Key Genes In Your Mold Illness Treatment Journey - Part 1 Transcript

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Introduction and Mold Background

Welcome to mold, mycotoxin, and Chronic Illness Summit. I'm your host, Dr. Ann Shippy. And next we get to speak with Dr. Ben Lynch. He's the author of Dirty Genes and the founder of Seeking Health Supplement Company.

He truly is one of the most brilliant minds and really looking at genetics and these important pathways and how we can help our pathways to work better.

So today we're going to dig into methylation, the histamine pathways as well as glutathione. Thank you so much for joining us today. It's great to see you. Likewise, Ann. Yeah. Yeah.

So I know you've had quite a bit of experience with mold personally. So let's start out there. Yeah. Personal exposure to mold. You know, you don't really know about mold because no one talks to you about mold until you get sick from it or get exposed to it.

And you really wonder why you're not doing so well. And then you learn about it through the grapevine after. Unfortunately, you're pretty deep, deeply sick from. It.

So yeah, I have a number of mold stories because wherever you go in the world, there's mold. And with some few exceptions, I had some patients. Of of a. Doc actually.

Move way up. In elevation up in the Colorado to get away from. Mold. So I thought that was interesting. So I don't think mold likes high elevations, which is if you need to escape, that's where you go. No.

And I've had a number of patients go to Colorado or even Santa Fe, New Mexico, just to be in that drier climate, at least a little less likely to give their bodies the break and time to heal.

The people that can. I think it's a good idea. Yeah. So I was born and raised in Portland, Oregon, very wet. And then we moved to Central Oregon outside of Bend, Prineville, Sun River area.

And I don't. Recall any mold issues there. It was actually really a beautiful place to live. And I go there basically every year to visit. Now we got forest fires.

That's another issue. But for mold. I will I. Will share a patient story. This is after I've already been having a personal experience with it. But I want to start with this one because this one.

So. Oh, my. God. So I had a. When I was still a student at Bastyr, I was seeing patients. And. I had a supervising doc, you know, shadowing me.

Personal Mold Exposure and Home Problems

Of course. And this patient comes in runny nose, signs, congestion. She's saying, you know, I'd like to get this resolved and remodeling my home. And I think it's just dust from remodel is like, okay, sure, sure.

Give her the neti pot. Talk to her about dairy and gluten. And she's like, Yeah, yeah, she does all this super compliant lady. And. Comes in a couple of weeks later, still the same symptoms.

I was like, Okay, are you wearing a respirator? What type of work are you doing? She goes, I actually stopped doing the work because it's I just can't handle it.

I got to teach. And. I'm missing too many days of school. So it's okay. You're a teacher. She goes. Yeah. And then

all these supplements, all these lifestyle things, air purifiers, nothing's working.

And I was. Like, you know, have you where do you tend to feel good? What is the last time you felt good? Because I don't remember the last time I felt good.

It's been a while. And I said, okay, where do you feel? Worse goes, I can't pin it. I said, Well, where? Where you spending most of your time? She goes home. Work, car.

I said, issues in your car, your any water damage in your car. Now, this is a commonplace, by the way, that a lot of people forget. We had mold in our car.

There's there's another story and two to car stories. With mold and. Long story short, after maybe two months of seeing or. I said, so I. Would like you to go to your school and test your school.

And she goes, Why is that? I said, Well, are there any other individuals struggling with the same symptoms as you are? She was like, Yeah, if you actually I said, okay, go test.

She disappears. I don't see her on the docket for quite some time. I see her name come back. She comes back and she goes, Well, I have good news, bad news.

I said, What's the good news? Because I found the problem. So what's the bad news? I said. They found mold so badly in the school that they're almost destroying the building. Oh, my gosh.

Yeah. Yeah. So they helped you helped a lot of people by helping her find a big problem because. That's right. Then a lot of people were sick. That's right.

Yeah. Yeah. And and so when I was looking at schools for our oldest son, you know, you get all involved in which school, which place is best for living. And.

And so we toured this one school that was quite known for having a good academic program, walked in. Musty smell. Carpeted. I looked around for, you know, air intakes and stuff, and it's like I told the principal who was walking us around and said, you know, your place really smells musty and moldy.

And he goes, Oh, we don't have any issues. And I said, Well, you definitely have an issue. You need to get this checked out to this day. So hasn't been dealt with, still the same building, still the same mustyness, cause I couldn't go there.

So, okay, well, in there, I mean, it's even on the EPA website on, you know, what to do if you feel like there's a problem with your school. Like it's very clear your children are heavily affected, even, you know, their IQ can change and I'm old school so I found I think the EPA website is actually a good resource there.

I think that's great to know. Yeah, yeah. Yeah. It has to be an existing student patient situation, but. Yeah, it's, it's. I don't know what the school's going on now since my.

Kid at the time was. Six and now he's. Oh my goodness. 21. Yeah. So yeah. Well, that was really smart of you to, to go take a peek first. Yeah, for sure.

And you know, then we had mold in. Our, our home. And so when you're doing home construction. Home construction, you probably talked about this. You know.

So I'll just share that. We bought a home. Our first home was in North, so I'm in Seattle, Seattle's notorious for mold. And so we had a converted garage turn it into a master bedroom and I bought the house already that way.

So the nest, the garage was already converted into a master. So there was no garage in this home. And it was actually I bought the home for 189,000. Good luck finding it a house for that price these days.

