Introduction and Speaker Background

– Welcome to another episode of the Environmental Toxicants, Autoimmunity and Chronic Disease Summit. My name is Dr. Ed Levitan your host for today's episode and we are extremely privileged to have Dr. Miles Nichols.

He is a functional medicine physician specializing in lime mold illness, gut thyroid and auto immunity. After Dr. Nichols personally struggled with chronic fatigue, which we probably should talk about in his early twenties, Dr. Miles dedicated himself to figure out the root causes he suffered with and recovered from thyroid dysfunction, auto immunity, gut infection, lyme confections and mold illness. So a lot of stuff, Dr. Miles and Dr. Diane Mueller co authored how to use your mind to heal your mold and lime and stress resilience. He also founded the Heart, excuse me. He also founded the medicine with heart Functional medicine Clinic in Colorado, as well as the medicine with Heart Institute that trains other doctors in functional medicine.

He is regularly featured in national conferences, Professional Associations, podcasts and summits. Dr. Miles. Welcome. It's really privileged to have you. – Ed. Thank you for having me here.

– So were going to have a discussion on a really cool subject because, so it's gonna be microbes and mental health. So many people struggle with both those things actually. But how do you, well, first, I guess let's start with, how did you get into this?

Your bio gave us a little bit but tell me, maybe start with how, why, why are you doing this work? How did you get here? – Sure. Yeah. Well, I grew up with a father who was a doctor and had his master's in public health as well as teaching in a medical school.

And he was working on policy for changes in the public landscape of medicine. He founded a rural health clinic that took mobile clinics to rural areas and gave basic checkups to people who needed them. He became a politician and started working on public health policy from the political angle. He became a state legislator and a state senator. And then When I was 15, I was babysitting for a friend of mine and the phone rings. One of those old style phones like Grandma's phone or something that got cream on the wall. Big thing I answered the phone and someone from my family's church was calling saying something's happened.

Your dad's in the hospital, you're gonna have to go immediately. And it turns out he had passed suddenly and unexpectedly. And that threw me for a loop because he had top notch medical education, public health education. And yet it was a surprise.

It was a shock. No one thought coming. We didn't have predictive preventive things in place in order to have a couple of years notice. It just happened all of a sudden, didn't have the chance to say goodbye.

Didn't have the chance to do some of the things that I would love to have done if we had known that it was coming or even better to be able to prevent it, to be able to help him. Because he was really at the pinnacle of his career. He was doing amazing work in the world.

He had achieved State Senator status. He was starting to pass policies are really important policies and he could have done so much more good in the world if he had more time.

And so that that was the beginning for me of really feeling like I need to do something to help people to be able to live their mission, to be able to live their purpose, to be able to do important work in the world. And I have important work to do too.

I got kind of as a child, this sense of that I can make a in the world inspired by my father and also that I need to do it in a way that's sustainable.

And that I'm having the self care, the mindfulness, the stress resilience, which is why the title of the first book in

order to make that last and make myself not have a family tragedy like happened in my family and help others to not have that too.

So that was part of the beginning for me and I had a history as a child of asthma and eczema and some strange health things that were going on that I didn't understand completely at the time I didn't think much about. And then later on I had recurrent strep throat over and over and over and over again.

How Personal Health Challenges Led to This Work

And it was always, this were weird, rare strains and I'd have lots of antibiotics. And so By the time I got into my early 20's, I was struggling with chronic fatigue and having a hard time getting through school. And I got called into the principal's office.

It was nearly the end for me of schooling and I it was a wake up call. I had to do something. So and I've been to the doctor, they had said nothing's wrong. And so I had to just take it into my own hands, start to research, investigate, find other mentors and functional and integrative practitioners.

And it took a long time. But eventually I was able to through a combination of practices, meditation practices, mindfulness practices, breathwork, cold exposure and through functional medicine labs.

The right labs, the right tests, I discovered I had thyroid issues and autoimmune issue, co infections from that were chronic and systemic in nature and talks.

And I was living in a multi place and had the genetics for accumulating that talks in and, and, and that really because I had such brain fog and because I had such difficulty with my energy, little by little I became very passionate about.

And I started to see research based links between brain and cognitive symptoms that includes mental health issues like depression and anxiety, as well as brain fog, cognitive decline, memory issues with microbes and microbial infections with toxins and the environment like mold toxins.

And that's become just a huge fascination to me because I, I started college and contemplative psychotherapy with an emphasis on somatic psych. And then I did a year and a contemplative psychotherapy graduate program before I moved on to doing medicine. And that really is something that I, I wanted to bring back into a bigger approach, a more mind body together approach. And not just look at the counseling side of the mind, not just look at the body side of the neuropsychiatric drugs, not like really look at an integrated whole perspective on brain health, cognitive function and mental health. – Cool. So I mean that obviously you just gave a lot of water. So let's let's start with maybe how do, what is the connection between microbes, the microbes or I'm assuming you're talking about the microbiome, the bugs in the gut and mental health.

