

Detox Your Home: How to Improve Indoor Air Quality & Get Rid of Mold – Michael Rubino – #1036

Dave Asprey:

You're listening to The Human Upgrade with Dave Asprey.

Today we're going to talk about one of my favorite topics and a topic that you might not know is affecting your life on a daily basis, because it's affecting 100 million people in the US at least. I know that because it's affecting 100 million structures in the US and I'm talking about toxic mold and air quality in general.

One of the variables that you can control in your quest for biohacking, change the environment around you and inside of you so you have control of your own biology, well, it's air. So, you can control your light, control your air, control your food, control your movement, control your magnetic environment, all that stuff. We don't pay much attention to air filters. In fact, more people have a water filter than an air filter, and like with water filters, some of them are better than others.

With air filters, it's another thing. So, we're going to go really deep on mold. We're going to talk about how to biohack your home environment, what to do about mold, and we have an expert who knows a lot about air quality and what it does to different parts of your health. It's not just about mold, but if you think, "Well, I don't have a problem with mold," well, your home may or may not have it, it may or may not be affecting you, but if someone else in your home has all these weird problems you can't explain, the first question I always ask when someone says, "I've tried everything."

I'm like, "Tell me where the water damage is in your home?" And they say, "How did you know?" And then they tell me where it is, and I say, "And you had this symptom and this symptom and this symptom." And then they start crying sometimes because someone finally believes them. It's not crazy. In fact, moldymovie.com is a documentary you can show to people who think it's crazy. That's a free documentary I filmed a few years ago. And by now, hopefully after this rant about mold, you're going to listen very, very intently to Michael Rubino, who is an expert on this stuff.

He wrote a book called The Mold Medic, An Expert's Guide on Mold Removal. And that's really important, because if it's in your house, you can't just cover it up with bleach and assume it's going to be fine. It's actually not fine to do that. Michael, welcome to the show.

Michael Rubino:

Hey, Dave. Thanks for having me on.

Dave:

You're welcome. You were a big success at the last Biohacking Conference where the session you did was completely packed. I think a lot of people are realizing that mold is a performance inhibitor, even if it doesn't make you really sick. You don't need to have your body carrying that extra weight of having it in your environment. So, I wanted to have you on the show to share some of the wisdom you shared at the conference. All right, Michael, why do you care about mold? What did it do to you?

Michael:

Well, actually what happened was my dad's been a contractor since I'm five years old, so I've been around construction my entire life. And right after Hurricane Sandy was really when I started seeing a pattern of people getting sick.

My dad's been a contractor since I'm five years old, so I've been around construction my entire life. And right after Hurricane Sandy was really when I started seeing a pattern of people getting sick. And I never

really thought people can get sick from mold, just like many people in the population don't think that, until I started to see this firsthand of just the craziest symptoms, the very wide-reaching from person to person all within homes that were supposedly fixed.

So, it really started to take a deep dive into asking why and a treasure trove of information was made apparent to me on how we actually need to solve this problem.

Dave:

It's amazing what happens when you have an actual flood or real storm damage. One of the guys who's been on the show a few times and is a very dear friend is Dr. Mark Hyman. He's in the documentary that I did about mold, and he started having all these crazy health problems after a hurricane damaged his house. And we sat down and talked and I said, "I think it's mold." And he went in and explored it and it was the mold, and that let him go through his detox thing.

And we talked about that in an episode. So, if it can happen to Mark Hyman, it can happen to anyone. So, when I hear these hurricanes, I hear these floods, I think of what I did when I was in my early twenties and my parents' house flooded. We all went back in there and shoveled all the mud out not knowing what we were exposing ourselves to or how to protect ourselves. So, those are extreme though, Michael. How is this affecting people who aren't being flooded right now?

Michael:

So, last year I had 1,807 families contact me. So, I have a pretty good data set to operate off of here. People really experience totally different symptoms. I mean you hear a lot about brain fog or chronic fatigue, but I had a woman last year who was so sick that she actually had a feeding tube installed to her a lower intestine, because she couldn't eat. She threw up everything she ate. She was bedbound 95% of the time, couldn't hold her kids, just very not a good quality of life at all.

Within seven days of moving out of her house so we can go and fix it, so we didn't even touch her house yet, she just moves out of her house into an RV on the property, feeding tubes gone, she's walking again. I mean these are the types of miracles that I see. And of course, I see more acute things too, where people are dealing with gut issues or just that brain fog, chronic fatigue that seems to go away once they really look at their environment more. And I think to see such remarkable things is amazing, but also with all of this comes some detriment too because I think where a lot of people have been going these past couple of years is saying, "Well, if my home isn't a healthy home, I'm just going to call my local mold remediator."

