Welcome to this episode of the Michael Talks and Chronic Illness Summit. I'm so happy to have with me today Michael Schwantz. He's an indoor environmental professional.

We're going to talk about mold in the home, how to assess for it and what to do about it. Most people suffer who suffer from mycotoxins illness. Well, it started in their home.

So so welcome. Michael. I'm just so excited to have you here. I know our listeners are going to learn a lot from you. Thank you. Nafisa. Glad to be here. Yeah.

So can you start by introducing yourself to our audience? Absolutely. Michael Schwartz, the owner of Environmental Analytics. I'm an indoor environmental professional, which is kind of a broad, sweeping term to cover a variety of all things environmental.

I got my start back in 1996, dealing with general indoor air quality concerns, mold being one of them, and migrated, into other fields, chemicals and radon and its business and found myself loving the trade, loving the disciplines, found the proper education to kind of grow.

And probably the biggest shift in my career was around, 2010, maybe 2015, where I started to just work with more complicated clients. These were the people that weren't calling you up because they were selling their home.

And somebody noticed a water stain on the ceiling, and it was more of a transactional issue. It was more health related. And, really found new terms like series.

And, you know, what's this Lyme thing people are talking about? And Sibo and the list goes on. And, and really just found that I was resonating. I was doing the type of testing that was detecting things.

If we think about mold, for example, I was doing a lot of the more forensic types of sampling for years, even before even people knew what an hermy sample was or that sort of thing, and found myself with like minded professionals to where probably since 2015 till today, I exclusively work with, clients around the world, with various forms of chronic illness where, really my role as is education and providing direction.

These are individuals that may just be getting started and they're doctors that I think exposure in your house or building is occurring, or somebody who's gone through so much already, maybe they've done it, 2 or 3 times and they're getting conflicting answers.

And so they're looking for somebody who not only has a critical eye and forensic guy with the environmental piece, but has an appreciation for the health piece, because so often that art is missed from your common inspector.

Right. And what's going on in the house, as you said, it's so often missed. So it means that because that's missed, people are going to keep having the insults just thrown at them in their home, and they have no idea.

Right. You know, very often I might see it in in someone's bedroom or close to where they sleep, and little do they know, they're resting their head every night, right by where there's mold behind the wall or in their bedroom.

So, let's start by talking about testing. Can you tell them about what an early test is? Right. So, back in, 2000, six, the EPA came out with a test, called an army in, Environmental Relative Maltiness index.

It's been a while since I've actually spelled it out. And and basically the idea behind it was it was a dust sample. Right. So somebody collects a dust sample and they send it off to a lab for analysis.

It's a 36 mold species. It gives you a score. And through all of that, you're supposed to look at this graph, this

chart, and go, okay, well, based off of my score, I have this percentage of a maltiness.

Index problem or an issue in the home. And so that's kind of where it started from. I'll, I'll set you up for additional questions, but just to say that this is, has been a sample or type of sample that many professionals and homeowners or occupants patients have been using in a DIY format to get a general idea of exposure in their home, which sometimes can be a useful tool for their doctor.

When trying to figure out how much further should we go down this rabbit hole regarding all things mold exposure? Right. So I use it just to put us in the ballpark.

Well, does it appear that there is a problem in your house with respect to mold or, maybe that's not really the case, but lo and behold, most of my patients with complex chronic illness that that come to me with, symptoms that are unexplainable fatigue, joint pain, gastrointestinal issues, brain fog.

It's very, very often that they do have a mold issue in their home. Yes. They're going to also have, you know, typically tick bites and a high viral load and high parasites and everything.

But it's very, very often that mold sets the stage for everything else in the system to flare. Okay. Environmentally, mold is is kind of our surrogate.

When you think about all things water damage, there's certainly other things that can happen, right? We can get bacteria growth. We can have chemicals off gassing from building materials.

But a lot of times mold, if it's not the direct contaminant, is is the surrogate for other things because people don't want to spend $50,000 testing for everything under the sun in their home.

It's a great way to start for sure. Right? So let's talk about beyond doing an Hermie, this is where you would come in. Yeah, absolutely. So in the event that somebody reaches out to us, whether they've done their own initial sampling or they haven't, a lot of times we're doing kind of what you're doing to start, we're doing a client intake.

We're trying to learn from them. Why are we here in the first place? Right. You know, you don't just show up a good IEP again and or environmental professional is not just going to show up blindly or tell you over the phone how much it's going to cost.

That would imply that they have the ability to detect what is the issue. And at that point you might be asking, what do we even need a sample? If you're that good, a good IEP is going to listen to why they're there.

You're there because probably there's a health complaint. And you probably as a client or a patient, have maybe a couple few areas where, you know, maybe there's been some water, events, right.

Damp crawl space, toilet that overflowed a couple of years ago. And you're trying to figure out whether or not these could be areas or sources that could affect the normal fungal ecology.

That's a term for everybody. Our goal is normal fungal ecology. That's what we're looking for. We're not looking for mold free because we don't live on a bubble on Mars.

We live on planet Earth. And even looking at your background, you have plenty of, sources behind you outside where there's going to be molds and bacterias.

This is your normal fungal ecology that's getting into that building. So what do we do after we kind of get an idea of an assessment of what's the scope here?

The areas of concern, a good IEP still going to walk the whole house. We're going to put some special focus on the areas you, the client have mentioned.

But a good pair of eyeballs and a flashlight are probably the most powerful tools that and knowledge and experience of what to look for. Signs of water staining, swelling or separation of the baseboard next to, the exterior walls underneath your vanities or cabinets and kitchen sinks and water heaters.

