TILT & MCS Uncovered: The Science Behind Chemical Intolerance
Interview with Dr Shahir Masri

SPEAKERS
Kendra Seymour, Dr. Shahir Masri

KS
Kendra Seymour
00:04
Hello everyone, and welcome back to Your Indoor Air Podcast brought to you by Change the Air Foundation. My name is Kendra Seymour, and today we're going to be diving into a condition that affects millions, but remains widely misunderstood, and that's Multiple Chemical Sensitivity, or MCS for short, and Toxic-Induced Loss of Tolerance, or TILT, for short. So those living with MCs until life can be very challenging. You know, imagine waking up every day and having to carefully plan every step, because exposure to certain common chemicals could make you sick and leave you struggling to think and breathe and function. For those with MCS, everyday environments become a minefield, in a sense, yet their symptoms are often dismissed, and access to proper diagnosis and treatment remains an uphill battle, at least for the time being. So to help us understand this conditions, its triggers, what can be done to support those affected, we're joined by Dr Masri. Thank you so much for being here.

DM
Dr. Masri
00:57
My pleasure. Great to be with you today.

KS
Kendra Seymour
01:00
Now, a little bit about my guest. If you don't know who Dr. Masri is yet, he's an associate specialist in air pollution exposure assessment and epidemiology at the University of California Irvine, where he works on air pollution exposure modeling as well as climate change communication research. He's also an adjunct faculty member of the National University where he teaches online graduate undergraduate science

courses. Dr Masri earned his Doctor of Science and Master of Science degrees from the Department of Environmental Health at Harvard School of Public Health and his Bachelor of Science degree from the Institute of Environmental and Sustainability at the University of California, Los Angeles. You have such an extensive background here, and I think I told you when before we started recording, that I've heard you speak before, and you also have such a passion for this topic. So thank you for everything that you do. First of all.

DM

Dr. Masri

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My pleasure. Thank you.

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Kendra Seymour

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So let's jump in and kind of orient everyone listening. Um, because this is a topic that people may not be familiar with, yet it may be impacting them personally. So can you explain to us, you know, what is a multiple chemical sensitivity and toxicant induced loss of tolerance, and do they defer? Are they the same thing? Kind of unpack those for us.

DM

Dr. Masri

02:14

Yes, that's great question. I think the best way to to describe for you know those are familiar with MCS or TILT the condition is is to relate it to, I think on the surface it can look similar to what people like allergies, but there are very important biological differences, mechanistic differences from allergies. But I think at the surface, that is probably the best analogy. So people may there's a whole host of different responses someone may develop from their environment, from different emissions in their environment, different it could be air pollutants. And, you know, so multi system symptoms affecting different organs is quite common in the characteristic of this. It's one of the things that makes it a bit harder to hone in on. You know, what exactly is, is positiveness and can differ for different people. But, yeah, I think for that reason, thinking about it broadly is sort of like, almost like an allergic responses probably the best, the best way to convey it, what it is. And again, this can be a whole host of different sources, and it can manifest in different ways, from irritability, runny nose, respiratory impacts all the way to, you know, fatigue, mental fog, or quite debilitating symptoms for some

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Kendra Seymour

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Things like the cleaning chemicals that they're using, right? The perfume, dryer sheets, gasoline. I mean, it's things that most of us don't even think twice about. Am I understanding that correctly?

DM

Dr. Masri

03:56

Yeah, that's right. And it can be foods. It can be various pharmaceuticals. We can talk in a bit about what it means to become initiated and how subsequent so called triggers can affect somebody that previously didn't, and can affect people at very low levels, levels that you would encounter in a typical environment. And again, as you mentioned, it could be fragrance fragrances. It could be cigarette smoke and so, yeah, there's this area is still increasingly becoming understood. A lot more research needs to be done in this, but, but yeah, in a nutshell that that is, that's the that's the situation at hand.

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Kendra Seymour

04:35

So I know that there are other terms around people who react to the everyday chemicals in their environment, and one of the more common ones was MCS. But you know, you've kind of been working with others, and you have this terminology of TILT that you think better encompasses, right, what is going on. So can you talk to us about why you think TILT is perhaps a better term to use for people who are reacting to these everyday chemicals in their environment?