There are two different parts. What are you talking about? How are they possibly connected? – You actually have a broader definition for microbes? I'm talking about microbes in the gut, the gut microbiome and systemic infections like Lyme and Barton Ella and Busy and garlicky. And I'm also talking about environmental microbes like mold and bacteria that can produce talks and that can then be breathed in and can impact the system. So very a bunch of different angles on that, primarily gut microbes and then systemic infectious process and then environmental. So when it comes to the gut microbiome, one of my favorite studies is a study done by uh psychiatrist who didn't neurologist, actually who wasn't ever thinking that he would study gut microbes.

But he started to and found that they took two groups of mice and they gave one sterile broth and they gave the other lactobacillus rahm Nanosys feed and they subjected both to a stress test. After some time for mice.

It's a bowl of water. They don't like water, put them in the bowl of water. They're trying to swim, they're trying to get out, but it's curved. They can't get out there swimming, swimming, trying. And the group that had the sterile broth swam for a minute, two minutes, three minutes, four minutes.

And then they just kind of gave up. They didn't have, they floated there and, and they just like we're not trying anymore. And then what they did is they took the other group that had the lactobacillus prognosis in its feed and they had them do the same stress test and they were swimming the one minute, two minutes, three minutes, four minutes, five minutes, six minutes.

And they were still not giving up. And this was dramatically different. So they stopped the experiment at six minute mark. But this was a really interesting thing and they measured some things.

They measured some of the corticosteroid, which is the like cortisol for mice. The testosterone is like a stress hormone for them. So both groups had elevated corticosteroid. Both groups had increase in their stress response. Obviously, they had a water, they don't like water. But what was different is that the group that had the probiotic had intermittent gabba increases.

Gaba is a neurotransmitter in the brain that's inhibitory and relaxing in nature. So it was like they had this stress response and then a relaxation response and then a stress response and a relaxation response regulating their stress response just enough to not burn them out and make them give up and let them continue to have a managed a resilient stress response rather than to intensive a stress response that lead to burn out quickly. And then what they did is they took it a step further and they said, well, why is it that this bacteria in the feed is making them have more gaba in the brain? Because God is made by the brain.

They're like, why is this? And so they took that group of mice and they cut their vagal nerve. Now, the vagal nerve connects the gut and the brain, the heart and the brain, many brain connects to many organ systems through the vagus nerve. And so they severed the vagus nerve.

And what they found is that this group reverted right back to a four minute give up, not having the gabba release. And this became very deterministic that it is the signals from the gut via the vagus nerve to the brain that are telling the brain to produce relaxing neurotransmitters like Gaba and regulate that stress response on the fly.

And we know anxiety and burnout and stress issues are a big part of mental health. So when we can see that gut bacteria can send signals to the brain in order to produce neurotransmitters in the brain that can help relax and manage stress that becomes really important to look at the gut in relation to mental health.

There are many other mechanisms but that's just one study that highlights, – I mean, that's kind of crazy, right? For that, only one strain, it's not like they did it like they did one strain and that strain produced resilience. I mean that yeah, that's pretty lucky that they figured out that strain but also that they got the result is there any so what why is it getting worse? Like why is our toxic like why are we infections our microbiome? Like why are things get?

It seems like more people have anxiety, more people of depression, more people are just not doing well mentally. Is there a reason why like You talked about obviously got Mike Bryan, then you added mycotoxins, the mold toxins, the lyme and co infections. Why is it, is it more prevalent now than it was 10, 15, 20 years ago?

– It is lyme is actually one of the fastest growing infectious diseases. Part of that has to do probably with climate change and part of it has to do with ecological issues and the way that, human society is building and growing.

But there's a lot of reasons. So if you look at today, even Amish farms, you'll see that there's much less incidence of asthma and eczema and allergies and things along those lines that I grew up experiencing personally myself because in part of probable exposure to more microbes so that the immune system develops more of a wide base of tolerance from young age.

And so that there's a greater diversity in the microbiome.

Microbes, Gut-Brain Signaling, and Mental Health

We've seen this big, this big lack of diversity start to occur and that in part has to do with antibiotic, overuse with a certain level of of hygiene, without exposure to certain kinds of microbes that the immune system was meant to

develop with.

Even there's this old friends hypothesis that certain worms and helmets used to manage the immune system function in a way that the immune system co evolved, always having those infections present. And then so it's not even that infections are bad. Some infections.

