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Dr. Jill 00:00

Welcome to *Resiliency Radio*, your go-to podcast for the most cutting-edge insights in integrative and functional medicine. I'm your host, Dr. Jill, and with each episode, we dive into the heart of healing and personal transformation. Join us as we connect with renowned experts, thought leaders, and innovators—all who are at the forefront of medical research and practice. My goal is to empower you with knowledge and inspiration and aid you on your journey to optimal health.

Dr. Jill 00:26

Today we have a special guest and a special episode talking about environmental toxic load and the ways that we can test this in our body. As a clinician [and] functional medicine expert, this is one of the key things that we see in clinical practice. And today we have a leader from Vibrant America to talk about lab testing. His name is Dr. Jason Barker.

Dr. Jill 00:45

Jason Barker, a naturopathic degree, graduated from Southwest College of Naturopathic Medicine. He earned his bachelor's in exercise and sports physiology with a minor in anatomy and neurobiology from Colorado State University. After obtaining his doctorate in naturopathic medicine, he went on to do a two-year residency and earned a certificate in clinical research at Oregon Health Sciences. In addition to private practice, he served as a clinical consultant to nutraceutical and sports medicine, and he also has authored numerous articles. He now lives in Colorado with his wife and three children and is my neighbor.

I'm super excited to welcome Dr. Jason Barker to the show. Let's get to it.

Dr. Jill 01:24

Dr. Barker, welcome to *Resiliency Radio*. I am so excited to have you here. We're going to talk about my favorite topic in the world and that's environmental toxic load. Before we do, though, I always love to know my guests more. You and I know each other a little bit. We're neighbors, so I know a little of your story. But for those listening, will you tell us how you got interested in medicine and how you ended up

in naturopathic medicine? And then you've done sports and clinical nutrition and there are some really cool things about your bio that I learned. I'd love to know more about how you got to where you're at today.

Dr. Jason Barker, ND 01:54

Sure, yeah. Well, first, thanks for having me on, and I'm excited to talk about it too.

I grew up in a family of five, an athletically minded family. My brothers and I—I'm the youngest of five—were putting vitamins and all kinds of things into our shakes in the blender, trying to make these healthy shakes. This is back [in the] last century. I'll leave it at that. Before we had those actual foods. So a very health-minded family. I had my own health struggles growing up—asthma, allergies, scoliosis, things like that.

Dr. Jason Barker, ND 02:26

So I went off to college to study sports medicine, and again, that was last century, the late 80s. That was kind of a burgeoning field then. I was moving along, studying sports medicine. And this is the one joke I'll have for you today, but I had a girlfriend at the time who had an ACL surgery done. And that was back in the day where they'd splay your entire knee open. Very long, protracted recovery. She was very unpleasant and wasn't a lot of fun to be around. And I thought, "I don't want to go into PT," because that's kind of where that sports medicine took us. So I learned what I didn't want to do, which I think is important.

Dr. Jason Barker, ND 03:02

I went to the career office, opened up the big old book of careers, and flipped through. Back in 1990, they had an article about naturopathic medicine. I read that, and it was love at first sight. So I was off to go be an ND, but first, I had to go up to the ski areas here in Colorado. And I worked as a ski patroller for a few years before I went off to ND school but then graduated and have been doing that ever since. That's the long and short of it.

Dr. Jill 03:31

So first ski bum, and then... I love that you threw that in. That's why I'm here. The real truth about it is [that] I grew up skiing. My family took me out here from Illinois

every year. I love to ski, and I was like, "I'm going to Colorado to ski." And of course, work is a side thing, but... That's so great.

Dr. Jill 03:53

So today, like I said, it's probably one of both of our favorite topics. I want to talk about the problem because I think many people realize there's toxic load. And especially, we've had wildfires here in Colorado and some really devastating ones in my neighborhood of Superior and Louisville just three years ago. And now, just recently as this podcast is coming out—it's not been that long—LA has just been devastated. As you've heard, as I have, a lot of people who weren't even affected by the fires are leaving because of the air quality. So this is a really big deal.

Dr. Jill 04:24

I just saw [that] NPR interviewed someone on air quality. And before, they weren't even talking about that. But as you and I look out there, or when we live through it here in Colorado, we know we see the clients and the patients who are suffering from this air quality. Maybe let's talk about that first. Why is there increasing toxicity in the air? What things are in our air that we're breathing? And what might listeners not be aware of?

Dr. Jason Barker, ND 04:48

You bring up a good point. We think of places like Colorado as clean, fresh, rocky mountain air, and sadly that isn't the truth, whether it's environmental things or industrial stuff. Working with people at Vibrant and looking through all the different tests, it's really interesting to see where different people live. But long story short, there are air patterns. There is wind. Just because it's clean here doesn't mean that the weather hasn't blown in something else from some other area. There's a lot of industry, regardless of where you live. I'm assuming that it's probably a lot worse out east, where there's more industry. But we're susceptible to man-made things, and it just seems like there are more and more of these environmental disasters happening too.

