ERMI Explained: Why a High Score Doesn’t Always Mean Mold Problems Transcript

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Intro to ERMI Limitations

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All those things factor into that ERM score. So if you are going to take an ERME sample, we recommend that you install a new HVAC filter and then wait a couple of weeks, two to four weeks ideally.

to get one to three grams of dust. That gives you a better understanding of what is recent and also a understanding what your inhalation risk could be.

The fifth issue is the ERMI and this is a big one. It doesn't account for seasonal changes or geographical variances. This is huge because mold levels shift throughout the year.

Spring, summer, winter, fall, all different. And since the ERMI is based upon a national average, it doesn't adjust for that. And it doesn't account for geography.

So mold levels in Florida are naturally much higher than say dry state like Arizona or Utah or Colorado. But the ERMI compares everything to a national average.

What's moldy even in, Florida in February is changes from what's mouldy in in June when it's rainy season. And we'll talk a little bit more about that.

The sixth issue is there's no local baseline. It doesn't allow you to understand where the mold is coming from. We know that molds are going to be found naturally in every home.

That's okay. Molds are ubiquitous and we expect to find them. But what you need to Or is it coming from growth on the inside of your home? Well, the ERMI test, if you're taking a sample just on inside, it doesn't tell you what's coming in naturally from air exchange through doors and windows and what settles on our clothes whenever we come in.

Podcast Introduction and Disclaimer

You've tried everything. You changed your diet, you've detoxed, and you even moved homes. And yet you still feel sick. Headaches, brain fog, fatigue that no one can explain.

What if it's not you? What is your environment? Welcome to Mold Microtoxins and More. I'm John Bode. Each week I sit down with experts uncovering how mold, micro toxins, environmental exposures affect your health and what real recovery looks like.

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Welcome back to Mold Microtoxins and More. I'm your host, John Bode, co-founder of The Mould Pros. On this podcast, we explore the real world impact of environmental exposures, not just in buildings, but in the human body as well.

Today, We are continuing our series on DIY testing and we are diving into one of the most misunderstood tools in The mold world, ERMI testing. You've probably heard someone say, or you may have said yourself, my ERMII score is high and I need remediation immediately.

What ERMI Testing Is

Is that actually true? Or are we using a research tool in a way that it was never intended? ERME testing has become extremely popular as a DIY tool for many with environmental illness, and even with some home inspectors.

But as with any diagnostic tool, it has both its strengths and it its limitations. And we're going to discuss those in detail. So let's dive in. Exactly.

What is the ERMI test? Well, ERMII stands for the Environmental Relative Multiness Index, and it was developed by the EPA as a research tool using DNA analysis of dust.

That's right. It was designed as research tools. Important to remember. Never designed to diagnose whether your house is currently safe. It came from a large national study called the American Healthy Home Survey.

And in that study, over 1,000 homes across the United States were sampled. Researchers developed MSQPCR. That stands for Mold-Specific Quantitative Polymerase Chain Reaction.

MS QPC is a DNA-based method used to identify and quantify specific mold species in environmental samples such as dust or air or swabs. Because it's such a long name, I'm just going to call it PCR sampling or DNA sampling.

But these dust apples were obtained from over 1,000 homes and analyzed. And their analysis targeted the genetic sequence unique to 36 specific mold species.

It did provide a highly accurate spore equivalency based upon the amount of DNA that was detected for each species You'll see a spores equivalence on the test, not actually spork counts.

The first point to discuss with the ERMI is the PCR analytical method. It's super, super sensitive and PCR analysis can be both a strength and a weakness in that test.

PCR Sensitivity and Species Detection

So let's start with one of the biggest positive and that's the detection. Since it is using DNA analysis, it's way more sensitive and has greater detection than standard direct microscopic examination, which is the most common analytical method for mold sampling.

But it also very narrow what it identifies. It does identify mold at the species level and not the genus level. And it will

only identify the targeted species, not all molds.

So what the lab does is it actually plugs in the DNA probes for these 36 fungal species and it detects how much DNA of those species is found on the sample.

So if you want to understand the species of certain molds, then it's really helpful. For example, certain species are capable of producing mold toxins or mycotoxins, as we've discussed on the show before, and they can be really help identifying whether you have toxigenic species.

But it is important to remember that ERMI testing does not actually measure mycotoxins. It just measures the fungal species. I will have clients that call and say, hey, my ERMITest showed I have mycotoxin.

