Episode 533: Leah Segedie on the Truth About PFAS and How to (Somewhat) Avoid Them
Child: Welcome to my Mommy’s podcast.

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Katie: Hello, and welcome to the wellness mama podcast. I’m Katie from wellnessmama.com and wellnesse.com. That is wellness with an E on the end. And I am here today with Leah Segedie, who helps women and moms make safer consumer choices for their families. And she is the author at mamavation.com. And in this episode, we talk specifically about something called PFAS, which are chemicals that are found in all kinds of household products. We go deep on this today, but we talk about what they are, why they're considered forever chemicals, how there are over 10,000 in the environment, and how they affect the body in a lot of different ways. We talk about how testing is very nuanced, and how even natural and organic products can have traces of these chemicals, how to avoid them without going crazy and so much more, very, very fact-packed episode. I know I learned a lot. I hope you will too. So let’s join Leah. Leah, welcome back. How are you?
Leah: Hey, thanks for having me on Katie, so good to see you again too. I never get to see you.

Katie: Likewise, I love that we do video now. For anybody listening who didn't know, there’s video on YouTube that you guys can actually watch our faces while we talk. I think most people still listen on podcast apps, but it's fun to get to see your face. Feel like it makes it more personal. And like you said, it's been a while since we got to catch up. And we're going to get to catch up in-depth on a very particular issue. But before we do, I have a note in my show notes that you have hip dysplasia and are basically a human pretzel. So I would just love to hear a little bit about this story first.

Leah: Okay, so there is a genetic hip condition in my family. I have it, my mother has it. We don't know further than that because my mother is adopted, but it's hip dysplasia. Now, most people have heard of hip dysplasia because they have a dog. And that dog has hip dysplasia, and it's a little wiener dog or something. And so the people that have heard about it are like, "Yes, my dog has that." And no, I'm not a dog. But yes, that disease does happen in humans. But there's two types of people that it's really common in, Native American Cherokee Indian, and the Sami, who are in Norway, Finland, and Sweden, and they're the reindeer people. And I absolutely come from a Nordic, so it's absolutely coming from the Sami. And they have so much of it, it's been written up in National Geographic and stuff, so you can Google it. But basically, what it means is my hips pop out of the socket, there's about this much room in my socket that's just open. So I can just pop it out of socket whenever I want.

Now, when I'm running, that's bad, because it doesn't feel good. But the cool thing is, it makes me very limber. If you can imagine me being pregnant, like nine months pregnant, and being able to put my foot back here when I'm stretching. Like personal trainers freak out when they see this right? And it's totally cool for me. So I'm very flexible and I can make myself a pretzel by putting both of my feet here. But if I do it, if I get the second one up, I just go forward, so the only place I want to do it is in the bed. Because you know, I don't have the...I just look like a funny toy when I do that. But it is very interesting and funny to talk about. But yes, I can put my feet right back here and like a human pretzel. Absolutely.

Katie: That is funny. And one of my...

Leah: If no one has known me then now they're just gonna know that I'm Leah Segedie, the human pretzel, which I find amazing.

Katie: Well, and one of my favorite travel memories of all time was actually visiting northern Finland and getting to meet the Sami tribe. They are some of the most fascinating people I've ever met and absolutely beautiful the way their lifestyle is, very different than mine in a very warm climate. And it was so, so cool to see. So that's cool and you have a tie to them as well.
Leah: Yeah, I have a tie them and then...but I have more of my relatives that I know that are in Sweden, but they're more in the city now. And Bergen, Norway too, I have a lot of relatives that are in Bergen, which is really cool to visit because the fjords are just amazing. You have to go there once in your lifetime.

Katie: I'll put it on the list. And I feel like I could talk about that all day long. But we also have another important topic that I think will be really relevant to a lot of people listening, even if they don't realize it's going to be so relevant to them. And I know that you have been doing a super, super, super deep dive into this topic, which is why I was so excited to talk to you about them today. So I'd say let's start really, really broad and just define the key term that we're going to talk a lot about today, which is I hope I pronounced it right, PFAS?

Leah: It's called, you can refer to it as PFAS or PFAS. But PFAS is probably what you're going to hear most people say P-F-A-S, so it's just an abbreviation and they're just putting it together. So essentially, when we're talking about PFAS, we're talking about over ten thousand chemicals and a chemical category. And they all have fluorine and carbon in them in their bond. But you've heard of these chemicals because it's all the stain-resistant, waterproof, grease-proof chemicals that we have been kind of swimming in for decades. Now, these chemicals used to be thought of as safe, you know, inert, like okay, but in the last couple decades, we found that they're persistent, which means they don't go away. Scientists don't even know what the half-life of these chemicals are. That's why they're referred to as forever chemicals. These forever chemicals can last in your body for a couple of years or decades. They just really don't know the extent of all of it and why because there's 10,000 of them and the independent scientists who were coming in the backend trying to see if they're safe, it's been a lot and lot a lot of bad news. So if you've heard about carpet not having PFAS in it anymore, or clothing companies coming out and, you know, working on PFAS solutions, or if you have thrown out your Teflon cookware, that's another example. Those are all examples of PFAS chemicals that we have had in our lives for decades. And now we understand how incredibly problematic they are.