Dr. Jason Barker, ND 05:32

Those aren't short-lived either. Sure, the fire is burning, but where does all that ash and yuck go? It falls back down to the earth. Either here or elsewhere, on the food we're eating or in our homes. One thing we mentioned is [that] indoor air quality

can be worse than outdoor. That's why it's such a problem: Because this stuff sadly is everywhere, and we're not immune to any of it.

Dr. Jill 05:57

Yeah. [On] this topic of environmental toxic load, I remember my mentor, Dr. Bob Rountree. He would lecture on this, and it was all doom and gloom. He was brilliant and funny and such a fun person to listen to, but at the end, you're like: "Oh, man, what do we do? We're all swimming in toxic soup." So one thing I want to do today is give people practical advice. And then we're also going to talk about how you could ask your doctor to test these if you want to know what's really in your body. So stay tuned because we're going to get to all of that. And I think it's relevant.

Dr. Jill 06:24

As a practitioner, I know that a patient who walks in my clinic has a toxic load. Part of the conundrum is, "How do I identify what things are in that load?" I deal with a lot of mold toxicity, and I think probably one of the biggest culprits to indoor air quality is mold and mycotoxins. So let's veer off to that just for a second because I'm sure you see a lot of that. Are you seeing more in the test results than you used to? How big of a deal are mold and mycotoxins in our air quality?

Dr. Jason Barker, ND 06:54

I think that we're seeing more mycotoxins in the testing because, the way homes are built these days, the particle board is great food for this stuff. So of course you see it. And then going back to environmental stuff, you all down in Boulder had those floods a handful of years ago. You don't think of mold as an issue in dry, arid Colorado, but obviously, you do. So, yes, I think you see more of it on the tests.

Dr. Jason Barker, ND 07:24

And just backing up, sometimes it's hard to convince people of mycotoxins because we're not talking about the mold that you see, like the mushrooms growing in your backyard. Mycotoxins are these small—just slightly larger than a virus—particles that you can't see or smell. They're pervasive, they get in the body, and they make us sick. So patients come in. They don't feel well. They don't know why. We've got to really root through a lot of that. And they've gone to conventional practices, which no shade on them, but they're not equipped to dig a lot deeper, like we are with questionnaires, asking about mold exposure. Of course, you have a clinical hunch,

which is why you'd go on and test for that, and that's how we go down that path of figuring that out for our patients.

Dr. Jill 08:14

Yeah. I use Vibrant quite often. Even if I have a high suspicion, we have a story, a history of a change in the environment, and the patient all of a sudden became ill—a water damage exposure, a leak under the shower, in the grout, in the laundry room, under the fridge lines, a crawl space that's contaminated, all these other things that we could talk about, or after a flood or something that's gone into the foundation—and then within 6 to 12 months, the patient starts to have brain fog and fatigue and maybe new autoimmune disease. And maybe more than one person in the household is affected. I'm just saying all these things so if you're listening and you're like, "Huh, that sounds like me," you might want to get tested.

Dr. Jill 08:53

But what's interesting, I always use the analogy—and I probably heard this from one of the mold inspectors that I work with, but I love it—it's almost like if you had a fire inside your house, and that's like the source of the mold. You put out the fire, and you clean up all the debris and take the burned rug [out]. That's how you would remediate. But that fire is putting out smoke.

Dr. Jill 09:10

To me, that's the equivalent of thinking about how the mycotoxins can get into our air quality. They're very small. They're less than 2.5 microns. So when they go into our lungs as we breathe, they go directly from our alveoli into our blood. There's no ability to stop that because they're so small. They can diffuse right into our bloodstream. Within seconds of an airborne exposure with mycotoxins—say there's mold in this room behind that wall—those mycotoxins go right through the wall, I breathe them in, and they get into my bloodstream.

Dr. Jill 09:37

So we're testing with Vibrant. Urinary mycotoxins are the excretion in our urine of those same mycotoxins. And I often find it really helpful to test and find the metabolites and then say, "Does this match with the kind of mold we found in the wall?" It doesn't always perfectly match because obviously there are multiple exposures. Someone might have workplace exposure and a home exposure, or an

older exposure and a newer exposure, or they're excreting at different levels. But I love to find those puzzles where it really, really matches and I know that I have a case where there really is mold. So understanding that the smoke from the mold—even if it's behind your wall, you don't see it, you don't notice it—is what gets into your body, into your blood, and then accumulates in your tissues.

So I'd love to hear just a little about the testing. And what do you see? Do you see certain types of mycotoxins more than others? What are the patterns and things that you're seeing in the lab?

Dr. Jason Barker, ND [10:24](#)

Yeah, sure. One of the tests we have is a mycotoxins test. We bundle that up with what's called our Total Tox Burden. That looks at the mycotoxins, the heavy metals, and then environmental toxins. So it's kind of three tests in one.

Dr. Jason Barker, ND [10:37](#)

With the mycotoxins, we're looking at 29 different mycotoxins. When I review these with people, there are three groups of mycotoxins on the test. You have your aflatoxins, which are mostly foodborne. And I always have a caveat with that. And then we have other mycotoxins. Then we have some that are called trichothecenes. Those are more often environmental mycotoxins from a water-damaged building.