And one of the things that I've seen over the past 10 years is I understand what makes people sick, it's what mold is creating that's getting inside the body that's making people not feel well. And mold remediation doesn't address that at all. It only addresses cutting out some drywall, spraying some chemicals on a wall, and that's it. And so as I started to see this pattern of people getting sick after remediation, I started to realize, well, that's because remediation isn't really designed to create a healthy home. It's just designed to remove a little bit of drywall that got wet.

Dave:

Okay. You said something important there. So, when mold grows in a home, it makes the mold itself, which we know is toxic for us, or at least it's inflammatory for us, but it makes toxins as well that are chemicals. And you're saying that the mold remediation companies, they're cleaning up the mold itself, but they're not cleaning up the chemicals the mold left behind?

Michael:

Yeah, I would actually even argue that they're not even really doing a great job cleaning up the mold itself, because if we understand mold, it's both a living organism, and then once it's a living organism, it creates particles to reproduce as well as some of the toxins that it can create as well. Kind of looking at it like a plant, like plants, when they're alive, they're living organism, they're creating seeds to reproduce. Well, those seeds aren't actually alive, they're not living organisms, until you add water and soil and they grow into other plants.

And so the spores themselves too are not addressed in terms of remediation. And so this is why people remediate their homes but still don't feel well after, because technically all of which the mold created is still there.

Dave:

All right. Is it possible to get rid of spores or to deactivate them? Because I threw away almost everything that I had that was wet, or not even that was wet, sorry, that was porous when I moved out of a super moldy place, and I still have a box of papers, like important papers, it's in a sealed plastic box. I open it outside only, because every time I open it, I get dizzy from whatever the heck is in there. But they are things like insurance policies or whatever.

But the house I'm in right now has a mold problem in a closet, and I'm getting it remediated with appropriate people, but part of me is like, "All right, how many spores, how much mycotoxin is already around?" And how do you deal with that?

Michael:

Well, I mean the good news is we have technology to be able to test and find out how much spores or mycotoxins are around, so that's good news. We don't have to guess anymore, but how you deal with it is pretty simple. It's actually cleaning, because spores typically settle exactly where the dust settles. Actually, it becomes a part of our dust. And if you've ever sat on a couch near a window on a sunny day and you saw that ray of light peek through and for the first time you're like, "Holy crap, that's a lot of dust in the air that I'm constantly breathing in."

It's really what becomes part of our dust, like mold and bacteria, that starts to opportunistically get inside of our bodies. You mentioned earlier that mycotoxins are a chemical residue. Yes, they absolutely are. And so they'll stick to the spores, they'll stick to fragments of dust, maybe some furniture and things of that nature. And so you have to do a very detailed clean to remove as much dust and contamination as humanly possible.

And you made a good decision throwing out porous items, because if you look at a fabric couch, for instance, even if you clean the surface, what about all of the layers in between? Because when we start talking about mold or bacteria, it's so tiny. These threads of fabric are like gaping holes for it to get into.

Dave:

I will not buy a fabric couch, and there's a couple of reasons for that. One is you usually breathe a lot more of whatever foam is in there, and the other one is it's a huge dust cloud, and it's usually a flame retardant. Leather couches are the way to go, because you can wipe dust off leather, and when you jump on a leather couch, you don't see a cloud of dust unless you just didn't dust it with a cloth. So, for air quality, that and carpet seem like the worst things you could ever have in your house if you wanted to live a long time. Am I off base on that?

Michael:

No, you're not off base at all. I mean I purposely don't have wall-to-wall carpets anywhere. If I ever get carpets, I get small little area rugs as a decoration, and I try to get ones that are washable just to make the cleaning process as easy as possible. I also don't have these long threads where it just acts like a sponge. You've got to start making these decisions, like you said, leather couches that you can clean, less fabric, less carpeting. This is going to help with our air quality in our home.

Dave:

And if you want to get really sick really fast, go to a thrift store and buy a fabric couch. The chances of that being moldy are like 99%.

Michael:

I would agree.

Dave:

Okay. So, the big takeaway so far is that if you've had mold in your house, even if you had the drywall taken out and all of that, that you need to go through and micro clean everything, I'm assuming with a HEPA vacuum cleaner?

Michael:

HEPA vacuum cleaner, microfiber towels and botanical solutions are probably the best thing to do to wipe things away.

Dave:

Like ECOS probably?

