

Welcome to the Cutting Edge Health Podcast with Jane Rogers, where we discuss science to help prevent cognitive decline.

[00:00:00] Jane Rogers: Welcome to the Cutting Edge Health - Preventing Cognitive Decline podcast. I'm Jane Rogers. Welcome back. I had the pleasure of interviewing Dr. Jill Carnahan. She is one of the best functional medicine doctors in the entire country. Her practice is Flatiron Medical, and it is in Boulder, Colorado. Now, Dr. Jill has written a book, it's called *Unexpected*, and I read it to cover to cover. It has a whole lot of pearls of wisdom. I hope you enjoy this interview and learn as much as I did. Dr. Jill, thank you so much for making the time.

[00:00:32] Jill Carnahan: You're welcome. Excited to be here.

[00:00:34] Jane Rogers: Oh, I'm very excited to have you. I loved reading your book because you and I are both farm girls from the Midwest. We've both grown up on farms with a whole lot of toxic chemicals, and I could totally relate to that. Yours manifested. You've been through a lot and your book talks about that. You went through cancer in your 20s, Crohn's disease, all probably in large part because of how you grew up on the farm. Can you tell folks about that?

[00:00:59] Jill Carnahan: Sure. Who would've known because we know how that is. There's this wonderful, idyllic, I always say Norman Rockwell-esque piece of farm life. Especially from the outside looking in. It was a wonderful life. I was from a big family, one of five children. We had a large half-acre garden where we'd go and part of my chores was picking peas and raspberries and lots of fresh fruits and vegetables. Lots of wonderful things on the farm.

Unbeknownst to me, I always say, I didn't even know it, the farm was slowly killing me. That was back in the '70s and '80s before we really knew there's lots of chemicals, organophosphates, pesticides, herbicides, and then came glyphosate or Roundup. All these things tend to accumulate in soil and the water because we drank from well water, and even in the bodies of our parents, which they passed that on to us in utero.

All of that conglomeration really allowed me to realize when I got diagnosed with aggressive breast cancer at 25, "Oh, maybe this didn't just start now, but it actually started from birth or even in utero before birth." It really started my passion for environmental toxicity and understanding how our air that we breathe, the water that we drink, and the food that we eat really, really affects our health and our brains.

[00:02:10] Jane Rogers: It certainly does. Now, you healed from all of that and you're still on the path to healing. If someone doesn't treat the toxicities that you pick up, then

that can lead to memory loss. That can lead to real problems down the road as you get older. Our audience here is interested in cognitive decline. It's important to detox.

[00:02:27] Jill Carnahan: It is. I always say it's like the elephant in the room, but it may be the most important thing you learn about and do something about. I remember back when I got breast cancer and started to say why in the world at 25 -- I literally found the lump at 24 years old and got diagnosed with a biopsy just days after my 25th birthday, so incredibly young for breast cancer. If you don't know this, and you're listening and you know someone with breast cancer, breast cancer can be very slow growing.

It can be very aggressive and deadly as well, but especially in younger women. I was in a group of young women under 40, and I'm the only one that's still living. That just shows you how deadly that this disease can be. I was facing the battle of my life and part of this mystery, I love to solve mysteries, and all of a sudden it involved me. I said, "What in the world? Why did I get breast cancer at 25?" I started to look at my environment, not only the water that we drank, the chemicals on the farm, and many of these things have endocrine disrupting effects, which means they act like hormones on the body.

Now this can especially affect the brain as well because we need hormones and good healthy levels of cortisol and testosterone and estrogen and DHEA and all these things in order to have good brain health and all of these chemicals can affect that production. Unbeknownst to me, I started to realize that toxic load and I started to look at not just the chemicals in the water that I drank and the air that I breathed, and the food that I ate, but the things I put on my face, like our makeup and our bath and body products, and the air fresheners we sometimes use or the cleaning products in our house.

As you're listening, you're probably starting to think of those things you're using and it can be a little overwhelming. You can start by just the things that you put on your skin, like your lotions and your shampoos and your things like that, or if you're a woman or a man using makeup or creams or things like that, that's a good place to start. I remember when I first started to realize this, I think it took me a full year or two to start to go through products because it can feel overwhelming but all of these chemicals are slowly increasing in use.

A lot of them are not tested for toxicity and especially they're not tested in synergy with one another. When we have these exposures, it's multiple at one time, not just one thing. One thing that is so critical to overall health and to brain health is to really reduce toxic load. We can talk about some simple steps for that if you'd like.

[00:04:39] Jane Rogers: I would like to do that. That was my next question. Someone comes in and they're saying, "I'm just not as sharp as I was. I'm not recognizing faces like I used to. I'm having trouble with word recall." What's the first thing you turn to? Is toxicity one of them?

