Dr. Jill

Your Functional Medicine Expert®

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#87: Dr. Jill interviews Michael Rubino, The Mold Medic

Dr. Jill 00:12

Hey everybody! Thank you for joining us this week before the holidays. If you're live here or if you watch this recorded or wherever you're at—you might be watching after the holidays—we're recording this just right before Christmas and New Year. I'm super excited for my guest today. I will let him, in a moment, tell his story of how he got into doing what he's doing. But I know it'll be relevant to so many of you listening because many of you have had your own experience with mold, with mold-related illness, or with your homes. And we're going to dive into all kinds of questions that you might have for an expert remediator today with Michael.

Dr. Jill 00:47

I just want to say that, for housekeeping's sake, if you want to find all my free content, you can go to JillCarnahan.com. We have 10 years of blogs, all free. I just love writing this stuff. A lot of people have found me because they were searching for mold-related information about illness. And it's all free, so please go to the website. I also have a free mold guide. This is a 20- or maybe 30-page document that tells you what to do if you've been exposed to mold. I wrote this specifically for the listeners who are out there who maybe don't have access to a doctor like me or a remediator like Michael and are desperate to find help and need some sort of guidance. That's out there for free as well. It's probably easiest if you just Google 'Dr. Jill free mold guide'. You'll get to that landing page. And then you can download that for free. Like I said, there's lots of great information for you.

Dr. Jill 01:36

I don't always mention this, but because this is a mold-related podcast, I worked with a company called Quicksilver to create a mold detox box as well. You can go and look at more information on MoldDetoxBox.com. That's a great product. Once again, I found so many people who couldn't see a great doctor or a great remediator and were stuck and were like: "What do we do? How do we start?" So if you go to MoldDetoxBox.com, you can find information about that kit.

Dr. Jill 02:02
I always joke; this is a terrible analogy: It's like the Happy Meal for mold detox. Of course, I hope you're not eating Happy Meals, but it's all in one. It says '30-day' because it has everything you need to start a 30-day detox. I say start because if you're listening or you have a mold-related illness, you know that 30 days won't do it. I typically tell patients we're just getting started in the first four to six months. And again, Michael and I will talk a lot about what to do if you have exposure. Please put in your questions. I'll be watching for those as well, as we're talking. But at MoldDetoxBox.com, you can get more information. Then finally, my regular retail store is DrJillHealth.com. If you need any products or things that are professionally screened, they're all there.

Dr. Jill 02:46
Enough about me. I am so happy to introduce my guest, Michael Rubino. We met. It was really interesting. He's been doing this for a while and has a great story and a great view. If you're out there and have dealt with mold, you know how hard it is to find a remediator who really gets mold-related illness. They're like one in a million. And Michael's one of those one-in-a-million. It was one of his employees who had gone through mold-related illness herself; she reached out to me and said: "You need to know my boss, and here's his book. And by the way, he mentions you in the book." It was really special to get that and to see what you'd written. It's such a concise guide. We will be sure to let all of you listening know where you can get information about Michael, his book, his remediation company, and all of that during our podcast, so listen here.

Dr. Jill 03:32
Let me introduce him, and then I will turn it over to him. Michael Rubino has helped over 1,000 families heal from toxic mold exposure so far. The numbers keep growing, and this is just the beginning. He's dedicated to helping you have the resources you need to overcome poor air quality and create a safe home environment. Just a little note on air quality: You've all heard me say—it's so important—clean air, clean water, clean food. This is the core of healing. [Lack of] clean air is 80% of our toxic exposures. And many of you listening know that, and those of you who don't might be surprised at how big of a percentage it is. That's why I talk so much about this because the air quality really, really matters to your

health. Michael's become a renowned leader in the mold and remediation space. If you don't follow him on Instagram... Is your Instagram The Mold Medic? Is that right, Michael?

Michael Rubino 04:22
It is, yes. [It is] @themoldmedic. That's correct.

Dr. Jill 04:24
It's a great, great place for great information. I love what you post there. He's president of All American Restoration and the author of *The Mold Medic*. He continues to push the conversation forward for creating better indoor air quality. He's been featured on dozens of podcasts and news channels as a leading expert in all aspects of mold remediation and air quality. He's also a council-certified mold remediator by the IICRC and ACAC—in both organizations, I recommend you look for qualified professionals—and a contributing member, sponsor, and speaker at the Indoor Air Quality Association. Long intro, Michael. Welcome! I'm so glad to have you here.

Michael Rubino 05:00
Thank you! You certainly made me sound cool, which I really appreciate. But I want to highlight the fact that when I first got into this—you mentioned that I did mention you in my book—you were someone that I stumbled upon and started to identify and understand mold toxicity as it affects the person. That cements the fact of why I'm even here in the first place.