Michael:

ECOS is great. Now, there's so many products out there it's hard to keep track of, but any botanical disinfectant that you like is going to be sufficient to remove the byproducts of mold.

Dave:

I think it's also a good habit to have a dust cover on your mattress, one that's waterproof. That way you're not going to be getting dust, and if your mattress may have had some stuff on it, you're isolated from it. And I've done that for many years. It's less likely to get damaged in a moldy environment, and it's less likely to cause damage to you if it has mold on it. Is that good advice?

Michael:

Oh yeah, I just literally made that same recommendation to one of my clients earlier today. I think protecting your mattresses is a sound investment.

Dave:

What percentage of illness do you think is caused by environmental air factors?

Michael:

Really great question. So, according to the Cleveland Clinic, disease is caused by four major contributors, viruses, parasites, bacteria, and fungi, which obviously mold is part of fungi. It's interesting because over 50% of the global population deals with at least one chronic condition, so that is astounding. 80% of the homes in the US, based upon a study done by John Spangler in 1994, had a history of... Oh, sorry, 50% had a history of water damage, 80% of those had a history of mold.

So, that tells you that if I'm looking on my street right now, every other house at a minimum has mold and that's alarming. So, if we start to add all these statistics together with 20,000 breaths per day, I mean I have to think that at least 50% of the global population is dealing with environmental toxins and is suffering because of it.

Dave:

The most difficult thing to comprehend about these is that they cause different symptoms in different people. Oh, this person got cancer, this person had diabetes, it couldn't possibly be the same thing. But you realize, whatever mold is in those people's house, it was reducing mitochondrial function, which actually is a cause of both of those things. Since mitochondrial bacteria, the fungus had a toxin that affected that system or another system in the body.

I believe that the vast majority of cases of chronic fatigue syndrome are caused by toxic mold. Lyme disease, everyone with Lyme that sticks around has toxic mold in their house like 90% of the time. So, is it actually caused by Lyme or was it the mold did something bad to you that let the Lyme do its thing? So, what I'm finding is we go lower and lower in the immune system, we're finding many seemingly separate symptoms are all caused by the same thing.

Michael:

It's interesting, because mold is an immunosuppressant, so you weaken your immune system, and we already have 100 trillion different types of bacteria in our body. Anything can take over and cause any sort of symptom or illness within the blink of an eye. I mean our medical system does a great job creating baskets, putting labels on it, and then throwing people in different baskets based upon their symptoms. But it doesn't get us any closer to the information we need to really thrive as a civilization, because for so long people have been saying, "No, your house can't make you sick. That's crazy."

Even to this day, I'm constantly talking to new doctors who are new to the information. We're not doing a good job really taking a lot of these cases and bringing them to the forefront and saying, "What is the breadth of this?" Because I for one, if you look at Lyme disease, you look at SIRS, you look at chronic fatigue syndrome, you look at pretty much every autoimmune disorder, every autoimmune disease.

We look at the work that Dr. Bredesen's doing with cognitive impairment and cognitive decline and inhalational Alzheimer's, like what do they all have in common? It's neurotoxins, it's environmental toxins. It is in stuff that we can get through the air inside our own homes, but yet we're not investing billions of dollars as a culture to study this. We're not moving the needle forward. It's a couple of people like you and me right now that have dared to try anything to promote this as a topic that is affecting our civilization. And so we don't have all the answers, but we have great suspicion for sure.

Dave:

If we had spent as much on remediating mold from our schools that are almost universally moldy as we had on buying throwaway masks over the last two years, the overall death rate would be lower now, not higher. It's that big of a deal just from the exposure of kids. University dorms and places that are funded by the public are rarely maintained properly, and you just find that it's a massive, massive issue and

people don't know why they have brain fog and asthma and rashes and GI disturbances and Hashimoto's thyroiditis and all these other things.

Well, this is a trigger, but it's not the only trigger. You put together a talk two years ago and talked to the Air Quality Association's annual conference, and you found a subset of people that had a different reaction to mold. Tell me about what you shared and what response you got from that.

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Michael:

Well, basically I did a presentation for the Indoor Air Quality Association, and it is a group of professionals like myself who are sharing information with our colleagues, really trying to help shape the community to help more people. Because I think it's important that if we're going to be in a mold remediation industry, everyone should be on the same page so that when you call somebody, whoever shows up to your house is going to have the same standard. And that isn't the case today, unfortunately.

At this conference I the talk was, I believe, called Mold Remediation and Mold Investigation for Hypersensitivity. And it's kind of a term I've moved away from since then because I think we are all hypersensitive in our own way. But it was really trying to break the mark for this community of professionals that the way in which we do things, it doesn't work for a large subset of the population who seems to be affected by this chronically.

