



## Healing from toxic mold

**Guest: Dr. Margaret Christensen**

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**Alex Howard - [00:00:15]**

Welcome, everyone, to this interview where I'm really happy to be talking with Dr. Margaret Christensen. Firstly, Dr. Margaret, welcome and thank you for joining me.

**Dr. Margaret Christensen**

Thanks for having me again, Alex.

**Alex Howard**

It's great to have you back. And in this interview we're going to be talking about toxic mold and its impact upon fatigue. My sense is we're going to go a bit broader than that as well, we've just been talking off camera, so I've got a few more questions that I'm lining up.

Just to give people a bit of Dr. Christensen's background, an Institute for Functional Medicine faculty member for 13 years, Dr. Christensen first became interested in functional medicine 18 years ago, when trying to solve the riddle of her and her family's complex health challenges. We'll get into that today.

A board certified doctor for 23 years, her initial boutique functional medicine practice has grown into the Carpathia Collaborative, a large multidisciplinary functional medicine practice based in Dallas and covering the full spectrum of complex chronic disease. Dr. Christensen is passionate about educating her clients and colleagues about root cause, whole systems medicine.

So Dr. Christensen, I think before we come into some of your story, which I think is a really helpful way of people getting a sense of some of the ways that toxic mold can affect us, I think just for those that are not familiar with what we're talking about, it would be helpful just to say a bit about what actually toxic mold is and its relationship to fatigue.

**Dr. Margaret Christensen**

Sure. So when we're talking about toxic mold, I'm not talking about the type of mold that's outside and that comes and goes with the pollen counts and all that. What we're talking about is the mold that grows in water damaged buildings. Because the substrate or what's feeding that mold is sheetrock that has all kinds of chemicals in it. And it ends up creating very toxic chemicals that are called mycotoxins. So the molds themselves, the species of molds are very different than what grows outside. And then it's the toxins that they're producing that create so many problems.

You can have an allergic response, just like, you know, runny nose, watery eyes, coughing, etc. You can have a mitochondrial damage response, and we're going to talk about that because that's really where the fatigue comes from. And you can also have an immune system response that happens. Both, parts of the immune system are suppressed and other parts are turned on way too much and creating a lot of cytokines and inflammatory chemicals. And this part that's suppressed forgets to go

look for infections and viruses and bacteria and cancer cells. So that's why these mycotoxins are so dangerous and so damaging.

### **Alex Howard - [00:03:01]**

I think it's worth saying that the, sort of, evolution understanding of the impact on toxic mold has particularly been coming out of the functional medicine community, and it's something that more traditional mainstream medics are quite far behind, let's say, in terms of the understanding of.

And I think that's why there are a lot of people that are suffering, sometimes from very debilitating severe fatigue symptoms, and are having all of the normal tests and being told, you're fine, there's nothing wrong with you. Maybe that's a good place to jump into a bit of your own experience, because I know that both for you and your family, this was a pretty major impact on your own lives.

### **Dr. Margaret Christensen**

Absolutely. And one of the important things to understand is that these mold mycotoxins are fat soluble, so they can accumulate over time and they accumulate inside our cell membranes and inside our mitochondrial membranes, inside of our brain, because this is mostly fat in our fat tissues. So oftentimes it's not the first exposure that creates a problem, although it can depending on the type of exposure and the length of that exposure. But usually, it is a problem of accumulating over time and then multiple other factors coming in.

So in my own case, I grew up on the East Coast. We had a house that had a basement. It was always musty all the time. So that was probably my first exposures. In college, I ended up living in nasty dorm rooms and apartments that also had some water damage, a leak and old carpets and musty smells. And so again, I was breathing all that stuff, building it in. I got a bad cough, it didn't go away. I was having runny nose and, you know, congestion symptoms. But again, I was young and I kind of blew it all off.

And it wasn't until four babies later and 16 hours of sleep deprivation, multiple rounds of antibiotics, because I had been sick with other things, that I became so, so fatigued, that I could not continue to work. And here I am, totally a type A personality, I was always in the top of my class, both in college and in medical school, a real leader, a go getter. And my brain felt like it was all foggy. I mean, I just, it was like molasses. I couldn't think straight. I was so fatigued, I would be laying down and taking little mini naps between patients. And my whole body hurt. I had a lot of fibromyalgia, so, you know, that kind of total body pain. And it got so bad that I actually had to close my practice.

I had a very successful OB-GYN practice. That's my original board certification and training. And I had to take time off. Now at the same time, my children were all having different issues. I had one that was having migraines, one was having asthma, allergies. Everybody had a little component of some ADD issues. Sinus infections, that was another sign of that. Irritability. And then in one of my children, he ended up having psychosis symptoms. So hallucinations were happening and he got diagnosed with psychosis, not otherwise specified.