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Dr. Masri

05:03

Yeah, sure. So I, I my work has been collaborative with Claudia Miller, who's been working on this issue and coined the phrase TILT back in the nineties. He's been the the point that, I think the distinction that's important that our research group likes to make between TILT and MCS is, MCS is very much so multiple chemical sensitivity, very much describing, you know, what is observed at the surface, sort of like a description of symptoms, whereas TILT is getting at a mechanism, and that's an important part of the research that Claudia's team and myself have done over the years, and we can talk more about a paper that we published a few years ago that was looking into the so called initiators, but toxic and induced loss of tolerance is describing a mechanism underlying what essentially is MCS. There's some other reasons we'll talk about gravitating away from MCS, but I just want to point out so toxic and induced is implying it's a toxicant that is basically initiating or inducing what ultimately is this multi system, you know, symptoms and this sort of MCS characteristic. And once induced, individuals lose tolerance to a host of different it could be, like you said, benign substances. It could be, could be cosmetics, if they used to wear all the time. But once there's a an induction of this, this response, this, this, this disease, if you will, then there's this loss of tolerance, and somebody might lose their ability to eat certain foods that they used to eat without feeling symptoms. And so it's really getting at a two, a two step process, again, initiation. It could be a major exposure event, or it could be chronic, low level exposures over time. But once, once somebody gets initiated, and is what we colloquially say is tilted. Once you're tilted, then people tend to have responses to sometimes, like I said, very low level triggers. And it could be a whole host of different triggers that are

structurally unrelated, chemically unrelated, to that initial initiator. And we can talk about some of the initiating events that have been documented over time. But again, one of the hallmarks of TILT or FCS is, you know, once you're effective, it's really for one thing. It's hard to characterize. It's not, it's not a one size fits all, TILT looks very different in different people. But yeah, it can be a whole host of different foods, drugs and other chemicals that can impact somebody and cause, like I said, sometimes very debilitating stuff impacts. And this is something that surveys show is actually much more common, at least on the sort of lower end of the bell curve. If we think of symptoms as a bell curve, you know, we have, you know, people, a lot of people revert, sorry, report aversions to, for instance, fragrances, perfumes, even you know, headchae, nausea, those kinds of things you know, which are more minor, irritability, nonetheless, are reported in high frequencies. So the other, the other distinction, I think one reason, I think one reason to to for one thing, describe this condition as TILTS, that that is, that also makes some sense, is MCS. So that kind of grew out of less of an understanding of what was underlying, mechanistically, this, this, this disease, and also it's become unfortunately, so I want to say stigmatized. So MCS has has been this, and also idiopathic environmental illness. Some of these older terms have really become stigmatized. They grew out of real poor understanding early on in terms of what was going on. They don't characterize the the steps involved, or in fact that this is toxic, induced and and so MCS can, can really basically rub doctors the wrong way. It can, it can elicit, I want to say less health in the medical environment. So I think there's a variety of reasons maybe to to evolve away from the MCS term. But again, they're not really referring to anything different. I would say,

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Kendra Seymour

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Yeah, and we can talk about that too, maybe towards the end, about the struggles people face when they go to their doctor and their doctor maybe runs like a traditional test, and they're like, No, there's nothing wrong with you. And they kind of have that default, like, maybe it's anxiety, maybe you're just being dramatic. Maybe it's in your head, and they're gas lit, essentially, even though there's a very real physical thing happening to their body. So you talked about it, let's unpack that two stage a little bit, because I think it's important that people understand too, like the initial, initiating thing that kind of set them up for this, and then the trigger piece too, and how those can be different. So can you tell us what those two stages are for TILT,