And here is what I've been doing as a professional to really help this population. And I kind of made a call to action that we all need to be moving this industry forward in this direction if we don't want to have a sick society here. And, well, I was heckled. I had people standing up saying things like, "So, you're telling me that if mold's in the attic, we got to remove all the insulation? Well, these builders that I work for, they're not going to pay to do that." And it all just became about money almost instantly, and all the reasons why they can't conform.

It was very frustrating, as you can imagine. Now, I would say maybe 90% of the room was not enjoying what I had to say because it would cost them in some aspect, and 10% of the room was actually happy and wanting to do the right thing and loved the information and I've kept the conversation going since then. But it tells you that we have a lot of old dogs that don't want to change, and that's a big part of the problem here.

Dave:

It's kind of like how in the old times before we had the internet, if you wanted to create change in a field, you just had to wait for the old generation to die. And that's why human progress has been so slow. It was that way in medicine. You get these younger doctors who figure out something new that doesn't match. One of my favorite examples there is the head of the Karolinska Institute, which is one of the top probably three medical schools on earth, waited until the year he retired to release a massive, highly technical textbook he'd been working on for years, showing that the body is electrical more than its chemical, with photos and studies. And he says at the beginning, "You know what? I didn't publish this because I would have lost my job." But you said that 40% of the population has environmental mold sensitivity. How do you know that's 40%?

Michael:

Well, if you look at the number of how many people are here in America, 375 million people, you start to look at how many people have been diagnosed SIRS, Autoimmune diseases and disorders, Lyme

disease, it's a third of the American population. And you start to backtrack those numbers and you say, "What do they all have in common?" Well, they all seem to be extremely sensitive to mold. You start to ask yourself why?

Dave:

Well, it is absolutely well known in the mold survivor community that once you've been exposed a few times, you can feel it. Do you have an idea of what the mechanism of action for the sensitivity is? I think I know.

Michael:

It's really interesting, because after seeing so many people develop this sensitivity, what I think is actually happening is I think that our bodies are very smart creatures, if you will. And when it knows that you're in a situation that is very similar, like a stimulus response mechanism, I think is really what's happening, it knows that. If you look at fish and other animals out there, there's a stimulus response. If they get hurt in a similar situation and they're in that similar situation again, they'll have some sort of a heightened sense of awareness.

I think that's happening for us too, because there's a lot of trauma that comes with this. So, even if we get out of mold and get better, I think that you're going to always have this sense of, "This place is dangerous. I'm not going to stay here too long." And I think some people get scared of that. They want to feel normal again, but this is a new normal. This is you being intuitive. This is you having more knowledge than you've ever had before regarding the subject, and this is you making sure you never get back to that point that was such a traumatic experience for you.

Dave:

It's not just mold though, because I promised listeners that we are going to talk about air quality in general. Formaldehyde is an issue. My former wife trained at medical school on cadavers, and she breathed so much from formaldehyde that she got sensitized to it, probably via mast cells, come to think of it. And from then on, whenever we would go somewhere that had high levels of formaldehyde, like a mobile home or something or an RV, she would just get severe reactions, disabling reactions, like drops in blood pressure and stuff like that, just from formaldehyde. Tell me about formaldehyde or other VOCs and other toxins that are in homes and in home air specifically.

Michael:

So, formaldehyde's a big one mainly because everything that we buy these days comes to our house in two days. We have no idea where it came from. And a lot of the countries that we buy these products from don't really regulate formaldehyde nearly as much as, let's say Canada, for example. And so a lot of our stuff contains high levels of formaldehyde that perpetually off-gas into our environment, essentially creating these tiny particles that we breathe in with every breath that we take.

And this is everything from baby furniture to wood floors, you name it. So, all of the stuff we fill our house with, unless you specifically know to get formaldehyde free versions of things, you're going to have it. I'm pretty sure even there's formaldehyde in the magical eraser. I mean this is the kind of breadth that we have here, and it can create a lot of issues. I mean I once saw this woman, it was in Brooklyn, New York, or Queens or something to that effect, and she had literally red skin, head to toe crazy rashes and stuff. And we found just crazy levels of formaldehyde in her place. You also have VOCs. It's almost like the cousin of formaldehyde, because if it doesn't have formaldehyde, it's probably got some other VOCs you don't want.

Dave:

And that's a volatile organic compound. What are other examples people have heard of?