Michael Rubino 05:23
How I got into this industry is that I'm a second-generation contractor, meaning my father was a contractor before me. He did fire restoration. If you know anything about fires, they get put out with a lot of water. Mold was definitely a part of it, but nowhere near the way that I look at mold today. It was the journey of dealing with that after Hurricane Sandy and starting to see people get sick that I decided to go down this rabbit hole. Of course, I'm thankful, and I know the people that I help are thankful that I went down that rabbit hole. And you came up. A lot of the research that I've done is because of you and the work you've done, so thank you for that. You've helped pave the way for me to exist in the first place. I just wanted to throw that out there.

Dr. Jill 06:10
Thank you! That means so much. Like I said, I was really honored. It's so funny because I'm just right here writing my blog, seeing my patients in the clinic, and trying to make a little dent. Whenever I hear someone like you or a patient that's impacted, it's always really precious because you never know who's listening or watching, or, like for you, who's reading your book. It means a lot because sometimes, when you're in that silent wall of virtual interaction, you don't see all of the impact that's being made day-to-day.

Dr. Jill 06:37
It means a lot that someone like you's out there. For me in clinical practice, I can help heal the patients. But what I know to be true is that if they have ongoing exposure, there's almost nothing I can do that will shift their illness. So I really rely on people like you because, as I always say, you have to start with a clean environment. It doesn't have to be perfect. But if you're in a significantly toxic environment, no amount of supplements will fix it. What you do is like the first step.

Dr. Jill 07:06
You told us a little bit about your father, but tell us a little bit more about how you got into this and even that depth of understanding that you have around the person who gets ill related to mold, because that's a whole different ballgame than many remediators.

Michael Rubino 07:20
I've been around construction pretty much my entire life. My dad was a master electrician. I went on to become a restoration contractor, specifically geared more towards fire because historically, that's where a lot of the restoration work existed in this space. I started to learn underneath his tenureship, understanding the construction industry, which led to building [inaudible] and how homes are built and designed. I started to see a lot of the flaws in the way we build our homes. But really, it was after Hurricane Sandy. I lived in the Northeast at the time. There were so many homes that were decimated by the hurricane itself and all of this water damage.

Michael Rubino 08:04

What was peculiar to me was seeing people who were sick, especially after their homes were supposedly already remediated. That was what started to make me question everything: "What is remediation? What is it about remediation that helps the person?" What I saw was that remediation traditionally is more of a cosmetic handling. It's this "looks like it never happened," not scientifically like it never happened as some of these slogans might end up being. But that's when I started to realize the disconnect between what makes someone exposed to contaminants in their home, borne out of these water damage events, versus what the industry is doing to handle this.

Michael Rubino 08:56
Just to give a very quick example, I look at mold as two different things, both the living organism and the particle that gets created by the living organism. IICRC S520 does a stellar job of addressing mold. I just feel that the educational piece regarding that tends to leave off the byproduct side. You're removing this wall and the mold that's growing into the drywall, but you're not addressing the mold behind it growing into the studs and potentially the insulation. There's a lot of confusion in that arena. Certainly, we know that mold that's growing in one corner of a room is going to transmit through the air to other parts of the home. Most remediation protocols or policies were not geared to address that side of things. It was neglected overall.

Michael Rubino 09:53
When I started to look at all these things and dive more into microbiology and some of the health components of this, I said: "It's clear as day; we're missing the boat altogether in the remediation industry." I ended up linking with some amazing people on the mold inspection side who were doing some more progressive types of tests that helped identify more of the cross-contamination issue.

Michael Rubino 10:20
We're talking 2013. I had no idea what a mycotoxin was at the time. Here I am. I'm tasked with removing mycotoxins from someone's home. That's another rabbit hole I had to dive down and figure out: What is a mycotoxin? And how does it react in our environment? In that research, I found out that it acts more like a chemical residue. I started diving down this path: How do we clean up chemical residues? It was born out of this process that is in the book that talks about: How do we deal

with the contamination at hand created by the sources of mold borne out of these water damage events? That is the long and short of how I stumbled upon this. And it's obviously evolved from there.

Dr. Jill 11:05
Gosh, I love that you're talking about this now. In my clinician view—I am not the remediation expert view—I want to kind of restate that. And then let's dive into some of the details, because you'll be able to clarify more than even I can. From my understanding, we've always thought about spores, which are very large. They're like, I don't know, 10 particulate matter versus 2.5 in the VOC range, which is lower. We have [something] like 10, 5, and then 2.5. The 10s are like the dust and the dirt and the debris and the mold spores. They're quite large. They're easy to filter in general, like with a scrubber system or whatever.