And so. I was remodeling the room and making it better because it was such a dark hole and I didn't find any mold, I didn't smell any Mold. But I didn't change any of the drywall.

I just left the old drywall. And then I we had our bed up against a wall and we had our second son and he was born. And then he was fine for a while. And then he started getting just chronic runny nose, just prolific.

He had no vaccinations, he was breastfed. And he just. Had all these symptoms. It's like, what the hell? And my wife was her joints were hurting. I had some runny nose, but not terribly.

And one day I. I don't know. What I was doing, cleaning the house or changing the room orientation. I don't know. But I pulled the bed away from the wall, black mold along the entire back.

Wall where the bed was. And I was like, How in the hell did that happen? Exterior wall, not heated. And so you got to have maintain airflow. And then what I found is like, where is it coming from?

So remember it was a garage, converted garages, you have foundations that are go higher than the rest of the house. Typically with a typical house, you know, bedroom or foundation.

You have wood. And then you have drywall. And that's and then. You have the subfloor underneath that. And then you might have concrete, you know, way below that in a garage, you have concrete going a foot and a half up two feet, and then you have your walls.

And so they just slab drywall right over the concrete and the concrete had cracked so and it cracked all the way through. So the water was penetrating through the. The.

Concrete and got everything wet and then just I created a warm room and I pushed the bed away. So there was no airflow for drying and it was just a perfect black mold environment. So yeah.

And that was your first. So did you make that connection then at the symptoms that you guys were having or. Yeah. Yeah, yeah. And then so and then. You just it's so hard to get rid of all of it.

So that problem was taken care of. And then in the bathroom I just kept looking because the symptoms were still bad in there. Our bathroom always smelled just wet.

It just was very, very humid all the time. I was like, I leave the fan on. I open the window. There's two windows in here. The fan is going, Why is it always smell wet and it just heavy air.

Building Healthier Homes and Indoor Air Quality

And we had a solar light with a fan. So a solar tube brings in light because it was a dark area of the house. So I brought I was like, Oh, I'm going to create a solar tube, which brings a lot of sunlight into the house.

And then there was a fan kit with it and. The. I installed it and. The. Fans sucked in terms of power, a. Nice pun. But it didn't it didn't work well.

It didn't draw air very well. But I also noticed. That the the. Pipe was like this. So water was being held in a pipe from the condensation. So I replaced all that.

I got a bigger fan that helped, but it still didn't solve the problem. Years later, we remodel the bathroom and the entire walls were just moldy and it had to do with an exterior wall again.

So yeah, the entire tub was just black mold behind the tile. So yeah. Stuff is everywhere. So I know you at one point decided to actually do start fresh with new construction.

Has that been successful? Have you been. Yes, knock on wood. It has been successful. Our air quality in this

home is amazing. The materials used were good.

We built this basically from foundation up and there is a lot of learning curve on this and I had experts advising. Me. On certain things. So when you have rock faces on a home or brick.

And that's. Attached to wood, you know, I'm not talking like a total rock house or a complete brick house. It's there's a lot of facades being used in construction these days.

And so we have some stonework done on the outside of our home. And the one. Of the experts I talked with, they said, okay, you can have the stone on the outside of your house, but make sure that there is a gap between the stone and the wood or the rest of your home.

And it has to have a chimney of air to be able to pass through that. And our builders learned a lot because I was on their ass all the time about certain things.

And so they they basically when they shaded the house, they used a special fabric, which I forget the name material. And then they installed a two inch by half inch strips all along the exterior of our home before they put the siding on.

Before they put the stone facade on. And it's, it's been working really well. I haven't had any issues. That's good to hear. Yeah, it's it's quite a labor of love to, to get through the construction process and have it be successful.

Yeah. And it's, it's, you know, there's a joke out there which is shouldn't be a joke, but a, you know, a cheap account. It is expensive and expensive accounting is.

You know, not cheap. Yeah. So it's the. Same thing with builders. You know, our builders were expensive and I was sweating bullets about writing. The checks for them.

But it's, it's, it's a worthwhile investment because a home is it should be really cherished. So I would invest heavily in your home because you spend most of your life there.

So. You know, you could only be as healthy as your home. Yeah, exactly. Or as sick as your home. Yeah. And. You know, indoor air is is the worst. And Dr.

Stephen Janis, great guy and I hope he's doing well. His health. Was. Struggling from from possibly mold. And he he was presenting one of my conferences and he one of his statements that he always made was, you know, people are always concerned he's environmental doc or always concerned about the quality of the sunscreen we put on is what additives as I have it and they're they're deodorant and they're lipstick and so that's all great to know.

But you know, that is a micro area compared to your lungs. You're breathing 11,000 liters of air every single day. And if you're breathing 11,000 liters every day and there's mycotoxins and mold spores in there, you are getting massive.

Immune. Stimulating from that. And if you have massive immune stimulation, then your body is so busy fighting that that it can't fight any other persistent chronic infection.

It cannot provide the energy that you need to walk around. It cannot provide enough energy for you to think cognitively and perform at work or at home.

And and. You know, electrolytes require 40% of your body's energy at rest, which to pump magnesium and potassium into your cell. So imagine 11,000 liters of air.

I don't know. That would be interesting to calculate how big of an area that is and then the amount of antigen that comes in with. That and how much. I've always wanted to study how much ATP or the body's energy is utilized doing it during an immune response.