Michael:

Okay, so with volatile organic compounds, probably the best thing to register this would be when you paint. So, you paint a room, that smell that you are smelling is actually the VOCs that are coming off the wall as it cures. There's anything with adhesives, bonding agents is going to have VOCs. So, maybe you got a brand new vanity from some store yesterday and you're installing that. Well, they're going to have adhesives that glue it all together that could be off-gassing for a while. Caulking, silicone, things that we use inside of our homes all the time can contain high levels of VOCs.

Plastics, lots of plastics and stuff like that can off-gas. Carpeting. Carpeting has high levels of VOCs if you put in new carpeting. So, it's kind of all around us and creates another barrier to poor air quality or having good air quality. And then with that mold also produces VOCs called MVOCs. So, if you have mold and bacteria and VOCs and formaldehyde and all the amazing things that we have out there in the environment, we really create this situation where it's this perfect storm. We're overloading our immune system and we're paying the price for it.

People often ask me all the time, "Why is this becoming such a problem today? Mold's been around forever. We've been breathing inside of spaces forever." And I think we have a little bit of amnesia there a little bit, because obviously we've been living a little bit longer here and here. Actually last year was the first year that our longevity declined. When I look at this, if we look at the history of what's going on here, back in the 1970s, we had Richard Nixon in office. Richard Nixon and China and Russia, they're all getting together and they start this feud about energy efficiency.

And this is where I think we really executed before we looked at consequences. Since then, we have made several strides forward in energy efficiency. And like you said earlier, I mean we're absolutely trading energy efficiency for health right now. And so it doesn't matter how efficient we are if we're all dead, right? When you look at all this, it's the craziest thing. We seal these buildings with spray foam top to bottom. It's the new thing. Why spray foam? Well, you get the better R value per square inch. Okay. With that being said, there's no fresh air exchange.

Our homes have historically breathed really well. You used to have these walls, they're like a balloon frame. So, you would have a wall chase in between your interior and exterior wall that would go all the way up and down. They got rid of that. We're starting to build them tighter, and then it just went worse, switching from regular insulation like fiberglass or wool to spray foam. And even in attics, if you understand building pressurization, air is going to rise. So, when humidity comes into play because it's summertime, let's say, that hot humid air is going to rise and it's going to get trapped in the attic.

And typically when you look at these homes the way they're designed, you got no ventilation in the attic because they're spray foam. So, all that humidity just stays there and just fills the house like a balloon. And then what else do we get? Well, mostly our HVACs are in the attic in these designs, and so now we get mold growing and bacteria growing in our attic. Now it's sucking into the HVAC and spreading out across the house. And then we wonder why we're not feeling so well, and nobody's even talking about it as a big problem. It's a very small few people like you and me right now.

Dave:

I would go so far as to say that that cheap energy is fundamental to human freedom and human health, because if you can't afford to heat a home that has proper circulation so you don't get mold and bacteria growing all over the place, you're going to get sick. And when we talk about freedom, if you're

sick, you have no freedom. And if energy is so expensive that you can't drive to the store, then you have to walk to the store and you just lost your entire day. So, I am a huge fan of whatever's going to give us energy, and I don't actually care that much about carbon dioxide because I know we can hack carbon dioxide. All we have to do is restore cows and soil and forest.

It's just not useful to build a home that has a slightly lower bill to the electric company, but you're literally talking about tens of thousands of dollars that are going to go towards healthcare as a result of that. It just doesn't make any sense. But people haven't seen the connection yet.

Michael:

Totally.

Dave:

So, I'm all about reducing chemical poisoning, and we have to do that far ahead of fixing the CO2 problem. CO2 is long term. Right now they are spraying poisons in your home and on your food, and they're putting it into the walls of your home and it's growing there from mold. That matters right now. And if we ignore that for the long term goal, you have to ask who's directing that, because it doesn't make any sense.

Michael:

It doesn't make any sense. It's trading one thing for another that we just can't afford to trade.

Dave:

What do we do about VOCs in our homes? So, I mean I have around the house a bunch of air filters with charcoal in them that are HEPA and some ionizers and some other various random air filters. I'm kind of an air filtered fetishist at this point. I live in a 70-year-old home too. So, what works best?

Michael:

When people do remodels and they're really sensitive to VOCs and they just couldn't afford to use VOC free alternatives and things of that nature, we recommend baking out the house it's called, where you actually just heat up the house, which is going to help these VOCs dissipate faster. And then, like you said, carbon filtration is great at trapping VOCs into the carbon filters. So, it's kind of that process of exchanging the air, heating up the house and then carbon filtration.