Dr. Jill 11:36
What I always tell patients—and you can clarify anything that is not quite right—is that you could have especially some nasty molds that like dark, dank places, and they're stuck behind either floorboards or in the wall. Stackybotrys and Chaetomium—these guys are dark, they need a water source, and they are often not in the air. In fact, in my experience, if you have Stackybotrys in the air or Chaetomium, you've got a really big issue. They don't typically throw their spores into the air easily unless you have an open place where there's a mold source. Often, they're hidden. But what you said is that while they're hidden under the floor, behind the drywall in your crawl space, they're secreting mycotoxins.

Dr. Jill 12:13
Mycotoxins are more in the realm of 2.5-particulate matter, and they're invisible. They're almost like fumes. I think of them like smoke and formaldehyde. E. coli, I think, is about 2.5, which is a bacteria. So they're these tiny little things. Those cause organ damage, immune compromise, and toxicity. They are being studied in the armed forces for chemical warfare, some of the things like trichothecenes. These are the really nasty chemicals. Mold was created to protect itself, so it secretes these chemicals, which cause damage.

Dr. Jill 12:48

Most remediators, unlike you, are not looking at that. They might do air sampling, which I think is a perfectly wonderful and valid part of an inspection. But they're not testing for mycotoxins. I still like QPCR. And I want your comments on these because, in the big picture, what I often see in the QPCR is some of these nasty things in the dust. Or, in the EMMA test or some of the tests for mycotoxins, I see much more toxic things than I do in the air samples. And I want all three, but...

Dr. Jill 13:17
What's your comment on that whole slew about: Where do we find these? How do we get a good inspection? And here's the number one question: Why do patients often have one, two, three, or four inspectors that do an air sample and say everything's perfect?

Michael Rubino 13:32
It's a great question. There are a lot of great questions in there. First off, I love QPCR technology. We've all heard about PCR technology at this point with the pandemic we're living in. It is looking at the DNA of what's there—spores, fragments, the whole nine. It's all of the things that could enter the body opportunistically by getting into the breathing zone. Our homes are living breathing systems, so what's in our dust ends up inside our bodies. It's really important that we analyze the dust, not just the air.

Michael Rubino 14:04
The air gives you a snapshot in time in one particular area. They'll have these pumps that get set up. They typically set them up in the center of the room. They run it for five minutes. It tells you, within those five minutes, what exactly passed through that specific area. It's very limited because you can be three feet away and have a problem, and it's not going to pick it up nearly as much as if you were just three feet closer. You really want to look for more signs of water damage and test closer to those areas so that you can get a better view. I think air testing is very, very limited. Unfortunately, it gets misused a lot. I think that's part of the problem.

Michael Rubino 14:51
If you do an air sample in the center of the room and there happens to be nothing going on in the center of the room, it can give you this false sense of security that your house is fine. I can't tell you how many times people send me results and

they're like: "What do you think? What's the remediation plan? The guy recommended no remediation." I said: "We only have three air samples to go off of. Why did he take the air samples in those exact locations?" And it was just: "Oh, it was just random. He just did a random check." Those are not quality assessments that are going to provide you with any data.

Michael Rubino 15:21
It would be like going to your doctor and being like: "I don't feel well." "Cool. I'm going to check your vitamin D level." "Vitamin D looks great. You're fine." It's like, what about all the other things that you could check for? So that's why I say there's technology today; we call them tools in the tool belt. You have all these different tools in the tool belt. We want to utilize those things.

Michael Rubino 15:39
And that's actinomycetes and mycotoxins. It's ERMI, QPCR, or EMMA—there are different variations of it. You have air testing, but you want to test specifically based on what you're seeing visually. And then you have swabs. Swabs are pretty good if you have, let's say, a water stain. You're like, "I'm not sure if that's mold or if that's just water damage." Well, then you should definitely test for it. I think that's a good indicator.

Michael Rubino 16:11
For anybody who's followed someone like Brian Karr or @moldfinders on Instagram, for example, you'll see some really cool posts of him swabbing something that looks pretty innocent. But by the numbers, you're like: "Holy crap! There's a lot there." And I think it's really important to utilize these tools in the tool belt to help diagnose what's going on inside the home that could be causing or exacerbating chronic illness.

Dr. Jill 16:35
Yes. Gosh, you just did a great overview. And the one thing that you mentioned but that I want to emphasize is that there's no substitution for a great inspector because you need this computer [pointing to the head], just like I use it with my patients. You could read an article online, but for me or someone else who's a medical detective to go in there... It's the same with what you do—all of the important stuff comes from that inspection and looking at it. I want to emphasize

that if you're out there and you don't have a good inspector, you really do need to get someone in there. But sometimes, in the interim, you can do some of these things to get started on your own.

Dr. Jill 17:10
I bet you have people, Michael, that bring you testing, and they ask you where to go from there. Let's talk to the people who are like: "I think there might be an issue. I've been feeling poorly in my house." What would you say? How would you advise them to start? And give us a rundown. Say you suspect illness from mold in a home. What would you tell the client?