And I did do some research during COVID for fevers because fevers require huge amounts of energy. And that's why there's also febrile seizures during seizure, during fevers, because the body is you're supposed to feed a fever and starve a cold.

And I thought that was really interesting. Nobody taught me that in. School. Because the fever requires so much caloric evil, as you know. And in this is.

But we need the fevers to fight the infection, I think. Yeah, Tylenol and Advil and things. Right. So we need to let our bodies run the fever to fight the infection.

Yeah. And then if you have exposure to mycotoxins, you don't even have the ability to make a fever. Right? Because you're so depleted that your body. Cannot mount a.

Big enough response to fight anything. So not only are you struggling with the. Mycotoxins and the. Mold itself, but now how many persistent, chronic.

Low lying. Insects and are you struggling with that you would have cleared so quickly. Otherwise? So now it's just compounding and you just get sicker and sicker and sicker and. You.

Beat the mold. You know, you you actually let's say you completely beat the mold. You move, you get rid of it, you throw everything away. You basically walk out of your house naked and you shower in a new place, and then you leave and you move into your new home and you shave your head.

You know, you've got no mold spores anywhere and you net-a-porter the hell out of your nose. Kleenex, the whole thing. And but you're still struggling and you're still sick.

You know, adrenals are shot. You're you're persisting infections of amassed. You know, the recovery from the mold itself is as. Mitochondria poison the poison, the bile isn't flowing all the things.

Yeah, yeah. It's a great segway to get into one of your areas of expertize and that is how our genes can make us more susceptible. Yeah, for sure. Yeah.

So there's 18,000 genes in the human genome, give or take. So 18,000. 20,000 depends on what paper you read when you read it. Who knows? Maybe that's shifted to some other new number, and it probably has, which is really weird given that the Human Genome Project was done.

So I think you would know, like, right, isn't there like a perfect number? So it's like, do you have 2000 more genes than I do? I don't think so. So. Like, I don't understand why there's discrepancies.

It just shows you the infections in science.

How Mold Affects Energy and Immunity

Yeah, for sure. Yeah. And then so we have about 18,000 different genes. Right? So now. These genes are made up. Of, you know. Little basically bits, puzzle pieces.

And these puzzle puzzle pieces can create variations in the variations in our genes are what leads to, you know, survival of the fittest and natural selection and evolution.

So having genetic variations is actually the reason why species evolve. It's the reason why we have very different responses to things. Some people say, I don't understand why you're so sensitive, smells, what's wrong with you?

Another person will be supersensitive smells. And that could be environmental purely because their genes are just so overworked. And they've overworked them.

Or it could be a genetic variation that is predispose them to being supersensitive because they cannot process aldehydes. Their detoxification system isn't very good.

Their inflammatory responses supersensitive, you know. Just supertasters. Oh, yeah, super. Yeah. That's a genetic thing too, for sure. Okay. And bitters, some people love IPA beers, right?

And, and I forget the genetics with that IPAs. IPAs are super bitter. I can't stand IPA beers, I can't drink them anyway because they're gluten. But yeah, I mean some people love IPAs and some people hate them and I think that's a genetic variation thing.

Interesting stuff. Yeah. So don't think that genetic variations are bad, they're just different. And if you identify which DNA variations that you have, then you know your strengths, you know your weaknesses and you know the areas is like, Oh, I don't really need to focus on that.

But if, let's say you inherit a genetic variation that makes it that you're super sensitive, your immune system is extremely on guard sake. If, if it's like if you're walk by a car and you're two feet from it and it goes, chirp, chirp.

Yes. It's like, what? Now the lights flash and you go by other cars and just bang on the. Hood and. Nothing happens. And it's got a car alarm built into.

But these other ones are super sensitive. So it's like those super sensitive cars that you walk by that chirp and lights blink and you're not even a couple of feet away.

That could be your immune system and other people's immune system. You got to bang on the hood. Do you even get anything coming out? That's a great analogy. Yeah.

So in my wife's. Oh, my gosh, hers is just on a hyper alert. All the time. Just all the time. And, and and then you. Compound that with genes that. Don't.

Eliminate free radicals very well. Now you get a body full of these free radical compounds, because when your immune system is triggered, it releases these free radical compounds, reactive oxygen species, hydrogen peroxide, superoxide superoxide proxy nitrate, nitric oxide hypochlorite, acid bleach.

Your body actually releases this stuff in order to kill its target. So your immune system identifies the target. It stimulates your body to make all these different things and it uses your oxygen, which you would actually use for ATP and it shuttles it to make these reactive oxygen species.

And then glutathione helps your body get rid of all those things. So if you mount an immune response to mold and you have a hyper immune system genetically like my wife, so her TNF Alpha gene super active TNF Alpha is like that, one of the main genes associated with inflammation.

And then there's cytokines that trickle from that. And I sucked in immunology. So. I just did not care about aisle seven and I all ten and I and 12 and 13 is like, just give me the basics.

So yeah, the. Basics is you got TNF Alpha and it, it will sound an alarm and I'm probably going to mess up a lot of things, but there's, there's other cytokines too that are very inflammatory and there's other cytokines that are not so inflammatory.

And they're. Like. You know. Chill out immune system, calm down immune system. I'm good at that. I don't actually support your immune system to calm down as well.