And it doesn't show that at all. There are other tests that we can use to determine whether there's actually my cotoxines in the home. That's not the ERMY test.

You've cleaned, repainted, and replaced filters. Still, you're not getting better. Headache, fatigue, brain fog? The doctors can't explain it, but your environment can.

At The Mold Pros, we specialize in uncovering what's hidden in plain sight. Our environmental testing looks beyond surface mold, identifying bacteria, volatile organic compounds, and even micro toxins in the air that you breathe.

Then we correlate those results with your clinical data, showing how your space may be affecting your health. Next, we use our patented remediation process to safely remove toxins, restore balance, and prevent them from returning.

It's more than just a cleanup. it's a science-based system designed to help your body heal by healing the environment first.

ERMI Scoring and Dust Sampling Bias

If you're ready to breathe freely again, visit TheMoldPros.com and schedule your free consultation. Because wellness doesn't start in the doctor's office, it starts where you live.

And a big downside or negative of the ERMI test is that it only identifies those 36 fungal species, so it's pretty limited. There are hundreds of thousands of mold species and the Ermi test identifies really just a small fraction of that.

Let's take Aspergillus for an example. As of August 2023, the Species Fungorm Project, which was a project to identify and catalog mold-species, listed 592 Aspargilla species.

That's a lot. The ERMI test has aspergillus species on its profile, but only 10 aspargilla species. So if you relied solely on the ERM to evaluate your home, you're making a determination, whether a good or bad determination based on less than 2% of the total asparagus species alone.

And making that remediation determination without the other 582 fungal species of aspa gillis could be a problem. So the other issue that I see with the ERMI test is the scoring model.

So what the researchers did is they divided those 36 fungal species into two groups, water damage mold, which is group one, and common background molds, Then they created that scoring system based on the difference between those two groups.

So how the ERME score is derived is by subtracting the point totals of group two, again, the common background molds, from the points totels in group one, which were identified as the water damage molds.

And that became the ErME scale. That's the Point total that you see at the bottom of your ErMe score. Well, there's

a couple of issues with that. One is the ERMI is based upon a national average and not really what's going on in your local environment.

In the scoring model, be problematic as well because there are really two ways to get a great ERMI score. You could be either hospital room clean with very little molds detected on the samples that were submitted or you can have really high amounts of molds found in group two and when you subtract that score from group one you wind up with a really low score so you could either be really moldy or really clean and have a So, looking at the ERMI score alone and making a remediation determination can be a really big mistake.

The third issue to consider is what the Ermi data is actually measuring. So most Ermitest measures the dust, not what's captured in the air that you're breathing.

So that dust accumulation could be from weeks or months or could even be years old.

Seasonality, Geography, and Local Baselines

So it can reflect more of a historical exposure and not really a current exposure or current conditions in your home or structure. And it's important to remember there are three major pathways for getting mold exposure.

One is inhalation, two is ingestion, and three is dermal contact. So the inhalations obviously is the largest pathway for a lot of folks to get that molding exposure, so the ERMI test may not be the best indicator of inhalational risk in your home because you're collecting subtle dust.

The fourth issue is sampling bias. Where you collect your ERMI dust sample really matters. So for example, if you take a dirty HVAC filter that hasn't been changed in a while, that can produce a really high ER MI score and that would create a positive bias and it may not actually reflect the current conditions in your home.

Or conversely, If you have a clean home, or you just sample from a brand new HVAC filter, if you're sampling from the filter. That can produce a really low score, creating a negative bias.

So again, you could be making a remediation decision based on inaccurate data. The ERMI test, it's important to remember, is then becomes, You're not just measuring the mold, but you measuring cleaning habits and your sampling location.

All those things factor into that ERMII score. So if you are going to take in a resample, we recommend that you install a new HVAC filter and then wait a couple of weeks, two to four weeks ideally, to get one to three grams of dust.

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It doesn't account for seasonal changes or geographical variances. This is huge because mold levels shift throughout the year. Spring, summer, winter, fall, all different.

And since the Ermi is based upon a national average, it doesn' adjust for that. And it doesn't account for geography. So mold levels in Florida are naturally much higher than say dry state like Arizona or Utah or Colorado.

But the army compares everything to a national average. What's moldy even in florida in February is changes from what's mouldy in flora in June when it's rainy season.

And we'll talk a little bit more about that. The sixth issue is there's no local baseline. It doesn't allow you to understand where the mold is coming from.