[00:04:52] Jill Carnahan: It is.

[00:04:52] Jane Rogers: Then how do you start to detox them?

[00:04:54] Jill Carnahan: Toxicity is one of the big things that is, like I said, the elephant in the room because most people are walking around and they're not passing out from carbon monoxide poisoning because obviously if something like that insults you or smoke from a fire and you can't breathe, those things are very acute and very obvious, but what happens is almost like the analogy of the frog boiling in the pot slowly and they can't tell that they're not doing well.

That's what happens in our environment, we don't know these little insidious insults occur over time. I always give the analogy of a bucket. We're born with this bucket capacity to detox. As we live our life, it starts to fill up and up and the water level starts to come where we can't really see over the top. Then pretty soon, we're in over our head. That's when disease presents.

The three most common things with environmental toxic load when that bucket is full and the thing about the water spilling over the top and we're drowning in there is autoimmune disease, cancers like my breast cancer, and the third is neurodegenerative diseases, so Alzheimer's, Parkinson's, ALS, and memory loss in general. This is one of the top three things that is directly related to that toxic load. Then what do we do?

[00:06:00] Jane Rogers: What do you do?

[00:06:02] Jill Carnahan: Some of this stuff can be totally overwhelming. Like I said, even with my products and bath and beauty routine and stuff, it took me a while to really go through products and get clean. You might check Environmental Working Group, it's a nonprofit organization that gives out tips and tricks on products and things that have toxic chemicals. You can literally look up your products there on Environmental Working Group and see what's toxic and what's not and get rid of those that are toxic.

I always start really simple, and what I like to say is clean air, clean water, clean food. Air that we breathe, 80% of our toxic load comes from the air that we breathe. We can go more in-depth on mold in particular, but mold toxicity is in the air that we breathe. We often don't see it. We may smell it, we may not smell it, and many homes have water damage or workplaces that we don't realize. That mold could be behind a wall. Everything looks perfectly fine, you don't smell anything, but that mold can produce something called mycotoxins.

These mycotoxins are incredibly harmful to our neurological system, to our memory. I do a little work with Dr. Dale Bredesen, who's written a lot about Alzheimer's. One of his quotes, he used to say one in three younger people like 40s and 50s with dementia or

early onset memory loss is from mold. I recently, just a couple of weeks ago, was speaking to him and he said 80%. It's gone up as far as what he sees, 80%.

[00:07:21] Jane Rogers: Really? Mold is something you're so intimately involved in that we're going to talk about that later. You were really set back by mold.

[00:07:28] Jill Carnahan: Yes. That's the air. What you could do is at the very least, get a good air filtration system in your HVAC system. Make sure you have the highest MERV rating that you can fit in there, which means that it's usually the thickness of the filter, but also how well it filters out both particulate. That'd be like your HEPA filtration and VOCs. VOCs are volatile organic compounds that'd be like smoke, formaldehyde, off-gassing from your cabinets, or any fumes in the air, even from your cooking stove.

Like benzene gas might be from a gas stove. All those things accumulate in our air. If we're not deliberate about our air quality with an air filtration system, and I recommend not just the things you can put in your furnace or your HVAC system, but a standalone filter. There's a bunch of good ones out there. Some of my top brands are IQ Air, Air Doctor, Austin Air, and there's many others, but what you want to look for is a good HEPA filtration system that filters out the large particulate and then also a VOC filter, which usually means that that filter contains clay or charcoal or zeolite in there, which will actually pull out smoke and fumes and that kind of thing.

That's air and that's a huge percentage. Most people aren't thinking about buying a filter for their living room or their bedroom, but you could start there by getting an affordable filter in your bedroom where you sleep so that at least at night, the air that you breathe is filtered and clean. That's number one. Clean water, number two. Once again, you can't count on tap water to be clean anymore. Even in my municipality where we're at, we've gotten reports recently of contaminations and then we had fires in the town nearby.

It was superior and the water quality went terrible after those fires because of the contamination in the groundwater. Drinking water, either filter water, I'm not a big fan of plastic bottled water so you really want to get a good filter, either a countertop system that's really affordable. You can get one of those pitchers in your fridge for under 30 bucks, or ideally, if you have a home and you can install a whole house filtration system, that'd be great.

Again, you don't have to do expensive options. I'm in a condo, so it's harder for me to do the whole house filtration system and I just have a really good quality pitcher in my fridge. Could do better but that's at least a start and affordable for most people. Then clean food. Food is everything when it comes to the brain.

You want to have these phytonutrients, lots of leafy greens and colorful fruits and vegetables, things that produce nitric oxide, which allows us to have blood flow to the

brain and making sure that it's pesticide-free, it's organic, it's non-GMO, and things like wild salmon with Omega-3 fatty acids and lots of those good nutrients that we need. The food is the third thing that really, really matters in our brain health.