Vitamin D as well. That modulates your immune system. So my wife has a reduced ability to calm her immune system down. She has an enhanced ability for immune system to to get nuts.

She's the chirping car. And then she has a heightened ability to create histamine. She has a reduced ability to clear

histamine, which is also associated with immune response.

And then. She has. A reduced. Vitamin D receptor density. Test. Yeah. So I mean, and she got she got sick when she was 17 with juvenile rheumatoid arthritis.

And basically, I think what happened is either there was mold in the school or she in Russia. Where. She grew up. And then on top of that, she got an infection.

And then it just. You know, her immune system just went nuts and you get an autoimmune disease when your immune system is attacking everything. So so those.

Those are some you know, I didn't talk about too many specifics genes. And I know a lot of people are saying, well, what about Image Afar? Because you're the image of our guy.

Well, empty each of our does. It is an important gene. It's kind of like the hub of the entire methylation pathway and the entire methylation pathway.

That is just another major biochemical process in your body that does a lot of different things. A big one is for methylation as it turns genes on and off.

So you can methylated gene and some genes will turn off on for methylation and some genes will turn off for methylation. So as it's kind. Of a a trigger to turn genes on and off, and if your your genes are turned off, they don't make the enzymes needed to perform a particular function.

So imagine your genes as something that has a particular job to do. And if you're running a business and you have a customer service person and you have a warehouse person, you have a quality control person, I'm talking about my business that I was like, Yeah, I know.

You know, and. You've got your accountant and bookkeeper and you're like, okay, well imagine two of those positions and they get sick or they go on vacation.

Well, what happens is your business is starts scrambling and other people from other departments step in to try to compensate.

Genetics, Methylation, and Detox Pathways

But sometimes there's no cross training, meaning that, you know, accountant, bookkeeper doesn't know anything about customer service because they're just geeks behind a computer screen that they don't want to interact with humans.

And so they're horrible with customer service. And so now other things start falling apart. And so the same thing with your body. If you have 18,000 genes and you have genetic variations that make you more susceptible to have a heightened response to Mycotoxins. And.

Then your immune system goes bonkers. And so, okay, yeah, we, we sounded the alarm here. But then you have a reduced ability to recover because you don't you don't have to go to town that's needed to to calm everything down or the vitamin D to calm everything down and your low and go to down because some doctor told you to take Tylenol.

And, you know, you're you live in Seattle and there's no vitamin D for like six months in the sky at all from the sun. Plus, you you've been told to wear sunscreen all the time, so now your immune modulation is gone.

And so. You know, you don't have all these other genes to step in and help you out. And so that is a huge, huge problem. But going back to. Yeah, go. Ahead.

I love about your work and what you teach about all of these different genes though is the work arounds. So yes, when you get in this situation where there's all this turmoil in your body, we can we can use some of the genetic knowledge to help, to know which actions are most important.

Absolutely. Yeah, great point. In fact, it happened to me yesterday. So I'm I'm a jump in the car to return our boat trailer from vacation. I borrowed it from a company and the company is an hour away.

So I was like, I got to make this drive. And I go on Google Maps. And they start having me take the main highway. I'm doing all these side roads, what the hell is going on here?

And then traffic is horrible. I finally make it home. I don't even go back on the freeway again. And I and I almost went on the freeway anyway. I was like, Maybe it's set to begin.

Or drivers, because I have a beginner driver in the house and they avoid fast roads. But I come home and my my oldest son goes, Hey, Dad, did you hear about the semi-truck that exploded on the freeway?

Oh, my gosh. I was like, Oh. That explains why. So, you know, your jeans, you're by design. Imagine if there was only one highway through Seattle and that was it.

Right? They would just it would just be a mess. So there's there's alternate routes. And I took an alternate route yesterday. Your body has redundant pathways.

You have main pathways for things, but you also have redundancies built in. If we did not have redundancies, we would not be on this. Planet living today.

We'd be glad that you're bringing this up because a lot of times there is so much more resilience that we can be tapping into. Yes. Why these back pathways?

Yeah, for. Sure. Yeah. I mean, glutathione isn't the only game in town you have. You also have catalase. You know, catalase doesn't isn't as pervasive.

I don't think pervasive is the right word, but my head is full. Of. Forest fire smoke. So I'm not as clear thinking as I should be. You're doing great.

Yeah. So. But, yeah, you catalase isn't so we have genes. You also have to understand where the genes function. So go to find functions of genes function in many, many, many places in your body.

Probably everywhere. And mitochondrial cells as well. Mitochondrial DNA. Doesn't. Well, you. Don't want to get involved with that. But yeah, it's is everywhere catalase is is less less predominant.

There's the word predominant. So but it. Is still a backup. You can still function, but you're not functioning as well. So and then with histamine, there are primary detoxification pathways for histamine.

And if those get clogged up, then you're kind of struggling. But there is a minor route through acetylation and 82 that will help you out a little bit.

But I mean, come allergy season or cold come mold season when it's wetter or more humid, then your histamine pathway gets overwhelmed because you're not to gene, let's say it's a slow AC later and you're exposed also to car exhaust.

And you also have to understand this is another key point. Genes that produce enzymes and enzymes can have more than one job. So sometimes you can have like a role in your business where the person and warehouse can also do customer service really well.

And they might also be a very good project manager. And who knows, they might be also really good at

bookkeeping. Okay. They're they're multi talented.