All of these while you're you're seeing a theme of maybe where moisture can get into that sort of thing, and trying to provide a non-numerical value to these areas.

Is this an obvious area that should be remediated, or is it more of a question? How many of you listening have had a case where we have? We got water staining under the kitchen sink cabinet, but we don't want to spend $6,000 or more to replace that because of an assumption.

So the inspector will then sit down with you and say, well, what are the remaining balance of our questions that we can't answer visually? We know that's an area over there that needs to be remediate.

It's actual growth. On your actual cabinet, this is a more of an obvious issue, but what if it's not obvious? What if it's just staining or it's this whole debate about, well, do we really need to fix the crawlspace?

I've heard that that can be really expensive. That's where sampling comes in, and we can dive deeper into that depending on where you want to go. But the good inspector will sit down with you and talk about a host of different types of samples.

Typically around mold or bacteria, but all for answering different types of questions. If you're doing a dust sample in a home, for example, we talked about this for me before.

That will be good for giving you average exposures. Kind of the ballpark discussion you mentioned earlier, or maybe even zoning the house down like, oh, did you notice that we did 2 or 3 in the home and we noticed the master was higher?

That's weird. What's going on in the master? That's not going on in the other parts of the house. It's not going to tell you where the mold is coming from.

So on, a good inspector will have the ability to inspect. And here's a new term interstitial cavities, wall cavities, the cavity underneath a kitchen sink, or a vanity that little.

If you have a bottom shelf, there's a cavity underneath there up in the attic, down in the crawl space. These are areas that you don't get to see without usually opening up or being destructive.

So what are those tools and techniques that a good inspector can have while doing things like cavity sampling, where they literally sample the air from these cavities?

It's minimally destructive. It's about a little 3/8 inch of a hole. The special tube that goes into this cavity space and takes a sample. Or if they don't have that, they can do a thing called Michael Meter.

It's a well known test that does a it's a swab sample looking for fungal enzymes. Is it higher right here. Oh my gosh. We did a swab sample. And there's a mold source we found here.

There's a number of techniques. But you want to know that you're good IP has the ability to locate the source. Because if all they do is tell you you have a problem in the home based off of your dust sample that you took earlier, that's not going to really help you know where you need to remediate what you need to focus on.

And finally, a good IEP. This is the 30,000ft perspective, believe it or not, is going to be able to give you report with findings and recommendations.

Now what do I mean okay. So findings are probably self-explanatory. We saw this visually or historically. You've given us this information. Here's some sample data. Here's what we found.

But what about the interpretation of it? Believe it or not, there are there are companies out there that will not interpret the data for you. In fact, I'll leave it to the lab to interpret.

And I always found that silly because, usually the person is best able to interpret these samples. Is the person that's been out there with you involved understanding the unique part of your environment that could help explain whether or not this particular sample is elevated or not.

In fact, because keep in mind, the same mold species that could be growing in your home are right behind the feces. A window behind her, or other locations, in your outside.

That could affect what is normal for you. And that leads me to the recommendations. What are they recommending? If I tell you you have a problem in your house, if I say, yep, your air samples or dust samples indicate, contamination is exist, and I think it's coming from the crawl space.

What do I do about it? Is it good luck. So a good IEP is going to be able to write protocol for you and literally say you need to contact this type of company.

And in this specific order. And there might be 5 to 10 steps basically give you a game plan an action plan so that when you get done spending all that money to have an inspector come out to do it and a thorough inspection of the home, you have what it takes to walk to do the next step.

Maybe if they do need you do need remediation. You need to contact a remediation company. You do need to contact a crawl space company. You shouldn't have to expect that.

You need to figure that out on your own. A good IEP in this climate, with these types of patients that we're working with, should help provide that information for you, because it's going to be overwhelming when you realize that you might have 2 or 3 problems, but you don't know who to call next.

You know, I've had many patients go through what you are referring to right now. They've they've seen somebody that had an IEP come into their home to get it tested.

And then they say, no, what? Right. I don't know what to do next. 80% of the patients that I work with virtually are exactly those situations. Either they they were left with I don't know what to do with this.

Now I actually have more questions than I started with. Or it's more, you know, this person is recommending, spraying a chemical that I'm worried about being exposed to, or they're recommending $50,000 in cleaning my home.

I'm wondering if there's another way, because I have my budget's $5,000. So yes, it's unfortunately for many people, and probably most of you listening who have experienced this, this is odds are this is something you've gone through.

Absolutely. I'm so happy you're here discussing this. Yeah. Now, one thing that I wonder about, well, I wonder if people are thinking about right now is, well, if it's in a cavity space, isn't that space contained?

How does it get to the rest of the house? How does it go from that cavity space to my bedroom, for example? It's a very fair question, and I love that question.

So our house is let's just start from like what it's not our houses are not hermetically sealed, meaning that if there's something in a wall, it's going to guarantee stay there.

If our houses were hermetically sealed, every time you shut the front door, your ears would pop. And so and so we get that most of us are like, yeah, I get that.

But I mean, still, it's behind a wall. How? I mean, how much could possibly come through here? Well, it's nerd out

with some information and I'll tell you how easy it can happen.

On average, a mold spores about five microns in size, about 250. Mold spores at that size can fit on the top of a needle pinhead, the kind you sew with side by side without falling over for every one of those mold spores.

Depending on what study you read, there's anywhere between 300 and 500, some would argue, even up to like a thousand or more fragments. So every one molds or there's another.