[00:10:00] Jane Rogers: When you have a patient who comes in with cognitive issues and they make those three changes, you're seeing a turnaround, aren't you?

[00:10:06] Jill Carnahan: I am.

[00:10:07] Jane Rogers: Dementia is reversible.

[00:10:08] Jill Carnahan: Yes. This is why it's so important the work that you're doing because when you start to forget the keys and you start to have these things, and you're like, "Well, I'm just getting older," and you make excuses, there's something called subjective cognitive decline, this SCD for the diagnosis and that's pre-dementia. We can tell that in our 30s and 40s and 50s before anything ever gets serious.

If we're not aware of that and saying, "Okay, what's going on here? Could it be a mold exposure? Could it be the chemicals in my food? Could it be an autoimmune disease? Could it be inflammation?" and looking at those causes and either working with a functional doctor or a coach or even doing your own research online and starting to make changes, that is where when you say it's reversible, I did this whole monologue because when you catch it early it is absolutely reversible. When you start to get into moderate or even severe Alzheimer's disease, those cases are really difficult to reverse.

It's not impossible but the timeframe that we have when it's reversible is when we're like, "Huh, maybe I'm just getting old." It's that subjective cognitive decline. Now, we've also seen reversal in mild cases and some moderate but it's much harder.

[00:11:17] Jane Rogers: Do you ever have someone sitting across from you or someone you just meet who doesn't seem very concerned about the mild stuff and you want to take them and you want to shake them and say, "This is your time. Come on, I can help you."

[00:11:30] Jill Carnahan: Oh Jane, I love it. You say that as if you're listening out there. You just said it. In fact, I've been with friends and people who don't maybe really understand functional medicine and they're like, "Oh, I'm just aching up. It's my 30s or it's my 40s or it's my 50s or all my friends are 50. They're 20 pounds overweight, 50 pounds overweight. They wake up with joint pain. They wake up with brain fog. They just don't feel vibrant." All of that is normalized in our society. People just think, "I'm just getting older." Granted, we are all getting older and we're not going to perform quite like we did in our 20s.

The truth is much of those symptoms, especially when it comes to cognition, are treatable, reversible, and are not just something that we should accept as part of normal aging.

[00:12:14] Jane Rogers: If you are having these symptoms, sometimes you go to your doctor and he or she is not really trained to be able to help you. I'm hearing that a lot. It's important. What healed me was going to a wonderful functional medicine doc. I've been with her now for eight years and she's completely...Dr. Christine Schaffner has turned me around.

[00:12:35] Jill Carnahan: Oh, I love her. [crosstalk]

[00:12:37] Jane Rogers: I love her too. She's great. Can you advise someone when they're trying to select a functional medicine doc? Not everybody can get out to Boulder. What are we looking for? In your book, *Unexpected*, you talk about the rapport that you have with patients. You feel so much empathy as they sit across the desk from you, or not even the desk, the chair right next to you. You care. This is the kind of doctor people need, but sometimes we settle for less.

[00:13:03] Jill Carnahan: Yes. I love the image in Dr. Christine because I know her and she's got the most-

[00:13:07] Jane Rogers: I know you do.

[00:13:07] Jill Carnahan: -beautiful heart. She's one of those people who exemplifies more than almost anyone I know of this love because healing starts with, number one, unconditional love and acceptance. So often patients, they know inside, "Something's not quite right. I don't feel right. I don't know what it is. I need help figuring it out, but something is not quite right. Either I'm too tired, I'm getting frequent headaches," like I said, joint pain or the cognition stuff.

They go to their doctor, and they say, "Doctor, these are my symptoms. I've had more frequent headaches. I wake up with joint pain. I'm really, really, really tired and I'm having trouble remembering really basic things and I'm getting nervous. The other day, I forgot to turn off the stove," or something like that they'll say. The doctor might do a basic panel of labs and they look at the labs and they say, "Well, Mrs. Jones, everything looks fine. Why don't you come back in a year?" Worse yet, they'll say, "Well, Mrs. Jones, everything looks fine. Do you think you're depressed? Maybe we should prescribe an antidepressant."

Now, let me say there is nothing wrong with depression. I treat it. I prescribe meds and those are perfectly appropriate for depression, but when you feel truly on an intuitive level, something is not right and your doctor who you trust says everything's fine, find another person to help you. Like you said, you could find-- sometimes there's naturopaths and

chiropractors and health coaches. It doesn't have to be an MD. That's what I do. There's a lot of great practitioners out there that have just as much knowledge and skill set to help you that maybe aren't the classical trained doctor.