Dr. Jason Barker, ND [11:09](#)

When I review them, I'm trying to look for a pattern. Kind of that thousand-yard overview. Are your mycotoxins coming from your food or are they coming from your environment? As you know, there are some that can come from both, so I try to really parse those out. That being said, I certainly see a lot of foodborne mycotoxins. That's always an interesting conversation because people are expecting that their test should be green, meaning they're not detected or at low levels. These things are ubiquitous and they're everywhere. And we can do the work to identify the food or the foods they're eating.

Dr. Jason Barker, ND [11:44](#)

That's one of the big things you want to do: Stop the exposure into the body. But that's tough. I feel in some senses that it's harder to remove those foodborne mycotoxins than the environmental ones because then we go down that pathway,

as you mentioned, of testing the home and then comparing: "Is that mold creating these same mycotoxins that we found on that test?" But that's generally how I try to look at it.

Dr. Jason Barker, ND [12:08](#)

I'd say a huge majority of these tests have the foodborne ones, and then a smaller percentage have the environmental ones on there. It's always really interesting because I'm talking to clinicians like yourself. We're running the test. And I had a consult not too long ago where [there were] several kids sick. Dad didn't believe it. The practitioner wanted to test for mold. It comes back full of all the environmental mycotoxins. Dad didn't believe it. They went back and forth. Long story short, he went home and finally tore out a wall in the kid's bedroom and found it—*Stachybotrys*—all that black mold behind there.

Dr. Jason Barker, ND [12:44](#)

So that's an interesting point that you brought up earlier: Mycotoxins are microscopic. They're minuscule. Just because it's behind this drywall or what have you doesn't mean you're safe from it. There are so many gaps in airflow and etc., etc. So you're not safe because it's behind the wall.

Dr. Jill [13:02](#)

Yeah. I love framing that because some people are like, "Well, why would I get rid of books?" And again, I want to be real clear: I don't always say people need to get rid of everything. In fact, I rarely do. But if there's a severe situation, the things that are porous—like books and paper, sometimes rugs—can be contaminated. Typically, I at least have people get rid of their mattress that they sleep on and put their face on. And it's all arranged. It doesn't mean you always have to get rid of things. But those are the reasons why—because it's the smoke from the fire in our analogy that gets embedded in those materials and it makes it harder to clean them and to get them in a safe spot.

Dr. Jill [13:34](#)

The cool thing is [that] Vibrant tests a lot of other things. And I wanted to frame—there'll be a blog out and a link to this in our podcast notes as well because I wrote some notes for you guys—this as far as how many toxins are in our

environment. And then I want to talk about metals, VOCs, and some of the other things that you guys test.

Dr. Jill 13:51

To put things in perspective, there are roughly 84,000 chemical substances in commerce in the US, and many of these have not been tested by the EPA. And not only those singular chemicals that haven't been properly tested but then we talk about synergy, which means more than one chemical together. There are all these synergistic responses in our physiology that we know are true, but there's no way to test 84,000 chemicals in various combinations. We'd have an equation that would take AI to figure out.

Dr. Jill 14:16

And about 62,000—so that's roughly 70%–75%, somewhere in that range—were grandfathered when the Toxic Substances Control Act came through. So basically, a lot of these have never had any testing, and they were just consumed. They're assumed safe, basically. The EPA has only required testing on fewer than 200 of these that are currently in use. It's crazy to think about that.

Dr. Jill 14:43

Plastics, we thought we were fine, and now we're finding most of us consume about a credit card's worth a week. It's in our arteries, affecting our brains. And now we're like, "How did we get rid of these things?"

So let's talk about a couple of the categories we didn't talk about. One is the pesticides and herbicides. Having grown up on a farm, this is a big deal. What kinds of things are you testing in that, in the urine?

Dr. Jason Barker, ND 15:03

In the environmental toxins, we're looking at herbicides and pesticides, several different groups in there. Even among those two, we're looking at derivatives of DDT, which was banned in the '70s. It created the environmental movement back then. Derivatives of Agent Orange. We're sadly seeing stuff—it's crazy that it's still around and still in our bodies.

Dr. Jason Barker, ND 15:32

I speak to people [who say], "Oh, I grew up on a farm." I think these days we have the soccer fields and the green space that cities are trying to incorporate, which is great, but they're heavily sprayed and treated. And as you know, the food is too. People are shocked when they see these on their tests—let's just put it that way—even though they don't use glyphosate in their yard or they don't use herbicides, etc., etc. But maybe your neighbor is or maybe they sprayed the park down the street on a windy day and you were out there.

Dr. Jason Barker, ND 16:07

I live on a green belt, and I go out the back door and run down the green belt to the trail. Unbeknownst to me, they sprayed, and I'm out in the middle of this field and can smell it. I'm freaking out. So I'm trying to 1) exit the field as quickly as I can by sprinting and 2) not breathe. That was a funny sight to see. Anyway, random story there. So clearly we see a lot of this. People expect it, like, "Oh, they had a direct exposure." Like, "Oh yeah, they were spraying and I saw it." But it's very stealthily, like you said, and there's so much of this stuff.