The good news is over time that these VOCs will lessen, but unfortunately it could take years for them to fully off-gas. So, you have to keep that in mind, do everything you can, get a lot of air exchange, and certainly these tighter buildings are not helping. There's a good little tidbit that I found on the EPA's website in an article for should I use bleach? And the EPA says no, because the object shouldn't be to kill mold. Even dead mold may cause an allergic reaction in some. Now of course they use the word allergic instead of what they really should say, but at least they kind of preface that with the objective should never be to kill it because the truth is we don't really know what happens as you break down a particle into smaller fragments.

I think one thing we do know is when you kill something like you kill a weed in your backyard, what does it do? It shrivels up, it dies, but there's still evidence that there was something there. And you ever watch a CSI crime scene, right? Somebody gets killed. Well, there's still a body there. There's still something always left behind. And when we're talking about microorganisms, we don't really understand yet what these particles left behind can really do to us and if it's part of the overall health

problem that we're experiencing, because obviously we have homes that have water damage and maybe it dries up, maybe the problem is resolved, maybe the mold dies off and breaks into smaller fragments, and we're still seeing that affect people. So, we just want to be cautious about that aspect.

Dave:

We do. And it sounds like your mega point here is if you've had mold, you really, really, really need to clean exceptionally well, because it is like a chemical waste site and probably air filters as well to keep the dust down. I find dust in my air filters all the time. I don't know what the heck it all comes from, but it's always there. So, I open up my air filter and, "God, look at that." So, other than those two things, wet mopping and things like that, what else do you do for cleaning?

Michael:

Well, let me make a step-by-step process for you that I think will be very helpful. Your house is water damaged. You're going to open up these wet walls. You're going to find living organisms like mold and bacteria. You're going to remove those. That would be considered the traditional remediation process. But then beyond that, what's not included in the traditional remediation process is all of the particles that have been created over the time, however long in that mold or bacteria has been there. And so now you want to look at my HVAC system, because that stuff is going to be drawn into your HVAC system. I hate to break it to you guys, but those filters that you buy at Home Depot or Lowe's, they are not efficient enough to remove something as small as mold or bacteria. And so all that stuff is getting in.

Dave:

Should I buy a different kind of filter? Is there a special name to look for?

Michael:

Yeah, so the highest efficient filter that you can get today is Merv 16. Ones that you get at Home Depot are probably Merv eight to Merv 12 or something to that effect. Merv 16 can remove as small as seven nanometers in particle size. So, now we're getting into some viruses and things of that nature, which are obviously much, much smaller than mold, toxins, bacteria. That's really what we want to start moving forward to. Now, they've put that technology more in commercial buildings as of late, but there are residential products that you can get, but people don't know about them.

Dave:

Okay, that's a fantastic piece of advice. Get a Merv 16 filter. This is something you can do for what, like a hundred bucks or something?

Michael:

I wish. Because a Merv 16 filter has to be pretty thick. They're going to cost probably anywhere between 1,500 and 2,500.

Dave:

Jesus Christ. Seriously, 2,500 bucks for a house?

Michael:

Well, let me break this down. It's not like a filter that you throw away every month. This is something that gets installed into the return duct. The biggest challenge that they had in engineering something like Merv 16, is if you filter out tiny particles and you have thicker filters to do that, you obviously have to do that without restricting the airflow or you're going to freeze your coil and have all these other HVAC problems. So, it's got different chambers that kind of the air goes through that gets filtered as it goes.

That's the only way to really make this work. And it all also has to be electrically charged. So, you're talking about, it almost looks like a 1996 computer modem that slides into your return duct. And then as you change your filter, which by the way, you only change about every year and a half to three years, then you have that, it's a big probably one foot by three feet filter that you're kind of sliding in and out.

Dave:

I'm looking online, I'm seeing Linux Merv 16 replacement filter, 16 inch by 25 inch by five inch for 142 bucks. Is that not good enough?

Michael:

Well, that's the replacement filter, but you need first the starter kit that installs it into the unit.

Dave:

Okay, so it's a furnace upgrade, a one-time furnace intake upgrade. After that, you end up with \$100 filters.

Michael:

Exactly. Yeah.

Dave:

Okay.

Michael:

And even if you get the top of the line at 2,500 bucks a pop, think about it from this perspective, you're protecting something that's worth 15, 20 grand. And once that gets contaminated, if you ever look at an evaporator coil, it's like a million pieces of metal welded together. Cleaning that thing is very difficult to do. And so protecting that to have really optimal air quality is a sound investment.