So what I'm doing right now is, and through Mamavation, is really trying to build up some awareness around women, so that they know what to look for and know how to avoid them. And the hardest part of this situation is it's impossible to completely avoid them. You would have to live...you couldn't even go to, I mean, Iceland, or where the polar bears are, you would still find them there. So you literally can't avoid them. That's because they're persistent, and they get everywhere. But what we can do is we can make educated decisions and choices in our home, and lower the amount that we are exposed to, and most of all our children are exposed to because that's where this is really, really important is the next generation.

Katie: Yeah, I know, we're very aligned on that, and the importance of, in many areas, improving things for our kids. What are some of the problematic areas we see when it comes to these and health? I know, like, we're still doing research on this and, like you said, a lot of this research is only in the last couple of decades. But what do we know as far as how this affects human health?
Leah: So first of all, it's an androgen mimicker. So it goes into your body and your body actually thinks it's a hormone for men. It thinks it's testosterone, so it thinks it's androgen. So for boys, little boys and men, this is worse than for girls, it's really bad for girls, but it's worse for men. So just think about it in terms of that, you don't need extra testosterone in your body. But if you're a man, and you get extra testosterone in your body, your body says, "Okay, done, I've produced enough." And so for a man, it brings down your testosterone, which is something that's really bad if you're trying to have a baby, or you're trying to reproduce, you know. The other thing that it does, it's really problematic, that's linked with everything else is it kills your immune system, essentially, it brings down your immunity so that you cannot fight off diseases.

Now, here's an example of something of how this is happening. Now, I don't know how many people are pro or anti-vaccine or whatever. But what I will say, and this is very, very, very sound science, that the more PFAS you have in your system, the less likely vaccinations will work inside your body because it's bringing down your immune system, your body just can't do it. So that's some of the stuff that they're finding, oh, within the last three, four years is they're looking at babies, and how babies respond. And I don't know if they've done this in adults, but they've definitely done in children. And they know that the more you have in your body, and remember, this can happen in utero because you're pregnant, the less likely you can respond to something like a vaccine, or any other type of medication that's like that, that's supposed to bring up your immune system. So that's one thing you really want to be careful about.

They're also linking it to metabolism issues and type 2 diabetes. So they're linking it to type 2 diabetes, especially in women. So there's a lot of women walking around who are having issues and it may have something to do with the amount of PFAS that they have in their system. And then, of course, cancers, there's a lot of cancers this is linked to, like prostate cancer and those kinds of things, which makes sense if you realize it works like a synthetic androgen in your body. So that's kind of the totality of it. The problem that we're really, really dealing with is, you know, what's happening to us is also happening to the earth. It's persistent out there, it's getting in the soil, it's getting in the groundwater, it's getting in our consumer products, it's getting in all sorts of things.

And so to be mindful that this is out there, but not petrified, right, because you don't want to stress yourself out to the amount that you're making yourself sick, right? But in the world of, these are chemicals that I want to avoid, this is a 10, and this is like a 3, PFAS is higher up there, it's more of an 8, 9, or 10 is what I would look at first before you decide some...I don't know, if you're worried about something like sodium benzoate in your shampoo versus PFAS in something, don't even worry about the sodium benzoate. You know what I mean? Like, those types of things. That's a bigger class that you just want to avoid.

Katie: Yeah. So many important points I think you've just made. And I think what I would just highlight is whether people are in favor of vaccines or they're not, I think that's its own separate conversation, but the important similarity there is that in both cases, whether you're talking natural immunity or vaccine immunity, you need a functioning immune system to create that effect. And so I feel like that is actually a commonality. It's so easy for that to become a polarizing issue. But in both cases, it's like how do we support the immune system in natural ways in either of those cases, and that's something we can actually all agree on. And so this
is a piece of that puzzle. I think of a lot of similarities like plastic-type chemicals, for instance, as well, these are very problematic, they've now saturated the planet, they are storing in our bodies, which also brings up the question, how if possible at all do we get these out of our body once we've been exposed?

Leah: You can't. Well, here's the hard thing, it builds up. So it's one of those chemicals that we don't have any proof of anything being able to take it out of our body. That's the hard part. Right? And that's the absolute truth. If people tell you the opposite, I don't know how supported that is by the facts, right? So this is one of those unique chemicals that doesn't operate like other chemicals, you know, a lot of these nasty, persistent chemicals are trapped in fat. So if you can pull it out through the fat, then you can pull it out of the body, this is repelled by fat. So it just really operates very differently in your body, and the answer is they just don't know.

So what the best-case scenario is right now is to avoid it as much as you can, choose products that don't have it, be very careful of it when you're pregnant, and then when your children are about 5, and so up until that, that's when you're just you know, looking for it, avoiding it. After that, you don't want it, but of course, you know, hormone-disrupting chemicals are worse during hormone changes during the body. So the worst time is prenatal. So that's when everything is changing and it down to the second, the minute, you know, things got to just align right. The second part is when you're out and it's five years, you know, your body has like natural defenses it builds up doesn't really have that until you're over 5.