Dr. Jason Barker, ND 16:48

The testing is great. The test—the Total Tox Burden we have—is very diverse. It covers a big spread of those different toxins. But we're talking about 80-something thousand chemicals, so it's just not possible to do them all. But it provides a great snapshot. And that's what testing is. It's a snapshot in time of what is happening in your body. That's the info we can use going forward to help people get better and get the stuff out of their system.

Dr. Jill 17:13

Yeah, I find it extremely useful. And I would say almost all of my patients get the Total Tox Burden test because it's such a broad spectrum. And just to frame it, no test is perfect because we can't determine the exact excretion rates of each individual patient. For example, if we're treating a mold toxicity or a metal toxicity, we might temporarily see a rise because we're measuring excretion. And I always love to talk about that because patients freak out and are like: "Oh, no, it's higher!" And sometimes it's lower; a lot of times it's lower. But sometimes if you catch them in the middle of what our body is designed to do—the liver filters the blood, the kidneys filter the blood and dump this in stool and urine and sweat, [and] that's exactly what we want—sometimes it will increase as we're excreting that. So that's

not always bad. So understanding the testing and what it actually means is so important.

Dr. Jill 18:00

I wanted to just mention, as you talked about running through the spray and the glyphosate, one thing that really got me into environmental toxic testing was [that] I had breast cancer at 25 and grew up on a farm. And I realized that there was a big component of likely things like atrazine, which are endocrine disruptors. And I believe you guys test now as well. I don't know if anyone else is testing atrazine. Those exposures, I think, contributed to my cancer. Looking back, it was an interesting pattern.

Dr. Jill 18:27

About five years after I got through remission of cancer and was doing pretty well, I thought, "I'm going to look into this and test." That was way back before anyone was doing testing. It was probably 2005, maybe. And online there was a community service of glyphosate. I got back the test, and it was three times the level of farmers on application day. I was like, "Oh, my goodness!" I almost fell off my chair because I was, at that time, organic, completely clean living. I was so fastidious about my lifestyle.

Dr. Jill 18:57

But I had two dogs back then. I lived in a condo where they sprayed the lawns. And I think it was probably those dogs walking in the house, sleeping in my bed. And who knows what else, because now we find traces of glyphosate in organic California wines and all kinds of things. But that was my big aha and shock to say: "Okay, even if you're living really clean and you're doing everything right, you're going to still get these exposures." And it's important to know. Is that what you're seeing too?

Dr. Jason Barker, ND 19:23

Yeah, absolutely. The same thing. Again, I see these tests in people who live extremely clean lives, and you still see this and it's always a shock to people. And the idea is that because we're living, breathing biological organisms—especially at the top of the food chain—we are bioaccumulators, so we collect this stuff. Our bodies are good at absorbing this stuff for better or—well, for worse during this conversation.

Dr. Jason Barker, ND 19:54

And that, backing up as a segue, brings up a good point. We're looking at what's coming out of the body on this test. It's a urine test. So, hey, good news: You're releasing this stuff out of your body. I do see a lot of tests that are in the normal, so the test is all green, as I say. That doesn't mean that you are perfect at detox and have no exposures, especially if you've been around the planet for several decades.

Dr. Jason Barker, ND 20:22

When I see those tests that are all green, sometimes they're more worrisome because that tells me this person is not a good detoxer. And like we mentioned before, everybody's physiology is different. Some people are good at getting rid of stuff. Some people are good at getting rid of mycotoxins but not good at getting rid of heavy metals. So that's why we need to test. There's a lot of reading in between the lines of those results, based on exposure, based on their detox, their systems, etc., etc. So it's fascinating to look at.

Dr. Jason Barker, ND 20:52

I love looking at the test, but it's also depressing looking at the test because you get these very clean, healthy people and they've got a lot of this junk onboard. It's like, "Ah, geez!" But that's why we can test and it's another tool we have for our health going forward. So it's good in that regard.

Dr. Jill 21:08

I really love that you said that because I really take pride in trying to do everything I can right, and I consistently have a few things on the test. Maybe you can talk just a little bit about [how] Vibrant is very sensitive compared to some of the other alternatives out there. The sensitivity is very, very high. Maybe you can speak to that in lab terms. Meaning that you may pick up stuff, like you said, from food at lower levels that isn't a real environmental exposure. But I like that because I want to know everything that might be possibly on my plate. So talk about that briefly.

Dr. Jason Barker, ND 21:43

They're using either gas or liquid chromatography or mass spectrometry. We're counting the atoms of these molecules. This test is sensitive to one part per quadrillion. You just think about a piece of pie that's one quadrillionth. You couldn't

even see it. It's highly, highly sensitive. If it is in somebody, we're absolutely going to find it, and pretty easy. I say easy; I'm not a lab scientist. But the technology is so incredible these days that they can find it and they know what it is.

Dr. Jason Barker, ND 22:22

That term sensitive, they're good at finding it, and specific is identifying exactly what it is. Very high-tech, very incredible technology that we're using. We want that. We want that incredibly fine toothcomb because otherwise, if you're not looking hard enough, you're not going to find it and you sail off into the sunset not knowing what's going on inside of your body.