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Dr. Masri

10:43

Yeah, and Nick Ashford, who, who worked with our team at MIT, he gives a good analogy, thinking of sort of the human body as a in this context, as a computer that is, you know, for lack of a better phrase, begins to have some glitching going on. There is there's the glitching that that goes on where the computer is. You know, anything about the human body, we're having these triggering events. We're responding with a

heightened physiological response to things that, like foods and drugs that maybe never affected us before, causing us these really debilitative symptoms that might be thought of it as a computer glitching. The human body shouldn't be having these responses to these benign, otherwise benign sentences, but as it is a case of the computer, something caused the initial glitching event. Did you drop your computer? Did water get on the computer? And so those stick, that sort of is what you might think of as step one of the tilted. So that's the initiation. So something caused the initial glitching sequence. But now, once you're initiated, or once the you know, water entered the keyboard, so to speak, there's subsequent, you know, butching that takes place in the body. It's triggering that you can't reverse very easily, and that can look very different from one computer to the next. So I think that's a really good analogy. So to talk a bit more about initiating, there's been well documented cases in history that that have shown groups of individuals who have all been subjected to a shared exposure event. One example would be, you know, in the eighties, the the EPA headquarters building was getting renovated, where they were putting new carpet in throughout the building, and many people fell sick. And so these individuals at EPA sort of ironic, but in the EPA they were, they were basically all sharing that. And for those who don't know carpet, especially new carpet, emits a host of different volatile organic sensitivity indoor air environment, and can really drop make air quality quite poor inside the home or inside the office building. So that was a case here, and many EPA workers ultimately fell sick, and a subset of those actually developed intolerances to, you know, basically developed MCS or TILT like symptoms became, you know, basically intolerant to food, drugs and otherwise benign substances they didn't previously bother them, and that took place following that event. So that's one example, and when we start to see other examples where we have groups of people sharing and common exposures that ultimately develop this, this multi system reaction, multi symptom, multi system reactions to, you know, everyday chemicals following these shared underlying exposures. We need to start piecing the puzzle together and thinking about something uniform that's going on. And we've in one of our papers that was published, I think it was 2020, we looked at eight of these. You know, what you might think of is small and in some cases large cohorts that shared common exposures and subsequently developed TILTS. And so the Gulf War veterans is one example where we saw similar, similar manifestation of TILTS, and we can talk about other cases as well, but yeah, that's essentially the two stages. Is either a chronic low level exposures, which may or may not have been the case for the Gulf War veterans, or a very sharp exposure event, maybe like the EPA headquarters, where employees were subjected to the carpet fumes that initiates individuals, and then subsequently, they might not even be able to work in the same environment, because their workspace may have certain things that are possible with them to have, really, you know, symptoms that range from brain fog to fatigue, to headache, nausea, what have you.

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Kendra Seymour

15:02

Yeah, and we're going to link to that paper because it's one I encourage everyone to read. It was the toxicant induced loss, loss of tolerance for chemicals, foods and drugs, assessing patterns of exposure behind a global phenomenon. And you really do a great job, you and the others in that paper, talking about

the exact mechanisms and some of these cases, because it the the EPA case, other than being also ironic that it was the EPA, of all places, you know, they installed this carpet, people got sick and, you know, all of a sudden now they're reacting to things like outside of work, right, their everyday environment. Do you know, have you followed up on what happened? Did? Did a lot of those people recover? I know eventually took, I think, two or three years the carpet was removed. But what it, what was the long term health scenario for people who were impacted in that situation?

DM
Dr. Masri
15:55
You know, that's a really good question, and I did not have the answer. I think that. I think you're underscoring something that really is, as I mentioned, a lot more research needs to be done into this area. And I think following maybe going back to some of these cohorts and getting some more longitudinal data about data about how people recover, if they recover, is an open question, and I think more needs to be done there. But I personally am not sure what happened many years later, after that, but it's a good question,

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Kendra Seymour
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Yeah, because, I mean, you saw things like this, like post 911 with the World Trade Center, I know in the paper, you talk about other issues, mold in homes causing problems for people, and they then go on to not only have probably issues with the mold and the exposure from that, but then the multiple chemical sensitivities, the TILT that develops as a result, and they start having problems interacting with, you know, just the the day in and day out, and it can be kind of challenging, right to untangle, You know, what the actual trigger is and the cause. And I know you've talked about masking before, and what role that plays, and how it kind of muddies the waters. Can you talk about that just a little bit?