Now, the third time in your life, for women especially, and for men, is when you go through the change, right, you start to become a woman or you become a man, that's a time when, as a mother, you want to start to think about this, even though they don't care, you still want to think about it, right? And then towards the end of your life, for women it's when you go through the change again and you stop being able to, you know, have a baby. And for men, I don't know when men go through, you know, that change, someone should tell me, but I have three boys, it would be good to know, actually. But those are the most important times for you to start thinking about these things, when those types of people...you know when you have children in the house.

Katie: Yeah, and I think the balance, like you said is important, like avoid it whenever possible, but not to the point that it's causing stress, which we also know is extremely harmful to health. And then from there, I always think of, especially when we're talking about chemicals, we don't actually know how to get out of the body. It's like support the natural detox pathways in any way possible. And then try to keep a balanced stress level and not be stressing about it beyond that. So I'm a big fan of things like sauna, just basic hydration, eating foods like green leafy vegetables that bind to excess phytoestrogens and other chemicals in the body.

Leah: And poop, right? Because all the bad stuff comes out when you poop, you want to do that, right? I'm talking about poop and this, poop and PFAS is hilarious. But we don't know if it comes...I mean, we just...you know, they haven't done studies on that yet. But I think it's because they're so overwhelmed right now trying to figure out the ins and the outs of all these chemicals. You were saying something about plasticizers. Ironically, it's also a plasticizer. Because there's a whole category called PTFE, which is on those Teflon pans,
which is kind of like, which is a polymer. And ironically, you know, when I do testing, there are no tests to find all of these polymers. So when I'm testing for these chemicals, and I'm looking for over 10,000 of them, the kind of testing that I'm operating is more of a spot check. It's looking to see if these chemical elements are there, it's not telling you what specific PFAS it is because it's impossible. There's only about 90 chemicals you can test for at a really good commercial lab. Most of these labs that you can test for will only be able to test for maybe 16 to 30. But it's in a university lab, they can probably find about 150, but that's it for compound testing and finding out exactly what it is.

The other option is what you see a lot of NGOs doing and us doing is we look for fluorine in any product, right? And so then you operate another test that pulls out the fluoride from the fluorine, which is the natural and leaves the manmade, and we look for something called organic fluorine, which is not a wonderful thing. When I say organic in terms of chemistry, it doesn't mean the organic standards. No, it kind of means the opposite, it means man-made. So I'm looking for the man-made fluorine. When you find that, there's kind of only two options. One is PFAS, which it's very likely to be, the other one is fluorinated pharmaceuticals because 25% of pharmaceutical products are all fluorinated, so those are the two things that I could be finding. The testing that I operate is a really high test. It looks at 10 parts per million. Now, even though I'm saying parts per million, and that is really tiny, it's actually a larger amount because when they're testing in water, they're looking all the way down in the parts per trillion, which is like a drop in three Olympic size pools, right? And so mine would be maybe a drop in a regular pool or something like that, right? So we're looking at far larger, and we're not looking in water, we're looking in consumer products, like personal care, anything that can be burned, essentially, because that's how the test is, burns things, you know. So if it can't be burned, we can't use that testing method. Then there's other things we can look at.

But it's also really difficult to find, and you know, the devils in the details, if you can't find it and isolate it, then can they regulate it? I don't know. So that's where I feel like I'm kind of standing in the middle here. I'm sending a lot of products off to the lab and I'm starting with products that we would purchase that would be natural, you know, sending those off first as a confirmation because my audience wants to know about the things that they're already purchasing first, and then they want to know about everything else. And you would be kind of surprised, in the natural industry, how much of this chemical we're going to find. There's a lot of reasons behind that.

One of the reasons is, like for instance, if you're buying organic food, there's nothing in the organic standards to prevent them from using FDA-approved additives in manufacturing. And they don't have any standards behind that, and I just confirmed that again last week because I was, you know, emailing them, I'm like, "Oh, I can't find anything in the standards." And they're like, "It's not there." And they'll say to me something like, "Well, you should, you know, pressure the FDA to take these out of...you know, as approved indirect additives, instead of coming down on us." And I'm like, "I think you should probably fix this in the standards, I just think you should." But that's just my opinion.

So it can be in anything, essentially. And if you take a look at the FDA website, on what is approved for a food contact type of substance, there's a lot of polymers that are approved, polymeric PFAS. So that means these
are PFAS chemicals that are made up of all these different types of monomers. So it's like it's a PFAS made of PFAS, and also, but it turns into like a plastic, right? So we're going to see this, probably, I'm thinking, since there's so many of them that are approved by the FDA, that's probably what we would probably be seeing in food, you know, type of manufacturing. I've never been able to isolate and find it because those tests are just not available. But I keep seeing it in all kinds of products. And I'm really happy to do this testing because not only do I want to know, but once I started testing, everybody else wanted to know as well. So it's a great service that we're able to provide for people at Mamavation. I'm really happy to be able to do this.