Dave:

Now, a lot of the upgrade collective, by the way, if you're listening, you can go to daveasprey.com and sign up to be a live audience member, they're saying if you do Merv 13 is better, that it ruins your AC. It seems like there's a lot of pushback even from people who aren't AC experts saying that this is going to be really rough on your house. True?

Michael:

Yeah. So, this particular unit that I know of is a Merv 16 unit that has the pressure drop of a Merv eight. So, for those that are talking about Merv 13 filtration, yes, Merv 13 is obviously more restrictive than a Merv eight. Merv eight is the ideal restrictive airflow in a sense. But if you get a product that is

engineered properly, you can have the pressure drop of a Merv eight, as I was talking about different chambers as the air passes through.

Dave:

This is really useful. So, if you're remodeling and you have control of that, that does sound like a good investment to make sure that you have that ability to really properly filter your air. Plus bonus point if there's forest fires in your area, things like that, it's just you're going to live longer.

Michael:

Totally. Absolutely.

Dave:

Also though, I mean HVAC kind of is necessary where I live in Texas, because you need AC, because it's really hot here. But for a lot of people, when I lived in the Pacific Northwest, you just need baseboard heaters. It seems like those are actually a lot better from an environmental perspective. There's no duct work, there's no recirculation of air, a lot less dust.

Michael:

Easy to clean.

Dave:

Yeah, and they're cheap too.

Michael:

And they're cheap. Yeah. I mean in terms of heat source, that's great. Obviously they don't really provide AC these baseboard heat units. So, AC is the monster here, because any evaporator coil, which basically provides us that AC, it's going to condensate. It's designed to pull the moisture out of the air to cool it. Any coil is going to push off probably like 45 to 55 degree air, so you're going to have condensation due to the temperature differentials of the room that you're actually cooling or where that HVAC unit's located.

So, people don't realize that you are always going to have this wet environment in your HVAC unit when you're using AC. And that's true even if you just have the in the wall units. So, the biggest complicated part is the coil itself. And if you don't filter the coil, the mold that's among us is going to get to it and it's going to start to grow on it. Same thing with bacteria.

Dave:

Wow. So, there's a lot to be done around AC's. So, if someone's listening to this going, "Oh man, I do have some of these health problems and I don't know what's going on, it feels a little bit overwhelming." So, you can clean everything in your house or hire a cleaning service. New little tip there. If you're hiring a cleaning service, tell them they can only use your chemicals and your tools. The last thing you want is from some stachybotrys mold bomb house, they bring a mop from there into your house. It's like swapping Q-tips with someone. Just don't do that. But aside from having a cleaning service come in and just only use your stuff, including rags and everything, what do you do about your HVAC? It kind of feels a bit overwhelming if you don't have 2,500 bucks, should you have it cleaned?

Michael:

Well, you can have it cleaned and cleaning it can be pretty expensive too. The typical going rate of a good company to come in and clean your system is about a thousand bucks. So when you look at it from that perspective, the 2,500 doesn't seem so bad because without it, you're definitely going to need to clean that thing at least once a year to really maintain it and prevent these small particles from forming living organisms around that coil. You obviously can do those two strategies, whatever makes more sense for you. But if you can't get the Merv 16, get the best one that you can afford. I mean basically how it works is the higher the Merv rating, the smaller the particle it can remove. And so you want to really think with that. Some of your guys were saying that going Merv 13 or higher could cause problems.

The other thing to consider is too, is where do you put this filter? So, you don't want to have a filter at the unit, a filter in the grills at the returns. It's just too much filtration, it's going to restrict too much airflow. You want to pick and choose one and get the best filter you can either at the return grills or at the actual unit itself. And cleaning is huge. I mean cleaning is a huge part of maintaining air quality. As a matter of fact, if you want to know if your air quality is good, stop testing your air, start testing your dust.

Dave:

Okay, testing dust. You have some sort of dust testing thing. Tell me about it.

Michael:

Yeah, it's called the dust test. So, very easy to remember. What it uses is it uses MSQPCR technology. So, DNA analysis. Yes, we're all having COVID flashbacks with the word PCR here. So, with this technology, you're identifying and speciating different species of mold, bacteria, different mycotoxins you can have in your home. And I think it's really important that we start looking at that, not because of the technology or anything else, but because of actually it just makes more sense. When we test the air, we're only really capturing, A, within a small proximity of where that actual pump is located.

And B, dust is too big to fit inside of this cassette, so you're going to be missing all the mold that's settled in your dust. You're not going to get an accurate read of what you're actually being exposed to. But since we know that we breathe in our dust all the time, I'm literally seeing dust particles around me as the light is right in front of my face here, it's a problem. And if we test our dust, we will more than likely find what we're being exposed to and if it's abnormal than we will by doing air tests.