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Dr. Masri
17:10
Yeah, you might think of masking as you know. So when we do in the laboratory, for instance, even when you're you're trying to measure chemical in water or what have you, you're going to get, you're going to get a bunch of noise, other chemicals that could potentially get measured. I think that maybe the best analogy is, is just that it's sort of like background noise, and everybody's exposed. Most people are exposed to a whole host of different chemicals. You can be you can be quite unaware of what's causing your let's just take the symptom of fatigue or brain fog. It can be difficult to disentangle what's causing that when your neighbor smokes and when you've got solvents that are stored under your cupboard, under your sink, and when you've got an air freshener in your car, all these exposures can be triggers. And when we're sort of exposed to this soup constantly, day in, day out, for one thing, it's difficult to identify what's going on. And

you may be in sort of this, this sort of state of haze, so to speak, where maybe you're not even fully, maybe you're not even fully, you may be sort of in this, almost like state of depression is the wrong word, but this state of heightened response that that is kind of chronic and ongoing, and so an exposure that might, otherwise, if you were in a clean environment, trigger abrupt symptoms and give you an idea quite quickly of what's causing your your symptoms and illness. You may just be in a chronic state of heightened response and maybe even fail to recognize associations between your body's response and certain exposures, so that that's a that's the concept that we refer to as masking that that is believed to be playing some some role in sort of the everyday experience. For those who are tilted.

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Kendra Seymour

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Yeah, so you had mentioned earlier, so when we talking about, like TILT, you know, you'd kind of equated it almost to an allergy, but it's not really an allergy. If I think I'm having an allergic reaction, I can go to the doctor, they can run a blood test, they can look at it's, it's an IgE, right? And even though that is not perfect folks having a child who had food allergies, you know, it's it's not the way you would go about being diagnosed with something like this. So can we shift and talk a little bit about what, how would somebody be diagnosed? What is their criteria? Is there a test they can take? What does that look like if someone thinks that they're reacting to some of these things in their environment, and they want you know an answer, a diagnosis, right?

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Dr. Masri

20:07

Yeah, sure. And maybe let's back up just a second on what you were just referring to with allergies and and talk a bit about the distinction you mentioned IgE and yeah, so it's worth kind of just going back pre IgE and pre classical allergy definition, where we have a host of we have people that are having allergy like symptoms in, let's say we've got some percentage of population that is falling ill to certain exposures in the environment having allergy like responses. Of course, this is before we knew about allergies. Essentially, the build of allergies evolves and is trying hard to find some biomarker that can help explain what's going on for these people, and ultimately, Immunoglobulin E IgE is is bound to be present in those who are eliciting a high fraction of these symptoms. And so basically, you have these what's known as IgE mediated responses that ultimately, as IgE is used as the biomarker indicate this response. Essentially, we call that allergies, and we define out of that everybody who doesn't show that IgE response. So essentially, a fair amount of those suffering get defined out of the problem. And that's sort of what I think that's a good way to think about allergies as we understand them today. It really helps to explain a lot of what's going on for a lot of people, but a lot of people got left out of that definition, and they're still suffering. And so that's where, you know, MCS has evolved to kind of describe some of those people where the medical communicate community is still having a very difficult time pinning down what's going on. People are

