

Caspar ([00:00](#)):

If you don't think we live in an environment that can be quite toxic. I want you to think about this. A new environmental international study revealed that breast milk is often contaminated by environmental pollutants, including those that can disrupt hormonal balance brain development and establishment of the gut microbiome in an infant. So in today's episode, we're bringing on a functional medicine expert to see how we can not only navigate a world full of toxins, but thrive in it. This is the story of thriving in a toxic world with Dr. Jill Carnahan, Dr. Carnahan. So good to see you again,

Dr. Jill Carnahan ([00:36](#)):

You too. It's So fun to just reminisce about how we met and here we are.

Caspar ([00:41](#)):

Well, we met at the biohacking conference last year. You gave a great talk there, and, you know, before we go into all these things of biohacking, mold, environmental toxins, that are disturbing, so many people, I wanted you to just give us the backdrop of how you got into functional medicine and your backstory.

Dr. Jill Carnahan ([00:59](#)):

You got it. And I love starting here cuz story frames, everything. And clearly for me, it was no different. I grew up on a farm in central Illinois and so was probably well water and all kinds of things with organophosphates and pesticides and things like that. Classical, you know central Illinois farming. But I had a mother father who were very health conscious. We grew our own food, not all of it, but like we had a garden and kind of like a, you know, open-minded to those kind of things to help us live well and thrive. And I never, ever in a million years really had the plan to go into medicine, but I knew that I was a healer at, at my heart and I knew that I wanted to do something that would make a difference in the world. And I looked at all the different schools of therapy, physical therapy and, and chiropractic and all the kinds of things.

Dr. Jill Carnahan ([01:43](#)):

And I ended up choosing allopathic conventional medical doctor as a degree because I realized our system is still highly reimbursed by the system, at least in the US. And I wanted to actually infiltrate and make a change from within and start to move the needle. And I knew that the best place would be getting a great medical education and then taking that knowledge and kind of starting to shift and move and be open minded to how do we really thrive in this toxic world? So that's my backstory kind of surprisingly got into medical school, you know, was that Layola in Chicago. And then my third year medical student as a medical student, I found a lump in my breast. Didn't think anything of it, but within a couple weeks I got a call from the surgeon and I found out I had a very aggressive breast cancer at 25 years old.

Dr. Jill Carnahan ([02:27](#)):

So this was obviously shocking and not expected. And many people don't know this, but women in their fifties and sixties, we all know someone who's had breast cancer. It's incredibly common and increasingly so but at 25 it's like a death sentence. I was one of a group of about 12 women under 40, and I'm the only one still living. So it just shows you how toxic like serious this was. And so I went at it very aggressively and I was advised to do conventional chemotherapy, three drugs, six rounds, surgery, radiation, the whole works. So I was faced with knowing I wanted to live holistically, naturally heal

myself from within all those good things. And then all of a sudden I have a life threatening illness at 25 and am I gonna live or die? And what's interesting is I took their advice. I did the conventional treatment, but what I did is I altered the course a little.

Dr. Jill Carnahan ([03:14](#)):

I did chemotherapy in two days instead of one, I did it time so that it was less toxic. I did lots of things and I took nutritional supplements. I did prayer, fasting meditation, all the kinds of things there. And I pulled these two worlds together. And after nine months of therapy, I was incredibly sick from the therapy, but I was considered in remission and now it's been almost 20 years and I'm, I'm considered cured. So it, it worked, but it's interesting Caspar that people don't tell you is the cancer was easy. Like that was easy to battle and get over. And by understanding what were the tos like you mentioned, cord blood. I grew up on a farm. I had well water. I actually believed to have a cancer at 25. I probably had in utero exposure in my mother's womb to toxic chemicals like atrazine and organophosphates.

Dr. Jill Carnahan ([03:59](#)):

And I had a very poor detox genetics wise. And so this actually started to cause mutations on the DNA of my of my breast cells, probably at five or 10 years old, like decades before my cancer. So to me, it kind of makes sense that I grew up on a farm. I was very susceptible to that toxic effect, which is our conversation today. So my life passion is how do we understand the toxic load on our bodies and what it contributes to? So I got got through, I got back to, into medical school. I'm 26, I'm finishing up my degree. I was bald from the chemo, but my spirit was still strong. And wouldn't, you know, it, six months later I am in the hospital again, and I was diagnosed with Crohn's disease. Now Crohn's is an autoimmune disease where a body attacks, the gut lining.

Dr. Jill Carnahan ([04:41](#)):

And you might think how in the world you had breast cancer and then Crohn's, but the story makes perfect sense because one of the chemotherapeutic agents that I had actually pokes holes, holes in the gut and causes a more permeable gut. And I also had a genetic predisposition towards Crohn's disease. And Crohn's is an autoimmune disease where the body attacks the gut lining, where you just mistake normal microbial contents for dangerous invaders. And then you start this cascade where the body starts to attack the gut lining. So it kind of makes sense because I poked holes in my gut with the chemo and then the bacteria neck into the bloodstream caused an immune reaction. And six months later I have Crohn's disease. Now, this is interesting because this is why I became a gut expert after the cancer, because I had to figure out how to heal myself.

Dr. Jill Carnahan ([05:24](#)):

My doctor said, Jill, Crohn's is incurable. You're going to have this forever, lifelong. You're probably going to need multiple surgeries to resect, parts of your bowels during your life. You're going to need steroids, probably immune modulating drugs, and get used to this. And I was like, no way, you know, I didn't know a lot, but what I knew was like, this doesn't make sense. There's gotta be a way to find root cause. And the last question I asked before I left his office was, doctor I don't know a lot, but does diet have anything to do with this? Could I change my diet? And he didn't even pause. And he said, Jill diet has nothing to do with Crohn's disease. And again, even though I didn't know, my intuition knew this doesn't make sense food in the gut. Like how could that not have something to do with it. Now, unbeknownst to me at 14, because of probably zinc deficiency and low stomach acid, I, I became a vegetarian, but I wasn't a very healthy vegetarian.