Michael Rubino 17:32
Probably my first recommendation: If you're not sold on the whole idea of getting someone inside your home and doing a full gamut of testing, I would say the first place to start would probably be QPCR technology. I would analyze your dust. It's going to give you an overview of what's in your dust, which means what's in your environment. It will give you the confidence that you need, or lack thereof, to move forward or not, [and to consider]: Is there a problem inside my home? I think it's one of the most elementary tests that you can do to identify if there's an issue.

Michael Rubino 18:12
Just bringing Brian back up to the conversation, developing this technology called the ERMI Code, where you can then decipher that at a very respected cost. I think it's probably a good way to go to identify: What's going on? And do I need to take steps further from there?

Dr. Jill 18:30
I love that you say that because, as a clinician, I am not the expert, as I always tell patients. But I've had to learn enough to help people get to people like you. Let's say I'm in a clinic. I'm doing questions on mold symptoms. And if they're positive, I do a visual contrast test, either online or in my clinic. So [I do] a few free screenings. And then I'll go deeper with labs that cost more money—urinary mycotoxins, blood work, etc.—and look at a deep dive. But if I'm at the point where I'm highly suspicious of mold, I will have them order an ERMI [test].

Dr. Jill 18:59

If you're listening and you're like, "ERMI, QPCR—what's the deal?" I'm going to explain. Then I'd love, Michael, your thoughts on it, because I bet they will be the same. The way they set up the ERMI [test], they tested some HUD housing. Some of it was supposedly moldy, and some of it was not. They took a logarithmic scale to say that these are the moldy homes and these are the non-moldy homes and gave a score. Most of us agree that that score is basically invalid. It doesn't mean a whole lot. I've turned to start calling it QPCR, because all that means is that it's PCR or DNA testing of the dust in your home. It has no attachment to that ERMI, which a lot of remediators are like, "That's not valid." It's the same test, though. If you order it, it's still called an ERMI.

Dr. Jill 19:43
I'm not the expert, but I do have patients often start with that because I've learned to look at those numbers. And I do a HERTSMI score. I also look to see if there's anything out of line. I look at the individual molds that are on that sheet. I'm not the expert, but I can usually see patterns. Then I'll say, "You need to call Michael" or someone like that. But I do find, like you, that for me in the clinic, it's the easiest way to give the patient some control over starting.

Dr. Jill 20:08
I would say that 90% of the time, what I like to do is match what I see in their dust to what I see in their urine. If I see high trichothecenes and then high Stachybotrys or Chaetomium, I'm like: "Bingo! This is coming from your environment." Then I can clinically say that this is relevant. "Go get an inspector because I don't know where it's at. I just know there's something bad in the dust of your home."

Dr. Jill 20:27
I also want to mention—there's no affiliation—if you're looking to do tests and you can mention other companies, I think right now EnviroBiomics and Mycometrics are two good companies. What do you have to say about QPCR? Do you feel like that's in line with what your thoughts are?

Michael Rubino 20:40
Yes. It's exactly in line. The scoring methodology that the ERMI has is very flawed. You'll have scores that are like an eight, where you almost can't get the data better. And then you have scores that are like a negative four, and Stachybotrys is off the

chart, so you're like: "This is not a safe house." You can't really rely on the score, unfortunately. But the data itself, based on QPCR technology, is valid because it's actual. That's all reliable. That you can actually count on—the algorithms and things like that. If they're ever going to focus on updating that in the future or whatnot... It is workable now. But the technology is very, very useful.

Michael Rubino 21:24
You mentioned the word screenings earlier and how you use that in your practice. I would say that QPCR technology is exactly like that. It's your home screening. And that'll tell you, based on that, what you need to do from there: Get a deeper dive inspection, or does this place look relatively good? And depending on whether you're a renter or a homeowner, that can determine your path to securing a lease or going down the path of remediation before you move in, if you're on the homeowner's side.

Dr. Jill 21:55
Yes. Great, great analogy. Here's another question. I've had this happen a lot, and I'm sure you have too, but [it's] for those people listening. What if you get in, find out there's mold in your crawl space and maybe behind your wall, and you get a remediator in? They go in there, they cut out all the mold plus margins, and they do a good job. Then you repeat either the ERMI QPCR or some sort of air sampling, and it's worse. You and I know there are more steps than just that. Why don't you talk about: Why are there failed remediations? And why do the dust, dirt, debris, and the cleaning of your home matter? Go through that with us a little bit.