often described as just having, you know, mental health issues. And so what? What's going on mechanistically, is still not well understood, and much needs to still be uncovered. But we do run into this problem, as you noted, which is, you know, how do we diagnose people and and I should mention that many people will see a doctor and they'll run multiple tests, like you said, they might run an allergy test, they don't find IgE. And some people have to see a dozen doctors, in some cases, just to figure out, you know, what's going on. So diagnosis is not something that is, I think, well established at all. The medical community as it relates to this Claudia Miller and her group have come up with the QEESI and the BREESI, which is the quick environmental exposure assessment, essentially a tool that allows you to you can fill out a whole host of different questions, which will help you identify, first, if you are tilted, so to speak, and also, what are the exposures that are that seem to be causing your symptoms? So that is a tool that I think is very helpful and that you can print out and take yourself from the TILT, tiltresearch.org, website, and something you can also take to your doctor and show your doctor. And I do encourage individuals who may be having trouble getting any sort of getting anywhere with your medical you know your health provider to print out some studies that are peer reviewed, studies to show your doctors that, hey, something going on that seems similar in this study, similar to what I'm experiencing. Can you take a look at these studies? Because education is lifelong. It's not like we graduate and should be expected to know everything, and science is always evolving. There's always new papers, and some doctors may be more in tune with what the newer research is saying than others. And so it really is important, I think, to bring through these studies to your doctor if you think they may be missing the mark. Because, you know, like I said, education's lifelong. Our paper is one that I would defer people to, and there's others as well. Many by Dr. Claudia Miller as well.

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Kendra Seymour

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Yeah, we'll try to we'll link to all that, the QEESI and the BREESI and your some of your research papers and Dr. Miller's papers and things like that, so people have a nice starting place, so that they can educate themselves and then kind of go to their doctor with some of this information. Now, you know it's interesting when you think about like these exposures. And I know you've I've heard you talk about this before. I've heard others talk about this before. There's this saying that dates back in toxicology. I think this is Paracelsus. He the father of toxicology, and he talks about the dose makes the poison. But that's a bit limiting, and I've heard you say something else that kind of, I think, captures maybe what's going on a little bit more. So, not to put you on the spot, but what do you think about that dose makes the poison statement?

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Dr. Masri

25:12

Yeah, so it's very true that the dose does make the poison. It's one reason why it's virtually everything in the world can be considered toxic, because toxicity really is a function of dose. However, it's also, you know, born out of still a limited understanding. It still holds true today, but there's some modification that myself and others like to say, which is the dose plus the host makes the poison. So we have different person to person. There's variability. We have variability in our enzymatic capabilities of detoxifying or bio transforming certain substances every time we ingest a chemical, a harmful chemical, caffeine actually, is a good example. There's, I think, 13 different metabolic pathways that caffeine can get metabolized in the human body. So some persons response to caffeine may be actually quite different than others. I know my response to caffeine is very different than others around me. You can also build tolerances, tolerances to chemicals, but that's all embedded in enzymatic, you know, activity in the body, and that can be expressed differently from person to person. And that's why I think it's really important to think the dose plus the host that is the person makes the person,

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Kendra Seymour

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Yeah, and I think, to your point, I mean, we're also different, right? Different, just our current health status, our genetic susceptibility, our age, like all of these things factor into it. So sometimes people say, well, it's just a little bit it won't hurt well, that I always hate that. When people say that, Oh, it's just a little bit of mold, or it's just a little bit of the ammonia or whatever we're cleaning with. And it really isn't as easy as saying, well, the X amount is safe, but Y is not. There's definitely a lot more nuance to that. So is there anything that you kind of alluded to it, but just high level that we're missing? Why? Why are some people developing TILT and and others aren't like is it have to do with, you know, certain chemicals being more likely to cause someone to develop TILT, or is, is it just some of those complicated things we talked about, like your genes and your current health status?

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Dr. Masri

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Yeah, so I think, I think it's, I think it's two things. So one is, as we, as you mentioned, and when I say dose plus host talking about enzymatic expression and how that differs. I am, I should have said, as you know, and so I am talking about genetic differences, largely. There can be genetic slash environmental that both feed into your expression of different enzymes in the body. But, yeah, that's basically, you know, what you're given to work with in terms of how your body responds to chemicals, and that can differ from person to person, both because of genes and also epigenetics. So the environmental exposures that maybe your parent or grandparent experience can affect later on, genetics and offspring, which is quite interesting. So that is, I think, one, one explanation as to why people, I think it's a big part of why people, some cases can