There's a, let's say 500 to split the difference. Fragments from the same source, same mold. So picture a mold spore busted up into 500 fragments or other parts of the mold, the roots, the branches that we often refer to hyphae, Canadia, fours, those sorts of things that are also in the bat.

And they're much smaller as well. Well, now think about this. You have, your can't your outlets you have can lights up above. You have multiple penetrations on your wall.

Even where your wall meets the floor, in many cases, it's not hermetically sealed. So there's a plenty of pathways for the mold or let's just say loosely contaminant to go from location A, which is like an interstitial cavity, to the living spaces, you might ask, well, how does it do that?

Okay, fine. There's a pathway you've convinced us, but does it have legs on them? No. Not for the purpose of this conversation. Right. What we're talking about now is driving forces, pressure differentials.

It's it's windy. Sorry to be picking on to feast on your on your background video. It's beautiful. It's windy right now. If you look at the video and some of those winds are hitting the side of the building that she is in, and that's creating a, a pressure in that wall cavity right behind her.

And that pressure may tend to push stuff from that wall, not in any sort of huge mold monster nightmare type capacity, but push things from those interstitial cavities into the living spaces, temperature differentials that walls hot because the sun is on it right now, but inside it's 60 something degrees.

Heat goes from hot to cool. There's a multitude of driving forces that will allow things to come in, and oftentimes that is it's never really static. So your house is kind of bringing stuff in at times, and sometimes it's pushing things out.

And it's this relationship that's constantly moving. It's like a house is a living or breathing organism. So it's ironic that that because again, that's a great question, is like, how can I get in?

It's ironic that a lot of the folks that I work with the mold not obvious, I tell you, I would love it if my the most technical aspect of my job was walking into a building where the mold was 20ft² on a wall, and I could just point out and go, there it is. That's your problem.

You know, I wish it was that easy. I think the luckiest I ever get is when someone goes, oh, you know, I never looked underneath my kitchen sink cabinet. Let's see what's in there.

And there might be a little bit of mold there that we see. But for the most part, the feast of the sauces that we're seeing that people are being exposed to aren't necessarily the obvious ones that you might read in a textbook or on a Google online search.

It's the stuff that is hidden in either interstitial cavities, attics, crawl spaces, or something we haven't talked about yet, even inside of the ductwork or the Hvac system.

So this can happen in any house. Oh yeah, but a lot of people might think, oh, it's because I'm dirty. That's why I'm not, you know? Yeah. You know, it's not that you might have you might have an issue with, a total net buildup of things that are airborne and settled out because maybe you don't clean the house as much or you have carpeting or.

Yeah, there's there's a multitude of reasons of why that's the case. But at the end of the day, why is it an issue in the first place? If you're a doctor or you are suspecting or knowing that mold is kind of like the core exposure concern, then the idea is we need to figure out whether or not your home reflects normal fungal ecology.

And by the way, a good IEP will take those considerations when interpreting the data like, well, the House is not really kept that well. There's a lot of carpeting.

There's contents everywhere. And that will affect the numbers. So not always straightforward, but obviously something to consider. There's lots of ways you can have exposure, and it doesn't have to be 20ft² of mold growth growing on your ceiling, to constitute an exposure right.

And so in your experience, what are the most harmful indoor molds? Yeah. So another great question. I get this one a lot too. Let me say it this way. We know that there are different types of chronic illness a Lyme Sibo series, chronic inflammatory response syndrome for those who aren't familiar, we do not have a cheat sheet or a list of molds that we understand to be more of an inflammatory concern.

There are there's some literature out there about certain molds that can produce toxins that are depending on what lens you wear, may be considered to be worse neurologically or from other sorts of standpoints than others, but we treat mold all the same way.

If if you have mold growing in the kitchen underneath your kitchen sink cabinet and it's a species of colitis, versus a species of Aspergillus or Penicillium versus Starkey versus catatonia, we're going to remediate those all the same way, because we can't look at that and say, well, this is less harmful.

So you can leave that there and just keep on living your life. Right. I will tell you, though, if we switch the question a little bit and say, are there more, are there more useful or better indicator molds as from an environmental perspective, to help the IEP suspect that there is an issue?

Yes, there. A lot of people know. In fact, they know it so well, I just assumed I said stack earlier stat Sitaram, this is the blackish, kind of like greenish blackish mold, that everybody knows about, even if they don't know that name, they've heard black toxic.

It's kind of like the Tom cruise celebrity mold that everybody knows about. And that's it. And it's and it's had a lot of notoriety. It's been around.

Okay. Well, that's a, that's what we call a hydrophilic or water loving mold in plain English. It needs a lot of moisture to grow. And there's another one, Titanium Globus.

So these two molds are well known. Triggered. Dermo, there's these two molds that I've mentioned are, very good indicators. When they're out, quantities are elevated to indicate that there might be some ongoing or existing issue where there was major water saturation.

There are many species of Aspergillus and many species of Penicillium that can be good indicators of a problem, but the challenge with that is that a lot of those good indicator molds for a water damage building are very common outdoors as well.

So again, with the interpretation of the data, you really need to have a qualified IEP who can look at it because you don't want this conversation for some part has been, you know, the concern and the worry of of of of being exposed.

And that's important, of course. But we also don't want you to be misled down a rabbit hole. God knows we need more hope and positive information and just something that's pragmatic.