Michael Rubino 22:33
Yes. First, I think the term 'failed remediations' is probably a really good one to bring up and talk about and unpack because I hear that word a lot. I think it stems from two different things. One, you didn't get enough testing data to identify what was going on inside the home so that the remediation could have been performed. Sometimes a failed remediation can indicate that additional testing and additional issues need to be found, located, and remediated properly. On the other side of the fence, you may have all the data you need, but the actual remediator doesn't understand what to do with that data. The work plan isn't going to be conclusive enough to take that data and make sure that you're going to get the outcome you're looking for. So that's the other side of the fence of failed remediation.

Michael Rubino 23:23
I see both a lot, unfortunately. It is pretty frustrating, no matter which side of the fence you're on. But I think it's really important to do your due diligence, especially if you're vetting a remediation company, like All American Restoration, as an example. You want to make sure that you feel comfortable that they're going to achieve the outcome you're looking for. I think contractually, I see a lot of stuff that happens where they say one thing, but the contract reads something different. When you're trying to hold them accountable for passing, they're like, "Well, I don't guarantee that."

Michael Rubino 24:01
Always make sure the guarantee in writing matches up with what they're talking about verbally, and get clarity on what's included. Unfortunately, a lot of this stuff is traditional remediation tactics. They're opening walls, they're taking care of the sources, but they're not dealing with what that source has created over time: The mycotoxins, the mold spores, and that it was sporelating. If they're not specifically going to clean your home after to remove or reduce those things, when you do another ERMI after the fact, it could even get worse—because they're shifting stuff around and there's all this equipment moving air around—even if they're putting a room under negative pressure.

Michael Rubino 24:41
I did a whole animated ERMI video that you guys should check out to see the animation behind what I'm talking about. But essentially, imagine doing a bathroom on the second floor. You put that bathroom under negative pressure. There may be hidden sources of mold across the home that are behind walls, and you can't see them. But when you put that bathroom under negative pressure, all the air in the house is moving towards that bathroom. As that happens, you're going to be pulling stuff into the environment inadvertently. Then, when you swipe the environment to test it, you're like: "Oh my God, it went up! What a failed remediation!"

Michael Rubino 25:18
Unfortunately, a lot of remediators don't know or understand what I've just mentioned, so you're going to have that disconnect in being able to explain comfortably what happened and make sense to you. But when you're removing the

sources and then you start to clean, you'll start to gain net positive results, meaning the scores get lower and lower. The counts get lower and lower. Everything gets better. The way I look at remediation is that you're looking to tackle those things and create what I call a new equilibrium—a lessened toxic load. That's the goal of remediation in general. Or at least it should be.

Dr. Jill 25:56
I love this. I'm going to talk about what I think might be steps. Then you clarify, because you're the expert here, not me.

Michael Rubino 26:05
Sure.

Dr. Jill 26:05
Typically, though, we need to find the source. We need to have an expert go in under negative pressure and cut out anything porous. You don't want to treat stuff that's porous. You cut it out. There are a few surfaces—would it be concrete or non-porous material that you could treat or even studs in a wall?

Michael Rubino 26:20
Yes.

Dr. Jill 26:20
Sometimes you can just scrub them. And you scrub them, and then treat them if you can't remove them. Is that correct so far?

Michael Rubino 26:27
That's correct.

Dr. Jill 26:28
Before the remediation, dust and debris were going around your house in your air ducts and things. And then, after, you might have actually screwed it up. And what you said is true. Often, the spores are contained and left undisturbed, and they're secreting toxins, so the person there may not feel well. But they're fairly undisturbed. When you go to remediate, you're really blowing it up, no matter how well it's contained. So the thing that I found to be key after—and I want your

comment on this—is that the air ducts need to be cleaned at some point after and the house needs to be cleaned in detail with a small particulate clean (there are pretty good protocols now) because the dust and debris that's left behind could be parts of mold or toxin residue from mold. That can cause illness as much or more than the original source. So, talk a little bit about that. Did I have that right? In what order of operations would it be?

Michael Rubino 27:21
You had that exactly right. I think that's where most people miss the boat: They're looking at the source remediation as remediation because, honestly, traditionally, that's what most mold remediators have been pushing for sales, if you will. The whole cleaning process at the end, after the sources are eradicated, is really important. In that video I mentioned earlier, I talked about how it doesn't matter if you were meeting in one room or ten—you have to clean the house afterward because you're going to inadvertently pull stuff into the environment.

Michael Rubino 27:57
Most of the time, when I visit somebody's home, there could be sources for ten-plus years that have been in existence that were hidden that people didn't know about. There could even be previous owners who had this problem occurring and weren't aware of it. Think about the lifespan of that and how air circulates throughout a house, especially with the forced AC that we all typically have. It moves around the home. It gets into these dust trappings and gets caught in interstitial areas like below the baseboards.