Katie: I'm going to go line by line with some common products and like, go through what you found on the testing. But before we get into the more detailed part, I would love to hear what are some of the common sources in the home environment that some people listening...especially a lot of people listening are already more naturally minded, like your audience as well. What would be some of the common sources and how can we start to avoid it in the home?

Leah: So the number one place is going to be you're going to eat it and drink it, that's where they still think you're getting the vast majority of this is. A lot of this would be cookware, so if you have Teflon-based cookware or nonstick cookware at all, I would avoid that. Obviously, I know you've got great content about that and I've got content about that, that were kind of shoving you guys off of nano-based cookware and nonstick cookware. So that's one place. You also want to look for it in your small kitchen appliances, because you will find it in things like air fryers, you'll find it in things like toasters, and it's not on the food contact surface, it's outside. And the crazy thing about that is if it's on the walls on the outside, if it gets too hot, it can disperse into that air so it's still kind of an issue. So we're right now working through those products for air fryers and all kinds of different things. I would just say call up the company, look and double-check to make sure that they're not adding anything to these products on the surfaces. Definitely not food contact, food contact would be the first part, but that's what I look for.

Food packaging is another issue, things that we don't think of like parchment paper. I found it in parchment paper. So there are some parchment papers that are made of silicone and there's some parchment papers that are made of PFAS. And they, some of them sometimes they'll tell you, but you got to be looking to see which ones, and just to kind of help out your people right now because I know that you're going to ask me which ones are safe. If You Care, we tested that specific brand, it's the brown wrapper that looks kind of recycled, that one we didn't find anything in. Another Finnish company, which is called Gifbera, and then another one called Katbite, which I think is Korean, those are all available on Amazon. So If You Care, Gifbera, Katbite, those we tested, and we didn't find anything, but we did find it in Reynolds. And we did find it in Kirkland, so Costco. So those are food packaging.

But here's like, a lot of times when you're going to get this in your food packaging, it's going to be more of an issue of I went out to eat, or I'm using something that's processed. So the answer is the more you can cook from scratch at home, the more you're going to be able to get rid of these contaminants without even knowing about it because a lot of times it has to do with the processing of the food somehow, and how those chemicals, be in polymers or whatever, are getting into everything. So the more you can cook on your
own...again, I think that's probably something that you love to hear, the more you can cook using ingredients that you know about, the better off you are.

Another really big area is household dust. This isn't something that you would think about. But you know, your dust is then analyzed. Your household dust has been analyzed at a lab, not yours specifically, but other people's. And it contains a lot of fire retardants, phthalates, and PFAS. And that's coming off of your electrical equipment in your house. So your television probably has some PFAS in the wiring, maybe has it somewhere. And when that plastic gets hot, a lot of those plastics have fire retardants and other types of things inside them. Now, over time, and I mean, over years, as it gets hot, they kind of emit into the air, and these particles are highly magnetized towards dust. So they stick to the dust and they fall, right?

So how do you get this out of your house? I would say just dust, I hate that answer but that's really the answer. The more you dust, you know, the cleaner you keep your house, the less likely your children are going to be exposed to this. Now, I can't stop them from like, you know, being on carpet in case you have old carpeting with PFAS on it, there's nothing I can do for that other than just vacuum a ton, you know, to get that stuff out of it, it will break down over time and be released. So vacuum as much as you can, those types of things. Get an air purifier, some of the best air purifiers are out there. Though I know the ones that we recommend are probably also going to be pulling in PFAS because if they're pulling in the dust, that's where it is, right? So you want to get rid of the dust.

Makeup and personal care, this is a really difficult issue. Earlier this year, they did an investigation not me, but the actual scientists, right? And so they looked at over 300 conventional, mostly conventional makeup products and they found it overwhelmingly in makeup, think about it like this, stays longer, waterproof, you know what I'm saying? You want your makeup to stay on your face and not go anywhere and the more we've demanded that the more they put in PFAS. So you want to kind of look for things that don't have any claims about long-lasting, don't have any claims about being waterproof.

I would say we found about six or seven different brands of makeup in the natural world that I didn't find, you know, any organic fluorine at the levels we're looking for. But most of even the natural beauty products, you know, makeup brands, it's like...like, I was looking at a lot of things, mascara and lip gloss so to speak because I knew that those are like what everyone's using every day, right, lip gloss, and then if it's foundation, it's like next-level commitment, right? So we just went in the first pass commitment, and in some brands, we found it not in their mascara but found in their lip gloss or vice versa. So it was really difficult to kind of be able to say this brand or that brand because we had to do a lot of testing to figure that out. So makeup I would say, and other than just, you know, following me and what I'm testing there's no other answer to makeup because no one's putting that information out there. Even the scientists who were looking at it, they're not really like granting you the raw data to be able to figure out which one they tested but that's why we did it.