Dr. Jill Carnahan (06:15):

So the decade preceding both cancer and Crohn's, I was more of a carbatarian and I ate a lot of gluten and I was undiagnosed celiac. So now this picture's starting to make sense because I had gluten in my diet. I had a very poor high sugar, high carb diet. I still thought I was eating healthy, but I really wasn't. And I lacked meat and protein in that sense that I probably could have used at that time. Cancer Crohn's. And then what I did is I went on a search for diet and interventions and I changed my diet, took out gluten, took out specific carbohydrates and within two weeks my symptoms were resolved. I didn't cure myself from Crohn's in two weeks, it took several years to direct my gut microbiome. But what I learned in those experiences was like, wow, there's so much more than conventional medicine tells us. And diet does have a lot to do with not even a lot. It has everything to do with auto immunity. So that was my fast track education in the middle of medical school. And part of my reason for my passion for root cause functional medicine and gut health.

Caspar (07:12):

Incredible story, and, and so much to unpack there for me, but I'll do my best here because I truly believe that you know, the doctor of the future needs to be integrative and so that they need to be conventionally trained. I've Al I've never knocked conventional doctors. They have a great understanding of many things, biophysical understanding of all acute things, but they need to go beyond that, go into the functional training, go into holistic training, go into diet, all those lifestyle, combine the two. And then you have a well rounded practitioner that can start to address like you did with yourself root causes. And the fact you are able to get to your own root causes is amazing. And then start to build on that. So let's start with the diet and toxins, because a big part of that was your conventional doctor said, diet has nothing to do with this. You knew better. In your gut, so to say, you know, intuition, you knew that diet is a big part of it. Now, a lot of the times when we think of environmental factors, we think of being around chemical plants or, you know, something very in your face radiation or, you know, something that, you know, has hazardous toxins signs all over it. But the truth is we ingest toxins every single day. What are some of the things people should be looking out for in their diet that is causing a toxic reaction within them?

Dr. Jill Carnahan (08:32):

Oh, I love that you said that. And I also love that you said the truth is we all know, and I've learned with patients that intuition, that inner self, our inner story, we often know the answers. And if we just take the time to kind of tap into that, and like you said, our conventional system is the best place to be if you have a heart attack or a stroke or any sort of thing. So I love that we can do that, but what the toolbox is a little limited because drugs and surgery are primarily the answers. And what you're saying is we need to expand our toolbox, cuz that's a great place to start and I couldn't agree more. And then your question about toxins and you're right, we think about, oh my gosh, well, I'm not since I don't have lead in my paint and I don't have this or that.

Dr. Jill Carnahan (09:08):

What I talk about all the time when I'm teaching doctors is something super simple and it's clean air, clean water, clean food, because those basic inputs are the majority of our toxic load. And I love cuz it's something we can remember, clean air, clean water, clean food. It's not hard to remember, and it can be complicated to implement, but really it shouldn't be so clean air. The air that we breathe 80% of our toxic load comes from the air that we breathe. So nowadays with our VOCs from off gassing with our petroleum fuels and things in the air with mold in so many environments and increasing every day and

every year I think it's essential to have some sort of air filtration in your environment, especially if you're indoor outdoor dilution is the solution to pollution. So usually outdoor is not as big of a deal, but now with the fires and all of that, California, Colorado, and all over as we get more and more dry and climate change the outdoor air can be just as toxic.

Dr. Jill Carnahan ([10:03](#)):

So I highly recommend a high quality HEPA filtration system with a VOC filter. And there's many companies that do that. But if you get just HEPA, that's the larger particulate like mold spores or particulate pieces in the air that VOC filter, however, is the, the 0.3 microns or less like viruses or formaldehyde or smoke. And you really need both. I have three air filters in my small condo. I have five at work and I really think it makes a huge difference. So think about air quality, invest in air filter. Otherwise you can do are putting a high quality mer rating in your furnace. So just changing that out, you're going to have increased pressure on the airflow. So you may use a little more energy, but to me it's worth it to have that thicker filter and you can buy them even with charcoal infiltrated in there and that good filtration system.

Dr. Jill Carnahan ([10:51](#)):

And of course now people are using UV lights and all kinds of things. And since COVID especially caution with those, because some of these devices, whether it's UV or ozone, they can actually, they may say they don't produce ozone, but if they react to molecular particles in the air, then they can create reactive oxygen and people with sensitive lungs may react to a UV filter. So be careful with those. I'm not a huge fan because it can cause it, it doesn't produce their reactive oxygen, but when it reacts with stuff in the air, it can cause some irritants for the lungs. So that's clean air and dilution is the solution to pollution. I said that again, because it's fun to say and easy to remember, but that's where you can just open your windows and you can get some dilutional effects. Sometimes if you can't afford a filtration system opening and diluting, the indoor air is often really helpful.