experience, are, are getting developing MCS or TILT, why others are not. But at the other piece is the environment. And I think, you know, and I'm not, I'm not up to date on the prevalence as it varies from country to country, but we do know, as you know, we talked about, there are well known cases where people get initiated, and so in those cases, you know, we we've got two things going on. You can, for instance, let's get back to the EPA case, everyone essentially shared a very similar exposure. So those who develop TILT, we can be confident develop TILT because of something in their environment, whereas people in the neighboring building across the street didn't develop TILT because their environment was different. So, so that's kind of the second part of the piece, which is, you know, the first part being the the subset of people who did develop TILTS, whereas maybe the rest of the employees at the EPA did not develop TILT that may be sort of that genetic piece, people who were prone to to be more irritated by these chemicals. So that's the genetic potential piece. And then the second piece, aka one building, people developed TILT and the neighboring building across the street, they didn't. That's the environmental piece. So I think in different countries across the world. Different cities across the world. You know there is a difference in how our communities are utilizing chemicals. People have different occupations as well. Some may be in the agricultural industry, where they're being exposed to pesticides much more than they would otherwise be. And so I think it really depends, you know, what your everyday environment looks like, and that may determine your sort of chances of developing TILT. So is sort of that too. I think that that two prong to two parts of the puzzle, the environment and the genetics.

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Kendra Seymour

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Yeah, and I imagine, and I obviously haven't looked into the case, but even in the case of the EPA building, given the size of the building, ventilation would look different in different parts of the building, the amount, you know, there's all those other factors that come with each unique home or building that can impact that too, and the amount of exposure someone would get or not get. So let's talk then like, so we've talked a little bit about what it is, some of the causes, diagnosing it, what does treatment look like? Is there treatment, or is this more about just managing and minimizing exposures?

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Dr. Masri

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Yeah. So I should mention that our our team, has been talking Claudia in particular, has been talking for decades now about an environmental an environmental medical unit, an EMU. And the importance of getting one of these adopted in different hospitals, this would be essentially as as much as possible, a chemical exposure free environment where diagnosis could take place. We talked about diagnosis a second ago. It's very difficult to do, especially when people may be masked or subjected to a whole host of different exposures in their home. So an EMU would be a place where a person could go into a hospital, become unmasked over a day or two, where they're no longer exposed periods and chemicals, and then

through incremental reintroduction certain exposures would would be allowed to be experienced by that person, whether it's a food or a certain, a certain, you know, cosmetic, what have you, and that person will be monitored to see if they develop symptoms. And that's a really important way that people can, for one thing, understand if they have this condition, and then also to to identify what exposures are causing, triggering them essentially. In terms of your question about treatment, I think that so we're, I think we're still quite far given well, so I think, did I say that the EMU to our knowledge, and to my knowledge, knowledge today, there's still not a single EMU in the United States. I'm not sure in other countries.

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Kendra Seymour

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I want to unpack that, because it's basically a very you would go and stay somewhere, and it's a very controlled environment where all of these things are stripped down to to absolutely minimize your exposure to certain chemicals and things like that. And so it, it is. I mean, it's, it's, I would consider it more of extreme kind of intervention compared to some of the other conditions and things out there. But so, to your knowledge, there's none in the United States, though,

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Dr. Masri

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Yeah, that's, that's, that was at least the case a few years ago. I'm, I'm quite confident, probably not changed, and if it has changed, the point is still valid, which is there we're far from situation where we're really allowed, able to really take care of people the way that we ought to, I think, who are afflicted by this and in terms of treatment. So the reason I bring up the EMU is, is because treatment, really, in many ways, does depend on your ability to remove things that are causing that are triggering you. And so it's a really important piece of the treatment puzzle to figure out what's going on. It's, you know, it could be a certain food, it could be a fragrance, it could be it could be something that's all around your home. Can be your carpet. So I don't, I'm not aware of, really, treatments that exist other than, and I'm not claiming to know, know everything, but to my knowledge, I'm not aware of treatments that exist that can, you know, fix a person, like something you can take or so, the best suggestion and advice we often give is to really try to figure out what it is that's triggering you, and remove that trigger or those triggers from your environment. Some general just guidelines for indoor air quality include, for one thing, you know, it's quite, quite coincidental. I just before our call was I mentioned I'm active on social media. I was just publishing a post on my new Instagram page about how five tips to improve indoor air quality. So these are the tips that are actually fresh in my head. You know, thinking about for one thing, cooking can be a real source of emissions. You can switch your stove from gas to electric, not necessarily an easy thing for everybody to do, thinking carefully about it, ventilation, opening doors and windows, especially when you're cooking, assuming you're not living right by a freeway where maybe traffic emissions are causing your problems, incense, candles, air fresheners, scent diffusers, these things all should really be removed from your home