Michael Rubino 28:29
Once you are in remediation, you're going to be putting that room under negative pressure because you don't want what you're opening up to cross-contaminate the rest of the house. But because your house is already essentially cross-contaminated, you're going to be pulling that towards where you're remediating. I think a lot of people miss that fact, or maybe just haven't connected the dots on it. But when you look at it that way and start to wrap your head around it, you see how important it is to clean thereafter.

Michael Rubino 28:58

As you're pulling stuff to the center of the environment, you want to then remove all the particulates from the environment, including the toxins. There's also potential for bacteria, depending on the path the water came from. All of that has to be taken into account and tested for both before and after to validate that it was done. I don't care how good of a remediator you are—you're dealing with microscopic particles—you have to test after the fact to say: "I can confidently say that this person is better off now that this place is fixed."

Dr. Jill 29:32
Great, great overview. So a couple of things. First of all, what do you think is the biggest cause? We've touched on these [things], [such as] a failed remediation. I'm assuming you go after they've maybe had a previous remediation that's unsuccessful, and you see the things that didn't work. We've touched on all this, but what would you say are the top three things that a failed remediation might be caused by?

Michael Rubino 29:57
I can give different examples. I'll give one example of a remediation project that I know of that happened in New York. When you went in there, there was still drywall debris—chunks of drywall—left behind. If you get debris on that level, you know that they're not HEPA vacuuming on a molecular level. You start seeing that things were missed. Visibly, you can tell microbiologically that it's not clean. It leads to that neglect.

Michael Rubino 30:32
I've seen situations where the remediation looked really good. You can tell that the company did a great job. However, there were other sources. We don't all have X-ray vision, but there were other sources that needed to be identified and eradicated, and then the fine particle cleaning would achieve that new equilibrium.

Michael Rubino 30:55
It's the years of experience that I've cultivated that have allowed me to stay away from failed remediation. Not to say that it doesn't happen, where I get stuck in a project and have to go through these procedures to figure out what the root cause is. But it's like knowing when things should work and they don't. It allows me to

pivot and say, "There has to be another hidden source somewhere" to get the inspector back in there to identify it. So that's how you can avoid scenario two.

Michael Rubino 31:30
Scenario three, unfortunately, is tough. You have to really vet the company to understand if they know what they're doing. In scenario three, you have people that come in, and they're telling you: "I can fog the place. You don't need to do all this remediation. You don't need to do all this tear-out. That's over the top." It's misguided advice that leads you down this road where things do not meet the outcome you're looking for.

Michael Rubino 32:01
I think it's [about] vetting people. If you have a good report from an inspector and there's all this clinical data and you have ERMIs and you have mycotoxins, and if the company's telling you, "You don't need to worry about that kind of stuff; that's not necessary," that would be a red flag for me to identify that that company might not be what I'm looking for. There is a really big difference between companies that know how to do this medically and companies that know how to do it cosmetically. And I think you have to really understand and vet the difference.

Dr. Jill 32:31
I love that last line there because that's really where it's at here. It's like me, with my little special focus on functional medicine versus a general practitioner. They're amazing for a heart attack or if you need basic blood work. That's what they do, and they do a great job. But if you want this very specific, narrow, deep focus on chronic illness, mold, Lyme, etc., that's what I do. And the same [is true] for you and the remediators.

Dr. Jill 32:53
Honestly, from my perspective with the patients, it's: Are they getting well? If we're doing the plan that should detox them and at six months they're not making any progress, I always have to go back to: Are they living in a clean environment? We have to go back to that. Then I need someone like you to help me because, sadly, it's more common. If I had to guess percentages, I'd say almost 80% of the first-time remediations failed for my patients—maybe more, which is crazy.

Michael Rubino 33:18
That's depressing, honestly.

Dr. Jill 33:20
It is! It's so sad. It is important. And you know what? The other thing is that it usually costs more. It really does because it takes more time to do what you do than to go in and go out and not clean. The cleaning itself can take days, depending on the size of the house, the manpower, and all that.

Michael Rubino 33:36
Yes. I estimate that to do it right, it's about 500 square feet per day that the team can comfortably clean. For a 5,000-square-foot home, for example, that's 10 days. If somebody is telling you they can do it in a day or two, I don't think they're going to change rags often, let's say that. They're going to go through it pretty quickly. This really takes a standard of care. You've got to take your time with it. Just the downtime alone with verifying things with post-testing and waiting for those results and making sure that everything comes out good before you move on to reconstruction, doing it right is going to take longer. It's ready, aim, fire. But the result you get at the end of the tunnel is so worth it because you can feel the difference when you're looking at a standard cosmetic remediation versus a deep medical-grade remediation.

Dr. Jill 34:33
I love that. The other clarifying thing is that there are a lot of people who are not super sensitive, and they might do okay with a standard remediation. We're talking to the person who's very ill from mold and maybe has mast cell activation. They're hypersensitive to their environment. They're the 25% that have more genetics related to poor mold detoxification. The average person might not be as affected, but all of the people that I see are deeply affected. They need a very clean environment.