Dave:

Wow. And I think there's a case for air test, there's a case for a dust test.

Michael:

Sure.

Dave:

And you said you developed it. I know that your book and all of your stuff about what you do just for the resources for cleaning and all that, is at themichaelrubino.com. Do you have links to your dust test thing there as well?

Michael:

Yeah, so you can go to thedusttest.com, or you can go on themichaelrubino.com. Check that out. I didn't develop the technology. It's existing technology that's been around, but I did develop the ability to bring it to market for consumers so they can do their own at-home testing, because most labs, they sell to professionals. You need professionals to come in and do it, and it's just too costly for folks. Trying to get more direct to consumers so that people can buy the test, do it themselves, get the data they need. And we partnered with EMSL, the largest environmental lab in the US to do it.

Dave:

Got it. It's kind of funny, for a long time if you wanted to do a lab test to find out what's going on in your body, you had to go into a doctor's office and pay for a visit, even though you didn't really want to. I just wanted my vitamin D levels, thank you very much. But no, no, I have to decide whether I'm going to allow you to have your vitamin D levels. And it's like stop it. And I think there was some of that going on with the home environmental lab testing. I believe that you have a fundamental right to use any technology you want to know anything that we can discover about your environment or about your home, and anyone who tries to get in your way of doing that, they are not your friend.

Michael:

Totally.

Dave:

They have an economic interest in making you do more work than you want to do. And I'm lazy, and I embrace my strategic laziness. By the way, guys, my new book is going to tell you why you're lazy too and why that's a good thing for motivating yourself to do things better. But nonetheless, no, just no. So, thank you for making it so I can buy what formerly I had to spend a lot of money to have someone come out and swab some dust that I could swab myself. I think that's really cool.

Michael:

Well, that's it. I mean we need information. We need to be empowered to make decisions and make the right decisions. And it should be based on data. It shouldn't just be some guy coming into your home and saying, "Your home looks fine," or, "Oh, this is a problem. Let's rip all the walls down." I mean you should know the information that can tell you what's the best course of action to make my environment safe and healthy for myself and my family. And so I think creating products that put that information into people's hands is a vital thing to do.

Dave:

Okay, awesome. And Michael, I don't know if you even know this, but my team talked to your team because if you talked about a product on the show, listeners get a discount. So, we don't know what it's going to be. You're going to have to look at the show notes, because we didn't do it. I'm just going to do this. Use discount code, Dave, and they'll do something good for you, because I think we just told your team that's what the discount code is, right?

Michael:

Yeah. Yeah. There we go now. Now it's set in stone.

Dave:

All right, thedusttest.com/DAVE. There you go. I didn't realize we were going to talk about a product there, but that's kind of how it works here.

Michael:

Yeah, no, actually I think you'll probably have a link in the notes too, I'm sure. Because I saw some emails back and forth.

Dave:

But a lot of people are hearing this while they're driving and stuff, so you can just remember that, the thedusttest.com/DAVE use code Dave, and then they'll figure out the technology to make code Dave actually do something. And if it doesn't work, blame Michael. I just want to make that really clear.

Michael:

Yeah, it's all my fault.

Dave:

And it's your fault by way of mold toxins that you breathe on a client site. So, it's okay, we're all victims here. We can share in blaming others together.

Michael:

Amazing.

Dave:

All right, Michael. My biggest takeaway here is to upgrade the filters on my furnace and to double down on dusting and cleaning and HEPA vacuuming, book spines and all that. And just to keep the dust down no matter what it takes. And tons of tips and tricks in here. Thank you so much.

Michael:

Yeah, you're so welcome. Thank you for having me.

Dave:

If you liked today's episode, I'd ask you to do me a favor. Pick up your copy of *Smarter Not Harder* right now or pre-order it if this comes out before you can get the book. And the reason that it matters that you do it right now instead of sometime later, is that when you do it early on, it helps many, many other people find a book that's way more than worth their time. *Smarter not Harder* is going to teach you tons and tons of things that you can do that free up a lot of time and energy in your body around the things that you've been asking me about for 10 years around strength, around cardio, around getting your energy back, about losing weight, and even about being more resilient to stress.

All of the new technologies and techniques that we don't know about concentrated in one book. Take you a few hours to listen to it. And I promise you, if you like hearing me on the show now, wait until you hear the audiobook recording. It's awesome. It's called *Smarter Not Harder*, everywhere books are sold.