And, you know, now he's an adult and unfortunately, he has a severe mental illness. And none of this I knew, at the time. It actually took eight years from the time we ended up selling that house and moving out of it, but again did not know that there was an issue. Everybody was sick in a different way, but I didn't know that it was all connected. And it wasn't until we moved out that we found out that there was all this black mold underneath the house that had been blowing around the air conditioning system.

### **Alex Howard**

I think it's interesting, just sorry to interrupt you, but I think it's an interesting point to make that you were all exposed to the same toxic mold burden, but it manifested differently in different people.

### **Dr. Margaret Christensen - [00:06:52]**

Absolutely. It can have many different manifestations. I get this question all the time, OK, well, dad's not having any issues but Mom is so fatigued, she can't even get out of bed. Or she's having all kinds of neurological symptoms. Or, again, the kids are all sick, chronic sinus infections, ear infections, strep throats, tonsillitis. So if you see that pattern in a family, then that's one of the things you need to start looking for. Is there an environmental component? Are you breathing in some air that's very poor quality?

And that's kind of a good point that you mentioned is, why do some people get sick and others don't? And by the way, this is not just homes. We're talking about office buildings, 60 percent of office buildings have a water damage issue. We're talking about schools, I've been to churches, dorm rooms. I had mentioned already, again, poor air quality is a very common challenge.

But if you have one person that has been on lots of antibiotics, has had some head injuries, other lots of illnesses, etc. Their bucket is already full, it doesn't take very much exposure in order to get very sick. Whereas you have somebody else, who's been relatively healthy, eating well, not had any real issues in their life, and they can tolerate a whole lot more before they get sick. And that's what often happens too.

And men and women's symptoms tend to be different. Men present with a lot of irritability, just kind of general fatigue issues. And they may have cardiovascular issues, hypertension, blood pressure problems, erectile dysfunction issues and hormonal issues. That's how it presents in men. Whereas women are much more likely to have autoimmune diseases, again, the chronic fatigue, fibromyalgia symptomatology. Everybody can have brain stuff, and the entire spectrum, from autism to Alzheimer's, can have a toxic mold component, any kind of neurological, Parkinson's, like I mentioned, ADD, etc.

So again, you may see different symptoms in different people. Again, you have a whole cohort of people working in an office building, some get sick and others don't. It depends on their personal genetics and how full is their toxic bucket already.

### **Alex Howard**

And I think that this toxic low point is really important. Because this is also why we often see comorbidities with things like Lyme, co-infections, viral load. So maybe just say a bit about how that toxic load builds up and some of the possible ingredients within that.

### **Dr. Margaret Christensen**

Well, absolutely. So some of us genetically require, for example, more nutrients than we may be getting. And certainly the standard American diet is absolutely deficient in vast quantities of nutrients across the board. And then you have genetic modification and roundup. Glyphosate, that's in everything. And those things right there are going to complicate your total body burden and impact the good bacteria in your intestines, which are responsible for your immune system and modulating things. So already, if you're on a poor diet, lots of sugar, lots of inflammatory issues, you've had a lot of antibiotics in your life, you're in a city that has high levels of pollution. Those are all things you're using nonstop. I mean, standard cleaning products, you're using standard over-the-counter skin care and body care products. All of those things can add.

But probably the number one thing that really contributes to toxic burden is, food. And the food supply. And then you can throw in heavy metals on top of that and exposures. And there's lots of different sources for those things. So that's where the problem is. And that's where you get that load that then kind of tips over. And with mold exposure, you can end up affecting, every single system in your body can be affected. And it just depends on your genetics.

### **Alex Howard**

And just to complete the loop on your story. So at what point was it, having moved out of this house,

what point was it that you realized that that had been the impact? And how did that then allow you to start to address some of those loads?

**Dr. Margaret Christensen - [00:10:55]**

Well, I can tell you that when I very first started getting better and healing, I had found functional medicine and I'd radically, I'd changed my diet, so I was on basically a plant based paleo diet. I mean, I was eating meat too, but again, it was mostly plants and no processed foods, no sugar and lots of good bioactive fats. And being on some nutrients, I got on some B vitamins and some D and A and a few other things and I got better.

I didn't know what the underlying issue was, I still didn't know what the problem was, everybody was still sick. We'd moved out of the house. We were still having all these issues. I was so tired I had to close my practice. I could not keep practicing, I actually had to shut things down. And I had a very successful, large practice at the time. So what happened, is that then I got put on some decent nutrients and my body's system started helping to detoxify.

It wasn't until my second major exposure, which was in an office building that was extremely contaminated, that all the symptoms came back. And I was like, what's going on? I'm eating well, I've changed my diet. And we found out that that building had a really severe mold issue. And I did some testing. I went to the Environmental Health Center with the very famous Dr. Bill Rea. He was really one of the pioneers in environmental medicine. And they measured my urine mycotoxins and they were one of the highest levels they had ever seen in something called trichothecenes. And he said, get out now!