Another thing is like water, look into your water. This is a really big deal because if you live by a military base or you live by an airport this is really important, military bases and airports have been using firefighting foam
to put out grease fires that have PFAS in them and it has seeped into the groundwater below and has contaminated a lot of groundwater by these bases. So if you live by an airport or you live by a military base, I would just go out and get a water purifier regardless, don't even wait. Because the answer is it's probably going to be there and it may not be a type of PFAS that we can recognize just yet. You know, because that's the other problem with water is, we are not up to testing at all. So I would just assume, you know, that that's how I'm operating right now is I'm just assuming, even though our water system doesn't have anything in it, it's like, yeah, you only tested 16 of them, you know, there's like 10,000 out there, you know, that's how I feel like there's a big gaping hole. So water, work on water.

Clothing is another big one, but the answer to clothing is we don't know the answer behind dermal contact. So I have a lot of advisors who work on this and some of them are working behind the scenes to developing methods for testing. Some of them, you know, they're working at different types of phases in different types of ways with this chemical. But the one thing that they all agreed on was we don't know enough about dermal contact. We don't know if something rubs up against your skin, and it's a PFAS chemical, will it get in? How will it get in? How much we'll get in? We don't know. And because we don't know, we can't make any statements about that. So the answer is we don't know. But where are you going to find it? Anything that's stain proof, avoid things that are stain proof, absolutely 100% because that's where it's going to be. It's in a lot of jackets waterproof. We did an investigation on jackets, so if you go to Mamavation...I wish I could tell you every single one, but it's very confusing out there right now to find out what's PFAS-free, and then what's just a little section of PFAS-free. Some of these companies that are producing clothing, aren't looking at the big chemical category. They're only looking at this over here, and they say, "We're free of PFC," but they're forgetting all this other stuff over here, you know.

And there's some certifications like Bluesign, for instance. Bluesign certified is one of those certifications that will allow certain types of PFAS chemicals in the certification and yet they kind of make a claim that they're PFAS-free. So it's confusing for the consumer and the reason it's confusing for the consumer is the scientists have just kind of gotten on the same page about where this chemical is and what we're going to consider as part of the chemical. So I don't want to say it's all the businesses' faults, I'm saying that they're doing what's in the law, you know, when they're making these statements, but the statements are changing because the science is changing. And as the science is changing sometimes the companies are two, three years behind, you know, the mantra, how it's described. And so I'm running into a lot of that with jackets, like play couches, play modular couches, you know, anything like that, that might have like a stain-proofing about it. So just be looking out for that.

Tents and outdoor equipment. Oh, gosh, I can't...my cousins in Norway are going to laugh at me, but there is one brand that we love so much. And it's got a J in it, I'll put it in your notes, your show notes. It's like a Swedish name and I can't pronounce it because I don't speak Swedish. And it's got a J in it and I'm gonna just totally butcher it. But there is a lot of European brands that instead of using PFAS, like on their tents, for instance, they use beeswax and paraffin proprietarily put together and it does a very similar or pretty much the same thing. These products are more pricey, you know, you're not going to find a cheap tent that's PFAS-
free with, you know, more natural...and I know paraffin is not natural, but like, you know, it's better than PFAS. Those types of mixtures that are less problematic to the environment in an inexpensive way yet, hopefully the future will change that.

Then also, you know, it's in car wax and surfboard wax, those types of things, and carpet and flooring. We did a bamboo investigation, we looked at a bunch of different bamboo floorings and we only found one that didn't have detections out of like eight or nine. So I've been thinking about this in terms of what is around us. You know, if you're going to be doing flooring, for instance, you know, we went after bamboo and we looked specifically at bamboo because why? I'm like, it's less expensive, it doesn't dent, you can walk around with your heels and so I was trying to like, you know, solve all the problems and then we did find one brand. But it's difficult. It's really difficult to avoid it, you know, grandstand overarching, eat out less, dust more, and cook from scratch as much as you can. Those are the three things that I would say would probably do the most bang for your buck and just look out for places who...like if you go to mamavation.com, we've done an investigation on like a lot of things, not everything yet, but on a lot of things. And that's the...I'm trying to answer that question, where is it, how do I avoid it? And I'm kind of going category by category to figure it out because every category is really complicated.

Katie: Yeah, that reminds me, in the labeling, like, we started...like you said, we are seeing some that are labeled as "free of" certain ones of these, but it reminds me of when BPA became well-known, and then it was like BPA-free. But those all had BPS or BPAF or other ones, which are as problematic, where we're now finding, in some cases, worse. And so just because there are some that label now doesn't necessarily mean, like you said, that they are safe.

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And I know from your site, you’ve done investigations into all of these different types of things. And you gave us a household overview just now. But I would love to go through some others that are especially probably applicable to moms. So I cringe to ask, but the first being, what about, like, athletic wear like yoga pants?