Whoever it is, you want to find someone that listens to you, takes your complaints seriously, and like we talked about, goes really deep because in order to find these problems, whether it's toxic load and measuring the urine for toxicants like heavy metals or chemicals or mycotoxins, these things can actually be measured. This isn't just like I feel in my head this is a problem and then I guess what I'm doing. I actually measure with laboratory data what's going on in a patient's toxic load and then we try to address those things. You want to find a doctor who can go deeper.

It's like looking at a mechanic. You take your car in and they're like, "Oh, well, your car looks shiny on the outside. Everything's fine." You're like, "No, it clunks when it runs. It's not running right." You need someone to look under the hood and maybe throw in that computer diagnostic thing, whatever they do there in the mechanical shop, and say, "This is the problem. It's your carburetor. Let's fix that carburetor." Same thing with your brain, same thing with your body.

Again, if you find a good medical detective, whatever they are trained as, as long as they have a good background in diagnostic sciences, you can get some of this information and you might find what's going on when your regular labs look good. I'm saying all this because that intuition that you know in your heart something is not right is really powerful. We get taught to neglect or ignore that because some other authority outside of ourselves tells us, "Oh no, you're fine. It's all in your head." I really hate that because it's such a disservice.

It's really medical gaslighting and it's such a disservice to a patient who is suffering and knows there's something not right, but they don't know what's wrong. They're expecting that person to help them. Instead, they get told they're crazy. It's all in their head.

[00:16:09] Jane Rogers: I bet you would like to empower that person to make the financial commitment that it will take to go to this kind of doctor because sometimes insurance doesn't cover it. Family members may say, "No, we can't afford it. You can't do that." Maybe they can cut in other ways. How expensive is it to come to someone like you? Should everyone try really hard to cut their budget to make this happen if they feel they need it?

[00:16:32] Jill Carnahan: Jane, I love that you talk about that because this is another elephant in the room. None of this stuff is-

[00:16:35] Jane Rogers: It is.

[00:16:36] Jill Carnahan: -inexpensive. Especially if you really do-- say you do hyperbaric oxygen or you do some nutritional therapy or you do IVB vitamins or things like that, they all add up and then the doctor's visit and then they test. Often this is out of pocket. There are levels. First thing I would say is think about if you had a really expensive car and you would want to put really good gasoline in that. If you spent \$100,000 on a car, or something crazy like that, you would want to get the very best gasoline for that car. Why wouldn't, if a car, which is so not important compared to our human body and our mind, we would want to put in the very best?

It starts with, like I said, clean air, clean water, clean food, even before the physician. If you have to choose, you want to choose putting your money with nutrition. I always say pay the farmer versus the hospital because you're going to eventually pay one or the other. You might as well put your money in good quality food and that's worth it. If that's all you can afford, start with good quality organic nutritional produce. Often I want to talk about this briefly because we think it's more expensive, and it is if you want convenience. If you want pre-packaged, cut-up vegetables that are organic, yes, it costs more.

If you buy a five-pound bag of organic rice or you buy a head of broccoli or you go to the farmer's market and buy some of the vegetables and you have to clean them and cut them and put them in, that takes time. Overall, the cost, they've done studies, if you take out the convenience factor, it's actually not that much more expensive, sometimes less expensive to buy organic produce, especially when you use your local farmers. You start there. Second of all, yes, tests, all this cost money. You have to decide what matters to you. I feel like both time and your health, you'll always have time for what's important. You'll always have the money for what's important.

This is one reason why here I'm talking to you. I write an online blog every week. I do podcasting, and I feel so motivated to encourage people out there with resources that are free. Where you could start is reading online from any number of functional doctors that write or talk about this or listen to free podcasts or things like what you're doing here because you start by yourself. There's so much you can do on your own. Then that next level is getting the diagnostic help. You might decide-- even when I'm with a patient, I might say, "I want these five tests. It's going to be this much amount of money. If you can't do that, let's start with at least this one or these two."

Often I'll do tests. You can do some basic labs that are much more in-depth through your insurance, just through a regular lab core request. We'll start there. First thing is I'll do whatever's covered by insurance. Second, then we decide how much to do. Then even with nutritional supplements and things, you start with food, you start with air, you start with water. Then on top of that comes the nutritional supplements. Once again, you can prioritize, you can do a few key nutrients. You don't have to spend tens of thousands of dollars on these things.

[00:19:22] Jane Rogers: Exercise is free, which helps a lot.

[00:19:24] Jill Carnahan: Yes. Connection with people, hugs and conversations with friends, and doing that-- those things are so powerful and absolutely free. Connection with other humans, unconditional love, being with your pet, walking your dog, being out in nature. Like you said, all these things are free and so powerful as healers.