We know that molds are going to be found naturally in every home. That's okay. Molds are ubiquitous and we expect to find them. But what you need to Or is it coming from growth on the inside of your home?

Why ERMI Should Not Be Used Alone

Well, the ERME test, if you're taking a sample just on inside, it doesn't tell you what's coming in naturally from air exchange through doors and windows and what settles on our clothes whenever we come in.

So understanding the fungal ecology of the area that you are in is really important. And we've seen huge differences in outdoor spore counts from samples taken the very same day and just a few miles apart.

We've seen variances in the thousands of exterior baseline mold counts. So if you are going to take an ERMI test, we recommend that you take in an exterior base line to understand what's naturally occurring in your area.

You can differentiate, do a compare and contrast to what you find inside of your home on that newer HVAC filter that she sampled. If you have questions, you can call one of our offices and we can walk you through how to do that in a little bit better fashion.

So the other thing that since ERMI is a DNA test, it doesn't tell you if the molds that it does detect are active or not. Since DNA does, detect living organisms as well as dead organisms.

It just gives you a number. We've had real-world cases where air testing shows clean conditions but our ERMI scores shows extremely high because again it was a sample taken off of a old HVAC filter or we sampled from underneath the refrigerator or places that really don't get dusted oftentimes and it really did not provide an accurate insight as to what's going on in the fungal ecology of that home.

And remember, ERMI measures dust accumulations, not current exposures. We had a client that we did work for a few years back that actually they did the remediation, but they didn't earn me test back in February.

And it came back. The house was fine. Did a great job. Scores were low. Our air testing. Collaborated the results and it was, uh, there was no issues.

Then I get a call in June and he said, Oh my gosh, I need a remedial. Don't know how, that were really moldy in our home. Oh, I asked him to do a few things.

I said, all right, let's take another test and we'll do an exterior baseline test to understand what's going on. And what happened here in Florida? Well, that's rainy season, you know, after May starts.

And so nothing in their home really changed. They didn't have a lot of mold growth in there home, but the local environment changed due to higher humidity and more rain.

and therefore they had more molds occurring nationally outside. When they came in and opened doors or windows, That mold came into the inside. So ultimately they didn' need a remediation.

Their increased counts that they found in the ERMI test was strictly because they had more mold on the outside and it was part of a normal fungal ecology.

Final Takeaways and Closing

What we always say at the Mold Pros, you may have heard it on other episodes of this podcast, is that there is no single test that really tells the full story.

A good assessment should include a visual inspection. It should including moisture mapping. Taking humidity readings, moisture readings. Really dig into the home, underneath all the sinks, et cetera, looking for issues.

And multiple sampling methodologies. It is always a proper HVAC evaluation. Mold is a building science issue, it's not just a lab result. I encourage our listeners to go to the EPA's own website and read their guidance.

The EPA states that you should not sample for mold in your home using an ERMI test. Go to www.epa.gov forward slash mold and type in, did I test or sample my home for a mold using a ERMI test?

And look at what it says. So just to be clear, thermitest does have some value. It's great as a research tool and really understanding long-term exposure patterns in a structure.

And MSQPCR is also helpful due to its ability to identify fungal species, as well as its sensitivity. Again, it's extremely sensitive. But it should never be used alone to make a decision for remediation, one way or the other.

So if you remember anything from this episode, remember one, ERMI is a research tool. It's not a diagnostic tool and it reflects the history, not the current exposure.

And it can be heavily influenced by sampling bias. Um, and does not account for geography or seasonality. and It is not even recommended by the EPA to use as a Diagnostic tool is strictly a data point, but it has serious limitations.

So. Hopefully this kind of clears up the strengths and weaknesses of what an ERMI test is and how and if it should be used in your particular situation.

If you found this episode helpful, please make sure to follow the podcast so you don't miss future episodes where we break down molds, microtoxins, and indoor air quality in real world terms.

Share this episode, too, with someone who's stressing out about an ERME score. It could save them from making the wrong decision. And if you want real answers about your home, not just numbers, reach out to the Mold Pros.

This is John Bodie, and this has been another episode of Mould, Bicotoxins and More. We'll see you next time. You've been listening to Mold Microtoxins and More with John Bodie.

If you're ready to take the next step towards a healthier home, follow the show and visit TheMoldPros.com for your free consultation. Because clean air is the first step to true healing.