And so you don't just want to start making assumptions just because you have, a, some given quantity of a mold species of Aspergillus or penicillin in your home, that you have to have a problem that might be your normal fungal

ecology in your home, and that might be good news, right?

You know, I'm finding a lot of people allergic to molds themselves. So another thing, the mold IgG allergens, just LabCorp and the mouse. So I'm also testing, allergies to mycotoxins from my Michael.

Very often I'm seeing people highly, highly allergic. But, perhaps their home isn't as toxic as the next person who is, who's not as highly allergic and might, you know, it's I think it's important to take into account what's happening with the person's response in their immune system as well.

There's no doubt. I mean, most of the people that when we talk about the inflammatory response we're getting into, like the innate immunity, the innate immune system versus the adaptive, and that this is not just an allergy that's seasonal.

It will go away if you have like stress or line. But it's it's yes, it's taking a more forensic look and so that so that the clinician not you of course, but or that your your your your typical mold inspector who's not the person we've been describing doesn't just dismiss it because, it's not because it's not allergy season or it is allergy season.

And they just blame it off a bat and not the fact that you might have a source in your home. Right. So there's one particular strain of mold that I see a lot in California on the Hermie High, and it's really Mia.

I wonder if you could tell us about that one. Well, Amy, a CV is a very extra, like one of the most dry loving molds. It it it it can be, a decent indicator mold for a water or damp situation, but it's also very common outside.

I personally do not use that, as I'm obviously looking at the numbers. And a lot of times when I'm working with clients either directly or virtually, we're typically taking an outdoor control sample, to get a better idea of what is your normal background of La Linea CV?

Because, if you go online, unfortunately you'll read a lot of things like, oh, this is something that we commonly see in Hvac systems and things of that nature.

It's like, oh, okay. Possibly. Yeah, sure. But it could also just be normal background. So definitely can be a good indicator, you know, where that mold may end up popping up a lot too, is when you're having moisture humidity issues, period.

So condensation issues, that sort of thing, you're not keeping the house dry enough. Maybe not an issue in more desert, dry, climates, but in your, in your warmer east coast, like, I think tropical or even in the Bay area marine climates, that which probably to your point is why you see it more.

This is going to be a mold that's more prevalent. What I would advise the listeners is that is that either they they work with a professional or, virtually or, or on boots on the ground locally and ask them if we're focusing on a CV to get a control sample outside.

So we have some appreciation of what sort of baseline should we be expecting here. Right. So, Michael, how do they know when it's appropriate to get remediation done in the home?

Well, I guess the simple answer is, is if somebody has found an area that needs to be remediated, I mean, here's the thing. Unless unless somebody has invented this, I don't know of any formula that says, well, okay, we have identified a problem here, a source, if you will.

And, and but but you know what? We've scored, we've given it a score of a seven out of ten or a four out of ten. So therefore it's an issue. But you don't need to remediate it.

Here's what we're normally doing to justify fixing repairing remediating areas of concern is why are we here in the first place. We're here because you and or your clinician thinks you're having an exposure.

And because we've been picking on mold, mold is the focus. Okay. So we found the mold source and it's your crawlspace. And the molds that we've identified in your crawlspace, by the way, we were actually able to correlate with molds we found in your home on the main level, ironically, not so much on the upper floor because you have a two story home.

In this example. So yes, we do believe there's communication that's about as deep as you can go, from an IEP perspective to show that there's exposure occurring.

I don't know of any doctor, and I've worked with hundreds of them that would look at that and say, yeah, don't worry about it. They're they're, they're, they're, they're, they're trending towards recovery, although a bit slower than I would like them to every doctor I know.

I said, well, that sounds like it needs to be remediated. Then. So the question is around that model. Yeah. You should remediated. I think what might be useful to listeners is, is that, well, what about when I need to prioritize?

We have we had an IEP come out to our house and they said that we had to, literally sand down, remediate clean in our entire attic, replace the insulation and do our crawl space and redo our ductwork and remove our carpet.

And we got an estimate to do all that, and it was $100,000 or more. And they're like, we can't do that. So how can we prioritize that? Right. And that becomes a more challenging conversation, because now what you're looking for is review of what they found, kind of like an orders of magnitude.

Was it like a couple isolated areas that that they've just said, well, we found a little bit of mold and a couple areas in your attic. So therefore you need to remediate the entire thing.

And we're like, well, time out. I of course, I'd love you to have a, an attic that you could perform heart surgery and but maybe that maybe we don't need to be so extreme or so proactive if we want to use a nicer term up front, maybe we can focus on the the mold that was identified in your crawl space where half your house smells musty because of that, and maybe the mold that you found in your kitchen sink.

And we'll get to your carpeting later. We'll get to your attic later. That to mean if Isa is 9,095%, when we're dealing with mold remediation issues of what we end up looking at, everybody wants every part of their house to be remediated.

At the same time, I find that probably 20% of the people can afford it all at the same time. Right? You know, what you're saying is just so important because there aren't too many IEPs like you up there, Michael.

They're just words, you know? And so what do I mean when I say that? I mean, they're not giving people those step by step, pieces of advice for them. We need to be more pragmatic.

Sorry to interrupt you in the DSA. We need to be more pragmatic in the world we live in. I think, if we're talking about even the professional, that means.

Well, right. There's a general model of extremists, of or a lack of communication. So it's it's maybe they didn't mean any ill will, but they want you to remedy all this, and that is just overwhelming.

We can talk about it right? We can talk about anxiety and fear if we want it to. And and I see this. In fact, this has literally been a growing conversation.