**Alex Howard**

And were other people working in the building also showing some signs?

**Dr. Margaret Christensen**

Mm-hmm. Yes. But again, you know, we had autoimmune issues that were going on, a lot of neurological issues, severe headaches, migraines, tremors, M.S...

**Alex Howard**

And I guess you already had a load that was near the top because of what had happened previously, right? So you were like the canary in the coal mine almost.

**Dr. Margaret Christensen**

Absolutely. And then there's also a phenomenon called "sicker quicker", that once you've been exposed and you've been primed and the immune system has kind of been turned on to fight this thing, when it gets re-exposed, unless you have methods in place to really detoxify rapidly, you can get much sicker. And again, that's often what's happening with folks, when I get their histories and they've grown up in a house with basements, they may have lived through a flood or two or whatever.

I had one guy who's a professional baseball player, he was going to the minor league camps and they were staying in these nasty motels and these old gyms that were full of mold. And he'd get a sinus infection every year. And it wasn't until 20 years later, with another major exposure, that took him out.

**Alex Howard**

And so you got out of the environment. But at this point, did you then start to get more involved, in terms of the protocols you were using, because what you were using was sort of foundational functional medicine principles previously.

### **Dr. Margaret Christensen - [00:13:54]**

Foundational functional medicine principle. I mean, and we have all this on [MoldDetoxDiet.com](http://MoldDetoxDiet.com), how to use an anti inflammatory, low mold diet to start with, just as a basic to help you. You've got to get out of the situation, if possible, or do something to really improve air quality. And I'll mention that in a minute.

But then, this is where I started to learn also, my spouse had, at the time, severe Parkinsonian symptoms and got Lyme and, you know, a lot of neurological degeneration. And then I had the son who, at this point, had really started showing very severe psychiatric symptomatology. And my younger one also with a lot of fibromyalgia and chronic fatigue. So that's when I started learning about things like hyperbaric oxygen and IV ozone therapies and intravenous vitamin C, IV IV phosphatidylcholine and what we call lipid membrane exchange, it used to be called the PK protocol. And those are the things that I learned, and again, advanced levels of detoxification.

So hopefully, you know, I'm trying to educate people so they can learn before it gets that bad. So that detoxing can be a little bit easier.

### **Alex Howard**

And we'll come to those pieces in a minute, but I'm curious as to what was the effect? Because in a sense, you were sort of subject number one, in a sense, in terms of your research. So as you started, a) got out of the environment and b) then started to use these approaches, what was the effect?

### **Dr. Margaret Christensen**

Well, you know, it probably took almost a year to regain myself. And that's what I tell people. I mean, you're looking at a minimum of six months to 1-2 years, depending on what else is going on. If you have Lyme on top of that, too, then, you know, it's almost a lifelong process of detoxification. But you start using things like binders to bind and pull out the toxins.

There's a very specific sequence that I do things in. And it has to start with gastrointestinal tract and gut repair, first, before you start trying to move a lot of toxins. Because otherwise you start removing them and they just recirculate through Leaky Gut and they'll just reabsorb in the body. And then we have to open all the lymph channels and then we try and up-regulate liver detoxification. We do that with nutrients, with food, and again, very specific. There's certain prescriptions that we can use too. We see a lot of histamine issues, so people with a lot of Mast Cell challenges, really, that's a huge issue and a huge red flag that there might be some mold around.

### **Alex Howard**

I'm going to control my enthusiasm for a second. I want to just back up. Testing. So people that are watching this or listening to this and are resonating and are thinking, how do I know if mold's been an effect on my system? Say a little bit about the testing options and how helpful you think that is.

### **Dr. Margaret Christensen**

Well, there's no perfect test. Dr. Ritchie Shoemaker was one of the pioneers in this whole area. And he starts everybody with an online visual contrast sensitivity test called a VCS test. It's your ability to discriminate very fine gray lines. And you can do that for pretty inexpensive. I have my clients go to [SurvivingMold.com](http://SurvivingMold.com) to do that.

And then there are blood markers that you can get that look at some of the inflammation and some of the cytokines that are produced, but they're non-specific, it doesn't have to be just with mold. And those are things like TGF beta, MMPg, there's something called MSH and we can look at ADH and Osmolality. Those are things that affect the blood vessels. And what we see a lot with toxic mold exposure is that you get dehydrated inside your blood vessels, but then you get a lot of edema in your tissues, so you can get swelling and edema. And that's what the ADH and osmolality are measuring. So those are some non-specific tests that are part of the Shoemaker protocol.

I get urine mycotoxin testing. There's three different companies out there that are doing it. I think there's one that's been the pioneer and that's Real Time Lab. The other, more recent, is GPL lab. They have two different methods of testing. But, you know, I still use a lot of Real Time Lab, they're one of the pioneers and that's how I was diagnosed. Sometimes I use both of them. Those are urine mycotoxin testing.