In fact, I experimented myself and, and I let some worms crawl into my skin in order to see if I could manage my immune system function a little better because we do have studies that show that certain kinds of microbes, even ones that would be considered parasitic or infectious in nature may manage the immune function to where we're dealing with autoimmune issues today with allergies with the immune system on overdrive.

And a lot of that has to do with toxin exposure in the environment which even practices of that are advancements ecologically in buildings that let buildings become better insulated.

Also mean that the better insulated that they are, the more stagnant, the air inside of them are the less moisture issues will dry up. There's actually an advantage old homes have the disadvantage of more history for water damage, but they have the advantage typically of more airflow from leaky under the doors and windows to where there's a little more air moving through the homes.

So we're innovating in a way that is good on certain fronts. But it's the, I mean, the estimates are pretty bad on water damage. It's between 1-2-1 in four American homes are water damaged.

– That's crazy. – Yeah. And it's pretty equally distributed. A lot of people think it's more the humid environments but it's fairly, equally distributed and it's sometimes in new builds to, it's not always in old homes and, and it's very common in schools which is sad for Children and churches and in large buildings as well, especially flat roof, large buildings without big budgets tend to have these issues.

And so we see water damage leading to growth of molds and bacteria that can produce mycotoxins and endotoxins that can be breathed in. And they're so small, they can pass through the lung membranes and get into the bloodstream and then start to accumulate in the tissues. And it's about a quarter, just under a quarter of people have under one in four, have a genetic predisposition to not be able to recognize.

The immune system is a harder time recognizing and getting rid of those talks. And so they tend to be easier to bio accumulate in the tissue and even worse in the in the organs or the brain. And we start to see actual mechanisms of triggering autoimmune if someone's predisposed to potentially having an autoimmune attack against their brain tissue like dopamine receptors or tubular gnarly.

So, ganglia side that we see that the toxins from mold can be a trigger for the immune system. They looked just enough like those receptor sites that the immune system can trying to get rid of the mole toxins attack.

Dopamine receptor sites attack other parts of the brain that can lead to anxiety and depression and can lead to very similar symptoms to someone who's dealt with emotional trauma and PTSD. It's very interesting.

– I mean, yeah, I think you just talked about two very distinct issues. One is kind of everything being clean. And wasn't it like the grandfather of functional medicine?

Siebecker. Dr. Siebecker uses worms and helmets to that? Two people. Actually, this might sound gross to the audience. But there's a school of thought that you put a capsule of helmets in and they do what they do and they are not human.

Humans are not their regular hosts. So they come out but that does, adjust our immune system to for a better immune response. And then the next thing you're is the mycotoxin issue, which is just so I've just seen too many as you mentioned, kids in schools, like it's a major, major issue and I've seen too many kids that have problems with going to school.

It's not even their house, it's their school because it's an old schoolhouse maintenance has not cared. They're the canary, nobody. No other kid clearly has a good, has that response, but they clearly have that response. And when they get out of the school, they do a lot better than when they're in the school.

But how many kids may not have that huge response but have that minor response that they're not studying while they're not focusing. They're not able just that little piece which gives a lot of people the edge. So it's a huge, huge problem. – It is and I think with Children, especially that there's this, there's this issue where there are research is coming around and starting to support things like pandas where people know that Children can get a strep infection.

And then if their behavior changes suddenly, if they're having a hard time in school, if they're having anxiety or depression or rage or getting in fights or uncharacteristic personality traits or developing an eating disorder, getting obsessive O C D type symptoms, then that some, some to some degree people in research are starting to look at. Oh, is the infection is the strep infection to blame for that? Because strep also can cause this cross reactive autoimmunity that's well documented in research.

And more recently, there are other infections that are starting to show that to and Lyme disease is one and Barton Bellas another and Epstein Barr virus that causes mono is another certain streams of influenza. It's suspected that COVID could be a part of that trigger as well. It's not research yet, but it's on its way to potentially having that research and then mycotoxin as well.

So one thing that I think that really is dramatically missed, there's a, there's a research based link to where mycotoxin can cross react with brain auto immunity. But in Children often that it's chalked up to be the behavioral diagnoses tend to just get psychiatric medications and there's a lack of exploring environment and or infection and, or gut dysfunction, all of which I think if we, if it were routine to look for and clean up environmental exposures, chronic infectious systemic infections and gut dysfunction in Children, we'd probably see a massive drop in the need for any of these psychiatric drugs.

And I'd love to see a, a less invasive approach of let's sort through these things first, before we put a person on a drug that they're gonna have to take every day for as long as they want the effect of that drug. And so the A D D A D H D and some of the diagnoses that are given and the drugs that are given are good in that they can manage behavior, but they're only temporary, they only manage it for a day or so and you have to give it again and again and again.

