Introduction to Detoxify and Environmental Health

When people are sicker, they're looking for answers. When we're complacent, we don't feel bad. We don' feel sick. But I think when you end up getting sick or have a health issue, people We live in a toxic world, that's for sure.

From the air that we are now breathing, the water we're drinking, and the foods that were eating, even our personal care products and even some medications represent a clear and present danger to our health by virtue of the fact that they are toxic to some degree.

Hi, I'm Dr. David Perlmutter. Welcome again to The Empowering Neurologist. We need to unpack this information. It's vitally important. Our guest today is Dr.

Ailey Cohen, and here's her new book, Detoxify. She's been on the program before. New book is really terrific. The everyday toxins harming your immune system and how, importantly, how to defend against them.

That's what we want to discover. We know that the environment is toxic in so many ways and certainly getting worse almost on a daily basis. the question is, what can we do about it?

And we're going to find that out right now. Let me tell you a little bit more about our guest, Dr. Ailey Cohen. Dr Aaley Cohen is a triple board certified physician in rheumatology, internal medicine, and integrative medicine and a nationally recognized expert in environmental health.

She's the author of Detoxify the Everyday Toxins Harming Your Immune System and How to Defend Against Them. That's topic of our discussion today. a practical guide that helps us all reduce exposure to immune disrupting chemicals and strengthening our natural detoxification systems.

Dr. Cohen practices in Princeton, New Jersey, where she founded the Integrative Rheumatology Associates Practice. Her medical approach combines conventional treatment with integrative strategies, including nutrition counseling, stress management, and environmental toxin reduction.

Looking very much forward to our interview today. Well, Dr. Ailey Cohen, welcome back to The Empowering Neurologist. Thank you for having me. Your book is very, very timely.

As I just said in the introduction, we live in toxic times. And that situation clearly is not going in a direction that we would all like for a variety of reasons.

But let me take our viewers back a little bit and ask you, what was the inspiration here? Why did you write this new and wonderful book? Well, I wrote this book because it was really coming at a time where three areas of study for me over the last 20 years have come together.

You know, my previous books were written out of an inspiration from my dog getting sick and really jumping into the concept of, well, why did he have an autoimmune disease, young puppy?

And it really launched 15 years of research, personal heartbreak. into a mission. And then now I've realized after 22 years of practicing rheumatology, and I'm still practicing, I love it.

I loved my patients, but the convergence of what we're seeing in the autoimmune and immune disease space, it's a concern. We're saying an incredible rise in these numbers, not just in United States, And knowing what I now know about chemicals, having worked on that for so long from the endocrine disruption focus and framework, I've now moved into the immune disrupting chemical or immune-disrupting framework of how these chemicals work on theimmune system and how it converges with this kind of growing risk we're seeing with the Immune System

Disorders, of course.

So timely, you know, my work involving neurodegenerative conditions really is focused on the incredible role of the immune system or dysfunction of immune systems, dysregulation of immunity systems specifically certain cells in the brain called microglia.

But to recognize that fundamentally Alzheimer's and Parkinson's, and multiple sclerosis clearly are immune issues and then your work talking about how so many things around us, which are modifiable factors, relate to this dysregulation of the immune system.

I think, and even including cancer for that matter, obviously, really broadens the net that you throw in the work that your doing in terms of helping people understand what their exposures are and then more importantly, what they can do to help mitigate this issue.

So here we are, we're recording in 2025, early 2025. Your book is launching right around the corner. What do you think right now? What's really the biggest issue that you see that people really should be paying attention to?

And let me put a few things on deck that can choose from or bring up your other topic. And that would be microplastics, endocrine disrupting chemicals, PM2.5 air pollution.

Yeah, there's just, look, I've been doing this long enough that everything got into my crawl, but things have, you know, some. Who came up with that? But the idea is that, somethings have risen to the top, which brings me to my first annoyance, irritant things that I want to fix.

is drinking water. I think about drinking, water pretty much around the clock because I, think it's one of the most unrepresented, unrecognized source or associated source of problems for the immune system on contributing to health related issues.

And I say that because when we understand why the water system in the United States is problematic.

Why Water Quality Matters

It's not a third world country. I can compare the two from other parts of the world that are not as good for sure. But what we have actually is not great either.

And when people understand why it's a problem, why there's so much contamination, in all 160,000 wastewater treatment plants that serve 85% of the US population's drinking water.

The other 15% would be wells, either personal or home or local community wells. We now know that the laws that are governing those wastewater treatments plants are so archaic.

They're 50 years old. From 1974 with the Safe Drinking Water Act, which only designated 91 chemicals. 91. Out of now, what we know is about 95,000 chemicals, rough estimate, that have potential to get into our water system.

So we have an archaic regulation law on the books, and then we infrastructure that can't support, even if we were to make some of those changes, which hopefully we will, in terms of adding more chemicals that are monitored and removed, water is such a important part of the human body.

It is part 85 to 90% makeup of our cells and the body, so even the brain, of course. And so when we don't get that right, that really bothers me quite a bit in just something we can fix.

We have solutions to this, we just have to know what those are. So let's say I'm drinking the water that the city pipes into my house or I have a well.

How would I know? I mean, how can I figure out what the quality of my water is? So, you know, there are great

testing companies like, um, I tap score and I don't have any connections financially to anything, even if I talk about it, which I Don't often talk About any products or brands, but there Are ways to test your water.

Okay. You can even use EWG environmental working group has a, a zip code you can, You know finder where you Can look up your The last time they tested or at least brought together that data for your local town by zip code for water quality.

The problem is, is that's kind of one moment in time. And we know that water, quality and contaminants in water changes. You know, quite often it changes through seasons.

It changes by location. If you're in the middle of the country, you know you going to see more pesticide exposures during in-the-farm belt. We know that climate change changes in terms of flooding.

All of those things may potentially change your water in term of testing. So here's the point I like to make. You can test your body, which we might get into, and you can your test water for contaminants.

What I'd rather people think about is that it's probably contaminated until proven otherwise. Same with our bodies. Quite often we are more contaminated than we think.