Dr. Jill 35:01
One thing you mentioned that I've had personal experience with that I wanted to talk about is that fogging has its place, but fogging by itself in a home that has severe issues... I had a personal experience with a small water leak under my sink. I found a little Aspergillus in the air. I was like, "Let's get this cleaned up." This was

years ago, before I really understood. Someone promised me, "We'll just fog, and that'll be fine." I had no symptoms before the fog. Then they fogged, and I got really sick. I didn't feel well. In my mind, I'm assuming whatever enzymatic process they used in the air broke up those spores and things that were in the air, making them smaller fragments, and causing an effect in my body. I realized, "Oh, gosh, we have to be really careful" because you must always take care of the source.

Dr. Jill 35:43
I have found in some cases, when someone has no choice for a couple of months, that fogging can sometimes diminish the amount in the air just temporarily. Any thoughts on fogging and its place? I still feel like it does have a place in the cleaning and remediation at times, but where would you put that in order of operations, and what cautions do you have?

Michael Rubino 36:04
I would put that more at the end, when you've removed all the sources and you're doing that deep cleaning. I think it's valuable there because it's going to help bind to the particulate in the air, forcing it to the surfaces, allowing you to vacuum and wipe them away. Where it's misused is when it's used in place of remediation. I think that's really the big thing.

Michael Rubino 36:27
There are white papers out there that the fogging companies release. If you look at the white papers, it'll show you this u-shaped curve where the levels do go down—mainly, we're talking about through air testing. I don't think it would quite make the mark on PCR testing. But the air test does go down. Sure. I do think that it provides people with some relief in the very short term. But it comes back with a vengeance. And I'm sure that it probably speeds up the production of mycotoxins. If mold feels threatened... And we don't know all the ways mold feels threatened, but certainly, I don't think this is helpful to the equation on that particular piece of the puzzle.

Michael Rubino 37:13
Essentially, that's the simplicity of it. It's going to come back. It's going to come back with a vengeance. You have to ask yourself: Is that money better spent on actually fixing the problem once and for all? Or do you want to go down this road of

fogging every couple of months and [have] that be your plan? I would say that when most people buy into the fogging, it's because they're being sold on the fact that this is remediation. And this is why it's so difficult for me to even call myself a remediator, because when you look at the term remediation and all of the people utilizing it and how they are utilizing it, you start to think that it's all the same. If you think a $2,500 fogging is the same as, I don't know, a $25,000 remediation, you're going to be skewed in the way you're thinking because you're going to say: "Why would I spend 10 times more if I can get the same result?" The problem is that you're not getting the same result—not even close. I wish there was more care in the way companies marketed themselves.

Dr. Jill 38:29
Yes. I feel like your industry is coming around, thanks to people like you. But it's like the Wild West. It's starting to get more regulated, but anyone could kind of call themselves a remediator, and who knows how good the work they're doing is. So that's super important. Right now, I do have an oil-based fogger, and I use it in my home and office maybe once a year. It's purely preventative. I don't have any known issues. But I would never do that if I had a source. And that's what you're saying: You have to go to that source.

Dr. Jill 38:55
And we have all these wonderful filtration systems. I always say that the air in my office is cleaner than in a hospital because we have five air filters, all with VOC filters, and they're always running in every room. And the same with my house, so it's neat to see. Just a little bit of a side note: We got through COVID the entire pandemic, 18 months. Because I was [running] a medical office with retail, we were able to stay open with all of my five employees the entire time, and nobody got sick. I think part of that is the air quality. We really had good air quality and air exchange, and our filters would filter out viruses. Any thoughts on air filtration or UV lights? Let's say post-remediation. What would you recommend people do if they want the best air quality in their home?

Michael Rubino 39:42
First off, we filter our water. We should be filtering our air. I think that it's important. It helps keep the toxic burden that we're exposed to as minimal as possible. I think air quality and efficiency matter. If you're asking me what's the

number one feature that I look for in an air quality device such as an air purification system, I look for how small a particle it can remove. The smaller the particle it can remove, the better value it offers.

Michael Rubino 40:13
There was another interesting thing I noticed about air purification systems. There are a ton of YouTube videos you can check out, like different efficiencies, but it's another Wild Wild West industry. You have some air purifiers that say they go down to, I don't know, 3 microns, for example. And you have another product side by side that goes down to 3 microns. If you put particle counters in front of both, they both say 99% effective. You get one that has more particles coming out of it than the other. I find that very strange because 99%, you would think, is going to reduce the amount of particles. But some of them happen to be more efficient than others. Again, it's back to these marketing tactics. A lot of these companies, as long as it's 99% efficient 1% of the time, are going to go for that. That makes things confusing. I would definitely do my homework on them.