Whereas if we identify a source of talks in and resolve that talks and one it might benefit that kid and other kids if it's the school, of course, if the school changes their environment and is able to re mediate, then that could actually benefit many kids and could start to see cause I mean, cognitive function is so linked to environmental exposures.

It's, it's crazy.

Environmental Toxins, Mold, and Immune Dysfunction

I early onset Alzheimer's dementia memory issues. I see all the time in talks and exposures. – I've told the story and I was actually talking to Dr. Tom Moorcroft about this and I told the story of our son. My son that she was, She was about 10 years old and he was a very, very sweet kid.

And we, he started having some outbursts and things like that and we thought it was just hormones starting to kick in and that whole cycle and at some point many moons down the line, we're like, oh wait a second, something's wrong.

This is a sweet kid. What, what just happened in the last six months? Something changed like that. And we realized it was lime. And this is me having 30 or 40% of my patients are all lyme patients.

I didn't identify it and he was having rage outbursts where I had to literally hold him down. So typically what normally would happen would be that he'd get on psych meds, go to a psych ward and that would be his life and

we found that he had Lyme disease and treated and now it didn't, it took a while, but he's back to a sweet kid. Now.

He has his hormonal issues still as an adult, but he's still, but he's a sweet kid and this is coming from somebody that's trained to do this and see this.

And the thing that you're bringing up, which I love is, I think for kids, for adults, things come out more in physical symptoms, like fatigue and body aches and whatever else.

And kids, it's almost always coming out in some kind of emotional issues, whether it's anxiety, depression, O C D, rage, etcetera. And, And the problem is even if science catches up, medicine is going to take another 10-20 years sketch up. So for me, it's how many people part of the summit is just making people aware of how many people can actually have something else going on. And it's not just O C D or anxiety or depression or whatever else we say so. No, thank you for bringing that up.

It touches my heart because that it's personal. Aren't most of our stories personal. – Yeah. Yeah, I had a, I had a really young patients, six years old with severe seizures and you know, she was put on all these epileptic medications and she was at six years old on multiple meds and still struggling with multiple seizures every day.

We found incredible amounts of mold toxin in her year and, and when we treated it, it within three months, she was back to no seizures whatsoever. It was incredible.

And I think the it's underappreciated how big a role that, that these toxins can play and these infections, that one of the most recent studies that came out showed 14.5% of the world population zero positive for lyme And that's not. So that's a blood testing, several positive means that the tested positive and blood results.

And 14.5% of the world population. That doesn't account for that. Most of the interpretation of blood results for lyme is woefully inadequate. From the perspective of a lyme literate doctor that most people interpret, many many negatives that should be considered positives.

And then you stack on top of that different strains of lyme that that occur in different areas of the world. And then you add in co infections like Barton nella and Bob Asia and garlicky. And then you can start to see where, well, what percent of the world population does have chronic infections or a better question might be what percent does not have at least one or more chronic infections.

Not that it's bad. Again, we talked about how helmets and worms sometimes can be good. It's not that all infection that's systemic is bad, but it is something to be aware that maybe playing a role in people because our, our society and our medical establishment typically doesn't recognize enough the impact of chronic infections. There's acute infections are recognized.

Well, and if we circle back to 100 years ago, the biggest killers were tuberculosis and typhoid and like pneumonia. We've done a great job on those things.

Medical establishment said yes, these are big problems and taking care of them. But when it comes to chronic infections, the treatments are so woefully inadequate that it's almost like, don't ask, don't tell, it's kind of the sense of just let's ignore it and pretend like it doesn't exist and chalk it up to something.

But today, six and 10, according to the CDC, six in 10 Americans have at least one chronic disease, four and 10 have two or more. To what degree are chronic infections, toxins in the environment and gut dysfunction playing a role.

I think a huge, huge percentage. – No. Yeah, I don't have anything to say that. Yes, I want, actually I do want to go back to because I don't think we've talked about this in the summit a point that you brought up that I do want to emphasize, which is um testing for Lyme Disease because it's such a um contentious piece of conversation, but let's open it up at least and have a frank conversation.

So the what most people, well, you know what, I'm gonna let most, most doctors, what, what do most doctors do when they, when they're suspicious of Lyme Disease?

They go to the regular test and they test for some kind of Eliza test and then they, if it goes well, they'll do a western blot and that western block was developed, I think in the 90s, it was a great test when it was developed, but it hasn't been updated since. Right?

So it's one of those like you were talking about there, there's a lot of different cousins and a lot of different species of Lyme disease and that only picks up one. Can you speak a little bit more about what the testing and your your sense of it. – Yeah. So that most recent study that came out showing 14.5% of the world population syrup positive for lyme.

It did look at Eliza, it also looked at Western blot and it found that sometimes in fact, not infrequently, Western blot would be positive when Eliza was negative.