Dr. Jill Carnahan ([11:38](#)):

And nowadays with our lead certified buildings and our incredibly efficient buildings, it's actually more of a problem because we're not getting, I'd rather be in a hundred year old log cabin with a little bit of cracks in the woods than to be in a highly, you know, downtown lead certified where there's condensation, there's mold growth and there's no air exchange from the outside. So that's clean air, clean water. Again, I grew up on well water. We thought it was clean, but looking back, I'm sure that there was probably contamination. So if you haven't tested or asked your city water supply for a report, you really need to look at this. I have an water filtration system that's on a countertop standalone and also one in my fridge. And the one in my fridge does like everything known to man. In fact, my friend in a suburb close to us, had a water boil order on the community when there was an E. Coli break outbreak.

Dr. Jill Carnahan ([12:28](#)):

And he used the filter because it filtered out E coli had no trouble at all. So clean water. The whole house systems are great, but they are usually reverse osmosis, which takes out the minerals as well. So if you do get that kind of filtration system, you need to think about minerals in your diet because you're gonna be drinking acidic water, which if you have osteoporosis or issues with bones, that's gonna make that worse. And then the question you ask finally were to clean food. I am a huge fan of making sure you know, where your food is grown. If you can grow, get local, organic non GMO, for sure. And as fresh as

possible, grow your own, if you can, even if it's just herbs on your balcony like I do. And you really wanna at least be non GMO and you can, if you can afford all organic and that be genetically modified.

Dr. Jill Carnahan ([13:15](#)):

The reason for that is those, especially like corn and soy. The top six, I think are corn and soy and cotton and canola oil, wheat, there's maybe a couple I'm missing peanuts that are genetically modified. They're genetically modified so that they can tolerate things like glyphosate or Roundup applied to them without dying. And so what that means is there's more chemicals applied and they're actually altered proteins in those genetically modified foods. Like the GMO corn is gonna be slightly different to your body and maybe more antigenic. So it might stimulate the immune system a little bit more so, and then organic, if that all possible. And if you can't afford all organic, you can look at the environmental working groups, dirty dozen, and they put that out every year. And then at very least those are the highest pesticides sprayed foods you want to eat those organic.

Caspar ([14:02](#)):

Yeah, it's wild. Have we taken something like water, food and air something, we all eat some you're just about to drink right there at the water and made it into the toxins we're ingesting the most to substances. It's really so sad to see these three things become the most toxic. But you know, I want to go into that idea of where you live in the direct environment. We know outdoors is usually a better situation, unless you have those things like fires and other pollutants, but we we've basically made our homes into some areas where we become sick, sick building syndrome and a large port of that part of that has to do with mold. And I know you're a mold expert. You see lots of mold patients. What percentage would you say are actually dealing with mold that come into your practice?

Dr. Jill Carnahan ([14:49](#)):

You know, it's shocking. And my story, I got really sick from mold about five or six years ago. After the Boulder floods, I didn't know what was going on. I couldn't breathe. I couldn't walk upstairs. I had rashes and found out it was mold and I had to leave my office. And so once again my life is experiential. I experience something and then I learn and then I go on and teach others about it. So once again, I had to learn mold. I always said, I'll never be a mold expert. Well, the divine universe had a different.

Caspar ([15:13](#)):

Never say never.

Dr. Jill Carnahan ([15:14](#)):

Exactly so learned that also had to get well, that was actually way harder than both Crohn's and cancer, because it was one of these things that was fairly invisible. People didn't understand it. And I was actually probably more sick and especially mentally one of the things I talk about in my book, that's so interesting is the mold has this way of, of taking out your insight. So you have this, like, it's almost hard to tell when you're exposed or how badly you're affected and granted you don't feel well, but it's very subtle. And it also has kind of a traumatic response to it. So people often have connection to trauma or feeling like PTSD or fight or flight because of the chemical exposure. So mold is everywhere. But it, it, it's a lot worse as we get these more environmentally sound buildings, which are great for efficiency.

Dr. Jill Carnahan ([15:59](#)):

But like I said, then if you get condensation or changes in temperature, you can have issues. A lot of the construction nowadays is so quickly put up and the materials are much more instead of stone and brick and concrete, they're more like cardboard, which is the particle board or those things. And those are, if they get damp, as you're constructing, there could be mold in them. And then all it takes is a tiny bit of moisture in your house and it can grow and you can have leaks from your fridge and your washing machine and under your sink and you name it, attics, condensation intrusion through the windows during a storm and people think, oh, no big deal, wipe up the water. But it often, if it saturates a porous material, you are ripe for mold growth. And over time it becomes a really big issue. And I would say it's really growing in poor construction materials, the amount of people that are indoors. And I think with the pandemic, we saw more cuz all of a sudden people were stuck in their homes. If they had an issue, they didn't get as much outside time. I think the statistics say about one in four buildings in the us are affected by mold.

Caspar ([16:57](#)):

Wow. Think about that. 25% of us right now, listening are probably in a building that's impacted by mold. And I know this is very true for, you know, Southern areas where it's humid, everyone. I know who's gotten mold has ELISA, EMMA, whatever it is, have shown positive mold spores in that area. Yeah. Without even knowing and they're sleeping there, that's the scary part of it. But the good news is you have wonderful doctors such as yourself to help. And I know part of your treatment plan that you talk about are targeted binders. Can you go into that and what that means?

Dr. Jill Carnahan ([17:28](#)):

Sure. And I just noticed, I didn't answer. The other part of your question was like people coming into the clinic how many people and when I first had the mold illness, I, I very deliberately was getting myself well. And I thought, I'm not gonna go back to the clinic and assume that everything's mold. Right. Cause you know, we have those lenses where we see the everything's, this everything's this. And I was very deliberate. Like I am gonna look for it, but I'm not gonna assume that everybody has mold illness and more often than not, I'd go deep. I'd do the testing. I do. And we can talk about testing and stuff too. And I would be like, oh my gosh, this is mold again. This can't be like, how often? So when you say how many people, I would say chronic complex illness, like auto immunity, neurodegenerative diseases, or, or just things where people are mysteriously, fatigued, brain fog, not functioning their best, I would say about 50% or greater. And I, I I'm, I'm being conservative with that. Our root issues are mold.