You can get blood antibodies against certain of these very toxic species, like Stachybotrys or Chaetomium or in the Aspergillus and Penicillium. And that's relatively inexpensive, in the scheme of things, to see what kind of immune system response that you might be having. So those are some of the testing that I use.

### **Alex Howard - [00:19:01]**

And then, in terms of testing the environment, so there's testing one's internal terrain and whether there's a toxic mold issue, but there's then also looking at the building that one lives in or works in, what are some of the options that people have around that?

### **Dr. Margaret Christensen**

That's a huge other area. Unfortunately, kind of the standard testing that's done out there by air quality inspectors, are just doing air sampling, they're not really doing some of the nitty gritty sampling. And you can have air sampling done but there's also dust sampling, what's called a PCR test, so you can actually sample the dust for the types of toxic molds that are in there.

There's one company that makes agar plates that are, you know, like in your science experiment, you can put out plates. I wouldn't use the kind that comes from the big box home improvement stores, for lots of different reasons. They're just not very good quality. I would use [immunolytics.com](http://immunolytics.com) for that if you're here in the States.

And then, a really thorough inspection and visual inspection, looking in things like the air conditioning system and in the supply plenum of the air conditioning system and then looking on the exterior of the building or home, for any kind of leaks. Valleys, you know, is your landscaping above the waterline in your house? So there's a lot of things to look for.

And if you go to [immunolytics.com](http://immunolytics.com), there's a really good kind of list of things that you can do. And also, I use [www.envirobiomics.com](http://www.envirobiomics.com). They have a lot of information on their website, too. That's the dust sampling test that we do.

And then you might really want someone who's qualified. And I have a really great guy, Mike Schrantz. Excuse me, well, there's Mike Schrantz, he's awesome. And there's also Mike McNatt of Environmental Safe Space. And he's got a radio show, as does Mike Schrantz, that's a whole ball of wax, that you can send a guy. I have two summits, so the [toxicmoldproject.com](http://toxicmoldproject.com) where I interview all these folks and you can learn about that. And that's still available.

### **Alex Howard**

And there are also, I know that in the UK where we're based, we have various experts that can actually come out to someone's home and do various tests, and that's not so easy to recommend on an international level, but I think sometimes that can be a helpful piece as well.

### **Dr. Margaret Christensen**

Absolutely. I think you need a professional to come in there. The challenge is that so many of the professionals are like 30 years behind with what's the current standard and how to look and how to fix things. And remediation is a whole other ball of wax. And again, I would refer you to [toxicmoldproject.com](http://toxicmoldproject.com) and I have a whole day on that, just talking about that.

### **Alex Howard - [00:22:05]**

Yeah, we're just scratching the surface here. So, coming back then to some of the things that one can do about it, and people that have followed the various online conferences that I've done know that I'm a bit of a fan of the importance of sequencing of interventions. And I like the fact that you started to speak to that.

So you said that we want to start with the digestion. And I sort of interrupted you and we went off on this different track. So, just say a bit more about why starting there is so important, because I think one of the things that you're about to speak to that's really important, is that people can, when they get a mold diagnosis - and I think the same thing often happens with a Lyme diagnosis - is they want as quickly as they can to start dealing with that because that's the thing which is - sexy is not the right word for it - but it sort of is the thing which has got them excited that, now this explains my symptoms.

But our experience, and I know it's your experience, is that often you need to do work before you get to that point. So, just say a bit about why that's important.

### **Dr. Margaret Christensen**

Absolutely. And I talk about four things, which is clean food, clean air, clean water and a clear mind. And those are the steps that we need to take. But the number one way that you can impact your immune system and rebalance it, let me just start with that, because I think this is a really key, important point for everybody. And I have a lot more detail, especially if you're a practitioner listening, we have an advanced mold immune module that is for practitioners that really goes into this.

But, we have two branches of our immune system. One is called the innate, and that's what we're born with. And this part of the immune system is kind of like the ground troops in an army. It's always out there surveilling and it's going after viruses, bacteria, cancer cells. And it eats those up. It's able to gobble those up or eat them. And then what it does is, it takes a little piece of whatever it's gobbled up and chews out and it presents it over here to the adaptive immune system and says, hey, hey, if you ever see a little piece of this coming in again, this is a bad guy and so I want you to go after it with your cytokines and your antibodies. And this is what's called the adaptive immune system.

The challenge with toxic mold, is that we suppress the innate immune system that's supposed to be surveilling for viruses, including coronavirus.

### **Alex Howard**

I was about to get into cytokine storms but I was holding myself back!

### **Dr. Margaret Christensen**

Okay, okay, I'll come back to that.