But many two tier approach standard of care kinds of, of of test orders will only look at a Western blot if Eliza is positive first. So the first thing is that if, if your practitioner, if your doctor is ordering only an Eliza screen and going to do the Western block, only if that's positive, that may miss it just right up front.

And then when it comes to the Western blot, it in the early days, they were identifying these lime specific bands and they'd say, oh if any of these lime specific bands are positive, we know they're specific to line.

There's nothing else that we could see or know about that would cause an immune reaction on this band. So if you have any of those that clearly you've been exposed to line, but then it became this, I don't know what happened, but the politics of it and and the policies wound up or the standard for interpretation of that lab changed in in CDC diagnostic criteria really was looking more at acute lyme than chronic lyme and there's controversy on chronic lyme and how long that bacteria, the spire keeper Burgdorferi that causes lyme, how long it lives in its host.

So there's a lot of controversy around that.

Lyme Disease, Co-Infections, and Testing Limitations

And so in order to avoid some of that controversy, it, it became standard to you have to have five of these certain bands on the I G G and two of these certain bands on the I G M in order to be a positive for Lyme disease, what that did is that eliminated some people who had, let's say on the I G G side, three lime specific bands were shown negative, but these are three bands that we don't know that anything else other than lime can cause an immune reaction on these bands. So how do you, how do you wrap your head around that? So there's a couple of schools of practitioners, one are really the looking at these conventional diagnoses, these very standards of care diagnoses and saying that we need all this, you know, and part of it, I understand there's this sense of okay, you know, are we over treating chronic Lyme is hard to treat and a lot of treatments ineffective and, and so it gets put into this realm of let's just ignore it until we have something more effective. But it's, and I understand that I understand the public policy, understand the spend on it.

But I also feel for the people who are dealing with symptoms that could be due to chronic infections who are being told by their doctors that nothing's wrong.

And I feel for them because I see them all the time in my practice. They say, hey, I look kind of normal on the outside, but I don't feel great on the inside.

My doctors told me all the blood work looks fine and they tested me for line, it's negative. But then when we go and look at that, we often see that we do see one or two or three line specific bands that showed positive.

And that's just for that one species. So that one species and then you're missing the other species, you're missing the co infections. We do a line panel with infections often and find quite a lot of Barton Ella and baby Zia. And for me, I found both Barton Ella and baby Zia and to be able for on myself.

And I would have missed that if I had just done the western blot, even an expanded western blot with multiple species of lime. So I think it's really important that people understand that the conventional testing for lyme is woefully limited. It's okay.

It's a good start. But it's like you said, it's, it's an old test that hasn't been updated. And there's a lot of reasons why even the interpretation is an issue, let alone the technology advancements where we can test for more strains and co infections. – Your way more politically correct than I am.

So I'm glad you took this question because I have a lot more outraged by how hopefully inadequate the current testing is and the technologies to do better testing are easily out there and we're not taking advantage of it.

For me, like, like you, it's very painful. See, cause We have all the tools we have all the science where as unfortunately, medicine's just behind the science by 10, 20 years. at least. Okay.

So what are the kinds of, let's talk about since? So we talked about the mental health from a myco toxins, Lyme disease and co infections, chronic viruses, microbiome.

So what do people if people want to be proactive, if people want to be the ceo of their own health? What can people ask? What, what can people do if they have a, if they have a primary care physician? It's I'm gonna say it's next to impossible to get most of these tests. So let's get that part because it's, it's not a useful conversation. But let's say they have a open a physician that's open to the tests that may not be as experienced or may not know as much as you have as much experience. What are the things that people should be looking out for from their provider? What are the tests, etcetera? – That's a great question.

Thanks for asking that. I think that there are some things that people can do with a practitioner is just a little bit open minded to start to look at these issues without going all the way into the nuanced specifics.

There's a whole body of research called the cytokine theory of depression, which is looking at cytokines, which are inflammatory proteins and the connection between inflammatory proteins and depression and well, inflammatory proteins don't give us the exact cause of why those inflammatory proteins are there. They are sometimes conventional doctor a little more open to or or progressive doctors are a little more open to looking at, at cytokines in the blood and starting to see if there are elevations in things like c reactive protein, especially the high sensitivity c reactive protein or home assisting, which is an inflammatory protein that can be in the blood or maybe interleukin two interleukin six. Those are a little more progressive but some TNF alpha to necrosis factor alpha, some doctors may look at those and if we see those elevated, there are likely causes as to why their elevated that we need to investigate, but at least it opens the door to. Oh, there is an issue here where before a person might not have seen an issue on a, just a lipid and a CBC and A CMP that the doctors are gonna order typically. Although even a lipid, a CBC and A CMP are gonna show that, for example, we know that, that lipid. So cholesterol, the protein, the LDL particle actually has a little polish sacha ride receptor and LPS receptor on it.