Caspar ([18:17](#)):

Huge number, huge number. And again, that's why it's so scary. But to get back to that now, good part of it. All the treatment. Yeah.

Dr. Jill Carnahan ([18:25](#)):

Yes. The binders.

Caspar ([18:26](#)):

The targeted binders. Yeah. Tell us about that.

Dr. Jill Carnahan ([18:28](#)):

Okay. So and a lot of studies have come out now, I don't have this memorized, but I'll give you some tidbits, but there are some studies now on very specific substances for specific microtoxins. So what

happens? I'll give you just a tiny primer on mold. We have the spores, which are fairly large. They're typically like taken in air samples and things. And those typically aren't as antigen or immune reactive as the toxins that mold produces. So we have the mold itself, which could be aspergillus or Catto or stacky batteries or malaria or any of these. And those are certainly bad and problematic. And if you have them in air samples, it's an issue. Typically something like a black mold like Atomium or stacky, if you are finding that in your air, it's a massive issue because it typically hides wet, damp things under floorboards, and it's not in the air.

Dr. Jill Carnahan ([19:12](#)):

So the other kind of testing you can do is testing the dust for DNA of mold. That's called an ERMI and the ERMI data. Isn't the best. So we now call that QPCR. It's just another name for the type of testing it's done. And any person can do this without a doctor or even an inspector. You can get a dust sample yourself and test your house. And you can look at the species that are in the dust, in your mold. So still we're talking about spores and mold. And then the next level is particulate. Like if after remediation, I always say, it's almost like you had a dried flour and you flicked it or blue on it. And the particulate. So this dead mold particulate goes into a million fragments and those fragments are super immunotoxic. So even if it's dead and you've remediated, but you have fragments of dead old particulate from mold that can still cause immune damage and inflammation.

Dr. Jill Carnahan ([19:58](#)):

And then the last thing is the microtoxins that the mold actually produces. Now this could be the mold is hiding behind the wall. Your air samples are perfect, but it's still producing toxins. And that's that level of the VOCs is like 0.3 microns. And these are things like trycophenes, okratoxn, aflotoxin, gliotoxin, and you can measure these as well. You can measure them in the urine of humans and you can also measure them in a, in a dust sample. So those are kind of the levels. And then with binders, we know that certain types of toxins are better bound by certain things. For example, ochretoxin, which is typically from aspergillus penicillin the prescription binder cholestyramine tends to be really effective for that one. And same with clay or sacrymycees galiardi or glyco mannens, and then things like trycophenes which are the really toxic immunosuppressive ones from the black molds. Those I think are better bound by charcoal and clay works too. So I often, because there's usually more than one in each environment in each person I'll use combinations. So clay and charcoal are two of my favorites. Zeolyte is excellent and also binds to metals, glycomanins chlorella and even just fiber, like citrus pectin can be good for both organophosphates and molds.

Caspar ([21:15](#)):

Yeah. And it's so great that you're getting to this level of personalization, you know, not just saying, Hey, let's just throw something and see how it goes. Mm-Hmm <affirmative> because that is a, a kind of old antiquated way of going about it protocols for just general mold versus really being specific. And now one of the detoxification methods, excuse me, you talk about is NAD. And something I know very well done, lots. So we do a lot of NAD infusions here and all sorts forms. And tell me, how does NAD help to detoxify the body from mold?

Dr. Jill Carnahan ([21:44](#)):

Okay. So it's really interesting because glutathione and NAD are critical factors for our detox. NAD is like the fuel to make ATP for our cells. So it's critical for every cell in our body and actually our mitochondria, which is the biggest marker of aging or anti-aging, and the damage that happens to mitochondria. If we

could prevent mitochondrial damage, we wouldn't age, we wouldn't get Alzheimer's. We would get any of these things. Unfortunately, we haven't figured that out exactly yet, but anything in that realm, NAD's one of those things that's actually antiaging because it helps restore normal integrity of the cells and give us the fuel. But what we know is things like aspergillus and candida, any fungal species, they actually deplete NADPH, which is the precursor of NAD. And, and the currency for NAD.

Dr. Jill Carnahan (22:26):

So that's why many people do better when they take NAD it's, it's a critical thing. And so mold is really nasty because it depletes glutathione and it depletes NADPH. And those are two critical factors in energy and detox and just the cellular currency. So giving those back is just very helpful. In many cases, I usually start with either gluon or for those who don't tolerate gluon precursors, and you still need methyl donors and things like that. Precursors could be N acetyl cysteine, lipoic acid, liver support like milk thistle, vitamin C, glycine, glutamine. Those are all kind of precursors of glutathione. So some people don't do well in glutathione, but they can still take precursors. And then NAD often comes in a little later, because if someone's really, really sick and you give them a load of NAD they're gonna push detox so heavy, they get more toxic and more sick, even if they need it. So NAD's great for the healthy person to start on. And if you're really sick, I often don't do that. First. I do that a little bit into the protocol because it overwhelms the system. It, it almost like it turns it on full blast and the body's like, whoa, what'd you do to me?