But viruses, bacteria, again damaged cells, cancer cells, this part of the immune system is not working. And this part that creates antibodies, that is the autoimmune, that creates a lot of auto immunity, that creates the cytokines. All these people are getting sick from covid because of the cytokine storm that they're having. All this huge response of the adaptive immune system. And many, many people, because of the standard of American food, well processed diets and genetic modification that's around the world, along with a lot of antibiotic use, along with getting this toxic burden, we've suppressed our innate immune system, and this part is really overactive.

### **Alex Howard**

And I want to reiterate a point that you're making here, because I think it's an important one, that often people don't realize that it's actually not coronavirus itself which is dangerous, it's our immune system's response to it.

### **Dr. Margaret Christensen - [00:25:21]**

Absolutely. That is absolutely a critical point to understand. And so, when your immune system is very imbalanced like this, and again we see so much autoimmunity associated with toxic mold exposure because that gets triggered. And we see a lot of infections, so chronic infections, chronic viral infections, Epstein Barr virus, which I'm sure you've got somebody talking about on this, and kind of chronic fatigue. But the entire spectrum of viral illnesses, and I'm going to throw Covid in there, is much more likely. And then if you've gotten bit by a tick, and you have Lyme or any one of its co infections, again, your innate immune system is not working well to go after those, and kill those things.

And so oftentimes, we'll see that somebody gets Lyme and they have mold. And I would just say, if you have a Lyme diagnosis, the first question I ask is, where was the mold? Because what is it that took out your innate immune system that prevented your body from going after those Lyme protozoa in the first place?

### **Alex Howard**

Because what I'm hearing you say, is that one of the reasons why you might have an instance that two people get bitten by the same tick that's carrying Lyme, and one has a very poor outcome and one sort of goes back to life as normal fairly quickly is, what was the previous toxic load? And if there's mold issues, then the person with the mold issues has a much less resilient immune system to deal with it.

### **Dr. Margaret Christensen**

Yes, that's right. And so then the other thing that happens, again, hopefully everybody who's been watching your summits understands that 80 percent of our immune system lines the gastrointestinal tract. So this comes back to, why start with a gut? So if our gastrointestinal tract is already disrupted, that we have a lot of dysbiosis, unhealthy bacteria growing in there because of being on antibiotics multiple times because you have sinus infections which are really being caused by the mold, then you're disrupting your immune system. You're actually flaring up the type of cells inside the gastrointestinal tract, they're called mast cells, that are more likely to release histamines, which creates all kinds of problems.

And then you get a lot of Leaky Gut, the mycotoxins actually damage the lining of the intestines. And when you're inhaling them and then breathing them into your lungs, then they actually get into the bloodstream and then eventually go through the liver and then get dumped out into the gut. So you have that exposure. There's also some mold exposures through food, but we don't see that. Those of us who are really very facile in this area, we don't worry so much about the molds in the foods compared to in the environment, in terms of what it's doing to your immune system, initially.

However, grains have lots of molds on them, and we know that from animal studies. I mean, that's one of the huge areas in raising animals that the farmers pay very careful attention to, is the level of molds in grains. So one of the simple things you can do is just, you take grains out of the diet, particularly wheat, corn, oats too. Oats have a lot of ototoxins on them. And you try not to eat any moldy foods or things left over. But taking that, it helps to bring down this adaptive part of the immune system, starts to raise the innate. So we try and heal that up first. Then we're opening all the lymphatic channels. And, you know, you can do skin brushing or using a loofah, you can get on a rebounder. Those are all things to help open up the lymph channels. You can work with a lymph specialist, who does that manually.

### **Alex Howard**

Sorry to interrupt, I just want to dig deeper on something for a moment, in terms of the issue here, which is that one of the challenges that people with mold and lyme and co-infection immune loads can have, is they become very sensitive to, not just the issue they have, but also the interventions that one's trying to use to address the issue. And one of the causes of that can be this mast cell activation that you mentioned. So, I just want to just take a few minutes just to unpack that for a moment and

just explain, because I think there are people, certainly that we work with, that come in and say, I know that I have Lyme and I have mold, but I also know that everything I take to try and address it, my system has a reaction to, what do I do? So yeah, could you speak to that hypersensitivity piece.

**Dr. Margaret Christensen - [00:29:55]**

This is a huge, huge issue. We see this all the time. And basically, I would say there's two major things that I have them start and work with. First of all, you have to understand that you're having limbic system activation. The part of the brain that is responsible for unconsciously, it's the reptile brain, it's the old brain that just is always surveying our environment for uh-oh, is a tiger going to jump out at me? That gets turned on, in any kind of chronic illness, and it stays in the on position. So you're chronically in fight or flight, which is sending signals down your vagus nerve, connecting the brain, the heart and the gut, also the lungs. And that creates a lot of dysfunction there. So it contributes to SIBO/SIFO, the chronic gut issues, etc. And then you get this feedback loop, leaky gut - leaky brain, leaky brain - leaky gut.