We should be using, I believe, that money to do the solutions, to spend it on the solution instead of on testing. Because as I lay out in the book, we already know that when you make certain lifestyle choices and changes, when add in nutrition, get sleep, and we'll get into that, but when make those changes and smarter product choices, you will reduce those exposures and you'll change the destiny of your health by what is actually circulating in your body and what you can remove quite easily.

Well, I did receive a snail mail letter from the city in which I live. I get one every year. That is a review of the water quality. And it looks at five, believe it or not, five different things.

Uh, lead, cadmium, mercury, uh, probably arsenic, and then I think a bacterial components and it passes with flying colors, in in light of what you just said with the potential for there to be thousands of contaminants that were not evaluated that could be in the drinking water.

So my solution is we have an RO system at home and I get bottled water, I don't have any affiliation with Mountain Valley, but that's what we drink. And I think that, and then in the summer when I live on a boat, we create our water from the ocean using reverse osmosis as well, but so incredibly important.

I mean, you don't have to live in Flint, Michigan to be exposed. And you know, how does that water get into your house? It's either through lead pipes or PVC, polyvinyl chloride, And that even imparts another risk.

So again, your recommending people test their waters or if not, what should we be drinking? Yeah. So I agree with you on, you know, first of all, I do say to every audience that any filtration is better than none.

Okay. We want people to be supported for the choices that they've made, no regrets in terms of your own health or your family's health. And so I encourage filtration.

Why I go into the reverse osmosis as the best choice among filters is because the the material that's used in reverse osmosis, which by the way, was used even back with dialysis patients in the seventies.

My dad's a nephrologist and, you know, he's still practicing and he, his, dialysist patients that is a machine, uh, that helps to work like kidneys. When people have kidney failure, That's federally required water.

That reverse, osmosis back from 1970s, but that water now is available. Well, process is now available To all consumers at a really reasonable price point of like two hundred seventy five dollars was one of our so the idea that it's now accessible and that the material itself in a room in reverse osmosis filter is the weave of it the poor size is so small that catches not just single celled organisms like bacteria and viruses to protect.

dialysis patients who are immune compromised, but it goes, you know, even it can connect. It can collect bigger compounds like phthalates and BPA and lead and mercury and all of these synthetic human made chemicals.

70 years later, I mean 50 years, later. So it's just a wonderful mechanism that is now available to everybody. And I think when you filter of any kind, whether it is carbon block, typically in a pitcher or refrigerator door, the reason it doesn't catch as much contaminants is because water goes through much quicker and that's for convenience.

But it does not mean that it catches as many as we can collect if we have a different mechanism. So the point then for viewers is that reverse osmosis, which used to be considered almost industrial or in the use of dialysis patients, is something that's widely available now and is not cost prohibitive.

Correct. Yeah, absolutely. And that's why I'm shouting on mountaintops. Again, this moment is really interesting. We have so many better companies that are doing good things that we want to, you know, kind of take advantage of personal care products that We have water filters available, we have options for frozen USDA organics that are more accessible than maybe even more nutritious than fresh USDA organic that land into our supermarket.

So having all these options, you just need to know where they're at. You need know how to look them up. But that's what I like to bring is solutions to a lot of these heavy problems.

I know we're gonna have to double click on microplastics at some point, but the segue might well be water. People think that, let's talk aside from micro plastic for just a moment.

Let's about the quality of water that you might get if you buy a bottle of that might be in plastic, micro plastics not withstanding, how good a quality is that water?

Yeah, so upwards of 75 to 85 percent of just bottled water is tap water. So people don't realize that what companies are actually doing is just filling up from their own tapwater.

You know, there's really no value other than having the convenience of a container when you're out and about. And so that alone is a quality issue in terms of the water, then you have the potential risk of microplastics and what are called nanoplastics, which are even smaller and detectable now.

getting into the water or to any of the food packaging or liquid packaging that's being carried in those containers. So microplastics are not just from water bottles, but also the BPA or the plastic epoxy lining within canned foods.

And so that's another way that packaging can get into what we eat and drink. Interesting, when I travel, I actually will post on my Instagram feed for the smart human.

I'll show my choices in an airport. You know, i'm thinking about a container that stainless steel that I take with me everywhere I traveled because, and by the way, you have to empty it before security or else they might take away your expensive water bottle that is stainless deal.

But when you empty on the other side, in one of their many water filter stations along most airports. They're even in hotels now, believe it or not, they are carbon block, but they're pretty, you know, their big carbon blocks.

So they just, the tend to do pretty well and that will cut down on microplastics from buying plastic water bottles in an airport, for example, or out and about.

Now, one other thing which is so interesting is that plastic water bottles actually have an ingredients area that no one would bother to look, really, because you think water is water.

But when you look at the ingredients section of a bottle, you might have to looks for it. It'll tell you how that water was cleaned. it's going to be either distilled, it might even be the GALL, the municipal tap, which I've seen on plastic bottles.

Okay. Or it'll say reverse osmosis. And you may not be able to cut down on the microplastics, how that bottle got to that refrigerated space, could have been in high heat, it could've been traveling for six years.

Who knows the history? But you do know that you can get cleaner water, per se, by choices that you make every day from looking at these packages. So that's kind of where I say is there's all these hacks and I put it in a chapter on water.

There's actually a Chapter on Water in the book because that is something that I think people don't think about. But once you know, you now and you do better.

Well, at the health food store, pretty much the water is in plastic bottles, but there are always a few glass bottles that's more expensive than you have the issue about the environmental impact of glass, et cetera.

But you can seem to find water in glass bottle when you go shopping. Yeah, they're out there, but they are becoming endangered species. In fact, I'll post when I'm at a restaurant, someone offers water in a glass bottle, and it makes me want to cry because I feel like it's just an endangered specie to even have that served.

But here's the thing, plastic water bottles, and look, I have kids, they drink this stuff all the time. They're athletes, their buying water bottle, so they don't even want to listen to me half the times.