if you're trying to figure out what's going on. And also, solvents, cleaning solvents, shouldn't be stored in the home. They really shouldn't be used, in my opinion, except we're really essential. I don't I, you know, most counters can be wiped down with a wet rag if you're just trying to fill your counter. We don't need to sterilize everything in our environment. We evolved with microbes in our environment, and trying to, you know, make a sterile indoor environment is, I think, a goal that can often lead to paradoxically worse outcomes, worse exposures through bleach and and other, you know, ammonia, mentioned prostate chemicals. So those, I think, are really important, and then avoiding unnecessary renovations. You know, if some people have to move out of their their residents because they're so afflicted and they can't figure out what's going on. I've had people ask me about indoor quality and and somebody were buying a home, and my recommendation was to actually not buy a brand new home, for instance, because new construction has fresh compressed wood in the infrastructure and the construction in the walls, cabinets, paints, if it's a new carpet. So these things all out, gas, chemicals. It can be very detrimental and very impactful to somebody, especially if they're suffering from from TILT. And it could even initiate TILT in somebody who might be prone to developing TILT. So I think that's really important. Same goes for cars. Buying a car. I just bought a car, and I was very happy to get a used car that was three years old, pretty much new. But guess what? When I got in that car, there was no new car smell. I cannot stand the smell of any car, it causes me to have a headache almost immediately. So I'm a very big proponent of used used stuff, especially cars and homes.

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Kendra Seymour

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Yeah. And for those listening, this is part we have a whole series of other talks talking about building materials with like Andy Pace and better swaps, and if you're building what you can do, or if you have to renovate or remediate, healthier swaps that are going to minimize some of your exposure. And we're going to have Dr. Charles Weschler and Lara Adler and a whole bunch of other people who are going to talk about each of these, some of these things you highlight in a little bit more detail, so that that's incredibly helpful. I always like to hear what the experts themselves do in their own home. You know what tips and strategies do you use? So that's incredibly helpful. And before we wrap up, we'll get your social media stuff so people can follow you and learn more. But as we kind of come to a close, like, you know what? What do you think needs to happen for like MCS and TILT to be like taken I don't know if it's more seriously or become more widely accepted in the medical community. What? What shifts Do you think need to take place?

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Dr. Masri

38:30

So I think, I think education, you know, I think that seminars and, you know, workshops, getting medical nurses and doctors together could be very helpful. I think the more peer reviewed literature that, you know,

we can get out there, the more we can look at this through a scientific method and in a very you know, using science to really grapple with this issue, the better, because that's really how I think things start to be taken seriously, is the peer reviewed literature. Of course, news is always, you know, important, but I think that peer reviewed literature so critical. We work a lot with communities that are trying to get city councils and cities to really improve the environment, and through our peer reviewed publication in collaboration with local nonprofits and stuff, we tend to find policymakers are taking issues more seriously when there's, you know, a university that's collaborated and published a study and physically validated what the communities has understood to be a problem for quite a while, and so I think that's an early critical piece, But outreach education, I'm just so big on those things, regardless of really what the topic is, outreach and education are so important. And I don't think that needs to be limited to everyday audience audiences, but also, like I said, professionals, medical community as well. But that piece about the everyday community member is really critical, because people may be suffering and not knowing what's going on. I've had people email me. I had a person because, because they saw the paper that I published that we were talking about a second ago. And, you know, in one case, a friend of my wife's noticed my name on that paper, and happened to be the one that stumbled upon it, and I had a long phone call with her. I know Claudia Miller gets many emails each week, if not day, people that are afflicted, and we don't know what's going on, but they ultimately do stumble upon our papers, and they feel validated and and so, so that's, yeah, this is not, you know, people aren't alone who are going through this. I want to mention just one quick thing you mentioned you're always interested to know we scientists ourselves are doing so as we're doing this interview, and my, my two year old is with her nanny a few rooms over, I asked our nannies to please not where perfume when they come over. And that's of course, you know, deodorants and all that stuff is fine, but, yeah, the perfume is a very noticeable thing, and can be very irritable to people. I can't ask my daughter if it bothers her, so I defer to the assumption that it might. And I, and I asked the nannies to not wear that it so I think that, you know, we can start to ask things like that of our of our friends and colleagues if we are suffering from perfumes and strong sense that can be avoided. Doesn't hurt to have a conversation. And I've always found that I've always been happy, and nobody seemed to be offended if you just tell them your irritated by it.