Caspar (23:29):

That's what a lot of people don't realize that you can't just detox the body without actually having it in a place where it's ready. You know, you gotta get the organs and elimination going. You gotta get rid of some things a little bit more gentler, and then you could start to turn on this spigot, right. And NAD if you just turn that on at once, people have serious reactions that you don't want in there. Now, one of the things we've noticed, and I know lots of other practices and, and doctors have noticed this as well, is the correlation of Lyme disease with mold mm-hmm <affirmative>, it seems to go hand in hand. And a lot of times it seems that almost doctors who may not know, start to mix diagnose one or the other, and start to treat one or the other, but what have you seen in your practice and in your experience about Lyme and mold, are they truly just often misdiagnosed or do they actually go together?

Dr. Jill Carnahan (24:18):

Great question. So I frame function medicine in a very simple paradigm, and I think it fits what we're talking about. Toxic load and infectious burden. And I think almost every chronic patient that I see. I know you are nodding. You see this too in your clinics is a combination of toxic load and infectious burden and how they fit together is we all have dormant infections in our system. I've never once seen a patient that doesn't have an old infection that is dormant. It's not bothering them because most 95% of college age kids have had mono, which is Epstein Barr. And then most of them have had some sort of HVB six or seven or some childhood exam them like a viral infection, strep throat, et cetera. And then many, many, many people are bit by ticks, but also like things like Bartonella, cat scratches, or spiders or mosquitoes carry some of these things like West Nile.

Dr. Jill Carnahan (25:07):

And a lot of these things didn't really because we, they had strong, robust immune systems. They might have got infected, had a very short illness or some little thing or nothing at all, but they're carrying these bugs or spirochetes or viruses in their system. And our immune system is created to keep those in

checks. So if you're healthy, you're living well, you're doing well. You don't have a big toxic load. You might have a lot of things that are under the surface, but they never cause symptoms. They don't bother you. And that's how we're meant to live. Like we're meant to be able to control these. Not that we can't, we never get infected, but what happens in a moldy environment? Many of the toxins I mentioned, especially the trichothecenes, are massively immunosuppressive. There's one called mycophenolic acid that can be tested in the urine.

Dr. Jill Carnahan ([25:48](#)):

That's usually from aspergillus, but can be from other species. And this in particular is used to make the drug CellCept, which is for organ transplant to compromise the immune system so that they can, so literally they use that mold mycotoxin to cause immune suppression. It's one of the strongest immune suppressants known to man. And I see people all the time that walk in with mycophenolic acid levels off the chart. I'm like, it's like, you're on CellCept, right? It's like, you're an organ chest. So it wouldn't make sense. Then if you're completely immune suppressed, you're in this molding environment, things that weren't bothering you like a Lyme tick bite from four years old, starts to pop up and it's truly an infection and it's getting outta hand and it's causing symptoms, but it's not just the fact that you have that infection. It's the fact that your immune system is completely not doing its job.

Dr. Jill Carnahan ([26:32](#)):

So I always think of it in that that layer too, because usually I'll treat the toxic exposure, the mold first, and then some people don't need aggressive treatment for infections because if their immune system comes back online, often we do both, but I usually don't treat the infection and I don't do a huge amount with metals or, or that until we first get the exposure down and say, where is the immune system at? Can it come back online? Because often if we get rid of that mycophenolic acid, and that's not the only immunosuppressive microtoxin, there's others, that's just one we know about. Then they, they can do the fighting of the infections. So that's kind of how it, the common circumstance would be if someone comes in really sick with Lyme symptoms or the tickborne infections would be fatigue and pain of some sort there's many others, but those are super common. And they might have brain fog, fatigue, pain neurological things like numbness, tingling, weakness. And I kind of try to say, what's in the environment. And if there's a massive mold issue, we ignore the Lyme temporarily and support their immune system and get them detoxed. And then we reevaluate and say, okay, is the Lyme still here? And many people still need treatment, but not everybody does.

Caspar ([27:36](#)):

Yeah. My father was a doctor and talks a lot about this. Always says, listen, you gotta clean the terrain before you get rid of the mice and the cockroaches, right? Yes, yes. You can't just set the traps, which would be antibiotics in a terrible environment. You gotta first get, get the environment clean, get the organs, get detox going. Then you could go in and start to address those pests, which are your Borrelia or your, you know, Babesia, everything else that usually comes packaged. Yes. That's never one or the other.

Dr. Jill Carnahan ([28:05](#)):

Right, right. Exactly.

Caspar ([28:06](#)):

Now a big portion of, of toxicity and, and what we're seeing a lot. I, I feel like in, you know, neurological conditions and what you hear a lot about is heavy metals. And a lot of people are, are a little bit on the fences how much of a cause heavy metals in our environment, or that we're consuming can lead to certain conditions and certain issues. But what are your thoughts in general on the prevalence of heavy metals and how that relates to neurological conditions?

Dr. Jill Carnahan ([28:38](#)):

Yeah. So I rarely, as we just talked about, see someone with one thing, like with just toxicity, and especially years ago, I've been doing this about 20 years. I did often see, oh, thyroiditis or hormone imbalance, or a little bit of extra mercury. It was much more simple. And now it is never simple. It's always layered and it's always multiple things. So metals are usually part of the picture. I rarely see them alone and they do add to the load. But once again, if you think about what we first talked about with mold, mold, trashes the detox system. So often metals the same as the infections, it looks like someone's incredibly toxic and it could be chemicals or metals. If they're in a mold environment, cuz their detox is just trashed it's tanked. There's no glutathione. But again, if I get them detoxed, sometimes it's not as big of a deal or they can actually, because we forget our bodies are kind of created or made or, you know, designed to detoxify.