It's been such an issue that I've interviewed a couple of people that work with limbic system stuff on my IEP radio, because what I'm realizing it's that we need to do a better job as professionals holistically to say, listen, come on, you're human, you're resilient, you're strong.

You have some some topics, some issues, some health issues that we want to focus on. And we want you to be able to be responsible and pragmatic and on in your health.

But the model kind of feels like it's that plus everything needs to be extreme. And if you don't remove every mold spore, your arm is going to fall off.

And for those of you that are listening that can unfortunately, relate to that, let me just tell you historically with what we're doing, it's not, historically, what it is is it's breaking down fact from fiction, fear from hope, and then giving you a realistic game plan that meets your pocketbook.

And there are so many options you might imagine. Well, Micah, there's so many. It's because it's always about risk management. It's like, well, you could do this yourself and help clean this and do this in a certain way, and you could maybe save $10,000 or $15,000 or have some friends helping friends type of thing where people are getting together.

If you have a local church or whatever, you whatever you, you know, whatever you're involved with, there's so many ways that you can deal with this that isn't the what just feels.

Nafisa is like the classic remediate your whole house and yeah, just need to do that because we found mold and there's just no explanation. We have people that are raised their hands up and said, my inspector came out, identified a few good areas, but they identified so many areas on the outside of the home, it's like, I don't know whether I need to re clad my exterior house with new vinyl or if it's just more of a hey, a general impression.

We're just not doing a good job putting things in perspective of what needs to be done and again, even to your question that you ask, before we start to way it out, what we're here about exposure.

And no, we can't look at your kitchen sink cabinet and say you're having 70% exposure there. Remember that has the mold in it and 20% exposure from your master bathroom, vanity.

That had a little bit of mold in there. And the remaining balance is ex. It doesn't necessarily work like that, but you can use reasonable rationale as an IEP and go quantity does play a role here.

A square inch a mold has way less significance in terms of exposure than 20ft^2. All of us would agree with that in terms of everything else being the same.

And then the other thing is its ability to get into your environment. If it's mold growing in your grass, I'm a lot less worried about that than if it's mold growing in your crawl space where you have attic access or crawl space.

Access is throughout the home and you can smell the musty ness. The numbers are showing that the relationship, and you can look that person realistically in the face and go, I know you're having mold coming and contaminants coming from this location based off of your health, based off your storyline.

I think that this is your priority. We can worry about cleaning it and replacing your carpet with a hard flooring alternative later, but let's focus on getting the main source out of the way so that Nafisa or whomever else can get on with treatment and you can get to the finish line a lot quicker. Exactly.

Because it's true. Until they're out of the mold in the best way possible, then they're just going to keep getting sick. And you see this so much, see it all the time.

And then I tell my patients, no, you can't be bleeding money. If you're bleeding money, it's going to cause more stress. That's going to cause more immune dysregulation.

It's as bad as having the mold. So that's where I mean, extreme stress I believe, is as bad as having the mold, because there's so much research that shows the correlation between stress and the immune system.

So this is where I think you come in because you'll be able to guide them to towards where should I spend, where should I not spend. So you end up being an educator and kind of a quarterback.

Yes. Right. So Michael, how how do you work with people in, say, California when you're all the way in another state? Sure. Well, I do travel. And back in the day I was doing quite a bit of that.

There's a growing number of good professionals out there. But to answer your question, my main primary business has been virtual. I've seemingly had the most impact helping people that are either in remote locations they don't have the local talent or tools to get the job done, or they question, the talent or the tools, or they're getting conflicting information.

So, I literally work with people around the world, and it's been an amazing experience virtually. What I'm able to do is similar to what we're doing now.

Being on zoom is we're able to, you know, client takes photos, they fill out a questionnaire, we get some background, we about their health and about the home.

We never play doctor, but we just want to honor the pieces and use it as kind of like that fulcrum of, okay, here's what we're going to go first towards.

And then we just go through the home and, and in my by going through home, I mean talking about the home, you might get off your seat and go show me an area of concern.

But realistically, what we're going to talk about is what's appropriate is there some sort of a DIY thing that you, the client, can do first? Maybe it's some better rounds of cleaning or testing, I should say.

Or maybe there's, maybe they're based off of what you shared. It's better to get an actual mold inspector out there first. And and even though you don't have a local talent of tools of people, you can we can write specific things for them to focus on.

So now, you know, we're the quarterback. We're saying here's what needs to be done. And then you hire that individual. Or maybe you need a remediation company is such an obvious issue.

Skip the inspector. We just need to get an estimate of what it's going to cost to fix those things. So doing this virtually, as we've obviously evolved over the years, have been effective ways to help people who don't have, a Michael Schwartz, you know, within driving distance to do local work.

And unfortunately, that's the vast majority of people. And there are a number of growing professionals that, heck, probably some that are better than me.

But I think, again, it's not just about somebody who has a good flashlight, understands the IRS. It's the critical thinking. It's the being pragmatic.

How do we prioritize this in a way that honors the health? But but but doesn't break the, the, the pocketbook or the, the bank kind of a thing. And that is really a unique skill set.

And so fortunately for people like you and me, we're involved with organizations that are building in and, and the ability of finding professionals like the International Society for Environmentally Acquired Illness.

They have a get help page and there are others. But trying to find people through there first. Maybe you do have a local inspector that's driving doesn't start with them, but if you find yourself, just not sure where to start, or you've called five professionals and you've gotten ten different opinions on what to do, do the math on that is reach out to us and we can figure out a way to consult with you.