Leah: So yoga pants wasn't as bad, actually. So that was one of the better ones. We tested about, I think, 32 or 33, different yoga pants, athletic wear because that was a question I had. I'm like yoga pants, you know what I mean? I wear them literally every day, it's kind of like my outfit, it should be like a uniform. And I know on a daily basis, I'm wearing yoga pants, some shirt that's really comfortable, and my hair is in a really messy bun, I got a lot of hair, so this all goes up in a bun. So we looked at about 32 of them, we found 25% of those yoga pants had detectable fluorine in the crotch. Now, when I first started testing them, I was testing the knees, you're not going to find it in the knees. How do I know? I tested to find it. And then I thought to myself, where would I put it? And so I had the lab repeat a couple of them with the crotch, bam, that's where it was. So about 25%. Now, none of the organic brands, if you look in...none of the organic brands that we had tested, yeah, they all had non-detect at 10 parts per million, so that is safe.

We did a like a not our favorite, better, and best category of those 32. The ones that we found detectable there in the top of the what we would not recommend, then there were ones in the middle, which were synthetic materials so we did not find anything in them. So feel free to buy them. And then for those of you who want the organic version that's in the best at the very bottom. Yeah, so we tried to kind of divide it in three for everyone to be able to figure that out as well. So this was not as bad, but you'll find it in the crotch, which is probably...it might be similar in other pants too if you think about it, like it's going to be in the crotch. Now, I don't know is the answer to that. I may in the future, maybe start testing underwear and swimsuits and stuff like that, but if you...to know about that, I don't know about those yet because I've been asked that question. So I'm just going to tell you I don't know about some suits and underwear yet. But period underwear, I do know.

Katie: Well, that's encouraging that there are these good options available because I was not going to be ready to give up my yoga pants. But that does lead to other athletic wear. So let's talk about sports bras and then, since you mentioned it, also period underwear.
Leah: Yeah, so sports bras are pretty problematic. We found...so you know your sports bra, there's like the outer part of it and then there's the inner part. So the inner part is that, like, kind of skin color mesh that's next to your bra, that are next to your breast. We found detections in 65% of sports bras in that mesh area. And when I told my advisors about this, a lot of them they were pediatricians that were, you know, helping me review this one specific one, they were concerned and more of our advisors were concerned because this is the mesh that's right up against your breasts. Now, here's the scenario I'm thinking of because this was my life and still is probably my life. You know, you're a new mom, right, and your baby goes down for a nap, and so what do you do? You run off and you do a workout or something like that as best as you can and you know you've got like 40 minutes to an hour, right? So you're working out, working out, and then sweating up a storm and you got your sports bra on and then, you hear the noise, right, and you're like, "Shoot," didn't get the time, so you didn't have time for a shower. So then you run upstairs, you go get the baby, and boom, breastfeed. That's the scenario I'm worried about.

So if you are a breastfeeding mother, please be careful and look at my investigation for the not our favorite, better, and best. We found them in 65% of these products, it was not everything. It was hard because of the high-impact bras, there weren't as many good high-impact bras, but one of them that I did find that I think people are going to be excited about is Target. Target has actually been doing a lot of work on PFAS and textiles and you could tell because when I tested against that, they came out clean. So if you're a big busted lady, which I am, my girls are pretty large...If you're a big busted lady you don't want, like, black eyes while you're working out, right, Target's one of those brands. It's not organic, obviously, it's full of synthetic polyester and yada, yada, yada, but we didn't find detectable PFAS in the sports bras there. So they're called All In Motion or something like that, so that was good. And sometimes I just keep testing until I find something that I can wear, you know, and that was one of those issues where I just kept testing. That was sports bras. So that's one you want to look on mamavation.com. If you go there, we've got all of the tests listed right there on all the brands that we found.

Katie: What about period underwear? This is when I personally don't have any experience with because I'm a big fan of the menstrual cup instead for the sustainability, which I know period underwear are as well, but what did you find when it came to these?

Leah: It was pretty bad actually when we looked into period underwear, we had...I'm trying to remember how many we tested, it was over 20. I think we only found six brands without detectable levels. Yeah, only six, and the hardest part where there are some brands that actually market themselves as PFAS-free. I'm not gonna say which brand it is but you may want to be able to figure that out, you will go on their website, and they will show you scientific testing on how they can prove that they're PFAS-free. But you have to have my eyes to know what you're looking at. You look at that scientific study, right, that they sent off to the lab, the detection level is a lot higher than mine. So I test at 10 parts per million. They were testing at 50, so you know what I mean, like, I can't make any statements about that. But I would say there's some funny business going on in that.
And the problem is...I, you know, interviewed a lot of the CEOs that had the safer period underwear. And essentially what's happening is what they said to me is you have a lot of people in this industry that don't really have a lot of experience with textiles. Like, they don't know a lot about what they're doing. They're great marketers, they're great, at a lot of other things, but they don't really know a lot about the processing of textiles. And if you don't know, you don't know what to say, you don't know what to ask, and then she was also telling me that, she's like, you can get Oeko-Tex fabric, so to speak, and send it to the manufacturer, and then the manufacturer will be like, "Oh, do you want waterproofing on that?" And they know that if you put that on it destroys everything, like all the accreditations and all that stuff, but they offer it anyways. And so you know, if you're someone who doesn't understand the textile industry, you may fall into that category.