But the idea is that, believe it, but I just spoke to their high school, which went over really well with them personally. No, just kidding. Their entire highschool, i wanted them to understand.

Every plastic bottle has on average about 240,000 microplastics, even up to 500,00. The more damage, the more jostling, more scratches, high heat, likely those microplastics are going to come off.

of the plastic container. Now think Tupperware. Tuperware starts off clear. By the time you've run it through a few high heat cycles in your dishwasher or you scratched it up a bit, it's now opaque.

You can't see through it. That's showing that the matrix of plastics is really not that strong.

Bottled Water, Microplastics, and Plastic Packaging

And that's the reason why we should be thinking towards stronger materials like glass and stainless steel whenever we have access to it, Well, some would argue that thus far nothing's really been proven in terms of the threat of microplastics themselves, but on the other side of argument is that they are carrier vehicles for some of chemicals that you talked about earlier, endocrine disruptors for example, immunomodulators.

So tell us about that. Yeah, so when we think plastics, we sort of think of a stable piece of material. And it's very good visually to think about this in terms of getting people to consider plastics.

Because when you think a credit card in your body per year, how much a tablespoon per whatever, it's tangible. We can see it, which is a hard topic. It's hard to wrap your head around some of these chemicals because they're so hard-to-see and visualize, or EMF radiation, thinking about how that works because you can't see.

But I think what's important to know is that plastics are, as you said, the vehicle of a lot of chemicals that make up the plastics. Phthalates, have effects on hormones, but also the immune system, they are making plastic flexible, whereas BPA often makes it harder.

But they infuse things like anti-microbials into plastics when they need to make a cutting board, which is another way to say, get rid of your plastic cuttingboard, because every time you chop, you might be releasing not just the plastics, but also the chemicals that are added to think you don't need anti microbial or anti bacterial chemicals.

We don' want those in our environment if we don''t need them. in terms of antibiotics is what I'm implying. But the idea is that plastics are a vehicle for chemicals that can be, it's a mush of whatever they want to put into those

plastics and they vary.

Some are recycled chemicals because they've been melted down from other plastics because it can't be molded into new products. Then you have higher loads of many of those chemicals from reuse.

Well, hi everyone, Dr. David Perlmutter here. We hope you're enjoying this content, and if you would do so, go ahead and hit the like button. And if your not already a subscriber to our channel, please consider doing so.

We're really grateful to have you as part of our community, so let's get right back to the presentation. Well, I think the cutting board is a great example because here you're traumatizing the plastic, liberating these microplastics.

And I thing a lot of people trended away from wood with the idea that wood tended to retain bacteria and was very difficult to sterilize. So you look around, there's a lotta plastic being used in cutting boards.

Yeah, for sure. And listen, some of the things we thought we knew, science has panned out to tell us otherwise. That's why even when I think about what's something that I learned that i'm trying to unlearn or change, the idea even of fresh organic foods in the supermarket, that was shocking to me to really reframe myself into thinking, well, what is the highest nutritional value?

Then I frozen, because they're flash frozen as opposed to, or even a market. Of course, certainly a farmer's market, knowing your farmer, that's great.

But for all the other people who don't have access or time to do that, frozen organics tend to be highest nutrition. So that was an unlearning of childhood where I thought that all fresh vegetables were the same.

And now we know differently. It's good to unlearn or at least recontextualize some of the things that we've long believed about sunscreen, for example.

That's something I was just thinking about yesterday. Austin Perlmutter called my attention to something the other day was the blender, the clear plastic blender.

And he said, dad, why don't you just get glass or stainless steel? And when you think about a plastic blender, there's a lot of trauma being imparted when the food's getting spun around by those blades.

So that would conceivably be a big source. Yeah, and even reverse osmosis water filters. I mean, a lot of them are not made with parts that are all stainless steel.

They have plastic components. And what I'm starting to think about with that question is that, you know, I created something called the four A's of environmental health.

That was my next question. Oh, okay, good. Well, you just teed it up because I think, yeah, the four A's, look, I've been teaching high school, college, seventh and eighth graders who have the best questions in the world, and even doctors, like three programs on physicians who are now learning this material.

Unfortunately, long after their med school training. But it's important that we're all on board and trying to think this through. And so one of the ways that I had to figure out a paradigm for teaching this material is I came up with something as simple as the four A's.

And the first A is assess and I have a 50 question very reasonable very practical questionnaire that people can put one or zero and they can add up their numbers and can see a starting point for where they're going to dive into making changes if they want to.

So assessing is really critical at the beginning to kind of get a feel for where you're going to go with this and what you need to do and the urgency if you feel it.

The second A was really avoid or swap and avoid meaning do we really need 20 kitchen cleaners for a sink, for an oven, a window cleaner, or a carpet cleaner.

we've been marketed to for many, many decades to really throw these chemicals on every specialized part of a kitchen when technically we only really need a couple ingredients to make our home clean, right?

Vinegar, white vinegar, castile soap, lemon juice, sea salt for scrubbing, those kinds of things. And I even have do-it-yourself recipes for making those products.

But that's the second A is avoid. Let's cut back on total number of chemicals we feel that we need to bring into our home, which is a place we can control.

And if we want to swap and we love our products, then swap to cleaner versions of what we like and here are the resources to do so. The third A is add, and add is really part of this big picture of you can take all the chemicals away if you as much as you, but we have to add something in that's part anthropology and evolution.

It's the parts that make our bodies thrive, not just overall, at the cellular level, the organ level and helping our kidney and liver and skin and lymphatic systems work better.

We've needed these things for millions of years. Great quality sleep. to help wash out from our glymphatic system chemicals that we get exposed to. directly or indirectly throughout our lives and our daily life.

We need exercise for sweating, sauna, getting those chemicals out as much as we can through skin. But we also need particular nutrients, nutrients that not only help us from a nutritional standpoint, but specific nutrients we now know offset epigenomic changes, which are the changes that environmental chemicals can have effects on in terms of how our DNA is expressed or not, that's the proteins that sit on top, our epigenome.

that get manipulated in a good or bad way. And I'm saying in good way, let's throw nutrition that we now know, specifics like vitamin B9, which is folic acid or omega-3 fatty acids, good quality, quercetin, vitamin C, becoming nutritionally sufficient with iron.