Michael Rubino 41:10
For a lot of the companies that are well-marketed, most of their money is spent on marketing. You've got to wonder how good the quality is. Always verify that. Take a look, read the reviews, look at the videos, and see if somebody has put a particle counter in front of it. You'll be surprised; YouTube is a wondrous place for that. And dive into: How small of a particle can it actually remove? If they can't remove that small of a particle... Keeping in mind that mold can be anywhere between 2 and 4 microns, and mycotoxins are smaller than that. Of course, you also have the fragmentation that happens when the spore itself breaks up into smaller particles. You want to keep all that in mind. The smaller the particle, the better.

Dr. Jill 41:52
Yes. I couldn't agree more. I use Austin Air. There are many other good ones. Personally, from a feeling-better perspective, it tends to work. They've been around a while. One other thing I want to mention is that some of these newer companies promise either UV filtration or ozone. Some of them even say: "We don't produce ozone." But what happens in those types of machines is that their process with the particulates in the environment can create ozone. And there's just a caution: Some people feel fine and do great with that, but patients who have lung inflammation or

lung issues like myself five years ago... I did very poorly. I felt burning in my lungs. I felt much worse when I had that type of filtration system. For those who have lung inflammation, even the smallest bit of ozone in the air can be irritating. Again, they can be good. I don't want to say they're all bad. But my experience is that patients with lung inflammation don't do well with it. So caution.

Michael Rubino 42:45
That makes a lot of sense. I particularly don't use ozone technology in my business just because there are a lot of those issues. Also, sometimes it breaks down certain things that people have inside their homes, content-wise. That can cause some problems. I tend to stay away from it for that reason.

Dr. Jill 43:08
Yes. You and I are dealing with a sensitive population, and they don't do very well with ozone. Maybe the hospital system is great, but it's a very different ballgame. Good. Gosh, so much great information.

Dr. Jill 43:20
You mentioned the video a couple of times, so when we're done, be sure to send me the link to it. I'll make sure that wherever you're watching this, there'll be a link to the video that Michael was referring to and, of course, all your websites. But before we go into where people can find you, do you do consults all over the US? And can people call you? How do you work?

Michael Rubino 43:39
I do. I do consultations. I do it virtually. Very sparingly do I hop on a plane and come in person, but that does happen from time to time. We are a nationwide company as far as All American Restoration. I am the founder of that company. I am still the acting president, definitely involved behind the scenes in making sure that our clients are well taken care of. We do travel nationally, essentially consulting-wise. I consult internationally as well. There are a lot of clients in Ireland and the UK that don't have a lot of professionals out there with a vast amount of expertise, even less so than in the US, unfortunately. So I've been doing everything that I can to help as many people as possible. There's only one of me, so I get booked up and stuff like that. But I try to respond as quickly as possible. And I do respond a lot on Instagram, where I give a lot of free content, and apparently on TikTok now too, because you've got to keep up with the times.

Dr. Jill 44:44
I know, right? I need to get on there too. That's awesome. And what's your main website, Michael?

Michael Rubino 44:49
My main website is TheMoldMedic.com to contact me, learn more about the book and how to work with me, and ask unbiased questions that you may have in regards to: How do I find a good inspector? How do I find a good remediator? On the remediation side, we have a ton of free information on what remediation should be. And you can find all that stuff on AllAmericanRestoration.com.

Dr. Jill 45:14
Awesome. We'll link to those. And I highly recommend your books. Again, that's how I found you: One of your employees sent me a copy. I was like: "This guy really knows what he's doing. I want to connect with him." We all need each other, so I definitely need to know more people like you. And you were kind enough to send me a little stack, and I've been giving them to patients because it's such a great little concise... It's almost like a handbook. And you probably wrote it for that purpose.

Michael Rubino 45:39
Yes. It's just a simple guide. I tried to cement the fact that it's not all equal. I look at this as a triangle: You need a good inspection, you need a good remediator, and you need a good healthcare practitioner. Without that, it's really hard to make sure you have everything you need to heal.

Dr. Jill 45:59
I totally agree. Thank you for the great work that you are doing in the world. I'm so glad we connected. I'm so glad I could have you here. Any last-minute advice, notes, or anything else about what you guys do?

Michael Rubino 46:11
Nothing that's immediately coming to mind. I know we covered a lot of great topics here today. For anything that I've missed, if you have questions, please reach out. I'm happy to answer.

Dr. Jill 46:20
Awesome. And if you're listening, just look below wherever you find this; I will be sure to include links and information. Thank you so much, guys, for joining us today! And thank you, Michael, for your great work in the world!

Michael Rubino 46:31
Thank you for having me!