So you've got this going on and then people feel like crap. They're very overwhelmed. They can't think straight. So they're very anxious. So again, that limbic system is constantly sending out signals of distress and is very hard to heal. And one of the ways it does is, triggering mast cells all the time. They're just kind of on hair-trigger, waiting to go off if there's something new or different.

It's important to understand that the olfactory nerve, which is the nerve that's in your nose, it's your smelling nerve. It goes from the back of the nerve, directly into the brain, into the limbic system. It's the oldest nerve in our body. Smelling is the oldest sense that's on the planet. I mean, you can go down to one celled organisms and they have sort of a sense of the chemical smell. So that goes right into the limbic system, and that often gets inflamed and those mycotoxins start irritating and destroying that nerve right away, or you have chronic sinus infections, again, your whole head is just full of boogies all the time. They're leeching cytokines into your brain. That nerve is swollen and inflamed right into your limbic system. And so that is keeping you in this very heightened sense and state of awareness and limbic system dysfunction, which is triggering the mast cells. And then, same thing, you get dysfunction in your vagus nerve.

So we have people start doing limbic system retraining through Annie Hopper's program, DNRS. Or Gupta, Ashok Gupta has one, the Gupta amygdala retraining. Neil Nathan has a recommendation for these things that you can wear on your head and eyes to help to retrain. And then we start having you do vagal nerve exercises, gargle, gag, hum, sing, all of that.

But if you have a history, particularly of what we call adverse childhood events, you grew up in not such a great situation with a lot of stress or alcoholism or abuse or neglect, and/or you've experienced major traumas in your life, and/or you've been sick for many years, and have PTSD from going to doctor, to doctor and everybody's telling you you're crazy. So that level of stress and/or PTSD in and of itself, that creates a chronic neuro inflammation that can go on in the limbic system.

On top of that, if you have a history of having had any kind of head, neck or spine injuries, and that doesn't necessarily mean... Concussions certainly count, but things like, you know, a baseball or basketball bat to the face, knocking your teeth out, you're a gymnast and lots of flopping back of your head and spine. I've had pole vaulters, same thing, you know, with a lot of whipping motions, car accidents where you get whiplash, falls out of a trampoline, off of a horse, off of a slide, out of a tree. Those are things that can create any kind of head, neck or spine injury, which also creates low-grade areas of neuro inflammation. And you can get like a little scarring in different areas. So that in and of itself can create neuro inflammation, inflammation in your limbic system.

And then the third factor is any of these biotoxins. So toxic mold is at the top of the list because you're breathing that in, it's going right through there. And then, you know, Lyme and its co infections, heavy metals, pesticide exposure and poor air quality, all of that.

But when you put all three of those things together, chronic stressors, head injuries and biotoxins, you set up a system where you have chronic neuro-inflammation that's going on in the limbic system. And

until you deal with that, you can do every single detox program that there is, you can get rid of all the mold, you can get rid of the Lyme but you're still having the symptoms because your limbic system is stuck.

**Alex Howard - [00:34:26]**

Or indeed, you can't do any of the programs because you react to everything you try to do. So calming the limbic system, and there are strategies to do that from a psycho-emotional point of view, there are strategies from working with the vagus nerve, and there are also ways of working with mast cell activation more directly as well, right?

**Dr. Margaret Christensen**

And with mast cell activation, so this is something Dr. Neil Clayton and I talk a whole lot about, we have an advanced mold immune module for practitioners where we go into depth about mast cell activation and what to do. You can use botanical anti inflammatories, things like quercetine and acetylcysteine, vitamin C, vitamin A, but you can also use prescriptions. And in the States we have things like Alegra and Zyrtec. There's hydroxyzine is a great one that we can use for anxiety and sleep. That helps. There's something ketotifen, people say it different ways. So you can use both botanicals and prescriptions.

And somebody who's like a super, super reactor, I start with their histamine issues. And again, we try and do the antihistamine diet, we'll use prescriptions and then we'll be working on all the limbic system retraining to help calm the system down.

**Alex Howard**

Awesome. That was a very comprehensive answer, thank you. And it was a sort of entry to lots and lots of other pieces which we can hopefully explore. So coming back to, there's working with digestion, there's calming down the limbic system, those kind of sensitivities and almost prepping the environment to be able to come in. What's the next piece in the sequence?

**Dr. Margaret Christensen**

And then you really start with the detoxification. We're upregulating the detox mechanism. Now binders you can start right from the beginning. Unless you've got somebody who, again, is very high histamine, super responder, you might not be able to start with binders right away. But, you know, binders such as charcoal, clay, chlorella, zeolite. There's prescription ones, something called Welchol, I don't remember the generic name for that. And Cholestyramine is another one, a powder. I've gone away from using that. And many of us who are members of ISEAI.org (International Society for Environmentally Acquired Illness) use less Cholestyramine than in the past. It's a prescription binder but it has a lot of GI side effects. And so many of our folks have a lot of GI issues.