In all these nutritional components, when we add really key things into our lives, not just takeaway chemicals, it's the double whammy of how we thrive.

It's really what we've been missing for many, many hundreds of years that we can add back in now. So again, assess, so we know the problem, add or avoid or swap whatever we want to keep in or out of our lives, adding in this other component that is so important to human health.

And then the fourth A, which gets me back to the reason we got on this topic, is allow. We have to be able to live life. I mean, it's why I have colored hair.

It's way I'm going to a lacrosse game in a few hours to see my boys play on toxic turf, right? It's birthday parties, it's travel, is not having access to some of the stuff we wish we had access too, certain foods.

So the allow is, in my opinion, able to help people not have regret, feel restricted, fell resistant, give up and allows people to move through this topic in a way that I think is reasonable, practical and individualized.

Well, a couple of thoughts come to mind. First of all, one would assume that if there is a cleaning product under my sink that some governmental agency has screened all of the chemicals that it contains to make sure it's safe for me.

But as I think you're about to tell us, that's just really not reality. Yeah, the first thing I like to start with is why is this a problem to begin with?

Well, we've kind of, you know, let these chemicals in for multiple reasons. They took off really, in terms of synthetic

compounds, they took of really in the 1940s post World War II when we were sending soldiers off to fight battles and we needed them to be have pesticides.

So pesticides took off so that they wouldn't get sick in battle in foreign countries. We came up with, you know, Nogahide and Rayon and Formica and Plexiglas for fighter, yeah, for pilots to have lighter aircraft.

we wanted to conserve resources like wood and stainless steel, all these natural resources. Plastics and chemicals came really into our lives in a big way.

Around that time period the promise is that there's no regulation on any of these chemicals no required testing for safety or toxicity for any these compounds going into the products that we do like and we love and use.

And that's been a real problem throughout this whole discussion. In Europe, they have a much more rigorous process by which the EU does go through all of their compounds.

They also separate, especially for the food system, the people who create the science behind risk. and the people are separated from the People Who Manage management, you know, in terms of regulation.

The Four A's: Assess, Avoid, Add, Allow

In the United States, those two bodies are actually together. And that poses a big problem if you understand the food system, because you really need to have different bodies checking each other in term of what they do best.

I was going to say, isn't it true that I think it might be Lucky Charms or one of the cereals has to be formulated in a different way for Europe versus the US?

For sure. There's a whole list of products and there's almost I think it's estimated about 1200 chemicals that are used differently that our band I'm sorry in the EU than they are in United States and they're reformulated in different places and sold to different markets than the are the United It's such a shame because we really don't need those chemicals either.

And the goal would be that we can actually get on board with this nationally and have these chemicals blocked across the United States as well. But as it stands right now, and probably into the future, certainly during our lifetimes, the actual regulation that's being put through is wonderful for some of these changes, but it's not, in my opinion, moving at the rate that is really protective to human health.

which is why I want people to be empowered to do a lot of this on their own. I think that we're seeing some interesting developments as it relates to environmental protection recently.

I mean, I know there's a move to ban red dye, but the bigger pictures deal with what factories are putting out and what is approved and non-regulated or regulations have been reduced significantly in recent times.

It's unfortunate that people like yourself, your clarion calls are falling on deaf ears to some degree. I mean, our community, your community and my community are really desperate to hear this information and will pay attention, but it seems to me the ability that we have to get to a larger audience with this incredibly important message is a bit curtailed as of late.

Well, I'll tell you, looking back at the last 15 years of my interest in research and studying and asking the right questions to see that I can understand how it works, it's changed.

10, 15, years ago, you did not see any of the discussion we're having now, whether it was in the politics of our country or whether or not it is just on the number of people embracing this topic.

And I will say, Um, in my opinion, having been a rheumatologist for so long, seeing younger people getting autoimmune diseases, uh, when they might not have developed them to later with no family history.

So de novo cases. of immune and autoimmune disease coming to see me, but also reflecting what we're seeing as an epidemic. I think when people are sicker, they're looking for answers just like the way my dog was sick and I was looking at answers.

When we are complacent, we don't feel bad, and we haven't gained weight. All these different aspects of human assessment We don't do much because it's exhausting.

We're busy. You know, there's lots going on. But I think when you end up getting sick or have a health issue where you you're not losing weight, even people are looking for answers.

And that has sort of brought this concept of environmental health, I. Think more to the forefront and I hope it continues. Well, interestingly, I think that the general public is informed that once one of these autoimmune conditions develops, that there are these wonderful biologics that are the focus of incredible advertising efforts.

And that's the way that they should pursue a remedy rather than what it is you're talking about, where people are exposed to these chemicals that causing imbalance of the immune system.

up regulating immune function leading to autoimmunity. That's where it begins. But, you know, it seems like this is waiting for the fire to begin as opposed to checking your outlets ahead of time.

For sure. And, again, this book wasn't meant for just people who are ill or people chronic illnesses, not just autoimmune, but cancers, as we said, are very interconnected with the immune system.

These aren't siloed systems in the human body. The book is really meant to give people a leg up on how do we prevent ourselves from getting sick or sicker?

How do quiet down inflammation? how we remove chemicals that were never meant be in human bodies in first place? Now, I will say this, there are many medications in my 22 years of practicing that never existed and have been remarkable to many of the rheumatologic conditions that I manage for sure.

But what I really bring in to my work with patients and into the book, by the way, is the integrative medicine approach to how I You know as many conditions as i can it could be migraines that i talk about in the book you know we know that a lot of chemicals and process and ultra processed foods can contribute to my grains we no that deficiencies in nutrition like magnesium which is an anthropologic deficiency we haven't really gotten those in our you routinely in your lives.

the combination can lead to things like migraines deficiency and exposure so you know the idea is. Not everything has to be a life threatening condition it could be something that's just really not sitting well you don't have to expect anything but we have this ability to prevent a lot of that.