It's not some sort of multi-hour thousand dollar experience for a relatively affordable amount of money. We can get you well on your way and potentially save you not just many thousands of dollars, which is pretty common, but your sanity.

I can't tell you the. So last point, how many people end up breaking down crying at the end of our consults with joy and happiness and relief? Because the the the assumptions that were made were so off.

And when we are able to show them the science and take their unique situation and apply the specific sciences of those things together, it's like they were reborn.

So you need that in your life? Yes. So then if they have a report from another IEP and they're just not getting the answers they need, they can send you that report and you're going to analyze it.

Look and look at the pictures. And just probably 70% of the time that's what we're doing with that that approach. Absolutely. That's pretty straightforward.

It's it usually people have questions that they found this problem but they want it. The classic one is the severity of the remediation. It's yeah, sure.

We'll get a lot where an inspector just goes out and finds nothing, but it doesn't agree with everything clinically you're seeing or the DIY sampling, that kind of classic story.

But we're also getting a lot that comes through our office where it's, they found mold on the grout line in the shower, so they want to remediate your entire shower.

In fact, we had one recently where, the inspector found mold in a toilet tank, and they were recommending full on remediation. And I'm just sitting here going, this does not make sense.

And you're asking these people to spend, thousands of dollars to do something that could be included in the whole house clean for less than $200. So it's being pragmatic with them.

And I don't think that just in case any of you are wondering, I don't think it's this whole conspiracy theory everyone's out to get you. These can be tricky, to navigate from a liability perspective on the remediation side.

Well, this got this was cross contaminated and we're not going to pay for it. You know, there's a lot of politics. There's a lot of concerns. But that's why it helps to have a third party quarterback.

Because if you know the language you're like, well, just say this or have them do this instead, maybe they'd be willing to to to to deviate from their particular area of because we had one lady who, after talking with them, the professional agreed that the $28,000 remediation estimate for the attic did not need to happen.

And so this is what I'm talking about. It happens all the time. That's great. Have you noticed in California, in Colorado, after the fires that there's more of a mold issue?

I sure have. Yes. That's a wonderful question. So a colleague of mine, if you don't mind me mentioning John Banta, who's, who's done a lot of work out there in the Bay area.

Yeah, we represent a lot. Yeah. Okay. Very well. Good. Ever since the wildfires were happening, there were there were general concerns about what are these wildfires doing to contribute to our indoor air quality.

Now, I'm not just talking about soot ash. That's obvious. I'm talking about what kind of molds are coming into your house. But we were finding especially, John was, elevated levels of molds that you would normally as an IEP who's first with these mold species would go, you have a problem in your house, only to find out that it was coming from the wildfires.

Literally all of the common species, including our Tom cruise stack buttress, making its way into the home and the person doing a DIY sample, or even the professional doing sampling, and thinking that there was an issue.

So yes, wildfires can be is absolutely something that needs to be taken into consideration when it comes to could

this just be wildfire? Could this be a problem in my home?

The other thing, that I'll just mention real quick is landscaping. So I've heard from my colleague John that a lot of people, in certain parts of California, will use cardboard, where they plant their flowers and their gardening, as a way to promote, growth in that respect, for the plants and the life and all that, they'll stick it on the top.

And I remember looking at a picture actually very recently with John, where it was covered with mold. And so, the short version of this longer story is we're trying to figure out where all the stack he was coming from in the house.

They could not find a problem in the house that justify this. They couldn't even find stack. They found it outside. They tripped over it, so to speak, and realized that this is where it's coming from.

So our environment's not just about what your normal collar is, because you have bushes in your backyard or a tree, or it's windy on this side of the house.

It's also what what is the environment doing? Have you experienced wildfires? Do you have a next door neighbor that's using some unique gardening with, cellulose rich cardboard boxes aka mold food?

And that stuff is coming into the home? Definitely needs to be taken into consideration. I think what you'll realize is the theme here. It still can be an exposure concern to FSA.

There's no argument that if it's if it's elevated in the home, it's elevating the home. But the difference is, is where do we focus? Are we ripping out walls in your house?

Are we changing how the stuff from the outside communicates to the inside of your home? Those are night and day difference topics, and obviously no one here would want to waste money.

Going down a rabbit hole trying to find mold and interstitial cavity is a term we used earlier when in the end of the day, it was really just a temporary thing, a temporary thing from wildfires or your next door neighbor's garden.

Right. That's a big deal. Oh, it's a it's the difference between someone worrying about their home and having to move versus, well, we can we can change the way our home communicates.

We can change the way we live in our home. Do we want to keep the doors and windows open? Do we want to modify the landscaping? Maybe we can just re clean our house and resample.

Maybe the numbers were just temporarily bad because of that wildfire we had a couple months back to be determined. But these things are possible, right?

There's so many different variables. Oh yeah. I think people are just not thinking about. Yeah, they think it's as easy as a mold test that you can go buy at a large box store.

And if you have more growing on a plate, you must have a problem. If you don't, you must not. And there are so many things wrong with what I just said.

Mold complicated. And it's complicated, folks, because, it's a normal part of our ecosystem. It wouldn't be. We wouldn't be here without mold. Ironically, and and we have normal exposures.

Our body depends on normal exposures. I understand that there's nuances with, you know, genetic susceptibilities and contemporary, chapters in your life where even normal may not be enough for you.

I get all that. We deal with that on a daily basis. But I just want you to know it's not mold free and it's not running from a mold spore because if that was the case, the only option for you would be, you know, a bubble on Mars.