Dr. Jill Carnahan ([29:29](#)):

So we are a detox machine. And if we are given the right circumstances, the right fuel, the right air, water, food, that's clean we can do, we can actually handle quite a toxic load and do fine. So it's not something to be afraid of, but because the mold, the load, it overloads our system, the bucket gets full and spills over the top. And because of that, if we decrease that load, then we say, what's left. What else is here? If though there's someone who stills metals, it is an issue. You do need detox. I start with the gut and I do a lot of Zeolyte and binders through the gut. And do you know, lipoic acid, N acetyl cystine, glutathione and then make sure we're, we're repleting minerals. I do a little bit of DMSA. I don't use a lot of E D T A, because I find I have a few colleagues that are expert in that.

Dr. Jill Carnahan ([30:12](#)):

And if you don't know what you're doing with the IV chelation, you can mobilize something that's not excreted and get someone worse. So I'm incredibly respectful for that. It's a great therapy for the right person. And I leave that to someone who that's all they do and they're really good at it. And I'm sure you know, with your clinics and stuff not against it at all, but I just, I I'm, that's not my expertise, but I know when it works. And I know when to refer people and for lead, especially EDTA and heart disease, there's a lot of data and it can be incredibly effective for mercury. I find oral DMSA or oral Zeolyte can be just as effective.

Caspar ([30:44](#)):

Yeah, you you're absolutely correct that. I mean, chelation is not just chelation. It's not just, you just jump in and do 20, you know, E D T A IVs and that's it, depending on who it is, it could be absolutely detrimental and you could start to move things that are in connective tissue and start to deposit in the brain, even a heart elsewhere. And that's where it gets really tricky and you do have to be skilled and that's where quality comes in over quantity and knowing what you're doing. So I'm glad you brought that up. Now, mercury amalgams, is that something you take case by case or are you asking your patients to remove them at the right time in all cases?

Dr. Jill Carnahan (31:21):

Gosh, it's, it's all these things are expensive, right? So I'm always checking where are you at? What you, you afford this area, whether it's ations or root canals that have failed, or they're leaking into the, and we talk about lipopolysaccharides and endotoxemia, which is the dumping of the gut contents into the bloodstream and a huge trigger for diabetes and heart disease and obesity and all that. It's called LPS endotoxemia that can happen in your mouth as well. So you can have this leakage of bacteria into the bloodstream, which causes a massive, it may be in my mind, one of the most potent immune triggers of all the lipopolysaccharide, the LPS, and it can happen in the mouth. So you mentioned mercury, but I, I got a little bit bigger than just mercury because what I see maybe more often than just mercury is old

Dr. Jill Carnahan (32:01):

Cavitations like where your wisdom teeth, and you have a little pocket of bacteria that's just sitting there for years or root canals, root canals are not all bad, but if you have a weak immune system and you're dripping bacteria, because there's no way to perfectly sterilize a tooth, then for those people, they don't do well and they tend to do better if they have those root canals pulled. I'll tell you a quick story on that. This was between the cancer, the Crohn's and the mold, and I was doing fine, but I had a little psoriasis on my scalp in my body and I went to a, a biological dentist and I had two root canals, same Meridian. And I learned that those two meridians were breast pancreas and colon. So breast cancer Crohn's is in your colon. And the pancreas, I didn't tell you this, but I had pancreatic insufficiency after the mold and I have had for a while.

Dr. Jill Carnahan (32:46):

So that was literally my health history in the teeth. And I was like, okay, let's pull those. Like once I saw the meridians and when I'm talking about meridians, if you're not familiar with that, the acupuncture, meridians, you know, go through all of our organs. And I am not the expert there either, but I know this stuff is valid. And when I saw that alignment with those, and it was the same tooth on each side, and when I got my teeth pulled Caspar, one week later, the psoriasis was gone and I've never had it since. So there was something there that was clearly like, I was like, wow, I would've never thought pulling these teeth would have an effect on my autoimmune psoriasis. And it was mild, but it went away like gone. Yeah. Yeah.

Caspar (33:22):

So it's, it's incredibly important. What happens in your mouth and a lot of times dentistry not to blame them because I think you're taught this a lot is you see it as separate, you know, head up, they say, just go in the mouth and it's. But when you talk about those meridians, those are real things that I've talked to many doctors about and have seen the charts of what is connected to what, and it is very true. I don't know if you ever saw the documentary Root Cause, but there's a lot of people there that talk about breast cancer, root canal in the one. Yeah. And seeing a huge correlation, not just, you know, causing it, but but that's, that's fascinating that you experienced that again. Now, one of the questions I wanna sk you, cuz I'm hearing this so much is I'm, I'm a big believer in experiential medicine, meaning we experience and we get results and evidence of course is important, but it's not the end all, if that were true, you just follow the evidence that everyone would be healthy or sicker and sicker. Where do you find yourself? Cuz functional medicine is very evidence based. But you're sitting here talking a lot about experience. And if you followed some of the evidence that many of the doctors probably you worked with in the past were following you gotta go on this, you know course of action with oncology and this

that's what the evidence shows us, gives us the best chance. And you said, well, my experience showed me something else. Where do you fall on, on that? Between experience versus evidence?

Dr. Jill Carnahan ([34:40](#)):

Oh, this is a brilliant question. And I love it because I just did our interview earlier this morning, we actually got into this because she said, this neuropsychologist you talked to neurologist was like, if it's not randomized controlled trial, then you know, he's not gonna do it. And all he was doing was SSRI for mood. He wouldn't consider that the gut or anything else had anything to do with it. So love that because I am a huge believer. I love the science. I was a bioengineer background. Like I'm very steeped in, in that science, but as I've grown and learned and seen, I'll say it like this, and then I'll tell you why the place where we see the miracles, the spontaneous healing, the things that are like not expected, it's always outside the box. And when we stay there's this box that says, this is what 30 years of like 30 years of old data has told us has been the standard of care.