**Alex Howard**

And just to explain, for people that aren't aware, when you say binders, just explain the actual process of what we're actually doing by using them.

**Dr. Margaret Christensen**

Sure. So with binders and in general you're taking them orally, they are literally binding up the toxin. As your liver is excreting it into the bile and then the bile dumps it into the gut, you get binders that help to bind things up and move it out. So that it's not recirculating. And so, that's a critical piece. And you can start that almost at the beginning.

But then in terms of pushing and upregulating the detox mechanisms with things like glutathione, acetylcysteine, there's certainly a lot of herbal preparations for liver detox that would include things like milk thistle, nettles. Certainly all the B vitamins are important for that. Sulfation is important for

that, that's what glutathione does. So that would be the next step, is really up regulating all of those things. And then I use a lot of phosphatidylcholine, a liquid phosphatidylcholine I use for membrane health and something called butyrate that helps to break down the toxins.

So it's butyrate, phosphatidylcholine, glutathione and binders. And doing that over and over again. And then sweating. Anything that you can do to sweat, hot Epsom salt baths can be very good. If you have access to an infrared sauna, and oftentimes it's a very good purchase for people, a very good investment. They have some less expensive versions that are collapsible. And you want to get real high quality. A lot of the cheap stuff coming from China, you know, you're heating it up and you're off gassing lots of stuff. So you have to get quality there, too.

**Alex Howard - [00:38:36]**

And they're quite fun, in as much as you can sit in the living room watching TV while being in it. I remember staying with a friend and I came down and I was like, why not? It's actually remarkably practical.

**Dr. Margaret Christensen**

Right. And there's one that kind of looks like a giant toaster and your head's sticking out of it and you can read a book or..

**Alex Howard**

Yeah that was the one, with your head sticking out the top.

**Dr. Margaret Christensen**

Yeah. So anyway, so again, sweating. And again, any kind of lymphatic drainage is important. We have a whole lymph circuit here that we utilize. That includes a BEMER mat, includes a vibration plate, includes a percussor where we're percussing the lymph system and kind of moving things, we use an ionic foot bath with it. So it's just to help mobilize. And then oftentimes, we'll do that and then we'll hook people up to IV and give them a big load of fluids with some glutathione, like a Myer's cocktail, B vitamins, we can flush things out with some glutathione. And then, again, depending on their situation, we'll be using things like IV ozone.

**Alex Howard**

Yeah say a bit, because we were talking about this off camera, before recording, in the context of of covid as well. I was interested, maybe explain a bit more what ozone actually is and by using that in an IV form, how that can be so effective.

**Dr. Margaret Christensen**

Well, again, this is an area that a lot of people don't know about, they think ozone is terrible. You know, we breathe it in, we have the ozone layer and all that. And all that's correct. You don't want to breathe it in because it is irritating and toxic to the lungs. However, ozone therapies have been used for over 100 years, they used it in the civil war to help clean wounds. They actually use it to clean places and surfaces in hospitals and that kind of stuff.

But when we're talking about IV ozone therapies, what we're talking about is actually extracting blood. You put an IV in, you extract blood, you mix the ozone with the blood and you put it back in. And you have that ozonated blood. And the blood that comes out of you is a very dark maroon color, it's coming out of the veins, the oxygen is gone. And once you ozonate it, it turns bright red and you get all this oxygen that goes back in.

It has a lot of different properties, but one of them is is antimicrobial. So, again, it'll help to kill off viruses and bacteria and different protozoa from the whole range of spectrum. And so that can be

pretty useful. And it also helps to generate energy in the mitochondria, it stimulates the stem cell production. And a lot of people use it as an anti-ageing technology, but we use it therapeutically.

### **Alex Howard - [00:41:16]**

And is that effective for, sort of, more localized microbial issues in terms of gut issues or is it more, where you've got sort of more global issues in terms of...

### **Dr. Margaret Christensen**

More global issues, yeah. But you can drink ozonated water to help the gut. And some people use rectal ozone but that's a whole other hour's discussion!

But what we find is very, very helpful, particularly if you have a lot of neurological symptomatology, nervous system issues, is doing phospholipid exchange.

So, again, I mentioned earlier that these fat soluble toxins, they get trapped inside the cell membranes. The cell membrane is made of two layers and is water soluble on the outside where my hands are. But the inside is like olive oil and they are what's called phospholipids. So there's these phospholipids that are floating back and forth, or hanging down off the membrane. And it's inside this fat soluble layer, which also your mitochondria has this double layer like that. Inside is where the fat soluble toxins get trapped. Mycotoxins, heavy metals, pesticides, etc. And when they get trapped in there, rather than having like an olive oil, it goes to having like little chunks of lard in there, which are called lipid rafts. And you can't get oxygen and nutrients in and you can't get the energy and toxins out of that cell.