[00:19:43] Jane Rogers: I was reading today that there are going to be more people 100 years old in the future than we've seen in the past. A lot. Right now, there are not very many people who are 100. You don't even know someone like that, but in the years ahead, like in the next 30 years, we're going to see a ramping up. Huge number of people living to be 100. If we're lucky enough to be one of those, we want a health span that is vibrant. We want to be free of the diseases of aging, heart disease and cancer, and cognitive issues. What are you doing today? What are you recommending your patients do to try to be in that 100 who has their health?

[00:20:25] Jill Carnahan: I want to go back to the basics, but the food is so critical. You must be deliberately avoiding processed foods, avoiding sugar. Alcohol has been very controversial and a lot of the people I treat have sensitivities and autoimmunity and other issues. Many of them choose to totally avoid alcohol. Again, there are some studies that show some benefit, but in general, you want to be incredibly moderate or abstain from alcohol as well. Sugar is toxic. That one just goes without saying. It's so easy to get into the habit of the cravings and all of that.

If you can really get back to clean food, whole foods, very simple lists of ingredients, fruits, vegetables, colorful phytonutrient-rich foods, healthy protein sources, all of those things, that is going to be your foundation. Then the other things, like you said, being out in nature. Once again, if our environment is full of toxic chemicals, we have to really make sure that we are exercising outdoors with clean air or using an air filter indoors. Connection with humans, so important. Especially after the pandemic, when we all became more isolated, I think the number one cause of mortality is loneliness.

That actually affects our physical health. We saw this, especially with the pandemic, with the older individuals where they were really isolated. I think that actually contributed to some of the cognitive decline as well because part of that sharpness is kept with connection with human beings. Making sure that we do what we can to get off our phones, very simple thing is turn off your notifications so that that phone does not control you. If you go into settings on your iPhone, every single app has a notifications off or on. Every single one of mine is off during the day. Then you just select.

You get to control that versus-- this is a dopamine machine. It is created so that we are triggered by the flag. Then we go to the phone and then we answer it and we get these little dopamine hits through the day. You can break that addiction by shutting off your

notifications and taking back control of your time. If you really look at your time, you're going to find one hour, two hours, three hours is spent on social media or on your phone. You can take back that time and instead go for a walk, be outdoors. All those things are going to do much better for your brain than the iPhone or the iPad or the computer.

[00:22:37] Jane Rogers: You're inspiring me very much. How about some of those things that we're reading about like plasma apheresis, hyperbaric oxygen, rapamycin, NMN? How about some of those things that our parents never had access to?

[00:22:51] Jill Carnahan: This is that next level. I really think if you want to live and thrive to be 100, you're going to need to implement some of these things. Yes, the clean air, clean water, clean food, that's basics. That'll get you to 75 and healthy, but if you want to go past 100, you're going to probably really need-- unless you have phenomenal genetics, you're going to need to incorporate these things. I'll just start with some basics that I do. I want to go back to one more really important basic and that's sleep. You must be getting good-quality sleep.

Nowadays you can get the Oura Ring. You can get Fitbits. You can get all kinds of tracking devices if you like that data. For me, I do because I'm a scientist at heart and I like to see if I do PMF mat, hyperbaric oxygen, IBNAD, and we'll talk about those real briefly as well, does it affect my sleep? Does it affect my energy? Does it affect my stress level? I like having that feedback because when I do an intervention, I want to say, "Is that worth the time or money for me, and my N of one?" which means my, if I was a science study myself, is it worth for me? For me, what has worked, PMF mats, I am a huge fan.

These used to be tens of thousands of dollars, and nowadays you can get one for 1000 or less for a mat that you have at your home and you can use. This is a pulsed electromagnetic field when you lay that mat and it increases blood flow. A lot of the NASA studies are cognitive-based, so this has been shown to improve cognitive blood flow. It's been shown to improve bone mass as we age, which is a huge cause of mortality and morbidity for women, especially over the age of 50. It can also help with calming and getting into that deep sleep.

My biggest aha was after I got the mat, my deep sleep went up by 5% to 10% per night when I used it.

[00:24:30] Jane Rogers: Oh, that's excellent. [crosstalk]

[00:24:31] Jill Carnahan: I was like, "Oh, this is a big deal. This is a game changer." Other things you mentioned, IV nutrition can be powerful. If you have any gut issues, you have any autoimmune disease, you can bypass the gut and get Myers cocktail, which is a classical IV with B vitamins, magnesium, zinc. You can get extra vitamin C if your immune system is compromised. For brain health, we use phosphatidylcholine. This is

the bilipid membrane layers of all of our cells and especially our neurons. It's almost like an oil change in a car. You get repairing of that neurotransmitter manipulation so you can actually get better signaling.

