



Our Toxic Kids – What We Can Do to Heal Chronic Illness in Our Kids

Guest: Elisa Song, MD

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Dr. Schaffner: Hi, everyone, I'm Dr. Christine Schaffner. Thank you for joining me for the Heavy Metals Summit. Together with Dr. Dietrich Klinghardt and Wendy Myers, we've assembled the world's top health experts to talk to you about the dangers of heavy metals, how we accumulate them, the importance of detox, and what you can do now to restore and protect your health.

I co-founded Sophia Health Institute with Dr. Dietrich Klinghardt, outside of Seattle, Washington. Our clinic specializes in treating the real root causes of why people are sick today. Together we hope the information in this summit will help you get your life back to one that is healthy, pain-free, and full of energy.

Today, I'm speaking with Dr. Elisa Song about what we can do to heal chronic illnesses in our kids. Holistic mama doc, Dr. Elisa Song, is a holistic pediatrician, pediatric functional medicine expert, and mama to two crazy, fun kids.

In her integrative pediatric practice, Whole Family Wellness, she's helped thousands of kids get to the root causes of their health concerns and help

their parents understand how to help their children thrive—body, mind, and spirit—by integrating conventional pediatrics and functional medicine, homeopathy, acupuncture, herbal medicine, and essential oils. These health concerns have ranged from frequent colds, ear infections, asthma, and eczema, to autism, ADHD, anxiety, depression, and autoimmune illnesses.

Dr. Song is the host of the Thriving Child Summit, a life-changing event for parents to learn how to help their children thrive. Dr. Song created Healthy Kids Happy Kids to share her advice and adventures as a holistic pediatrician and mama. Now, everyone can have their very own virtual holistic pediatrician. You can follow her blog at Healthy Kids Happy Kids and get even more tips and inspiration from her on Facebook and Instagram. Welcome, Dr. Song. It's an honor to have you on the summit today!

Dr. Song: Thank you. I'm so honored to be here and really share this super important topic for our kids.

Dr. Schaffner: Absolutely. And it's fun for me. I know that I've had the opportunity to be interviewed by you. So this is so much fun to now get to pick your brain and learn from you today.

Dr. Song: Have to get the other side, right?

Dr. Schaffner: Yep, absolutely. So we're obviously talking about our children. And I think that's such an important topic. Our children are our future. And I think both of us have seen that our kids seem to be getting sicker and sicker over the years. And so I know that this is obviously your area of expertise. So what are you seeing? Why do you think this is happening? What are really the statistics out there right now?

Dr. Song: Well, the statistics are fairly grim. When we're looking at this, there's been this shift in our expectations of the health of our kids. And you just look around. And there are some kids who are very, very sick. And then, there are some kids who seem like they're vibrantly healthy. But most kids just have this middle of the road. They're just not 100% well.

Like, what infant do you see that doesn't have like some dry eczema patch somewhere on their body or these bright red, rough cheeks. Or what baby, what newborn isn't diagnosed with reflux nowadays. And these are conditions that really, they should not be having.

So right now, what we're thinking about, "How many kids in the U.S. have a diagnosed chronic condition?" Whether it's something like eczema, or asthma, or something like autism, or an autoimmune illness, we're looking at more than half of our kids nowadays have some sort of a chronic illness. The estimates are maybe about 55%.

But if we're going along this trajectory, it's projected that by 2025, which is right around the corner—that's less than 10 years from now—they're projecting probably about 80% of our kids are going to have some sort of a chronic illness. That's 8 in 10 kids. You will know or you will have a child, or a niece, or a nephew, or a grandchild, who has a chronic condition. And these chronic conditions, I'm seeing them skyrocketing.

And I know that my practice is somewhat unique in that it draws a population of kids who have chronic illnesses. But the number of kids who have autism, and ADHD, and sensory processing issues; all of the atopic category of illnesses—eczema, asthma, allergies are huge. Neuropsychiatric illnesses—depression, anxiety, bipolar disorder, PANS, which is pediatric acute onset neuropsychiatric syndrome. I never used to see these conditions in toddlers.

And now, it's not uncommon for an elementary school-age kid to be diagnosed with anxiety, generalized anxiety disorder, and be on medications. And these are medications that really have not been tested for long-term use in children, period. So if we diagnose a child with a chronic illness when they're five or six or seven, and they're placed on medications, there's really not a clear end in sight, unless we take a different approach.

The number of children with autoimmune illnesses that I'm seeing is devastating to me. I have infants, six-month-old babies and 18-month-old babies who are diagnosed with Crohn's disease and ulcerative colitis. Toddlers and middle school-aged kids who are diagnosed with juvenile rheumatoid arthritis, teenagers with lupus.