Dr. Jill 22:46

Yeah, it's so important. That's why I like to start with this panel. One thing we haven't talked about—VOCs. Mycotoxins can be VOCs. These are volatile organic compounds that go in our air. I always think about [it this way]: If you think about smoke versus a dandruff or a fiber or a spore of a mold, there's a particulate. The VOCs are smaller. They're usually airborne. And there's lots of things from gasoline derivatives and nanoparticulates from combustion. These are also on your test, right? Do you have a little overview of the kind of combustibles or VOCs you have?

Dr. Jason Barker, ND 23:20

We look for a collection of those VOCs. As you mentioned, they can come from a new car...

Dr. Jill 23:27

Even carpet, right? A new home is actually full of VOCs.

Dr. Jason Barker, ND 23:31

Think of anything that's manmade that smells good, that has an odor. Those are VOCs that you're smelling. Car fresheners, dryer sheets, the carpet. All things that people don't really think about all the time. So if it smells good and is manmade, it's a VOC.

Dr. Jill 23:51

If you're listening, don't use those plug-in air fresheners. Please don't use laundry sheets. Even perfumes and colognes that are not... I only use an organic essential oil blend or an essential oil by itself. That's what I use for scenting my own skin. It's

usually coconut or vanilla. And people are like, "You smell so good!" I'm like, "Yeah, there's no perfume here." But it's really important that we don't because those things in our skin just get absorbed. They get into our respiratory tract. And for a lot of people, it's a trigger.

Dr. Jill 24:19

You mentioned your childhood growing up similar to mine with asthma, allergies—the atopic stuff. Those are definitely triggers with our indoor air quality. So please be aware of the things you're plugging into your wall to make it smell good. It's super toxic.

Dr. Jason Barker, ND 24:32

Yeah. And you can get a lot of things clean and get rid of odors easily with vinegar, baking soda, and Clorox diluted in those areas. That's a big one because the stuff's rampant.

I don't go to the mall anymore, but I never forget when I went into the big department stores—you go by that fragrance area—getting sick, feeling a headache.

Dr. Jill 24:56

It's like an instant headache, isn't it? I have so many sensitive patients that the smallest bit... They're sitting on a plane with someone with tons of cologne or whatever, and they can't leave.

The last one is one of the newer ones you guys have added to the panel. I love it, especially in our state of Colorado. I'm sure you know the data. These are PFAS, which are polyfluorinated compounds. These are things that we often know as Teflon or Gore-Tex, which is interesting because campers, hikers, skiers, and bikers—we use these materials to stay dry in the crazy weather. And I think it's super popular to have the coolest Teflon or Gore-Tex material for all these extreme sports that we love. However, what I really find disturbing is [that] these are called forever chemicals. We can't even calculate the half-life.

Dr. Jill 25:42

The data I was going to share, which I'm sure you've read—I think it was the summer of 2023—is that all the water bodies in Colorado tested, and I think it was

extremely large. I don't know if it was 100% of the water bodies. But many, many, many of our sources were already contaminated with detectable levels, which means there's no getting rid of that in our environment. Do you want to comment on that? I was especially thinking Colorado was particularly disturbing.

Dr. Jason Barker, ND [26:06](#)

My only comment is that, as you mentioned, they're hard to avoid. But I think testing for that and knowing what your burden is in your body is very powerful. And you can take action on that. While it will be very challenging to avoid a lot of these things, we can only control our environment and what goes inside of our bodies. We can't control the air, obviously, or going outside, etc., etc. But that's when we need to educate patients to do all they can to keep their bodies as healthy as possible, and part of that is making sure we're moving this junk out as best you can. It's not all doom and gloom. You find that information and you take that and use that to guide your health going forward. I like looking at those tests as well.

Dr. Jason Barker, ND [26:57](#)

The other thing I'd say is it's really interesting—the differences between different physiologies. Again, lots of toxins, not a lot of the PFAS or vice versa. So it's interesting to see that. And that can also guide how you're going to treat people, knowing that maybe they have this weakness with an overburden of this one type of toxin.

Dr. Jill [27:17](#)

That leads to another topic, which is your brand new test on toxin genetics. I want to talk about why people should care about these toxins and what kind of things they lead to. But before we do, let's just talk about this since it came up. I find this to be so helpful. And you can talk about what it is. But it basically is going to give us the kinds of people who are more sensitive to mold versus maybe metals. Do you want to tell us a little bit about this new panel that you have and in the name of it?

Dr. Jason Barker, ND [27:42](#)

Sure. It's called the Toxin Genetics Test. We're looking at what are called SNPs—single nucleotide polymorphisms. You could call them glitches in your DNA or in your genome. These are genes that are mutated for better or worse. The newer term is called a variant. But most of the time, if you have a variant gene in this regard, your body is going to be less efficient at moving out a particular type of

toxin. So as you mentioned, we look for SNPs that help your body remove heavy metals and SNPs that help your body remove mycotoxins or environmental toxins.

Dr. Jason Barker, ND 28:20

And then there's also a set of SNPs that we test for that just look at—we call them xenobiotics. That just means any kind of foreign chemical—foreign to the human body or the natural world. We can look at all of these different SNPs and get an idea of where a person's weakness is. And I would tell anybody who's listening—clinicians or patients—run the Toxin Genetics with that Total Tox. Because having one without the other, you're missing some of that info.