And clearly, that's not what you need. I think it's just that sanity and that and that education and knowing, okay, I

get it. I need to be reasonable.

We may have to tweak our environment a little bit to help me with my health goals, but I don't need to. I don't need to feel like the mold is, going to get me one spore at a time.

You typically are looking for, appreciable sources that are causing something that's different than, say, if you just walked out of your front door, assuming you didn't have the garden with moldy, sticky, cardboard on it, that kind of thing.

And so, Michael, tell them what steps they can take for prevention in their homes, keep the house dry. Mold is kind of like a fire, right? Like fire needs three things to, to, to start, whereas mold needs three things minimum to start.

You got to have a viable spore. Well, you can't really prevent that. That's everywhere. We've all been breathing. And as you've been listening to us, you've been breathing in viable mold spores from the outside.

Same species too, that can grow in water damage buildings, needs nutrients. That's the second thing. Well, nutrients are everywhere. How many of us haven't seen mold growing on glass?

Well, it's not growing on the glass, right? It's growing on the nutrients, the dust, the debris that are on the glass. So that's everywhere. You can't really control that.

The third and final thing that you need as a minimum is moisture. Now there's something that we have some control on most of the time. So if you keep the house dry, like for example, if you live in a hot, humid climate, you'll hear different numbers.

I get it, some people say less than 60%, some people say less than 65. Some people like me say less than 50. Why do I say 50? Not because I think you're going to have more growing on your walls.

If it hits 53% relative humidity in your home, it's because I want to give you some wiggle room. Common sense, right? Maybe it's 50% at the moisture meter, but what if it's 59% in that closet?

It doesn't really get a lot of air moving by an exterior wall now. Mold growing in there, but not the rest of the home. It gives you some wiggle room to keep the levels low enough.

Dampness. Okay, what about that crawl space? Well, maybe you're I keep we keep picking on crawl spaces. I know I do. It's because it's like a large petri dish underneath your house.

It's not some small little. I spilled four ounces of water in a corner of the house, and there's a huge thing that came of it. It's usually the footprint of the home.

And so many feet high. This is a huge, perfect, dark, typically pour ventilating area, typically with no improvements like, moisture barriers that sort of thing.

Rat slabs, concrete to minimize moisture buildup. And so it turns into this petri dish if you address that, if you control the moisture, you mitigate areas that you can't deal with.

You're like, Mike, we can't we have a we have a high water table. And and even if we, ventilate the crawl space, we still seem to get mold in the, in the crawl space area.

Well, you have options. You can seal up the crawl space more from the home, do a better job. You can. There's more robust options that we, you know, we probably could get into later.

But the point is, is keep the house dry. And usually and I'll tell you one other thing is I don't have them up on a screen or anything, but, you know, you can buy on Amazon or anywhere nowadays.

A very cheap moisture alarm. I'm talking a moisture alarm that probably has a footprint similar to this probably takes a couple a nine volt batteries.

I have five of them in my house. That has saved me from two legitimate potential water problems that if they wouldn't have gone off the alarm. Very annoying, very loud.

It would have been a 3 to $6000 mold remediation project. Keeping the house dry, checking your plumbing sources. It's not a bad idea to get, a home inspector if you haven't had your home really looked at in a while, have them do an inspection to look at the integrity I want to spend a little bit more money.

Hire that mold, inspector. But what is the condition of the roof look like? What is the condition of your siding? And your. Your windows look like these are going to be the areas where the water is going to want to come in, and it doesn't always present itself on the inside.

So if you want to minimize that, take the time. Think of like an annual or maybe every 2 or 3 years having your home inspector come out and take a look at your home inside and out, just like you would do if you were buying a home.

It doesn't cost that much money for the peace of mind you would get, or the potential to prevent issues and that and keeping that house dry. And people who live in California, in the marine climate area closer towards the ocean, dehumidifiers are huge.

Portable whole house. You need to keep it dry. If not, you're going to have issues one way or the other. If it starts creeping up typically above 6,065% over the long term, we're talking weeks or months, the crawl space, if you let that go and most people don't have improved crawl spaces, you will have some microbial growth.

It would be silly not to expect that in that environment. Look at the crawl space. If you have if you're having health issues, get a crawl space company.

There's a company out there. The FSA, they're nationwide called basement Systems, dot com, basement systems.com. Look up people in your area and have them come out and take a look at your crawl space.

They can give you an estimate for what it would cost to truly keep your crawl space. I'm trying to use simple terms here dry so that you don't have future mold issues in that home.

And also, last but not least, your Hvac system. Have that checked out. Probably the first place that every inspector in warmer tropical climates will look is an air conditioning system.

Even in hot but dry Arizona, where I live in, we can have mold and bacteria biofilm issues in the evaporator coil. This is the part of the system that cools the air.

If you have air conditioning, where mold will proliferate. And so many people, even myself 20 plus years ago didn't, didn't really think about it as much of how common it is.

But yet this is the lungs of your home. If you have a forced heating and air conditioning system with ductwork throughout the home, and you have a mold problem in your system, you have the perfect transport mechanism to transport contaminants from that location of the evaporator coil or nearby throughout the home.

Have that inspected how often we'll start with before the summer hits this year and and and keep an eye on it if you're if your system doesn't show signs or evidence of microbial growth or otherwise, maybe you don't need to do it, you know, every year.

But it would be smart for an annual check because things break down, things get clogged up, and things change. Right. And I think all of these that you've mentioned are not super expensive.