Phosphatidylserine and phosphatidylcholine you can take orally, or you can get IV. Glutathione master antioxidant. This can be taken orally, liposomally, you can nebulize it and breathe it in. You can do it IV or you can do it injectable, all of these ways. Now your body should be making glutathione, but in our toxic world, we tend to deplete that. It's a great way to enhance your ability to detoxify in a toxic world. Those are IVs. NAD, you mentioned. There's things out there called nicotinamide riboside or NMN. These are all precursors of NAD.

NAD is a core nutrient we need to make ATP and it's depleted by toxins, by stress, by many things. A lot of people, either IV, intranasal, oral, you can take it and this can be really powerful. When you take NAD, you need B vitamins in order to produce the ATP. You want to make sure you have methylated B vitamins along with NAD if you're doing high doses. Hyperbaric, you mentioned. Hyperbaric can be incredibly powerful for healing wounds, for increasing nitric oxide to tissue. Getting better blood flow to the brain. It's really good for injuries, for healing, for concussions, and it can be helpful for brain health.

I would say it isn't the very first thing I go to for brain health, but it's one of those tools, especially if you've had multiple concussions, it can be really powerful. One of the mechanisms, whether it's cold plunge, which we didn't even mention, or hyperbaric, I know we all shiver, all of these things, part of how they work is they increase nitric oxide production. This is something that happens on the lining of our vessels and allows that opening up of blood flow to our extremities, to our brain. So much of brain is, are we getting blood flow? Are we having good blood flow to all the areas of our brain?

Things that increase blood flow, increase nitric oxide are really powerful. This is why going back to food, some of the leafy greens like bok choy, arugula, celery, spinach, and especially beets are precursors of nitric oxide. If we have those daily in our diet, that's one more way to get nitric oxide production.

[00:27:11] Jane Rogers: What a great list. Thank you very much. Let's segue to mold because I know that a big flood came into the Boulder area and it hit the basement of your office and you explained in the book what symptoms you started to have. You started talking about mold and toxicities, but Jill, you are such an expert on mold. Can you go a little bit deeper for folks?

[00:27:33] Jill Carnahan: Yes. This is a big deal to brain health. I quoted Bredesen, he just said a couple of weeks ago, 80%. He specifically said the younger ones that are in their 40s or 50, that may be a successful attorney that's not able to practice because of brain health issues or cognitive decline. Very frequently in these younger people, again,

versus 80, 90, when you might expect some cognitive decline, this mold is a huge issue. What's the deal with mold? Mold comes from any water-damaged, porous material, like drywall. You could have a foundation that has too much saturation in the soil and the water gets into the foundation and leaks into your basement.

You could have a sump pump that's not working. You could have a window that's not sealed well, a door that's not sealed well, an intrusion, a hurricane, or a storm. You could have a dishwasher that leaks, a fridge that leaks, and all of these things in our homes are sources of water damage. If this happens and it goes unnoticed, or we think, "Oh, no big deal, mop it up. That's fine," we don't clean up the material that became water damaged, if it's porous, these are niduses for mold. Then mold grows. A lot of people are like, "Well, 50, 100 years ago, my grandparents, my great-grandparents had mold or mildew in their shower. It was no big deal."

They're partially right because what's happened over the years is in the '70s, we started putting fungicides or antifungals in the paint, and this would kill off all the really slow-growing, not super aggressive molds. Now in indoor environments, it's just like antibiotic resistance, we have a lot more aggressive molds that produce really nasty mycotoxins in indoor environments. More than ever before, the types of molds that are growing in homes are more toxic. Number two, many of our homes are now LEED-certified. They're high efficiency. There are all these wonderful things that cut down on the electric bill.

What that does is it creates a much more sealed environment. When there's lack of airflow or air exchange in that indoor environment, you can create a much more toxic load inside because you're not getting that outside air to exchange as frequently or as easily. All of these things contribute. Like I said, you can have an invisible mold behind the wall. You have no idea it's there. That mold produces mycotoxins. Some of the most toxic chemicals in the world are tricothecenes, which are T2 mycotoxins from certain black molds like *stachybotrys* and *chaetomium*.

These are incredibly toxic to the brain, absolutely neurotoxic. Can cause inflammation, can cause memory loss, can damage your hippocampus, which is your main memory center. All these things can happen unbeknownst to you. If you're listening, and you're like, "How do I know? Could I have mold?" some of the questions I ask are pretty simple. Do you go on vacation or have you gone away for seven days, 10 days, 14 days and started to feel better when you're away from your normal living environment like your home?

Do you go camping or outdoors or be somewhere where you're on the ground, you're away from an indoor environment and you feel amazing? That's another sign. Did you get sick after you moved to a new home? A lot of times I'll have a story of, "2018, we built a new house and we all moved in. The next year my son got new diagnosis of asthma. I started having memory issues. My husband started having rashes." That's a situation

where I'd be asking more questions about that home. You notice I mentioned a new home because the most growing area of mold contamination is actually new construction that's been poorly built.