So those types of genes are wonderful for you because they can handle a lot. And the problem with those types of genes that they they handle a lot. And if you tend to rely on them and overburdened them and you down, you push them down to the ground, then those other supportive genes they don't support as well, and then you start getting sick.

And so I say that for folks like, Oh yeah, I can drink a lot of alcohol way more than other people or yeah, I can, I can I can walk down the aisles of Home Depot.

In fact, I can work in the pesticide section at Home Depot, not have any problems. It's like, okay, do that for a year or two years and you're going to start having problems.

So you can't overburden the genes. And but they do have the ability to do multiple different things as well. So with the histamine genes, they there's like the mouse gene helps process histamine but also processes serotonin it as well and norepinephrine and epinephrine.

So and then you have CMT gene. CMT supports estrogen metabolism and dopamine and norepinephrine. So these you know, that's why PMS becomes such a a problem for some women because a CMT metabolism is surprising to support the metabolism of estrogens and opening of norepinephrine and the women might have issues with detoxification from the mycotoxins, she might get horrible moods prior to her menses, and it could be because her CMT is so much back pressure from excessive amounts of estrogens and excessive dote means and what have you.

So I love that. So the Conti polymorphisms are so common and like to explore that one a little bit. Like if you know you have those, what can you do about it?

Yeah. So in my book Dirty Genes, I talk about CMT. So as CMT is a major, major player in emotions, cognitive abilities, focus, learning memory, cancer, cardiovascular disease and health.

You know. Estrogen metabolism. That's why it's associated with cancers at heart. So it's a major player. So there's there's CMT, whose job is to, well, again, process estrogens, dopamine, norepinephrine, epinephrine.

And so imagine if you have high levels of. Of. Dopamine and estrogen, you can become a rage monster. You just and you can't control it. And it's it's like, oh, here's mom.

She's it's that time of the month again. And everybody has all these jokes now. It's no joke because. You know. The woman does not she can't control it.

I mean, it's like it's happening. You can try to control it, but imagine if you're just so pissed off. You're just, I got this, I got this. And if someone just keeps needling you, you're just going to blow.

So with CMT, a big one for that is first to reduce the load. If you know that you are going to have a tough time, certain periods. Of the. Of the month, then you need to reduce the stressors.

Can you reduce the stressors while you can? But are people going to help you out with that? Can you reduce the stressors at work? Can you reduce the workload?

Do you have the ability to say no? The project comes across your way. Some people with slower CMT, they tend to be very good at working and getting things done and they're very driven people.

And but that's a problem because if you're very driven person and you're a woman and you're dealing with these things, then when your estrogen levels spike prior to ovulation, now you got estrogen influencing your mood as well and you need to back off.

So first is awareness. So if you do genetic testing, you find out that you have a slower CMT. You say, okay, during this time of the month, I need to give myself more me time.

I'm going to schedule a massage. I'm not going to take on these big projects. I'm not going to do X, Y and Z. My kids going be doing chores around the house, not me.

I'm going to go on a date with my husband, you know, things like that. So first is awareness and there's there's been some individuals. So I've been doing genetic testing for a long time.

And there was one woman said, you know, I've been struggling with a sociology my entire life and I got an empty GFR and I have a slow now. So her neurotransmitters is like jacked. And.

What you get stressed out she goes, I lived in New York City forever. She goes, I'm after my genetic test. And I heard you say, Sometimes you just got to pick up and move.

She goes, I bought five acres. I'm out in the country. She goes, Life has ever been better. That's interesting. Yeah. I was like, Good for you. Good for you.

So your uphill battle. Yeah. So I mean, you know, you're you live where you live for various reasons. And I'm, you know, I'm struggling here in Seattle because for various reasons.

And so if your place. Of of. Residence is not conducive towards your mindset and your goals and desires, then you should probably get up and move. So those are the big picture.

Now, let's say, what can you do nutritionally, Ben, because I can't just pick up and move. Well, lithium is a fantasy stick. Very, very good. I know there's a lot of fears.

You know, you hear about lithium and prescription meds, that's a different game. And, you know, that's a that's. A use that with patients a lot. Yeah and I just to explain it's like taking magnesium, zinc, selenium and we don't have a great way to measure it like some of the other minerals.

But the soil and the water, everything is depleted in a lot of the areas of the country. So a lot of us actually need some. Yeah. Yeah. And so yeah, lithium is just fantastic.

There is there is one time when my son came down the stairs, he was studying for a final exam and I'm in the kitchen. I look up and his hands are on the railing.

His dad, I need something. I think I'm having a panic attack. Oh, like, dad, dad, it's like. Okay. So I gave some lithium and some herbal adaptogens and adaptogen sake, usually a lot longer to work, but this formula also helps nip it in about a little bit.

But I knew he needed lithium because lithium can work pretty quickly.

Histamine, Homocysteine, and Glutathione

And so I gave him the lithium and this stuff and he went back upstairs and started studying again and he tells that story to his friends all the time.

And he's got buddies who had panic attacks. And and so yeah, he he knows. And it's, it's funny. It's it's it. It's not funny. It's it's actually great.

So he he's part of a fraternity and at Cal Poly in San Luis Obispo. And and so he lives with like 11 other guys and they have a wall of signal supplements.

That's just a wall. Sounds similar to one of my kids. Yeah, yeah, it's. You. Know, they're all have their regiment in

the morning and, you know, I. Just send it all down to them. It's like that.