What this means is that LPS is an endo toxin. It lives in the cell wall of gram negative bacteria. So a gram negative bacteria is sometimes in the gut, sometimes a gut issue or a gut dysfunction can lead to an overgrowth of certain gram negative bacteria and intestinal permeability. And then those bacteria can get into the bloodstream and then the immune system can start to react against that and start to try to do things like up regulate cholesterol production in order to bind to some of that LPS.

And so we see that that infections there, there may be a relationship between cholesterol elevation and infections due to a mechanism of LPS receptors on LDL particles.

So to put it really simply, if you have elevated cholesterol, it's not just like a happens to, I mean, maybe it's genetic and there's lots of reasons, but infection is one reason that it could be elevated and, and it's a reason that's never considered in most conventional offices.

So to know that if your cholesterol is elevated, infection could be one consideration of many, of course. And then to also understand that if your white blood cell count is low normal, consistently over and over and over again, if it's in

the threes and the fours, I see this all the time with people who are struggling with chronic infection and or toxin accumulation and or chronic viral issues.

And sometimes we see the neutrophils a little depressed. So normally, neutrophils would be about 60% of the white blood cell makeup and lymphocytes, about 30% of the white blood cell makeup.

Sometimes we'll see more like like 40%, instead of 60%, And those neutrophils are a little depressed. The lymphocytes are a little up and that can be also assigned potentially of, of, of something a pattern that I see go together with chronic infections a lot. So people can look for low normal white blood cell count of three or four. You know, below five consistently.

When they're getting CBC S, they can look for cholesterol elevation as a potential sign for infection. And then of course, if there are any issues with the electrolyte balance, there's something called the an ion gap that a lot of doctors won't do that. You can do with a standard CMP that your doctor is often going to order.

If you take your sodium and you subtract out the chloride and the carbon dioxide that creates what's called an an ion gap. Anything greater than 18, I I prefer nothing greater than 16 is a sign of metabolic acidosis and hypo metabolic function, which can be due to infection, chronic inflammation, toxin accumulation.

So if you see that an ion gap elevation, which again, you might have this elevation and no one's ever told you that you have this elevation, I had a TSH thyroid stimulating hormone in the fours when I was chronically fatigued.

And my doctor said nothing's wrong. And yet we know from looking at the healthiest population that anything less than 2.5 even better, less than two is normal for TSH.

But above two or especially above 2.5 is maybe at least a subclinical thyroid issue. And it warrants looking at free T three, looking at the thyroid antibodies, looking at free T four and often practitioners and doctors won't go there. So I encourage people to see if they can get start to get an understanding of some of what we call the functional ranges of the basic labs so that they can inspire their doctor to order some additional labs like additional thyroid markers and to expand a little bit into some of the inflammatory proteins in order to start to get a better sense and catch more things.

I also like an A N A lot of doctors will order anti nuclear antibody. Most won't unless you ask for it. But if you ask for it somewhere and that's that.

And thyroid antibody. So the T P O antibody for thyroid, the thyroid peroxide, this antibody is a really good one that can catch, sometimes you'll see that antibody elevated, well, thyroid hormone is normal and you're catching an early, potentially an early stage of the thyroid autoimmunity.

– Interesting. Yeah, I'm thinking how it's basically asking your doctor to do the order the testing and then you do all the background for it, which unfortunately, that is the state of the world that some people do have to live in.

Thankfully there are more and more functional medicine providers out there, which is good. So outside of that, what, what are some actionable steps? If somebody's has Mike some kind of microbe and has mental health issues? Is there if they can't get to a functional medicine provider, are there steps that they can do that?

That's going to improve their health or at least give them a sense of what's going on? – Yeah. And just to take one step back quickly, I'll say that also you can ask for uh line block with fans, you know, to see if you can get that and you can ask for something like a gastroenterologist are starting to become open to see bo breath test.

So a los three our breath test with hydrogen and methane would be a reasonable thing to ask a gastroenterologist for these days and some are starting to order those.

So I would add those two – Even in Massachusetts, which is one of the most conservative medical states, they are starting to be open, which is profound.

Anything that happens in Massachusetts, I think is like amazing because again, we tend to be very conservative medically. So I concur that gastroenterologists are starting to order that.

– So those would be a couple of additional things to potentially ask for.

Practical Testing and Functional Medicine Clues

And then when it comes to practical tools and steps that there are some things that are generally applicable when you don't know what your environment is.

I mean, certainly there are some investigative steps that you can take that aren't, you don't need a doctor for, I really like visual contrast sensitivity testing or VCS test.

It's an online test. People can do place like VCS test dot com is a place that has those. And and that's something that you can look at the visual parts that can be damaged by toxin or infection.