Dr. Jason Barker, ND 28:49

Now, we have a number of genetic tests like this that look for SNPs or oxidation and some other problem areas in the body. But knowing what your genome is like and what its capacity is, that's not ever going to change. So the good news is you only need to do the Toxin Genetics Test once because those genes will never change again. That's genetics. That's your genotype. And then your phenotype is what you're expressing. So looking at, "Hey, look, you've got all these SNPs. You're not great at removing metals. And by the way, your Total Tox—I see a lot of metals on here."

Dr. Jason Barker, ND 29:30

It's just a finer toothcomb where we can really pinpoint that treatment in for people. And vice versa, too. Maybe somebody has a whole lot of SNPs that are not favorable yet. When you do that Total Tox Test, we see that they're not as polluted as you might find, so they're doing something right. They've got a good phenotype going or the treatment, etc., etc. Anyway, I like to use those two tests together because there's more data. It drives more specific treatment for our patients.

Dr. Jill 30:03

Yeah. I was super excited. And I wasn't planning on this, but I'm going to share my test really quick so those viewers can see what it looks like. And I'm happy to share my genetics. I've done a lot of that before on here. Can you see my Toxin Genetics?

Dr. Jason Barker, ND 30:16

Yes.

Dr. Jill 30:16

Perfect. It's interesting because it fit really well. CYP1A1 is a cytochrome in the liver. For a lot of these CYPs, if you have an abnormality, you can look up drugs and say which ones go through this pathway. Maybe anesthetics would go slower through my body. And I've noticed that to be true, so I need a lesser dose.

Dr. Jill 30:34

When I had my wrist repaired, I told the anesthesiologist about my SNPs. He did exactly the kinds of medications and the doses. I came out of that the best I've ever come out because he knew my genes. So this matters. And this particular one is to a lot of drugs as well as chemicals. Mine's elevated, so those drugs and chemicals will go slower through my process.

Dr. Jill 30:56

COMT is interesting. We can't break down stress hormones or estrogens as well either, so we might be partially prone to more stress-related illness because we're not breaking down norepinephrine, epinephrine, or estrogen-related issues.

Dr. Jill 31:08

Benzene is so interesting because that comes with gasoline in our environment. Mine is a high risk for not detoxifying benzene. You can see there's one here for bisphenol A, parabens. A lot of this probably relates to my risk of cancer because these were things that I could have been exposed to before I knew how to live clean. There's another one here—styrene, arsenic, cadmium, mercury, and pesticides—partially elevated, that GSTP1. That's a glutathione gene. I know that one well. And then here we've got these aflatoxins. Again, no surprise because I had massive mold illness. I've got two really, really red genes.

I'm not as familiar about these XRCC4s and XRCC1s. Do you have any comments on that at all?

Dr. Jason Barker, ND 31:49

Not specifically.

There are thousands of SNPs in the human genome. When the lab scientists decide what we're going to test, they're looking at the ones that are most relevant and have the most research behind them. The reason that there are so many of those, as an example for aflatoxins, is because they've been better studied. And it's not just like you have one gene that controls how you detox aflatoxin. There are numerous of them. So that's why there can be longer lists for certain [inaudible] on that test.

Dr. Jill 32:22

It's so interesting. I love that. And again, you can piecemeal. There's been SNP testing, all kinds out there. But this kind of dovetails so nicely with your environmental toxic burden test, and it's a great way to screen your patients. And I know there are a lot of clinicians that are listening and listen to the show. So if you are a clinician out there, we'll be sure to link up to how to get set up because I find this to be really helpful in the practice of functional medicine.

Dr. Jill 32:45

One thing I didn't want to forget to mention is people maybe are like: "Well, yeah, toxic load, that kind of sucks. We're all swimming in toxic soup." But if we think about, "Why does this matter?" there are three things that come up with toxic load: One is autoimmunity, one is cancer, and one is neurodegenerative diseases. And there are a lot of other things, but those are big categories. If you're worried about dementia or autoimmunity, which is rising exponentially—Hashimoto's, thyroiditis, Crohn's, colitis, lupus, MS, rheumatoid arthritis, you name it—or you have a new diagnosis, or you've had cancer, or you just got diagnosed with cancer, these three things, in particular, are very relevant to the toxic load. So anyone with cancer, autoimmunity, or neurodegenerative diseases.

Dr. Jill 33:27

And now we have tons of great information from menopausal women. It is exploding for women to think about their hormones menopausally and take care of that. But there's an important thing that we don't hear a lot about, and that is if you're not detoxifying those bioidentical hormones—that are so important to you feeling great [and for] your mind, your sleep—you need to think about that as well because there are certain genetic SNPs. And stay tuned because I'll be having a podcast about this soon in a few weeks. But the key there is if you have these hormones, it's so important to menopausal women. I'm a huge fan. I prescribe

them. But I'm also looking at the genetics and the person that I'm treating because if they're not getting rid of that, I could be causing more harm than good.

Dr. Jason Barker, ND 34:08

Yeah.