And if we don't look at environmental exposures and some of these chemicals as a contributor, then we're missing a really great opportunity to become healthier.

And not just for ourselves and our generation, but even successive generations where we know these exposers can play a role in successive generation genetic changes.

Not to scare your audience, these are real findings that we are seeing. You bring up genetics. And we can certainly screen individuals for various types of toxins, certainly not all of them that are important, but the big players, the heavy metals, for example, we check patients for that.

But looking at it from the other perspective as part of the 4A program, how can we look at genetics of an individual to determine her or his ability or lack thereof to detoxify?

I mean, what are the markers that, common markers, that might be looked at to determine risk for then toxicity based upon genetic predispositions or genetic maladaption to the environment?

Yeah, this is a really great question. I think it also goes into whether or not I'm a big tester of things because I want people to know that I don't like to spend a lot of time on testing because there's so many confounders to the human being in general that when you find something like a genetic abnormality, and there are all nuances, by the way, to companies that do this and what they're looking for and the expanse of what their looking.

And then who interprets these labs is critical to how we move forward. I worry about companies that don't have a well-trained interpretation of what these results are, I think, can add more problems and certainly more questions.

But when people look for, say, for instance, MTHFR genes or looking to see whether their liver cytochrome system works, again, you can find out that you may be heterogeneous or homogeneous, but ultimately, in my opinion, If you start to think globally about everything you're exposed to, you are going to have more of a benefit than just honing in on one particular cytochrome or some heterogeneous or homogeneous effects.

there are fixes for particularly the methyl pathways, the methofolate pathways. That's me. Yeah, and I think it's really brilliant that you choose, for instance, there's a chapter on what I call human fertilizer, what every human should be on.

And one of the things I'd call out is a multivitamin, right? But not a junk multavitamins, ones that think about these common genetic discrepancies in our human population, And instead of giving folic acid as an ingredient, we'll have methylfolate as ingredient.

Companies that are really good at doing that don't have to be expensive, but you need to vet them out to show that they are clean, no colors, preservatives, additives.

But they're also thoughtful even with iodine, which I talk about in the book. Things that people dont often think about that can contribute to autoimmune and immune disorders, having just a little iodide a day, 150 micrograms, is protected to the thyroid gland.

It's a nutrient deficiency that we're missing in the public in general, that offsets some of the risk in a world where we have chemicals that like the Thyroid gland, so I want people to have all aspects of conversation, but if you have a deficiency, It doesn't always mean that you're going to develop an issue.

And that's why instead of spending money on all the different, you know, testing that we can have done that is available quite readily by a lot of people, I say, please just focus on the big ticket items.

Start with those. I even give actually in the book, you probably noticed that in back, I wanted people to have access to using their insurance to look up basic heavy metals, arsenic, cadmium, mercury, and lead.

You just need to those ICD-10 codes listed to give to your hopefully supportive healthcare practitioner where they can actually write on a script the test, the ICd- 10 code, which is the reason from your insurance that you can get paid for.

for that test, people who have that access and have people supporting them to get those tests done, we shouldn't have to dig into self-pay, I think. I want to shift our conversation.

We've covered water. Let's talk about the air that we breathe. I mean, I think we're hearing so much about air quality as of late, especially now that wildfires have become so more common and people are breathing air, that is clearly polluted.

Where do you want start this conversation? I do want at least make sure we cover the PM2.5 discussion. Yeah, so PM2.5 is particulate matter, as you know, and probably your audience knows, but basically 2.50 microns in terms of the diameter of a particle.

And there's even smaller and there is larger PM10. But the idea is that our air, similar to lots of other things, we can't see and feel and know exactly what's in our And it is fluid from where we are in suburbs versus a city, you

know, after a fire.

But those particles actually are inflammatory when they get into the human body. I mean, that's really the punch line. Yeah. And they got into human bodies.

Just look, if you breathe in, You're going to get oxygen, but you're gonna take with it whatever's in that air with And we know oxygen goes right into the bloodstream.

So do these chemicals. We know that many of these air contaminants, which vary even in your home when you're bringing in air fresheners and candles and phthalates and some of things we create of our own demise.

But we can remove them and that changes the quality. We want to remove things that we breathe just like drinking and food because again, it's an input that We have control over and it is really not an expensive lift to be thinking again about what we bring mostly into our homes where we spend 93 or so percent of our time maybe 6% outside of our home.

We have also time in our car and at work. When you think about those locations, you can think, for instance, I have a cleaning person in my office who uses my cleaning products that I purchase for their use.

It's not a heavy lift, but now I know whatever's on the surface or ends up in the dust is going to be less toxic for myself and my patients. And I don't bring in, and I talk about it in book, the day I got rid of an entire drawer of plug-in synthetic chemicals that were like ocean breeze and Christmas stuff.

The Christmas tree hanging from the rear view mirror in the Uber, that one always gets me. Yeah. But we love those smells. And look, there wouldn't be a market if there's a for it because people like cologne.

My kids love colognes. Everyone loves odors, but guess what? We can choose safer versions of everything we loved. That is really the take home. Indoor air pollution is a big issue.

Cooking with gas, for example, can be an issue, incense, lots of things that we do in our homes can certainly be threatening. So we're seeing the advent of people using sometimes several air purifiers in their homes.

I mean, we are big into that, so what are your thoughts?

Air Pollution, Wildfire Smoke, and Indoor Filtration

Yeah, and so there are some really interesting things I had to learn about when it came to the fires that was kind of thrown on me because I wasn't really well versed in all of that material.

And so what you're talking about is let's not bring some stuff into our home intentionally, cleaners and air, you know, incense and candles. Again, I have gas appliances.

I open my windows. Lots of plants, especially the surface area, which not only exchanges oxygen and carbon dioxide with oxygen, but also the service area collects dust and chemicals that we can wipe off too.