So what I found in period underwear wasn't levels that looked like...there was a few brands that had levels that were really high, right, I would be like, "Whoa." But then there were other brands that had levels that were low. And so when you look at that, it looks like more of a contamination issue than it looks like an intentionally added issue. But I don't know what, you know, the difference is when it's right up by your vagina. I just don't know, and nobody knows. So that’s why we were able to do the categories we were and I believe it was...it might be seven now because we keep testing. And we keep adding to that report, you know, whenever we do find something, and people that send me period underwear want me to test it, just if you want to do that I can test stuff, just keep it in its original packaging. I just don't want you contaminating it. But yeah, we've had community members buy more period underwear that they want, they send it off to me and then we just go test it in the lab just to make sure we know out of all the brands that we can see. That's not a good one.

Katie: Gotcha. I'll make sure we link to these as well because I know you've written about all of these and people can go look for the specific details. So for you guys listening, wellnessmama.fm will have all those links. Another relevant one for moms, what about ketchup? Because I know for a lot of kids, this is a favorite to add to a lot of stuff. So what about ketchup?

Leah: Ketchup was just heartbreaking. Ketchup, the vast majority of the ketchups that I tested, all had total fluorine in it. Now, I wanted to explain to everybody that I did total fluorine tests on the vast majority of these ketchup brands. I didn't do organic fluorine, but let me tell you kind of what I've been doing. I have sent about 350 things off to the lab over the last 2 years, a lot of testing. So that gives you an idea of how much testing I've done. And I would say 80% of that testing, we've done organic fluorine on. And when I first started, I did total fluorine. So I wasn't as savvy as I am now to know about the difference between the natural fluorine and the organic fluorine, which is synthetic, and you needed to separate that. And so, you know, my scientific advisors came in and helped me with that and then we started, so ketchup is an older one.

But we found a ton of total fluorine in ketchup, except for two brands. We did not find it in Heinz, and that shocked me. So I was like, here's the regular Heinz in the glass bottle, nothing, in the plastic bottle, nothing, in the little ketchup packets, nothing. We didn't find it, you know, in any Heinz product. And then we didn't find it in 365 Whole Foods Organic Ketchup. So it made me think that that might be white-labeled, maybe white-
labeled Heinz ketchup, do you know what I'm saying? But then every other ketchup that we tested, we found detectable levels, and a lot of them were really close to 10. So it was like they were right there, right?

So here's the answer to that, of all of the things that I've sent off to the lab, they've been able...and they do total fluorine on everything, but then we run another test and it's a test for fluoride, right? And what they do is they look for fluoride and then they're able to do a calculation to deduct the total fluorine amount from the fluoride amount, and that is organic fluorine, so they do that calculation for you. I have never seen, not possible, but I've just never seen fluoride, more than two, maybe three parts per million. You know, so a lot of brands will want to say, if they want to say it's total fluorine, I've not found that, you know, fluoride to be a big thing and anything, you know, I think they want to think that it is but it's in the stuff that I've tested, we've not. I did send two of those brands because two brands people were really, really...they really wanted to know about.

And that was Primal and Annie's. And I sent Annie's and Primal out for organic fluorine testing after we put this up, and they were pretty much the same number. So I think that we're finding a lot of indications. That's the one where I have to say read it, but understand the testing isn't complete. And I do plan on updating that particular investigation, adding more brands, and doing the whole shebang, it's just probably not going to be until next year sometime, right? And I want to give these brands some time to work on it. So I know a lot of them do know about my testing and whether...I don't know if they're making any moves, because they haven't come to me and said they're making any moves. So that's unfortunate, but I will say in other brands...or other industries, there's brands making some pretty hefty moves here.

Katie: So, to be continued, and I'll put links to the current ones so people can have those as a starting point. And I know that there's more to come in other categories as well. So people can stay up to date with you to keep an eye out for that. It also makes me curious if it's possible to get people tested for these compounds. And I also wonder like, is there even a...if you're going to weigh the risk and benefits, is it even worth doing? We don't know how to get them out of the body and we know it's good to avoid them. Like, is it worth testing if it's even possible? Or is it better just to know they're bad and avoid them?