Dr. Jill Carnahan ([35:25](#)):

But the data that's coming out now, it may not be standard of care for another 30 years. So I could wait 30 years and have a lot of people die and get sick and not get well. Or I can go in the very kind edge of that data and say, okay, we have preliminary data on this vitamin C, well, that's old now, but you know you something else, maybe N A D. And I always, my mind is like, is this safe? If there is a, a safety profile and I know no major risk of harm or we have informed consent. And then there's a possible benefit. First of all, if it's me, I'm gonna be on that cutting bleeding edge. I do stuff to me that I would never do to patients. Cause I'm willing to take the risk, right? I mean, I write a motorcycle, I climb mounds.

Dr. Jill Carnahan ([36:00](#)):

I do other things like that too, but I don't have any problem with risking and trying stuff on myself to see if it works. And then I can be that judge. And I often give patients that option. Of course, I'm much more careful with them and say, this is the, but what we find is when we go outside that box and we say, Hey, this makes sense. There's a preliminary study on this ingredient. Plasminogens and antiaging. This is a huge new topic. And can we use this to reverse Alzheimer's? well, there's just preliminary evidence. And but if someone wants to try Phosphatidylcholines or precursors of Plasminogens my gosh. That's from, I mean, food sources, it's pretty darn safe. Why not try it? So I am definitely one of those docs that is not willing to step outside the box. I hear something in a lecture it's got decent evidence.

Dr. Jill Carnahan ([36:41](#)):

I might the next day talk to a patient and say, Hey, I just heard about this. What do you think? And then in combination, and what I wanted to say too was again, I have this science background. I used to live from my neck up as far as analytical and problem solving. And I love to have complex equations in my head, but what I learned, the most powerful medicine, the most powerful answers and the most powerful miracles that are unexpected healing. This happens when we trust our gut and our intuition and whether it's tapping into the patient and saying, what do you think? What do you suspect most of the time, the patient, if you give them the permission to speak their truth, they have answers that are helping you to help them heal. And they know they know what a root cause like something they have, well, this may make no sense to you doctor, but I was wondering about this or this happened with my family when I was a young child.

Dr. Jill Carnahan ([37:25](#)):

And so all these are clues and what I've learned in the last, at least 10 to 15 years is that heart based intuitive sense, which is not science based. It's a gut instinct is thousands of times more powerful than the science space. I think of it as the old analog computer can process so many pieces of data. But when we go to the heart space, we can spontaneously process millions of pieces of data with our intuitive subconscious. And again, this isn't woo, woo. There's actually evidence to support what I'm saying, but I have fully swung. I still use both sides. I still use the science. And what I typically do is I go with that intuitive sense and then I prove it with the testing of the science and make sure, but I'll tell you what it is so accurate. And I get so many more, really deep insights and, and ways to solve a problem that I would've never found if I had just stuck to the old analog computer.

Caspar ([38:15](#)):

Absolutely. It's never black and white. And that's what you gotta see. You gotta find all those different shades in the colors in between. That really makes sense. And I even posted about this not long ago, how, you know, following the heart and the heart gives off the most EMF and it's most powerful. And you know, I had some doctors on there saying there's no science to this, right. And it was just, it, you, you can't say that it's misinformation and it's like, come on, like you gotta, you gotta find, and I can find the science if you want.

Dr. Jill Carnahan ([38:41](#)):

And there is science that things like really powerful science.

Caspar ([38:45](#)):

It's just not the science they're used to, you know, it's, it's a little bit outside the scope of what you're probably learning in, in medical school, but, you know.

Dr. Jill Carnahan ([38:52](#)):

Well, and even what you're saying there too, for me just showing up and really listening with my heart and like really giving them a space that's safe, where they believe that there's hope where they trust me and where they know there's unconditional love and acceptance that might have been woo woo 20 years ago. That is not, that is a foundation of healing.

Caspar ([39:10](#)):

And it's something you absolutely incorporate your practice. I remember when I was listening to you on stage at the biohacking conference, you talked about heart base intention, goal setting, purpose-driven medicine, all these things that my ears perked off for that. Cuz I love that. I know the difference with many patients. Do they have a purpose to get better? Do they have a goal to get better? Cuz it's not gonna always be easy and linear healing you'll have bad days and maybe you don't want to go through with it and change your lifestyle. So you back out of it. Yeah. And you stay in a disease state. Can you talk about how you implement that with patients to really get them to set goals, to see themselves getting better and see it through the finish line?

Dr. Jill Carnahan ([39:49](#)):

Ugh, this is so important. So this goes to the more metaphysical, but super, super important because we can give all the right protocols, the supplements, the you know, nutrients, the labs, the medications, and still not have a good result. And what I found again in my own journey was I went through divorce about six years ago and I had before that been married almost 20 years. So that was the only life I'd really

known. And what that did for me is it took me outta my comfort zone, threw me into this new, who am I, what's going on? You know, what's life like as a single person. And what it allowed me to do though, was look at my old patterns of security and comfort and safety. And one of the things I learned in that process was I wasn't, we talk about intuition.