So plants are great. But when it comes to air filters, there's a couple of things to think about. In our home, if you have an HVAC system, so central air and heating, you can actually increase your MERV rating.

filtration. So for instance, going up from, you know, the default is like a MERV of five or eight in terms of the rating, You can move up to say a 13, 14, even up 16.

And that way you can, clean more particulate matter. It has just a finer mesh, similar to that RO filter conversation. You do want to keep up on your regular filtration changes, but again, these aren't expensive swaps.

The other thing when it comes to, air filters is something called the CADR. So I think it's the continuous air delivery

rate. And that is that you can see on a purchase of an indoor air filter.

You can even get them for your car, by the way, for people who drive into cities. But that CAD is really you're looking for a 300 CAD for every 500 square feet.

You want a filter that's going to be able to handle the space of the room. That's the going numbers, 300 for every 500 square feet of room, so those are great.

You can also get a CO2 meter if you're really curious to know about the oxygen exchange and return rate in your home or your office. They're very cheap, you can get those, but again, your going be paying attention to how much CO2 versus how many contaminants per se.

And then there's great, yeah. I was just gonna say there are wonderful apps that you can use, indoor and outdoor, that will check the quality of the air.

It's typically the outdoor air quality that can get and that's really available to anyone for free, believe it or not. So I have a device that screens specifically for PM2.5s and our indoor air, So I screened it and it was great.

Everything was in the green zone. And then I just, for the fun of it, I started vacuuming and held it just in my hand where, you know, close to my face near, but as I was vacuum-ing, this thing went off the walls in terms of the red zone, there is a filter on the vacuum cleaner, But this is very challenging event in term of exposure, PM2.5.

You know, when you talk about the CADR and also another component of the air filter, home air filters is the HEPA rating. So we've gone with a Hepa rating of 14, which is that the best you can get.

We're using a brand called Lichen, L-I-C-H-E-N. I think it's really probably, you know the, best one that we found out there actually waiting for ours to be delivered if they haven't just ordered it.

But I, I um, think this is actually something very, very important. You mean, do you have the sense that, well, You're indoors now. Everything's safe because I'm not outdoors and exposed to wildfire smoke, which is critically threatening.

Here's the other thing I wanted to say. I've said this on other podcasts that wild fire smoke is not like you're at a campfire, you know, don't bust out the marshmallows.

This isn't just trees burning, but it's buildings and insulation and all kinds of horrible things, and when you could smell wildfire you are threatening your body.

So I think wearing an N95 mask when there's wild fire nearby or the air as you can tell by looking at the atmosphere or as as, as say, looking these various apps, I have no reason not to use an n95 face mask.

Yeah, for sure. And understanding how these masks work. I mean, the surgical masks don't really do much. You really have to upgrade that to an N95, but even more so is the ventilator mask.

If you're really gonna be spending time as a first responder, if you are obligated to be outside for any reason in those environments, you really looking to see if can get a respiratory, a respirator type mask, because they do better in terms of the VOCs, which actually are not actually managed with the N95.

So again, there's all these opportunities to do better once you're aware, but you also have to judge out. Like, you know, I'm not an alarmist, and I am certainly not a purist.

I have two teenagers, so you have take what I can get. And the idea is that even if this concept with allow, because You have to sort of weigh it out.

How long are you going to be outside? How for? You know, I'm about to go toxic turf for the next three hours. The

question is, am I too close? Am I to far?

What if my kid who plays his face off, his faces in the in a petroleum based, you know tire crumb for entire game because of the position he plays? Do you get rid of his dreams and say you're not allowed to play?

No. I mean, so I think there's a lot of things we need to think. They certainly wash off in terms of exposure to their skin. immediately after, at least I hope, with soap and water.

But the idea is that when you're dealing with air quality, it's one of those things where in your home, your work, you can really make differences. When you are outside, I think you just have to be gentle with yourself and understand that the world is not always going to fall in line and that you do the best you could so that your saving up all your good your cred until, you know, 80-20 rule is what I like to live by.

Yeah. And I think that, a lot of our viewers do have children and the question is, how do you choose your battles? And one offset is okay, they're going to be exposed and we're all going be expose, but why don't we enhance our detoxification ability.

And I think that's one of the great values of your new book, that you're saying, okay, we're all going to get this stuff in our day-to-day lives. What can we do to offload this?

How do we enhance our enzymatic detoxification processes, phase one and phase two? What we can do? Why are cruciferous, sulfur-rich vegetables a good choice?

Because they enhance manufacturer, glutathione transferase, or whatever it may be, how can we change the other side of the equation so we're exposed, but how could we help ourselves offload?

That's something for parents to think about. Okay, your kids are playing on turf, exposed to all kinds of stuff, including glyphosate for that matter, and what can do to off load the risk?

For sure. You know, mom always said, eat your veggies, right? So, you know I try to impart some old school wisdom into these kids. And I think they learn a lot by example.

They don't always do well and do right all the time, but I Look, these are athletes, my kids, for example. They need really clean water. I mean, they're literally sweating, moving.

If there's one thing to say about detoxification, putting in the right water would be a good start because you're not bringing in contaminants to begin with.

So even when we travel to tournaments, I have a three-gallon stainless steel container that I bought not long ago. It took how many years to get to that point.

But I'm like, wow, should be filling up at home. I don't have to deal with microplastics and buying water bottles enough to ruin the earth. And by the way, it's a really great way just to get water continuously for three days or what have you.

So there's all these hacks we can think out when it comes to eating again, getting them to eat those cruciferous vegetables that upregulate stage two conjugation.

that break down from all of the compounds that are magical. I mean, we have such a magical array of well-studied foods that offset chemical exposures that, again, between the nutritional additives that we need from that fertilizer, I do think there's certain things we will not get enough of just from our food system.

And that's the argument where, unfortunately, need a couple of supplements, and here's ones that I really recommend. And then by the way, the quality of the matters because a lot of them are junk.