Like you said, all those conditions are rampant now, and we don't know what causes them either. Yeah, there are a lot of known carcinogens—cigarette smoke, etc., etc. But for a huge majority of these other conditions... Autoimmunity—what causes autoimmunity? We don't know. Lots of stuff. But certainly, there's also a lot of good emerging research that toxicity is creating that. Chronic infections, especially viral or bacterial infections, can create this.

Dr. Jason Barker, ND 34:43

This is the next best step we have for preventive medicine. Because you go in and you get your diagnosis, and then you have autoimmunity, you get some steroids of some type, and that's it. So by understanding this and understanding our burden and being able to move these things out of the body, we're lowering a person's burden and susceptibility to getting these illnesses later on.

Dr. Jason Barker, ND 35:08

And I like how you are looking at the SNPs that are surrounding hormone detoxification. We need to detox everything in our body. And that's the future of medicine. This is the future because, especially with psychiatric drugs, you can do testing to see which drug will work and [which] will not work. So in the future—this is the start of the future, which is cool—we're going to have a lot more data like this that is going to help clinicians select the right treatment for our patients so that 1) it works and 2) it doesn't hurt them, as you mentioned. It's a pretty exciting time to be practicing.

Dr. Jill 35:43

It is. And functional/integrative [medicine]—we've both been in that world for a long time. But this is really taking that to a new level with personalized, precision. Those terms are thrown around a lot and I love it because you, as a single n of 1 person, are not a study. You don't fit into all of that. You can be treated very, very specifically based on your genetics. And I love that you're pulling that in.

Right now, I believe this lab is ordered by physicians only. Is that true?

Dr. Jason Barker, ND 36:14

Yes, that's true. Clinically, yes.

Dr. Jill 36:16

You can take this information to your physician. It's not hard to order at all. And if you're a clinician or you're a colleague of mine, you can obviously get a lab account and get these ordered. I find it to be super helpful. I will link up in all the show notes wherever you're watching. Don't worry if you're driving. But the company is Vibrant Wellness. What's the main site, Dr. Barker?

Dr. Jason Barker, ND 36:38

Just VibrantWellness.com.

Dr. Jill 36:41

Perfect. Okay.

And they have all their labs if you want to look at some. They have a lot more we didn't talk about—Gut Zoomer, Wheat Zoomer. All the different foods. We have the Neural Zoomer. There's a ton more. We'll have to come back and do another episode on that. But today I wanted to focus on environmental toxic load because that is what I do most of.

Dr. Jill 36:56

And I've said this before, but just to frame it, most times when I see complex chronic illness, it's some combination of toxic load plus infectious burden and how those interplay with inflammation and immune dysfunction. And at the root of most of the cases I treat, those two things are really, really core in identifying and then treating.

Dr. Jill 37:15

I have a few tips we can leave with people as far as clean air, clean water, and clean food. But you did this on a day-to-day basis, and you probably have patient questions. Are there any things that you hear yourself saying over and over again as far as prevention?

Dr. Jason Barker, ND 37:26

Yeah. And you know, it's not very sexy, so to speak, but it's just like, "No kidding." People need to eat well. They need to eat organic. They need to not eat the packaged junk. I'm a huge advocate for exercise. I kind of think it's a cure-all. And I'm not oversimplifying it, but it's so important that people exercise just because it creates that hormetic stress on our body. I guess you can put it like, "Whatever doesn't kill you makes you stronger." Our bodies thrive. Biological organisms thrive on stressors, and one of the positive stressors we can exert on our body is exercise. That makes us more resilient. It turns on the right genes. It turns on the detox genes. Obviously, you're sweating. The skin is one of the largest organs of elimination in the body. We always talk about kidney, liver, etc., etc. It's super important for that.

Dr. Jason Barker, ND 38:20

And then I would get more specific if somebody had a greater burden of one of those particular exposures, whether it be metals, mycotoxins, or those environmental toxins. So trying to mitigate intake and trying to do those things that help move this stuff out of the body is what I say over and over and over again to people every day.

Dr. Jill 38:43

I love that, Dr. Barker. And I really love that you talked about exercise because I think, as a medical doctor, we often aren't trained well to talk about prescribing exercise. And I have just come to learn, especially in the last year or so, how—as far as the data on exercise—it blows out of the water everything else that we do. It is so powerful. And even aerobics. Strength is really cool and sexy. And then high intensity is cool. All these things are great. They're wonderful. But if we forget the basics—sweating, movement, aerobic... I love that you're talking about that because I have just come to believe it's maybe the most important thing we're not talking about.

Dr. Jason Barker, ND 39:22

Absolutely. Exercise prescription these days is a lot like nutrition—it's confounding. "Do this." "Don't eat this." "Don't exercise that way." I would just say, and I say this to patients: "I don't really care what you do to exercise. I don't care if you go for a walk or a run or play basketball or underwater basket weaving." That's exercise too.

People need to get their bodies moving. They need to get it sweating. And they've got to like it. It can't be like a punishment. So finding what works well for them and then building upon that.

Dr. Jason Barker, ND 39:54

But if I don't exercise, I'm going to wilt on the vine real quick. That's why I try to get everybody to do it because it's super important. And no matter what your ability or disability is, there's something we can find for you to do to get your body moving and getting those pathways working for you.