Dr. Jill Carnahan ([40:28](#)):

I have a really strong intuition, but I didn't trust it. I trusted just other people's opinions and I was just waffling around. And then the second thing was I didn't really value or love myself. And I was very hard on my, I could be very kind and loving to the world around me, but I was horrible to myself. So that what happened is that trusting my intuition, laid the foundation for me to have self-compassion and self love in a healthy way. And I feel like I had more healing with learning those things, dealing with my childhood trauma and ha finding trusting myself, trusting my intuition, having self-love and compassion because then I could show patients how to do it. And I could recognize in themselves, you know, it's funny, there's literally data out there. Some DeWar Professor VanderPol, and some of those guys talk about auto immunity as a process of our self-loathing cuz it's attack itself.

Dr. Jill Carnahan ([41:19](#)):

Right? I wouldn't say everybody has that, but there are a lot of commonality and breast cancer itself. We see women that are more like nurturing kinds. It's from the breast, the nurturing organ. But what happens is we're over nurturing to our loved ones, but we forget to nurture ourselves and we're actually not taking care of ourselves. So those lessons with autoimmunity and breast cancer became very profound healing of my own. And so now I can recognize if someone has an old pattern of trauma or distrust or lack of self-confidence or self-loathing. And I go to those places, I'm not the expert, but I know people they can go to, to help do that work. And I always, I literally write on a prescription pad, be kind to yourself because that right there is just so powerful. And sometimes like I, in my mirror, my bathroom cabinet still to this day, I have a little sticky note that says, what does she need from me today? And that's just a reminder for me to say, okay, I can actually have a need and fulfill a need that before it was like, take care of everybody else, not yourself. So these little shifts that may sound like not science based can be the most powerful foundations because nowadays when I see these complex chronic people, they've had all the good supplements. They've been to amazing doctors, but the work inside is where it really starts to show a shift.

Caspar ([42:31](#)):

It's so important. So little things, there's nothing bigger they say. And I totally agree. I mean, through all the different biohacks and therapies and technologies, I've used gratitude, meditation slowing down, people around me showing more love have been the greatest, most profound ones on my health at least. Now you gotta, you got a lot going on right now. I could see you have a documentary coming out. You got another book. Could you talk about those a little bit?

Dr. Jill Carnahan ([42:59](#)):

Sure. So it's interesting. I've been probably eight years ago I had on my heart, I'm supposed to write a book. It was kind of a divine thing that I just felt this. And I was like, who am I, I don't know what to do. I, yeah. Like all woe is me. And like, and then I just kind of got the down, like, you know what? This is like telling your story and there's more to come. And I waited eight years because I had a lot more to learn. And now it's finally in the process, it'll be published in February, 2023, it's called unexpected. And it's a, it's a, a finding resilience through functional medicine, science and faith. And what I do is bridge the two

worlds is I love science, but I also love, and I can say faith for me. I do have a personal faith, but it's bigger than that.

Dr. Jill Carnahan ([43:36](#)):

It could be any sort of religious, not religious atheist doesn't matter. It's something bigger than ourselves, greater purpose. For me, it happens to be partially faith, but it's bigger than that. It's like this intuitive versus the science mind, pulling those things together and finding resilience on a foundation of a bigger scope of medicine. And that's my story. And I write about it. That'll be out in February and then so stay tuned. And then the documentary, this was funny because I'm in the middle of writing my book and January, 2021 came along right in the middle of pandemic. We're all sitting at home and I literally was in my meditation spot and I had to download again. And I was like, people are on screens. I mean, they're not reading books like they used to be. And granted, I think my book will be read, but I need to, if I wanna impact.

Dr. Jill Carnahan ([44:14](#)):

And my desire is I don't care about fame or any of that. I do care about inspiring and impacting. And I thought if I wanna impact people, I need to be where they're at. So I thought, well, why don't I do a documentary now? This is funny. I have no experience. I have no like background in production. I had nothing, but it was just like, okay, well, well I know from experience, if I move forward with a vision or a purpose, if it's supposed to happen, the things will come together. Within a week, I had producer director, full team executive. Like they, they all came like, we love this, let's do this. And then Caspar, the best thing were like, I'm like, well, let's write up a budget. We need money. And then again, I just knew if it was supposed to happen, we get the money within three months, I had one single investor said, we'll give you the full amount. It was a lot of money and we got the film funded. And then we started filming May of last year. We're finished filming we're in the final. Like the we call it the picture lock right now, getting the sound. And we're hoping to get into the film festivals this fall, it's called Doctor Patient. And it also follows my own journey and, and some of the patients that I treat. So that's all coming out next year.

Caspar ([45:15](#)):

Incredibly exciting and congrats on manifesting all of that. You know, that's the power I believe of manifestation when you're truly aligned. Things happen in your favor, not against

Dr. Jill Carnahan ([45:25](#)):

How did this happen.

Caspar ([45:28](#)):

And this is from someone not only as a doctor, but a patient yourself. And that's the title. I'm sure Doctor Patient there. That's amazing Dr. Carnahan, where can people learn more about you?

Dr. Jill Carnahan ([45:38](#)):

Mm, well, as we know, both Instagram is great. It's just Dr. Jill Carnahan. I have so many post and articles and things. I put all kinds of information there and my website is loaded with 10 years of blogs, like weekly blogs and information on Lyme and mold and everything we talked about here, detox all free. So that's just my name, Jill carnahan.com.

Caspar ([45:59](#)):

Amazing. Well, thank you so much for being on the show.

Dr. Jill Carnahan ([46:02](#)):

Thank you so much for having me. It's been a fun conversation.

Caspar ([46:05](#)):

Absolutely. And for everyone listening, be on the lookout for Unexpected coming out soon as well as the documentary doctor patient, and remember to be kind to yourself, that's what I pulled out of this. In a toxic world. You can still thrive, but regardless, always be kind to yourself until next time. Continue writing your own healing story.