KS

Kendra Seymour

41:42

Yeah, no, I appreciate that, because there's a lot of things I think people don't realize, from your lotions to the soaps to your shampoo and all these things have fragrance, and it can add up and become rather overwhelming. And even to cleaning products, people think that clean should have a smell, and really like you can clean 99% of your home with just like a non toxic, unscented soap and water, and it's pretty effective, and you really minimize some of those VOC exposures. So no, that's always helpful. There was one thing, and I know this is cheesy, but I'm gonna quote you to you. You had said something once, and I found it so profound, not just from the TILT perspective, but mold related illness and other conditions that are perhaps not as widely understood yet. And you said, we can't confuse our infancy and our

understanding of a certain disease system with the rejection of the potential that there is some sort of explanation for what's going on, just because we haven't discovered all the details surrounding something, it's myopic to say this is just mental. I thought that was so fitting for so many of the people I talked to and in my own situation early on, when you come to a professional and you say, this is what's going on, and when they don't have an easy answer, then you're just told to, you know, it's all in your head. And so I appreciate that perspective. It's clear that you are a scientist at heart, right? You're always asking those questions and thinking at it. So for those listening, if this is something that you're going through, we have more recent resources on our website. We're going to link to a lot of the stuff that Dr Masri talked about so that you can learn more. We're going to link to and have other guests that are spending even more time talking about TILT and multiple chemical sensitivities, so that you can start to connect with people in your in the community that are experiencing the same thing, and hopefully get some answers and get some relief. But thank you so much. Dr. Masri, if people had follow up questions, can they you had mentioned your social media? How could they get in contact with you?

DM

Dr. Masri

43:49

Yeah, so there's a few ways to get in contact with me. First and foremost, my website, shahirmasri.com, is in theory, where everything's updated all the time. I gotta get a little bit better at that. I do have a newsletter which has gotten a little slower, but it's supposed to be monthly, and also my social media. So on Instagram, I'm dr.shahirmasri, that's dr.shahirmasri. And then I just started a new Instagram, which is exclusively environmental health tips and everyday insights, which is environmental health resource. So that's on Instagram as well. And so both of those, I think, are good ways to follow the work that I do. And you know, the environmental health resource is going to be more laser focused, whereas my other one is more of my everyday life, which includes my passion for outdoor agriculture and farming, and, you know, all kinds of topics, climate change, all kinds of stuff. So that's really, those are really important ways, I think, to get in touch with me. And my email is also on my website as well.

KS

Kendra Seymour

44:53

Great. Well. Thank you so much for your time.

DM

Dr. Masri

44:56

Thank you very much. And thank you, Kendra, for what you're doing. Because outreach is such an important piece of all this.

KS

Kendra Seymour

45:01

Yeah, it really, it really starts with you, the listener, advocating for yourself, with whether it's professionals in your home or your healthcare practitioner, no one's going to care about your health or your home as much as you. So for everyone listening, do me a favor if you found this information helpful, head on over to changetheairfoundation.org, and sign up for our newsletter, because it really is the best way to get great interviews and other information like this directly to your inbox. We'll see you next time. Thanks so much.