amazing source of information. Thank you. I feel like I could just talk to you all day so we could we could talk and then we can talk about proving Amazon.

That's going to be fun. Yeah. Yeah, definitely. So I know you are just on such a mission to get information out to, the public, but then also to, health care providers.

So for anybody listening in either of those categories, how do they find you? Yeah, they find me at drcrista.com. That's dr.crista.com. And I have courses for public and information for the public, factsheets on mycotoxins.

And then I have a doctor training course. They can become mold literate. You get CME for it and everything. The magazine. Congratulations on that. I did not say that.

That's a big deal. That is a big medical education has to be approved by, you know, the the more allopathic model. So the excellent job. Yes. Thank you.

And then I have a short course coming up called Updates and Mold Related illness, which is going to be a few months yet. And then, I have a training course on pandas and Pans for practitioners as well as that's my other passion project as a mama of kids with pants from our old arrow.

I did know that. God knows. Been there, done that. Makes me really learn it to the to the deepest level. Yeah, you've got it. Well, thank you so much for your wisdom, your huge heart, your brilliance.

And, I know this interview is going to help a lot of people to better understand what's going on with them and how to help. Great. Thank you so much for the invitation.

Thank you. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices but empower your wellbeing.

For more insights and strategies, subscribe to our podcast and visit our website.www.drtalks.com. Stay connected, stay healthy and join us next time on Doctor Talks.

Real talks from real doctors on the issues that matter to you most.