And same thing in the mitochondria. You can't get the energy out of it. And it's not working correctly and then starts to self-destruct. And so that's where a lot of the fatigue and inflammation comes from.

So when you're using 80 percent of your cell membranes, there's phosphatidylcholine and on the inside of mitochondria membranes is something called phosphatidylethanolamine as well. And so those get damaged with these biotoxins. And so exchanging them out and doing an oil change on the whole body can be very useful, especially if you have neurological or nervous system symptoms.

### **Alex Howard**

There's so many things I could ask you right now but I'm very aware of time. But one thing I do want to ask you about in the time that we've got, is how do you help people pace their journey through these protocols?

Because sometimes they can be quite challenging, in terms of people having die off reactions and it being quite intense on the system. And I think often, but not always, some of the characters that end up in these situations are also, you mentioned it for yourself, being the sort of type A driven personalities that can sort of see it like the harder I go on my body, the faster I'm going to get through the other side. And others can come in so afraid of trying anything because of their experiences historically. How do you sort of help people navigate the rhythm and the pace of progressing down these paths?

### **Dr. Margaret Christensen**

Well, the first thing we tell them that this is not a sprint, this is a marathon. And that you do have to pace yourself that there's going to be ups and downs. That self care and self compassion are absolutely critical in this. And again, this is where it comes back to the things like the limbic system retraining and I get them to turn off the news, they can only watch things that are funny, that are uplifting, that are that are nourishing. They have to do things every day that make them laugh.

And they just have to... Again, it's a big deal and oftentimes very emotionally devastating. You have to move from your home or, you know, you have to get rid of a bunch of stuff or whatever. So, having a

support system is critical. And I urge people to join different support groups. But I think that the most important thing is just giving them hope that, hey, you're not crazy because a lot of people have you know... We didn't talk about the whole range. I mean, you can have psychiatric symptoms, you can have immune system dysfunction and autoimmunity issues. You can have the entire spectrum of neurological syndromes that I mentioned, again, from autism to Alzheimer's and everything else in between, that can be problematic as well. Gastrointestinal issues are another huge piece of this. And then all the mystery illnesses like chronic fatigue, fibromyalgia, POT syndrome, and then these co-infections. So we see the entire spectrum here.

And I just try and teach everybody that, your body has an amazing capacity to heal itself, and what we have to do is take out what's toxic and put in what's missing. And so if what's missing is joy, rest, fun, play, being nurtured, good food, those are the things we have to put back and are just as important as the medicines and the binders and everything else. I have coaches too, you know, we have health coaches.

**Alex Howard - [00:46:01]**

Yeah, to support people through that.

**Dr. Margaret Christensen**

We have support people.

**Alex Howard**

So many more things I'd like to ask you. We're really out of time, though. For people that want to find out more about you and your work, you've mentioned some great resources along the way but just maybe mention your main website portal.

**Dr. Margaret Christensen**

Sure. Well probably for the folks watching, they would maybe like to go to [MoldDetoxDiet.com](http://MoldDetoxDiet.com) and that is a great place to start. We have two things available at that website. One is, again, just what to do for diet and nutrients and beginning basic binding and detoxification protocols. And in lay terminology it has seven different modules, all animated, very simple to understand that can take you through that process.

And then we also have the advanced mold immune module that goes into a great deal of depth for anybody, practitioners but we find that we have a lot of clients ourselves who are like total geeks and they've really gone down that, they know more than we do in some areas. And this is a great program that includes everything like what blood work to order, what are patterns to recognize, we're looking at immune system dysfunction, where to start? And all of that. And mast cell activation, it goes into great detail with that.

So that's found at [molddetoxdiet.com](http://molddetoxdiet.com) and as far as myself, I'm in Dallas, Texas at [CarpathiaCollaborative.com](http://CarpathiaCollaborative.com) Carpathia was the ship that rescued the survivors of the Titanic. We have the Titanic of Western medicine which is just treating the tip of the iceberg and it's not looking at the underlying causes. So the Carpathia comes along, it's functional medicine.

**Alex Howard**

Fantastic. Dr. Margaret Christensen, thank you so much. That's been a fascinating interview. It's one of those interviews where I feel like we need another twenty interviews to unpack it all!

**Dr. Margaret Christensen**

Yeah I was going to say folks can also go to [ToxicMoldProject.com](http://ToxicMoldProject.com) and that is the summit that I've done. And I've got 40 different interviews around every single topic that I just brought up.

**Alex Howard**

That's great, saves me having to do it! So thank you. Thank you so much.

**Dr. Margaret Christensen**

It's all good! Thanks, Alex.