Just because you get a new home does not make it safe for mold, sadly. Again, whether it's constructed during a rainstorm and never dried out completely or whether-- I've just heard all kinds of stories about cabinet installation and they put a nail right through the pipe in the kitchen or someone doesn't seal the chimney and there's water leaking through the chimney into the home or the shower pan isn't properly installed. These things can be in brand-new homes. Now, certainly, older homes have more history as well, but all those things.

Say you suspect mold, what do you do about it? First of all, you can do a test and obviously, you'd probably want an inspector. That is your best option. Just like we talked about earlier with costs, sometimes you can't start there. One way you could start pretty simply is by doing a qPCR. It's also been called ERMI test. You can do these. They're online. I think Envirobotics, Micrometrics is the test company, and The Dust Test. Those are all three companies that do this.

You can get this online. It's literally like a cloth that they will mail you and you collect dust in your home and then that lab tests for DNA of mold in the dust of your home to see a historical snapshot of what might be present in your home. That's a great starting place because if it's perfect, you're like, "Oh, maybe it's okay." If it has some of those black molds I talked about, then you could call an inspector and say, "You know what? I have this dust sample. It doesn't look so good. Can you look around and see if you can find where that might be coming from?" Because ultimately, if there is a mold issue, you have to find the source.

You can't just spray over it or ignore it. You have to find where it's coming from. If there's drywall or damaged materials, you have to take those out through remediation. Then typically, in order to get a really clean environment after the remediation is done, you want to fog and clean your home really well because that dust and debris left behind can carry those toxins unless you clean it out. That's how to find the source. Then what do you do with your body? Say you found mold. You found it in your basement. You clean up the basement. You remediate it. It's all gone out of your house, but you're still having cognitive issues.

The main thing here is when you've been exposed to mold for months or years, it can go straight into your nose through the breath. Those mycotoxins are particulate matter, PM 2.5 or less, which means they're very tiny. They're almost the size as virus particles. When you inhale them, they literally go straight into your lungs. They go straight through the alveoli and into the bloodstream, literally within seconds of inhalation. As it gets into your

bloodstream, then it can be stored in your tissues over years in time, and it can be even stored in your brain.

Say you find this mold and you feel like you've had symptoms, you need to get that toxic load out of your tissues and back to normal healthy levels. You need to get that water level down. What you want to do is enhance your own production of glutathione, which is your liver gallbladder area. You can either take glutathione, you can do precursors like glycine, glutamine, alpha lipoic acid, N-acetylcysteine, vitamin C, or any support there for that liver because that liver is like your filter of your blood. As you mobilize toxins, maybe through infrared sauna or dry brushing or Epsom salt baths, those things can all mobilize toxins out of your tissues into your blood.

Then your liver starts to filter that blood and the liver then dumps it into the gallbladder into the bile. You want to pull this bile out. The bile naturally gets excreted from your gallbladder into your small bowel when you eat and during the day. If you use a binder like clay or charcoal, it will actually grab onto that bile and escort it out through your stool. The basics of detox are mobilization and then excretion. Mobilization, as I mentioned, infrared sauna is huge. Cold plunge is actually helpful too. Epsom salt baths, dry brushing helps lymphatics. Then taking glutathione or precursors, supporting bile production, and then also using some sort of binder.

That's a very basic overview of what you would do to detox from mold.

[00:34:54] Jane Rogers: One of the things glutathione, I learned from you and I was so excited to learn it because you nebulize glutathione because you have a mutation in some pathway, G-something that means your lungs are not making enough glutathione. I checked back on my analysis, I have the same thing. Thank you for sharing that because, because of that, I'm nebulizing glutathione. [crosstalk] I really appreciate that. Can you explain that to the audience about that mutation and what you're doing and why it's important?

[00:35:23] Jill Carnahan: Yes. There's a GSTP1 and GSTM1 and these two can be alveolar, which means-- when I say alveoli, those are little sacs in your lungs. For me, and maybe you too, Jane, is on the surface of our lungs, we maybe have 50% production of glutathione. As you can imagine, as I talk about clean air, clean water, clean food, these things come in through our mouth, through the air that we breathe. The air that we breathe is so important because the tissue of our lungs is our first defense if we breathe these in.

If you or I aren't producing that protectant, like the guards from the toxic load on the surface of our lungs, we're much more susceptible to either have lung damage or tissue damage or even get it into our system. What I learned, as you know, usually it is by prescription. I wouldn't recommend over-the-counter, but they'll make a sterile vial of

liquid glutathione and you can actually dump that right into a nebulizer with saline and breathe that just like you would an asthma treatment with albuterol. That goes directly onto the lining of the lungs.