So walking through that whole process is really key. Having those for my kids, discussing water, talking about processed foods. These are things that are education that may not happen now, but layer in over time.

and i think that's worth something instead of being aggressive you know you have to pick your your battles as a parent but yeah certainly i mean you've been through it but you want to have that open channel of communication so you don't want You close that line of communication.

Sweating, sauna, exercise, improving their sleep, working to make sure they don't have early morning things or going to bed too late where they do not get enough time to wash out.

And again, also, there are vulnerable periods of human development. that we may want to focus more on, at least from what we know from the science. Certainly pregnancy, certainly toddler years, but teenagers.

I mean, this is my next leg of my work is going to be trying to work to get this material into schools as a dedicated curriculum for environmental health, letting teenagers know they use the most personal care products in 24 hours than any other demographic.

They have tons of hormone changes and immune system changes during this vulnerable period. And that's an opportunity where you can really educate them because they're interested, they are self-conscious, their tech savvy.

They want this material. We just have to be able to kind of give it to them whenever we can. Better coming from you than TikTok. You said personal care products.

Let's say what are the top three things that a label reader should be looking for that are most threatening in terms of the personal products? Yeah, so I would start off with something very easy.

The word perfume or fragrance, okay? In any products, you know, personal care or cleaning products. These are, again, not regulated. None of those chemicals are not even tested.

I should say not so much regulated, but they're not required to be tested for safety or toxicity before they make it into the product and make onto the shelf.

So remembering that is really critical. There's no protections. And if a personal care product says it's organic, that's really held for food. That is really only the criteria for USDA organic foods.

The difference is that personal-care cleaning products can put one organic gradient in.

Detox Support, Personal Care Products, and Food Choices

and have 99.9% other ingredients that are not organic and are toxic. So we wanna just keep that in mind as a header. But when you're looking for products in general that not food, you wanna be thinking perfume and fragrance, which are really by definition proprietary.

Manufacturers, it's almost like Coca-Cola, right? They can say whatever and put whatever in those two ingredient words on a label. So just by the fact that they're not disclosing, really puts you a little bit more at risk in terms of the products you choose.

Other chemicals are parabens. There's also lauryl sulfate, which is like a scrubbing bubble. Sodium laural sulfates come out as like SLS. You know, there's titanium dioxide, Which was considered to be a problem, not just in food, but has been added to many sunscreens, as you were mentioning earlier.

We want to really be thinking about what we put on our skin for sunscreens too. Avoiding avobenzene, avoiding nanoparticles and avoiding titanium dioxide and just doing zinc oxide.

The kind that we think of with the nose and the lifeguards, those stay on the surface of skin. They don't get absorbed into the bloodstream. There are usually used in baby products if you have to choose.

But generally speaking, you can look these up very simply on the apps that I share and the resources in the book as well. I'm amazed that a lot of people don't recognize that the skin is a portal, that this skin as a delivery system through which chemicals can pass and make their way systemically.

I was having dinner several weeks ago at some really high level individuals and we were talking about this and there was such pushback. Some of the things you put on your skin are getting through.

And they said, oh, that's ridiculous. And then it stays on the skin. I said well, how do you think the Nicoderm patch works or the transdermal hormones that people are taking, topical estrogen, progesterone, testosterone?

And I think that caused them to stop and reevaluate. The skin is a delivery system that is used in the pharmaceutical world. Why wouldn't we be expecting these chemicals then to make their way into the body as well?

For sure. Great point. And here's the thing, we have studies by even my co-author for two other books, Fred Vomsall, who really was the forefather of BPA and bisphenol A research.

One of his studies that he created and worked on was, the idea that BTA can get into the skin even with hand sanitizers more effectively than without hand sanitizer.

Not only can BPA get into the skin, we know this from studies on people who work with receipts, check out people, especially pregnant checkout people can have some of the highest levels, believe it or not.

And so those are human studies, but he was able to also show that even when you put on another chemical, like a hand sanitizer, a typical, you know, found everywhere, it actually accelerates the movement of BPA into the skin, which can be then tested in the urine.

You know because some tests, some chemicals are better tested than in urine than the blood. So we do know that the human body is a sponge and I literally put up a Sponge as a slide for this high school 800 kids because I wanted them to really globally think about their body as sponge and that what they're doing in and around their bodies, even feminine care products, which was so critical to share with this particular young group, is that we have absorbent vaginal tissue that's very similar in the way it is absorbant in both are actually taken from both areas, which was fascinating to me because the tissue is so similar.

We put estradiol, we put lots of intravaginal medications into the vaginal canal with the intention to actually do something, right? And we can measure that within minutes in the bloodstream.

But so too can chemicals that are made into tampons and feminine care products, antimicrobials, which we do not need in the vaginal canal, chlorinated cotton, rayon, sometimes not even cotton used in tampon's, bleach, all of these things are used to make tampones.

And those are things that we can easily swap to safer versions because again, that route into the body is just so immediate. It's just something to keep in mind in terms of all skin, but also that area.

But even without a route These intervaginal products can alter the vaginal microbiome. I think we saw that with the toxic shock syndrome issue, that there's a biome there that is clearly affected by the presence of chemicals, even before these chemicals are absorbed.

But it's interesting that you bring up the notion that the lining, the vagina lining is like the mouth lining. We have plenty of medications orally, sublingually, with hopes of absorption.

because the vascularity under the tongue. And I think the same thing is going on with intervaginal administration of

who knows what medications. It brings to mind the notion that, well, if you're using inter vaginal estradiol, it's not pure estridiol but there's a carrier chemical or chemical suite of chemicals to allow you to deliver that.

One wonders what is the safety profile of these carrier compounds. For sure. I mean, and, you know, we don't know all of them because again, they're proprietary, but for instance, the skin chemicals that we know in many of the lotions that are designed to make skin feel soft, meaning that it wants to enter the body, skin and break through a very protective epidermis layer.

So the chemicals are typically used for that, are called pegulated. They're peg related chemicals. And in fact, if you look at certain creams and lotion, They will say peg something, peg, something that Prefix basically essentially means that it's making its way through an outer shell of our body, which has been designed for millions of years anthropologically to protect us, make us waterproof, keep our biomes healthy, and now you have these chemicals synthetically derived to break through that barrier.