You know, it's not going to break the bank. I realize that everyone's got a different budget situation, but when we think about the cost of remediation, we threw out a couple indirect examples, including thousands here, thousands.

They're having your you know, you can find a local air conditioning company that has a customer service program where maybe they come out twice a year for anywhere from 75 to $150, each visit to check the functionality of your system, you can you can ask them to take photos.

A lot of times that's what I recommend is to have them take photos. Don't just rely on their opinion, but of the evaporator coil. I mean, that's cheap maintenance compared to do I have to replace my ductwork now because there's mold growing in it now all of a sudden we're talking real numbers.

And then the next thing you're going to worry about is mold contamination in your house. And then you have to talk about that cost. The home inspection, I love it.

If you could find a home inspector who is also well versed with Cirrus, who's a mold inspector and knows everything, but likely you don't have the perfect thing, you probably could do a home inspector, though that might charge anywhere from 4 to $800, depending on the home and the demographic who can come out to the house and look for areas like, did you know that you had a crack in your roof, or a flashing that does not have any caulking, where points of entry could be identified and addressed before it becomes a big issue?

And you find out not because you were looking outside, but because all of a sudden now you have a mold problem inside of your house and you didn't realize it until it was too late.

It's like prevention. These things, even the basement systems to check the crawl space, finding a local company in your area are ways that could not just provide you with an idea, some prevention, but also give you a realistic cost of what it would take to fix these things.

Because most of you that are listening are trying to figure out, you know, can we even afford this? Do we even want to open this book up? The other thing that people look at is you need to find a line in the sand where you're willing to spend X amount of money before you want to sell, and that that's something that I don't like talking about it because I know it can be uncomfortable for a lot of people, but, you know, if it's going to cost you legitimately $50,000 to remediate a host of issues in your home and you have $10,000, the math is not adding up.

And minus any sort of exterior help and reaching out to friends and family, a lot of people will just want to sell and disclose what they do know about the home and just take that hit, because nothing is worse than the continued health problem.

That's number one. That's always going to be priority one. And if you're not getting better and this constantly is coming back to your home, sometimes you have to make those decisions.

And it's not an easy one. And it's all the more reason for you to work with a professional who can weigh those out with you. Right? So, Michael, how can they reach you?

If they're looking for consulting work, you can go to Environmental Analytics dot net. And just go to our contact page and fill out the form there. There's an email too if you want to do that.

And just let us know what's going on and we'll, we'll, we'll help you out for sure. If you're looking for education, maybe you want to learn a little bit more.

I really invite you guys to go to IEP, Radio.com, the letters IEP, Radio.com. There's a host of various topics, including mold remediation, different types of sampling, what you would expect with a good inspector, and way more detail than we were able to cover today.

It's all free. And for those of you that are, into the well, what's the evidence? What's the references? A lot of people talk, but how do you know? I have a separate references section.

So you can kind of see where a lot of all this is coming from to educate yourself. If you had kind of have that inquiring slash engineering background mindset and tastic. Thank you for doing that.

You are you are such a wealth of information on this. I mean, every time I talk to you, Michael, I am just so happy that you're out there doing what you're doing because there are not enough, IEPs out there who have your knowledge base, you know that that's the truth.

Not just saying that. No, I appreciate it. It's really tough out there with. The good news is, for those of you listening, is that yes, if we can be of service for you great love to to to to have that relationship.

But don't forget that, you know, for those of you that might want to look, we mentioned earlier, the International Society for Environmentally Acquired Illness, and I want you to know, there there are others, but this is a quick and easy one to tell you.

The letters I s e a i.org, if you go to that is e I dawg and go to the get help page, you will find on the left hand side of that screen a map and a way to look for people in your area, people like me.

And even on that same page you'll see a document called Finding the Right IEP, a IEP. It's a free PDF. Look at it and read it because at the end of the day, while this is hopefully been enlightening for a lot of you out there, you're probably not going to remember every little thing or you want to have something that you can kind of go back to.

And the IEP committee, which is a group of a lot of professionals like myself, have taken the time to write this paper for you so that you have a way if you don't have the quote unquote perfect IEP, but you have you want to be able to have some discussions and talk and ask the right questions to kind of screen these individuals.

That's a great place to start. Great. Well, thank you so much, Michael. You're welcome. Thank you, Dr. Pisa. Is there anything else you want to share with our audience?

The Hope piece? I'll tell you folks, I've, offline, I was talking with Nafisa a little bit about my own, challenges in my own life, and I'll tell you that I think the biggest thing that's missing beyond the good education in the background and the perspective is just that there's, like, legit hope out there.

If you go online, if you go on social media sites, I'm sure many of you can resonate with this. It's usually doom and gloom and fear and that's such a horrible way.

The times are, it feels like our world is upside down to me at times. With the Covid piece and all of that. But the when you do this right, there are way more success stories than there are failures, and the failures are typically not so much like, oh, we didn't it didn't work.

It was more like, we just can't afford this. And so you look at the challenges of getting through that piece so that even those can turn into a modified success.

Just feel relief that it's not so ominous. A lot of people have the tendency to post negative stories. We're not apt as a human species to post positive stories, right?

So just know that there's a lot of hope and there's a lot of great, resources out there. And, the vast odds are that one way or the other, you're going to get to the finish line and move on with your life a lot sooner than maybe you even were thinking exactly.

But Michael and I see this all the time. Yeah, the people's lives change, and there indeed is hope. Yeah, yeah, yeah. Well, thank you so much, Michael. Thank you to visa.