We need another order. It's not. I need it. I need something. We, my kids place orders directly. They keep me out of the loop. They have the open credit card.

So it's it makes a difference for them. Oh, my gosh. Supplements. The key with supplementation is a supplement is defined as to add to or enhance. Okay.

That's why I led with the lifestyle first because. You you sometimes. You can't lead with the lifestyle, but you really should try and the environment as well.

You know, I'm sitting here breathing smoky air. I got my air purifier going, but it's still it's still just bad. Sorry. Yeah. I mean, it's just there's just hazy out there.

Sun is red. Yeah. So anyway, you should always lead with the environment and supplementation is very, very effective. But you know, I took good advice on this morning and usually when I take it down, I just feel my head go clear and then I drink electrolytes and it just finishes a job.

And I'm good to go today. I had to coolest down just like. E oh. Drink electrolytes. Nothing was like damn. So here I am breathing toxic air. And if you're in your home or workplace or your car or wherever or in a hotel and you keep inhaling mycotoxins that go on, it's just going to just do what it did. To me. It is like.

You know, it's, it's, it's like it's not going to do much. So but sometimes. They stop soon. Yeah, you can rebuild. No, we're, we're stuck. Stuck in it for a few more days.

So yeah, all. The windows are closed. It's hot. Yeah, it's bad. But. You know, it's, it's similar to mold. You can't get away from it, so you have to.

To move. From these environments. So now Seattle, when it's hot, you got the forest fires and when it's cold and damp, you got the mold. Say, Come on now.

So different solutions there. Yeah. So what else do you like besides the lithium and the nutritional side? Like you said, magnesium is great. Adaptogens.

I love. You. Know, herbal adaptogens you got rhodiola and you've got your Luther carcass. Siberian ginseng is fantastic and it's nurturing as well. PDX Ginseng is very stimulating. Hot and I've got lots of books on herbal medicine behind me.

I used to be very, very good at Aveda and Chinese herbal medicine and my skills in that area have gone down. So but I always have to reference them when I'm formulating. So.

But I like those too. Licorice is great. It's interesting. Adrenal cortex can be very useful as well, but you would think, well, adrenal cortex supports cortisol.

It's like, yeah, but if your cortisol levels are really low, you're going to be struggling, your immune system is going to be flared, know your your sleep is going to be all messed up.

So but you have to be careful with adrenal cortex because it works very quickly and. You only need it for a short burst usually unless you're really, really depleted.

So I love taking adrenal cortex if somebody is grinding. So these slower folks, they grind, they go to the gym in the morning, they wake up early no matter what.

They go to work, they grind, they come home, they do jobs around the house, you know, and their grinding, grinding, grinding. And they they don't take vacations.

Now their adrenals are shot or sucking down the caffeine, which further complicates the problem. Now they're losing magnesium and other things. Yeah. So, you know, it's magnesium.

Three, eight, eight. Fantastic for sleep. But I do like. The wow major. Brain fog. Where was I? I was just talking. About a particular. Other adrenal cortex.

Yeah, the adrenal cortex. So my rule for adrenal cortex, if you are waking up earlier than you want to by a few hours. So say your alarms at seven and you're waking up at four consistently and you stare at the ceiling and you have to go downstairs and get a bite to eat and you finally fall asleep at six.

Alarm goes off and sleep cycles around 90 minutes. Now you're really struggling at seven to try to get up. You're just lagging, literally lagging. So that is a perfect time to take adrenal cortex.

So if you if you wake up early, early, early in the morning and you're waking up tired, you're taking adrenal cortex at the time, you want to wake up ideally.

And then because that's where your cortisol spike is, is when you wake up. And that's useful. Now, if you wake up. So let's say you take adrenal cortex for about a week or five days and you're like, you wake up one morning and before the alarm at 658, alarms at seven.

You're like sweet. And you just pop out of bed. Don't take adrenal cortex. You're good, okay? You're good. If you take adrenal cortex now, you're going to become a rage monster and you don't want to do that. Be too high.

You get too high. So you don't do that. So you just skip it. And then it's like, Well, what if I fall off the, you know, if off the wagon again, then you take adrenal cortex. Okay?

So that's, that's how I use adrenal cortex. And. And it works really well. And I also used it when I go traveling different time zones. So I would, you know, you know, go to Japan or England or what have you.

And I would. Take my adrenal cortex and my B12 and methyl folate, you know, upon waking and that would that would just get me in the zone instantly. It was great fact, actually, that I could be using some.

I think it can. Happen right now when I have it on my desk looking for it. But so anything more kind of in the histamine pathway and the um. Yeah. Before we on to greater thiamin.

Yeah. Let's do so. The histamine pathway is not as simple as a lot of people make it out to be. It is simple once you see it and understand it and how it all works, then it's there's you're good.

But a lot of doctors look at histamine and say, oh, your high histamine, then you're not methylated very well. Okay, that, that. That, that's might be valid.

So and. Reason they say that is because histamine the primary remember there's multiple genes that have multiple jobs the primary route for histamine is to go through a gene called H and empty and H and empty.

Listen to the name histamine and methyl transferase. So it tran for a methyl group. From. Sammy which is may help help made by the MTA of our gene. So that's connected.