Leah: So I wish I would have done that when I didn't finish that question for you. I have a test downstairs, there is a brand new test that came out. I think it's called Empower FX. So I'm going to have to double check on that. But there is a brand new test where you can prick your finger and send it to a lab. Now, this is a big huge deal because it's not expensive and it's available to everybody. So let me give you some background. So I wanted to do a body burden, you know, scientific study. And I had a lot of scientists involved and we kind of talked about it. And what we realized was, it was close to impossible to do this because your body doesn't release it. So, you know, it's not like with polyphenols and, you know, you wait a week later and you just don't eat them or put them into your body, they'll be less. That's not the case of PFAS. So it's really hard to study on your body, really, really difficult to do those comparisons, so we ended up not doing it.
At that point, we were looking into a lab that was about $1,000 a test. Oh, yeah, crazy. So I will tell you my excitement when I found a brand who's doing this for $250. And you're doing it at home. What we were going to look into was sending people to a draw lab and then sending it off to a lab in Canada. And like it was all of this, you know, strategic, crazy stuff that we had to do. But now there is a company, and I want to say Empower FX, and we'll link that down below. But they partnered with Eurofins and Eurofins is a humongous $6 billion lab around the world. So it's a really...that's a great partnership. And so Eurofins is the partner on this and they're producing these little test kits. So you can test yourself, it's a little drip of blood, send it off, and I believe they're testing for between 16 to 30 different PFAS, but the most common ones that you're going to find in water.

Katie: Good to know, I'll put links to that as well if it's on your site, or I'll get that info from you for people who are...

Leah: It's not yet.

Katie: Okay.

Leah: You've got it first.

Katie: How exciting. And as I expected, our time, of course, flew by because we always have such fun conversations.

Leah: How has it been 45 minutes? Oh my gosh.

Katie: So we'll just have to do more rounds of this as more and more investigations come out. But just at the end, I love to ask if there's any parting advice you want to give to our listeners today, could be related to this or something totally unrelated to all the moms listening?

Leah: Oh, you know, in terms of this stuff, I would say don't sweat the small stuff, right? I mean, I have been doing toxic-free for seven years now, maybe eight. And that's one of the things that I've learned, you know, I want to know what the absolute worst things are and I'll avoid those. And all of the other things, I will based on my emotional needs at that moment, right? And so, in terms of like, when you're thinking about things, don't freak out about something you use once a month, right? What you want to look at are the big dailies, right, daily exposures. So don't sweat the small stuff in terms of, you know, don't freak out over some thing that you're going to be eating, you know, or drinking once a month. So go off to your friend's house, eat the pizza, and drink, and the cake and, you know, enjoy yourself. Because the stress that you can put on people
based on being afraid of all this stuff, I think, can be worse on you overall than I think the actual chemicals themselves and that's what I have learned over the years.

And so protect your space, protect your soul, so to speak, from being too afraid. I think that there's a difference between having a healthy fear of something that's dangerous, you know what I'm saying, and avoiding that because you're smart. And also getting into the world of it might being like a disordered thinking process, you know, the disordered thinking process of everything is toxic is not a good place for you to be. I want you to enjoy your life. And you know, follow people like Katie and I for, you know, instructions on what to do and then just let it go. You know, that's my advice is, you know, control what you got in the home, go out and explore the world and enjoy yourself, and try not to let your craziness sink into other places is my best advice.

And then just, you know, try to stay abreast of this, but you know, this is one of those issues where people are not really contacting their elected officials about this. And I know there's a lot of people specifically in like Republican districts and stuff like that, they're not hearing enough from you, because they would be doing more if they heard from you. And I really feel like for a lot of women who are living in Republican, congressional districts and stuff like that, call them, let them know you're concerned about this. Let them know that you care, and you care about them, do you know what I'm saying? If you're voting for them, and this is your issue, make sure that they know that this is important to them. Because I used to work for elected officials many years ago and I will say that when the women start calling up, and when they start pushing and honking on the doors, they got their little strollers and stuff, you know you're in trouble. It's the senior citizens and the moms and you don't want to piss off either of those groups. But you know, this is just something that your elected officials need to hear more from you on because there's a lot of states and when I say a lot, I mean a lot of states right now that are considering like 200 pieces of legislation on PFAS. They need to hear from you.

Katie: Yeah, I've said that so many times on this podcast that moms are such a force of nature and that widespread policy happens when the average mom changes her mind and gets involved and that's on so many different levels. And I've seen it on a local level. Actually, where I used to live, it was interesting, in this state, homebirth was technically not legal for a while, and a bunch of moms I know lobbied and got it changed. But I think it doesn't have to be...I think we often don't do it because we think it needs to be this huge number, this huge groundswell, it actually doesn't because I also used to page for representatives and it doesn't take that many calls and letters before they pay attention. So I would say don't underestimate...especially on stuff like this that relates to our kids, don't underestimate your power to change that. And also to echo your other advice, watch out for what you can but also realize the body is brilliant and adaptable and designed to heal and avoid the worst of the worst, but don't let it rule your life or become stressful. And that applies to food, that applies to what we interact with in our daily lives, and give yourself some grace at the end of the day too.

Leah: Love you, girl. You're so great at summarizing my point.
Katie: Right back at you, and thank you for the time today. It's always, of course, so fun to get to chat with you. Like I said, we'll do it again as more and more info becomes available. But thank you for being here.

Leah: Of course. It's my pleasure. Thank you for having me, Katie.

Katie: And thanks, as always, to all of you for listening and sharing your most valuable resources, your time, your energy and your attention with us today. We're both so grateful that you did and I hope that you will join me again on the next episode of "The Wellness Mama Podcast."

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