Dr. Jill 40:13

Yeah, I couldn't agree more.

Wow. This has been super great information, Dr. Barker. Thank you so much for your work in this area and also for bringing this information to both clinicians and clients.

If you're out there listening and want to get your toxins tested, this is a really great, very easy way. It's urine collection. The genetics are a cheek swab, is that correct?

Dr. Jason Barker, ND 40:33

You do cheek or blood. Both are very easy to collect. The cheek swab—you're just swabbing your cheek. And then urine—you're just collecting some urine just once too. It's not an all-day-long type of thing. So it's super easy to get the sample.

Dr. Jill 40:48

That's one thing I appreciate too: Some of these tests can be very complicated over multiple days, multiple body fluids—and it's great—but this test is quite easy to do and administer. Even a patient who doesn't have a clinician to interpret—although hopefully they will—there's a lot you can do. And you guys put a lot of data into the reports if they want to know, "Where are possible sources of this VOC?" where they might have gotten it. I often look at your lab interpretation because some of these VOCs I don't see very often. I'm like, "I wonder where this came from," and then I'll look it up. And you have a lot of the sources.

Dr. Jill 41:15

I remember a young kid—I think he was 22 and he was working in an autobody shop. We found this VOC I hadn't seen before. It turned out to be part of the treatment for leather in a car. And I was like, "Oh!" and I asked him, "Did you use...?" He said: "Oh, yeah. Every day I polish up a car." It was a polish on the outside of the paint and then also the leather in the car. It matched with the crazy high levels I was seeing. And I was like, "Wow! So stop doing that." He didn't use gloves, so we talked about, like: "At least protect yourself!"

Dr. Jill 41:45

But I love that particular test because, like many times, I'm like, "Oh, I can really pinpoint their exposure if we talk to them and take a good history and then talk about prevention and how to get less exposure, wash your hands, and make sure you put barriers if you need it." Really, really good.

Dr. Jason Barker, ND 42:01

Yeah.

And I'd capitalize on that too for any clinician who's listening or interested in ordering the test: Don't be intimidated by all that info because, like you mentioned, we have the report comments. And then in your provider portal too, we have these amazing interpretive guides that are like an encyclopedia. So definitely get that guide because it's going to go into a whole lot greater detail than what you'll just see on those report comments. We have a huge majority of data and information that clinicians can use to work with their patients with the results of these tests. We're trying to make it as easy as possible as we can.

Dr. Jill 42:36

And then they have you. And you do consults with providers as well if people want to learn more.

Dr. Jason Barker, ND 42:41

Right. Yeah, there are eight of me. There's a team of eight of us—clinical lab educators. When you order a test, you can schedule a complimentary consultation with myself or one of my teammates. We get 30 minutes to go through the results and explain it and make sense of it all for you. That's the complimentary service that Vibrant offers. I love doing it, so come find me and we'll chat. Tell me where you heard me—on Dr. Carnahan's show—and we'll talk about it.

Dr. Jill 43:10

Totally cool. And we all need that because there's more information coming out exponentially to educate. I love outsourcing some of this stuff; I don't have to keep it in my head. I'm just like: "Okay, I need to look up this thing I've never seen before. It's a rare one. What do you say, Dr. Barker?" Awesome.

Well, thanks again for coming on today with your wealth of information. Thanks for the great work that you're doing, and I sure appreciate it.

Dr. Jason Barker, ND 43:32

Thank you. Thanks for having me. And also thank you for doing all your great work too. This is fun.

Dr. Jill 43:36

Hey, guys, thanks again for joining me for another episode of *Resiliency Radio*. As you know, you can find this episode and every other episode either at JillCarnahan.com under "Podcast" with transcriptions and notes, or you can go to YouTube, Spotify, iTunes, or anywhere you watch or listen to podcasts and check it out there.

Dr. Jill 43:55

Check out below for a link to Vibrant America to sign up as a practitioner if you want to do this test or if you want to send that link to your provider, your physician, and get it ordered for you if you're a patient. I think it's a great way to check on total toxic burden.

Dr. Jill 44:09

And if you guys don't already know, my movie *Doctor/Patient* is out now. It's streaming for free on YouTube and Tubi. You can also watch it if you have an Amazon Prime account. It's on Amazon Prime. You just go to DoctorPatientMovie.com for links.

Dr. Jill 44:22

And if you haven't heard my new line of anti-aging clean beauty products, speaking of toxic load, it's now available at DrJillBeauty.com. Check it out. If you don't know where to start, I've got a favorites package. It's the stuff that I use every day. In fact,

right here behind me is one of my very favorites, my BioPeptide Beauty Cream. It is an essential. I travel with it. I use it every single day. The Vita CE Serum and the HA Collagen Booster and so many others. So if you want more info, go to DrJillBeauty.com.

Dr. Jill [44:52](#)

And join us again next week for another episode of *Resiliency Radio*. I just want to say thank you, guys, for subscribing to this podcast. It's been so exciting to reach nearly 500,000—a half a million—subscribers on YouTube. And I just want to say a huge thank you for your support. I'll see you next week.