You can start to get a sense for that. And there are a couple of research validated questionnaires on there also that are looking at uh potential causes of infections or toxins for certain symptom expressions and symptom clusters.

So there has been some research on questionnaires that can also be a pointer. And if you have a VCS tests that you do on your own, and you see that your visual system is impaired and that you have answers to the questionnaire that are suggestive of a chronic inflammatory response syndrome that are pointing to mull toxin exposure or Lyme disease or post COVID or whatever in the list. Sometimes some of those causes potential causes based on the symptom clusters. Then that would be a good sign to start to look deeper and then to look at your home itself or science, if you know, there was flooding in the basement and they brought fans in to dry it out, but they didn't replace the water damaged materials.

Unfortunately, if mold grows, even if it's dried out, it stays dormant and then when it gets humid, id puffs for again. And you're, a lot of people are living in mold unknowingly because they're like, oh, yeah, I took care of it. We dried it out with fans and unfortunately not sufficient water, damaged materials actually must be removed and replaced if they've been wet long enough for mold to start to grow, which can be in as little as 24 hours.

So that's another piece. And there are some things that people can order a hurts me H E R T S M I two or an er, me E R M I dust sample for their home and, or their workplace and start to get a sense for if they're exposed to some of the toxic molds. And then other things are, people can do some, there are some lifestyle things that can be, obviously, you know, if someone's on the standard American diet gotta go diet first and, and, and work on, on the basics, I'm assuming just for the sake of this talk that people have already done some work on diet and exercise and some of those basic sleep or they're getting enough sleep. But I will say that even people who think they're getting enough sleep often, art and sleep hygiene practices and light exposure and looking at red lights at night and things like that can, blue blocking glasses can actually make a difference for people, even people who have been on this path for a long time who have tried a lot of things.

I still in practice. I get people who have been to eight practitioners. They've tried 27 different there on 27 different supplements. They're there, they've done eight gut protocols and, and there they still don't have red lights at night in their home.

And, and it's like, okay, well, you know, let's, and, and then we do a sometimes a sleep study and we see that they're not getting a lot of rem sleep.

And I say, hey, you know, let's, let's do this, let's style this in. So there are some basic things like sleep hygiene and like meditation or so many people miss meditation. There's so much research suggesting the meditation and in certain limbic training activities and vagus nerve activities that these are big parts that get dis regulated the nervous system and the Amygdala in the brain gets overly activated, the nervous system gets activated, the vagus nerve gets dysfunctional.

And there's so much research on lowering depression and anxiety through maximizing heart rate variability, which is a sign of vagal nerve tone. And if people can implement simple basic practices to help to restore vagal function, to do meditation into a brain retraining practice.

I'm happy to give a basic practice if you like and, and, and that can be playing a big role as well. – Yeah. No, I think there's a lot of lip service to meditation these days, but not as much actual practice.

And, like any other practice, practice is hard and takes energy and sometimes it's rewarding and sometimes it's not, and the beginning in the beginning it's really not.

It's hard to stay on track if it's, if you're not rewarded right away. No, I think it's really great in terms of other strategies. What else should we know?

What else should we think about or we're coming close to our time. So, first of all, where can people find you? What's the best way if people have questions, additional questions to follow up with you?

– Yeah. So for Medicine with Heart is the clinic name and medicinewithheart.com is a great place to get access to free blogs that cover a lot of really interesting content. And then people can also on that site, book a discovery call with staff in the clinic. If they want to find out more, we have ways of working with people all over the United States.

And so people can go to medicinewithheart.com and can look at the blog sign up for the the list to get the new information from the blogs that come out and to look a discovery call if they'd like for practitioners mindbodyfunctionalmedicine.com is the website for our clinician training for practitioners.

So mindbodyfunctionalmedicine.com. And then we have a book out there, uh a couple of books out there as well. And the website, the medicinewithheart.com is the best place to find out about everything and what else people should know. I think breath works really underappreciated.

I think cold exposure is really underappreciated. There are, there are some things that like this morning, I was in the cold plunge and you know, just 30 seconds it wasn't, it's not, it doesn't have to be a long time.

Sometimes I'll do longer. But even just 30 seconds of cold exposure has a lot of research for mitochondrial function and longevity for helping this metabolic function and for trauma as well. Like, like if you're having, if you're having a rough time in life and you're really struggling not to think about your problems, get in some extremely cold water and you will not think about those problems.

You have a bigger problem, an immediate problem to think about. – I do sometimes think that our air conditioned heated life has decreased the outside stress.

So we put a lot more stress on ourselves. And when we make ourselves stressed through cold exposure, through fasting through sauna, it, it changes perspective and gives a you cannot think of anything. But when you're plunging your, that, that's kind of the only thing you can do. So I agree.