This was one of the things I did in recovering from my mold-related illness. Even during COVID, when I had COVID, guess what I was doing? I was nebulizing glutathione. It is so powerful because those virus actually cause oxidative stress in the lungs as well. You can do this if you're sick. Now, again, this would be under a doctor's prescription because it is something that they have to prescribe stable and sterile. It has to be free of bacteria, of course, but it's a quite not-expensive, easy thing. Anyone can get a nebulizer. You don't need a prescription for that.

You can do this and nebulize it. Whether you're sick or you've had mold exposure, you could do this every single day for a period of time to improve that glutathione, that protection on the lung surface.

[00:37:04] Jane Rogers: How often are you doing it on a normal week when you haven't been exposed?

[00:37:08] Jill Carnahan: When I'm doing well, it's pretty infrequent. I more use it as a rescue for, say, I travel. Recently in December, I was in two moldy hotels, felt terrible. I nebulized the glutathione after that for several days. I would do it daily for maybe five to seven days, or if anyone is sick, I always recommend, and especially with these viruses we've been having post-COVID especially, it's very, very powerful. If you're just wanting for the brain, when you inhale it, it's going to get systemic. It could be a treatment for the brain as well because you can inhale and get that effect systemically. Not just for the lungs.

[00:37:41] Jane Rogers: Excellent. Now, in your case with the mold, I remember you saying you just couldn't remediate enough. You had to move out of your office because it was a toxic place.

[00:37:50] Jill Carnahan: Yes. This is another thing that-- and I've been talking to some attorneys that are now taking mold cases. There are a lot of people out there that-- if you own your home, it's one thing, and it might be really expensive, but at least you have the choice to remediate, do it right. Then you just have to decide, "How much can I spend on this?" If you have a landlord, you're renting a home or a workplace, and that was my situation, I had a landlord who really wasn't really willing to acknowledge that there was an issue and certainly wasn't really willing to do the things that needed to be done.

Often landlords will paint over mold that's not okay for someone who's sick, or they will try to cover it up, or they will tear it out when there's no controlled environment. Negative air pressure is required if you're going to tear out a bunch of moldy material, which means

they put up almost like a hospital setting where there's plastic and airflow going out to the window so that all that negative air pressure will keep that toxic air from just contaminating your whole house. Then, like I said, afterwards, you want to really clean up the dust and debris that was left behind.

It takes a good process to get it right. If your landlord or someone you're working with isn't willing to do that, you might need to move or leave. That was my case with my office was I was renting, so I didn't have control. I had to leave.

[00:38:58] Jane Rodgers: We're almost out of time, and you've been so generous. If someone wants to become your patient, you've got quite the waiting list, don't you?

[00:39:06] Jill Carnahan: Yes, we do. Now I have a nurse practitioner and I'm getting ready to hire a PA, so we are finally taking new patients.

[00:39:12] Jane Rodgers: Oh, good. Good. If someone wants to be your patient, the wait list isn't super long anymore.

[00:39:17] Jill Carnahan: No. I've been doing that just because we want access and I want to train up more. I go out there trying to teach other doctors. If you want a good doctor, I didn't mention this, but for resources, ISEAI, International Society for Environmentally Acquired Illness, is a great place for docs that are trained with mold. It's a non-profit. IFM, Institute of Functional Medicine, is some basic functional medicine trained docs. You can search by DO or MD or whatever practitioner. There's many others, but those are two good places, non-profits, that you could start to look for a doctor.

If you want to reach me, you can just go to my website and put in a request or call the office. My website is just my name, jillcarnahan.com.

[00:39:56] Jane Rogers: Excellent. The book is *Unexpected*. I've got it right here beside me. Thank you. I read it cover to cover and I got a lot out of it. You really shared so intimately and oftentimes docs don't do that. Thank you for just opening your heart and sharing in a book like that.

[00:40:11] Jill Carnahan: You are welcome and thank you for all the work that you're doing. Just it's such a pleasure to be on here with someone who is so full of warmth and love even in our interview. I feel it. It's healing and it's powerful so thank you for the work you're doing in the world as well.

[00:40:25] Jane Rogers: Dr. Jill, thank you. Have an awesome day.

[00:40:27] Jill Carnahan: Thank you.



[00:40:28] Jane Rogers: Take care. You've been listening to the Cutting Edge Health Preventing Cognitive Decline podcast. Any information shared here is for educational purposes only. Guest opinions are their own. This podcast is not responsible for the veracity of their statements. Do not use any of this information without first talking to your doctor. Cutting Edge Health LLC is not responsible for what may happen to you if you use their information in place of official advice from a medical professional. Thanks for listening. Be well.

[00:41:06] [END OF AUDIO]

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