Now, mind you, some things should be done through the skin. We do want medications like lidocaine topical, We do want things, you know, if you have arthritis, I use that with my rheumatology patients.

Sometimes there's drugs that go through the skin to get to a joint. But for the same way you're saying we've designed those, they are using a lot of those same chemicals with cosmetics that we don't want entry into the bloodstream.

Well, that layer over the skin that is protective is fat to a significant degree. And one wonders about, you mentioned hand sanitizers, generally they're alcohol-based or soap and water, and both are going to break down the fat protective layer of the scan and allow ingress of really who knows what.

I'm not arguing that we shouldn't be sanitizing our hands or washing our hand, but it is something to think about in terms of what comes next. What do you handle next?

after you sanitize your hands? Is it then that you put on your cologne or who knows what you're exposed to? And one other point to your point is that there's also the active ingredient that most people read on a bottle.

But sure enough, when you get to the very bottom where you wouldn't even bother to look is the inactive ingredients, which when I looked at, I had someone come into remediate mold in our house Um, and I said to the people who work there, I say, do you know what you're spraying?

Because they sprayed while I was at work and it was very unhappy about it. Um. And I came back and felt like I gave a lesson to them because they said, look at the active ingredient.

It's 0.005% of what. You consider safe, which by the way, the MSDS report would have told me otherwise because that's the report. Every chemical is listed.

want to learn more about any chemical, look up an MSDS for that chemical. But the active ingredient that was listed, which they touted was so safe, naturally derived, plant-based, I said, well, why don't you look at the bottom right now?

And at bottom of this jug that they had used to spray was the inactive ingredients that said 99.9906 or what have you. And it listed literally what it wanted to list, but technically many things that I would not consider safe for human exposure.

And again, that was the part that they try to hide because we now know the inactive ingredients can be much more harmful to human health than the active ingredient.

Yeah. I mean, who's to say active or inactive? What does that even mean? Right. What is these inactiv ingredients? How are they affecting immune function, for example?

Let me talk about the detoxify food pyramid that you described. I think we, you know, our viewers pretty well know where we stand in terms of what we should be emphasizing in a pyramid, what should we be the bottom pyramid and what want to minimize up top.

And how does what you're recommending for detoxification differ from, pretty standard recommendations these days for general health? Yeah. So when I was thinking about my philosophy on this, I actually turned to my mentor, Dr.

Andrew Weil, and I looked at his anti-inflammatory pyramid, which is beautiful and really lays out sort of a Mediterranean based, you know, kind of blue zones type diet, plant based.

And then as you move up the pyramid you're getting high quality lean meats and then you are moving and less red meat and at the top alcohol, chocolate and all the the fun things that we like, but in less, you know, in moderation.

And then I looked at actually Mark Hyman's Pegan diet. I was looking at everything that was established that I really respected and liked. But I thought that as someone who's now deeply involved in environmental chemicals, that were missing some things are critical when it comes to a pyramid for food ingestion.

forget food packaging chemicals and how they find their way into the foods that we love. So at the bottom, I put the, you know, tons of information about food, packaging and what to think about, avoid swap.

Then I thought, cause I love water as a topic. I think it's completely unrecognized as, as as contributor to health issues. then we had to about well, how do you get clean water?

And that was a, above that. And then I went into, Oh, I'm sorry. The very bottom was detoxification processes. I forgetting my own pyramid. And that was all the things that overall humans should take on.

Then food packaging, then water, and then food. Along the side, really wanted to emphasize USDA organic food and the reason I wanted do that. In other words, you could do all of the great Mediterranean blue zones in the world, but my real feeling was that if you don't think about the quality of those macros, your missing a really big piece of human health you know, management.

And so does everything have to be USDA organic? Of course not. There's ways to wash produce and get off residues and choose the dirty dozen, clean 15 from EWG and other options.

But the thing about the food system is the only regulation that exists in the US food is USDA Organic designation. And it started in the 1990s. It took 10 years to put into the market.

By 2002, it was like up and running, and it is the only thing we actually have that reduces thousands of pesticides, thousands, of fertilizer chemicals, genetically modified ingredients.

And guess what? Everyone can access a lot of this food now because it's frozen organic in big box stores nationally, higher nutrition, less pesticides.

So that was kind of what I thought to myself was how do I take what my colleagues and my mentors have put together and add my piece of the puzzle into it?

And I feel pretty good about it. The idea is that you don't have to be perfect. the USDA organic system is not perfect, but it is the best we have with what we can utilize to make our inputs cleaner.

But by and large, it's colorful vegetables that are rich in polyphenols to enhance detoxification, nurture the microbiome. We didn't talk about the fundamental role of the micro biome in terms of detoxication and the threat to the microbiome with respect to so many things that we are exposed to.

Dr. Ailey Cohen, thank you for joining us today. This is a great book and I'm very, very excited about it. And I'd like

everybody to see that you're doing great work and looking forward to talking to you again soon.

Thank you. And one thing to mention, if you don't mind, so I actually put together small courses for people who are interested in some of these topics like, you know, pesticides, heavy metals, EMF, um, really reasonable, easy to bite off and think and chew on.

Um, and so they're on the smarthuman.com, thesmarthuman. com, And those are my social handles, The Smart Human, as well. Thesmarthuman.com. With any luck at all, it's going to be right on bottom of your screen right now.

thesmarthhuman dot com. Oh, wow. You bet. Amazing, right? Anyway, thanks again. Thanks for having me, Dave. I really appreciate it. Thank you to your audience as well.

Well, thank you guys for joining me again. The book is Detoxify, Dr. Ailey Cohen. Very, very important information, Very practical information. You know, we can bury our heads in the sand, but the send may be toxic.

So these are things that we all be doing, you know little baby steps that can actually have a big impact. Hope you enjoyed the program. I'm Dr David Perlmutter here on The Empowered Neurologist and we'll be back soon.

Bye for now everyone.