– Careful. It's, I mean, you, you can go into hypothermia if you overdo it, but just brief, you know, get some training, get some, some, some education on it. And because you said that I'll say one more thing, which is that, I believe that you're saying, you know, this temperature regulated life. And I actually believe one of the biggest, if not the number one obstacle to health is comfort.

And that, that if you keep yourself too comfortable, you know, if you just keep doing the same thing, day in day out, if you're regulating your temperature, if you're, you know, always eating when you're hungry, things like that, it's, it that doesn't build stress resilience. There's some concept called or missus, which is a little a certain dose of stress in the right way.

It can make you stronger. Like if you lift weights distress, the muscle breaks apart the fibers, but, but it build it back stronger.

Lifestyle Tools, Resilience, and Hope

And the same is true for emotional stress. It's just that people are dealing with chronic stress in today's world rather than the kinds of Hormel thick stressors that would be most beneficial if you want to be able to deal with the stress of life, subject yourself to control old doses of healthy stressors that can train your physiology and train your mind to me, I see cold and I see certain kinds of breathwork that are a little more intensive kinds of breath work.

And I see certain practices that I do as training for wind stress hits in my life. Like I want, when I get that, when I got that call about my father, like I froze, I froze. I didn't, I didn't know what to do. I didn't know what to say.

You know, she said your father's in the hospital, something's happened. I couldn't even ask what happened. Like I was frozen and, and it, you know, I didn't even know what happened until I walked into that hospital room and I saw, but I was in shock and, and that to me, I want, when I get that call in the future, something's happened and, and something's awry.

I want, I want to have trained my physiology to relax and to be clear thinking and to be able to, and the thing is if you, when I get into cold and when people do some of these practices, the natural reactions, it's like tensing up and breathing quickly.

And the training is to get into relax and just like train the physiology. It's encountering this huge stress, everything in you wants to tense up and yet I'm your training, your body to relax and, and so it doesn't have to be cold.

It just find some things that challenge yourself in a healthy way, like healthy challenge. I mean, we know this from cognitive dysfunction and, and decline that the people who challenge their brains, healthy challenges have better outcomes and challenge your body, challenge your brain, challenge your heart. Like a lot of people don't challenge their heart. And when I say that what I mean is that a lot of people get into doing the things that they think would be good things for themselves and don't drop into what's their purpose? What's, what's inspiring, what's, what wants to come forth from a deeper place.

And I'm really, I think that one of the most healing things a person can do is to, to tune into and to step into and to have the courage to follow something in their heart that their mind doesn't agree with and to do it anyway.

And that's, and challenge themselves to do it anyway. And that I think can be one of the most healing things that a person can do. – Yeah, I couldn't agree more. And I'll add sometimes a cold plunge or something of that nature helps you clear, quiet your mind enough so that you can find that purpose or you can find that because your mind just gets super, still super quickly. And it's a beautiful experience, especially if you can relax into it – And to wrap up.

I want to just tell people that there is hope, you know, like this, there are so many people who I've seen and I've been there myself where I've felt like I've been to the doctor, they said nothing's wrong.

I started to think thoughts like, am I just not cut out to finish school to be a practitioner to do what I want to do in my heart? And I just not cut out.

Should I give up? And a lot of people I think are, they're like they've tried a bunch of stuff. They're getting worn out there wondering if they should give up.

Please don't. There is hope. I've seen incredible things happen and it's important to be accepting of what is as it is and to embrace where you're at.

And in fact, even to know that it could be worse, like wherever you're at, it could be worse. It's important to know that and to, to feel that that's part of how gratitude works is you have shelter over your head.

Some people don't, you know, to, to start to get a sense that you have enough food to eat. Some people don't like these basic things are important and so it could be worse and there is hope for it to be better too.

And I've seen people, I've seen things happen that seem unlikely to happen that people had almost given up hope. So, unfortunately, with Lyme Disease and with some of these things, the number one cause of death is suicide and that really saddens me too because the quality of life can become so low that, you know, person just decides it's not worth it anymore.

And I want to make sure that everyone here understands that, you know, I've seen some of these, some of these worst case is Dr. Ed. I know you've seen some horrible cases and, and we've both seen them get better and it's not in every case, there's no guarantees in this, but I do wanna extend that there is hope and I've seen incredible things happen and please keep seeking help and do it from a place of accepting where you're at and also acknowledging and being very compassionate with yourself while you're going through the process.

– Awesome. Thank you. I think that's great place to end. And again, thank you for joining us. And this has been an episode of the Environmental Toxicants, Autoimmunity and Chronic Disease Summit.

I'm Dr. Levitan your host and we've been really privileged to be with Dr. Miles Nichols. Thank you again. – Thanks everyone.