So the MTA of our genes supports the methylation cycle, which all it does is just make this methyl group and, and recycles it and makes it again and recycles it, makes it again so it can give it away.

And so the empty each of our gene helps recycle the Sammy compound and that Sammy binds to the h and empty enzyme and that supports the H empty enzyme to function.

And then when that functions, the methyl group binds to the histamine. So histamine comes into the h an empty enzyme and it comes out as an methyl histamine.

So it just slapped a methyl group on it. Now empty of Jabbar says, Oh, I got to recycle the Sammy again so I can give it to another, you know, help give it to another h an empty enzyme so it can process the histamine and convert it into an methyl histamine.

And you say, Oh, I'm done now you're not done. So you have to have a healthy methylation pathway. You have to have a healthy, empty GFR enzyme in order for that to happen.

And a good check for this, folks, is homocysteine. Check your homocysteine levels. If your homocysteine levels are between six, seven, eight, that's pretty good in kids.

It does tend to be lower. So don't don't tend to get freaked out because kids are using their methylation system more way, way faster. So their homocysteine levels are lower because of it.

So but if you see a lower homocysteine, you need to eat more protein. And people don't talk about this enough, low homocysteine is a problem. So I'm going to just detour a little bit on this.

So if you're if you're an adult and your homocysteine is for and people who are struggling with mycotoxins and mold probably have a higher prevalence of B may I shouldn't say probably do I would say may have an increased prevalence of low homocysteine because homocysteine is not a bad compound.

Homocysteine becomes your go to file. So we'll get it. We'll get to go down here in a second. But for methylation pathways, you want to make sure that your homocysteine is between six and eight.

So ask your doctor to check your homocysteine. Most doctors will not do it. If your doctor won't do it, find a different doctor. You're the boss. Don't forget you're the boss.

You're the one hiring and doing the firing fire fast hire slow. That totally agree. And then there are companies that you can just go directly and do room testing through like any lab tests now. Perfect.

Yes, that's great. That's that's actually great advice. So but so now you've you've if you have the histamine, you're methylated the histamine and you think, okay, well, yeah, the body will just get rid of it.

I won't have any more histamine symptoms. No, no, no. And methyl histamine, if it accumulates it can tell that the empty enzyme to stop working or. Yeah, but why would it accumulate.

Because there's another enzyme involved. And. I need to check my own biochemical pathway because I always forget the next one is now a grape. So a monoamine oxidase nobody talks about monoamine oxidase or MAOA in regards to histamine is like, oh, that's serotonin.

That's related to serotonin is like, well, it is related to serotonin, but it's also related histamine. It does different jobs. HMG has one job and one job only.

That's the process. Histamine. MAOA has multiple different jobs, tons of different jobs. And so if if you're in methyl histamine gets stuck and it can't go through the Maui enzyme, then the methyl histamine accumulates and it shuts down the agent empty from functioning, even if you have a healthy methylation pathway.

So when your doctor says, oh, you're under methylated because you're high histamine and they give you Sammy or methyl folate or methyl cobalamin, and you find no benefit at all or try methyl glycine or choline or creatine or what have you.

None of those really help you at all. Maybe if it's a small amount, then you're probably your Maui enzyme is potentially clogged. Most likely clogged.

And so what what nutrient does that that's riboflavin and riboflavin is also associated with recycling blue to file. So this conversation of methylation and glutathione works really well because.

The. Glutathione pathway is connected to the methylation pathway. That's why that we keep crossing these two things. And so when you understand the methylation cycle and what it does and glue on pathway and what it does, you you understand so much and you might have a headache from this.

Practical Tools: Nutrients, Lifestyle, and Environment

It's okay. Just listen to it again and read the book Dirty Genes Simple. What I love, though, is as you're describing it, this is really complex biochemistry and genetics, but it's what's so clear is the association between toxicity, the environment, our genes and nutrients. Yes.

We really need to be focusing on getting the right nutrients in to really help these pathways to work more optimally. And knowing the genes and knowing the nutrients can really be great tools in the toolbox.

Yeah, it's phenomenal. And I gave a talk in Canada when I was first starting out. It was probably 2014 or 13 and I gave a talk on Methylation and R and the nutrients associated environmental chemicals and all that.

And I. I'm at the podium about to step away and this older gentleman comes up. And. They're all doctors and it goes, I just want to say thank you. I said, Yeah, you're welcome.

He goes, No, no, really, thank you. I said. Yeah, we welcome. It is no, I mean, thank you from a naturopathic medical perspective, because what you're doing is you're validating and you're you're scientifically proving the the importance of lifestyle, environment, mindset and nutrition all at the same time.

I was like, Oh. Yeah, you're right. I never thought about it like that. So it's it's incredibly important. Yeah. And you really have been a pioneer in looking at these pathways and how they all work together and, and the genetics.

So I'm, I'm so enjoying. Yeah, it's, it's, yeah, it's. Been it's been very difficult because I was when I was reading the research on, on methylation in industry fr you know, I was just like everyone I was having the headache, I was lost, I was confused.

I don't understand why I could just couldn't give methyl folate to everybody didn't get it. And then I finally got it. And then, you know, you go down another rabbit hole and then I say, okay, I just got to start writing these things down.

And I literally took pieces of paper and started writing them down. And those writing them down became pathways which I use for teaching. And to this day I still use them.

They come off referencing it right now. Yeah. So you can't remember all this stuff. It's just not it's not possible. The body is so intricate and complex and beautiful that and it's never ending.