Hashimoto's is like just as common in teenagers as it is in adults, but just underrecognized. And don't forget the number of children with metabolic syndrome, and type 2 diabetes and type 1 diabetes. It's estimated that the number now of children with autism, which this is an older statistic, even from 2014, that 1 in 68 children have autism. Well, by 2033, that number's expected to be 1 in 4, if we're going along the same trajectory.

So that's why your summit is so important because we need to figure out how to stop this trajectory. We need to figure out how to stop this process. Really

halt what we're doing to our kids. And this has everything to do with what we are doing to our environment and what's happening to our children. But we need to know how to stop this process. And then, if our kids are sick, how to heal them and not destine them to a life of pharmaceuticals without an end.

Dr. Schaffner: Mmhmm. And I'm so happy that there are doctors like you so passionate about really educating us on really what the root causes are here because, as we're seeing, the trajectory is not good. It's getting worse. And we're only seeing sicker and sicker children. So we have to take this different approach. And I think you brought so many good points up in that medications are not solving the root cause. And we really don't know the long-term side effects nor really if this is going to resolve these conditions. And so we're just trading one set of problems in for another at such a young age.

Dr. Song: That's right.

Dr. Schaffner: And so I think this is so important. So really just diving in, why are these chronic illnesses on the rise? Like, what do you believe are the root causes of these chronic illnesses these days?

Dr. Song: Yeah. Well, it's interesting because there's so much information about how our genetic SNPs, our single-nucleotide polymorphisms, are affecting and manifesting as our health. How we're expecting our health. And so they're...I have patients. And I know you have patients and just the general public now, so many people are really clamoring to get their genetic information to see, "Well, what's in store for us? What future do we have or do our children have?"

But the thing is our genes haven't changed. Our genes have not changed in the past decades. So there is a reason why our kids are getting sicker and adults are getting sicker because these same genetic SNPs, they've existed. And so what has changed is our environment. It's this epigenetic expression of our genes that's changed. It's the interaction of our environment with our genetic makeup. It's said that our genetics loads the gun. But it's the environment that pulls the trigger.

And so it's really, what I believe is that it's our environment that's making our kids sick. It's our toxic load. Our kids are toxic. They're overloaded by toxicity. And what this then translates into are all of the biochemical and biomedical imbalances that we see and look for in functional medicine. So this toxic overload is causing gut dysbiosis and leaky gut.

And this leaky gut and gut dysbiosis is setting the stage for systemic, overall body, oxidative stress and inflammation, which is then triggering immune system imbalance and chronic infections which, in turn, is causing stress to our mitochondria and cellular energy production. And so what do we have then?

Ultimately, we have a sick kid that's presenting differently, depending on our genetic makeup. One child may present with severe asthma. Another child may present with autism. Another child may present with ulcerative colitis. But it all starts initially with that toxic overload. And our kids are especially vulnerable to these toxic exposures.

When we think about, well, okay, with the recent fires in the North Bay, and all of the toxins that were being released. And we know that kids, especially, were susceptible to having asthma and respiratory problems. But then, we think about, "Well, what about the detoxification capacities?" Children's livers are less mature than adults. So they're not going to clear these toxins as efficiently.

And the other thing that we need to think about is that pound for pound of body weight, children compared to adults, they drink more water. They eat more food. And they breathe more air. So pound for pound, they're getting exposed to more toxins. And they're not able to excrete them as efficiently as adults. And we want to think, too, about the fact that this toxic overload is not just something that happens once they're born, it starts at conception, unfortunately.

And this is where when you have the luxury as a practitioner to work with moms and dads before they're trying to conceive to really clear that mom and clear that dad as much as possible of the toxins that they're holding onto, then we can minimize the amount of toxins that are transferred through the umbilical cord and through the placenta before that baby comes out. So I think it's really the environmental toxicity, compounded by our kids' unique and increased susceptibility to toxic overload that's really, really making them so sick.

And they're vulnerable in different ways, too, because we think about this idea of a leaky gut. Well, infants are born with that leaky gut. So they're just going to absorb more toxins anyway and heavy metals and other toxic burdens from their gut more easily, even in infancy. But not only do they have a more leaky gut and they're born with a leaky gut, they also have a leaky brain. The blood-

brain barrier is not fully formed at birth and takes a while in to childhood, unless something happens to further disrupt that blood-brain barrier.

But all of those points of entry into the brain that are weak are where we see problems in our kids. Right by the pineal gland that produces melatonin will immediately impact how kids are able to sleep. In the posterior pituitary where hormones like oxytocin are made, that's immediately going to affect their socialization and their social relationships. And in the anterior pituitary where all of the other hormones are made, we're going to see immediate impacts on puberty, on their sex hormones, and on their thyroid, and on their adrenal hormones.