And I remember the first time when I was I. Would. Write, I would make a circle and I'd have homocysteine down here. I glued my own down here. And then I had, you know, messing with finding an empty GFR and I drew it all out.

And then I had methyl folate and methyl cobalamin histamine and all that stuff. And. And I, I realized that the thyroid was so central to the methylation pathway.

That I was like. Oh my God. I literally put my hands on my desk. I was like, that is beautiful. And what, what learned was your methylation cycle member, which you need to process histamine and you need to turn on genes and turn off genes and to clear a lot of other things too and make things if your methylation cycle is low glutathione, if you have low growth on your body, your methylation cycle does not function in a very important manner.

It just stops. It's like, well, why. Would it do that? But it. Stops. And then it will it will drive the homocysteine down to make more glue that I'll.

I was like. Oh, my God. So homocysteine is a key marker for well, a major key marker for seeing if your methylation

pathway is working really well or not.

If it's high, then things are stuck. You're not making good. If you're not, you're not you're not doing a lot of things. But and when I realized that the body will slow methylation down in order to preferentially create more good at my own, that tells you how important good amount is.

So. So let's dig into that a little bit. Yeah. I think, you know, in this segment we've tossed around gluten quite a lot, but we haven't really explained and and it really there way why it is so important.

Yeah so if you've if you've been to the doctor and you've had heart issues or pregnancy issues or what have you. And you have a. Good integrative doctor and they've checked your homocysteine levels and they were elevated.

You, you, you tend. To have a, a negative association with homocysteine is like homocysteine is bad. I need to lowered as much as I can know even lab tests companies if is greater than 15 micro molds per liter or whatever it is.

That's a high level. Well, 15 is is way too high. It needs to be six, seven, eight. That's pretty good. Seven is great. But six, seven, eight. Yeah, you're good.

You know, nine, ten, you start you got to start improving some things, maybe reducing protein intake, maybe taking more than. What have you. But homocysteine isn't bad.

Homocysteine is a starting point for your glutathione levels. Okay, so. Have that mindset that histamine is also not bad. Don't think that you have to clear out all your histamine.

If you clear out all your histamine, you're going to be dumb. You're not going to be focused. You're not going to be awake. Your immune system is not going to respond to things it needs to respond to.

If you get bit by a mosquito or or something, you won't have any welts there won't be itchy, but you also won't be processing those things. So when you list those things again that the symptoms of low histamine.

Yeah dumb tired inability to so dumb tired inability to have an active immune system, erectile dysfunction, lack of orgasm. Those are those are all. Said yeah you just gave the best example there because sometimes when people are addressing the histamines issue issues they way over correct.

And those people feel horrible. Right. So here's an example. Our son. Got stung by a bee. Or a wasp in our yard here at home because I don't spray chemicals on our grass.

We have clover all over the place and we got the white little clover and we have honeybees all over the place, which is great. And our neighbor, you can see the line of our along is our line, our lawns connect.

He doesn't have a weed in his yard. And. It's his grass which is dead. And the kids run play football from our yard in his yard because he's a great guy.

Let's run in there. But the kids just hate on his grass is just doesn't feel good. Ours feels great and it looks great. But we have called over So he stepped on a wasp stung as fighting is like, oh, crap, that hurt.

And then we go camping. And if you get if you get an insult into the same area repeatedly, your immune system is on hyper alert. And so he got stung again by a wasp, literally in the same spot, and his foot swelled up.

And, I mean, I could do the edema test. I put my thumb below his ankle and, you know, I could see my thumb printed like down and you got some swelling.

And and so. You know, he didn't have any breathing problems, but I was like, you know, our camping buddy has had some Benadryl. I it takes some Benadryl, which is, you know, antihistamine.

So was this. Not make this worse and get your leg elevated and I massaged it. And what have you put a sock on there as well? And then I gave him some of my histamine supplements.

And. Then he he woke up the next morning and I could just tell you was just dragging. Just dragging. I was like, Yeah, I think those antihistamines got you.

And he goes, Yeah. He goes, Dad, I just feel stupid and I'm so tired. And so what I did is I gave him some adrenal cortex, but what I should have also done is gave him some, you know, we didn't think we had it, but in that situation, that's when you want to actually eat some histamine, has some kombucha, has some orange juice.

Have some, you know. Something that's higher histamine levels that you would usually avoid. Yeah. Yeah, exactly. So if you're struggling with these high histamine symptoms and you have been for a long period of time and you're saying, oh, guy, I think maybe I swung myself too low because you're describing me to a t.

It happens quickly. Last night I took one of my histamine supplements. Just. To, I don't know, just to play with it because my wife needed it. And with the fires going on, I'm sure your immune system's a little cranky.

Yeah, yeah, something. And so I was like, Oh, what the hell? I'll just take it and have a good sleep. Because if you have too much histamine, you don't fall asleep, you stare at the ceiling, and I have a slower empty java, so my histamine pathway can also be clogged.

So I was. Like, What the hell? I'll just take one serving size as two is not as strong and so low histamine, you'll fall asleep. In fact on the back of. Of.

Antihistamine packages, it's like Sudafed or what have you. It says right there, warning, do not appropriate having machinery or what have you because you might this will cause drowsiness.

So anyway. Yeah, that's that's the lowest mean side of it. But.