All of that is just to say we need to think about toxins in our kids and what they're being exposed to. And how do we help clear those toxins from them safely and effectively.

Dr. Schaffner: Mmhmm. And I think it's not only the toxic environment, but the start that children are having. Just like you're saying, it's like they're starting with an unfair advantage with the mom and dad having the exposures that they do. And if they're not aware of that, which I know that there's more and more awareness going into preconception healthcare, especially with the rise in infertility and all of the things that we see in practice, so this is an opportunity, I think, to really create healthy parents to create healthy children.

But you brought up a lot of great points in that. Okay, so children are most often starting with probably an increased toxic load than probably than past generations. Right?

Dr. Song: Yep. Yep.

Dr. Schaffner: You probably know the statistic. But I think cord blood has like 20,000 different chemicals or something like that that babies are born with.

Dr. Song: Yeah. Yeah.

Dr. Schaffner: So we're in a different time. This is a different toxic soup that life is starting in. And then, once children get out into the world, they're bombarded. And so this is why we're seeing this increased chronic illness at such a young age. And so yeah, I think it's, as you said, a grim story. But, also, really empowering because if we can create awareness—I know you and I

are both passionate about this—we can create more healing for these kids, and for these families, and also for our planet, which I know that we both want. And so--

Dr. Song: Well, and that's where when I say the statistics are grim, they are. But knowledge is power. And you and I, like we want to leave parents with hope because you and I have seen kids heal. And kids can heal. But we just need to know first what's going on. We need to identify the imbalances. And we need to know the right things to do to help them detoxify and get well. But that's possible. You wouldn't be hosting this summit if it weren't possible. Right?

Dr. Schaffner: Mmhmm. Absolutely. Absolutely.

Dr. Song: And so that's where, too, for moms, I think coming in to this, when their kids are sick...And dads do this, too. But it's the momma who carries a unique burden of guilt. And so I think when kids get sick, we as moms, we just start thinking, "Okay, what did I do? What could I have done differently? Why didn't I...Why did I remodel the house when I was pregnant? Why did I eat all of those tuna fish sandwiches that I was craving?"

And we just, we do the best with the knowledge that we can. And it's not to go back and feel guilty about what happened because you just can't go back and change it. But we move forward with knowledge. And know, "Okay, whatever happened, we can be now be our child's best advocate. And do everything we can to reduce their toxic burden and to help heal them."

Dr. Schaffner: Mmm hmm, great point. Absolutely, I think shame and guilt don't, they're, of course, natural human emotions, but they are not in any way what we're wanting people to feel because it's like, to be very honest, it's just really hard not to be poisoned in America right now.

Dr. Song: Yeah, absolutely.

Dr. Schaffner: So you could do everything. A lot of my patients do everything right. And they still can't avoid exposures. And so I feel like there are forces that we just are never going to be in control of. And so that's why we have to know about these tools and have lifestyle...Detoxification, I know we both advocate as a lifestyle because of what we're up against.

Dr. Song: Yeah, that's right.

Dr. Schaffner: So I'm really glad you brought that up. And so breaking this down, since pediatrics is your specialty, and I know that detoxification in children can be a tricky subject, there's probably not as many pediatricians studying this or researching this. But it, also, I think sometimes as humans we over complicate things. But how do you really approach a detoxification protocol in, not only healthy children, but sick children?

Dr. Song: Yes. Yes. And I will say when we're looking at prevention in a healthy child versus prevention and treatment in a sick child, it's going to look different initially at first because in that sick child we're going to be much more, I guess, intensive and really pursuing more...How should I put this? In a child who's healthy, we're just trying to prevent them from getting sicker. We can really try to live by the 80/20 rule, where 80% of the time we're super clean. And 20% of the time, we lighten up a little bit.

When I'm working with a child with autism or working with a child with autoimmune illness, in those initial stages, I'm much more rigorous. But it's not forever. It's not forever. It's just when we're trying to get your child well. But the first key, for any child who has a chronic illness, and we're trying to really help them clean up and detoxify, the first step is always, always lowering their toxic burden to begin with. Lowering their toxic exposure. So that means understanding where their exposures are.

And I know you do a ton of this education in your practice. But we have to think about all of the different ways that our kids are being exposed to toxicity because if your child is heavy metal toxic, they're not excreting their toxins in general. So they're going to be toxic with other toxins, as well. So we can't just put our blinders on and say, "Okay, we're just going to focus on heavy metal sources." We need to figure out what are all the other sources of our toxins.

So, of course, with the heavy metals, we first want to look at what they're eating. We want to look at the water they're drinking, the food that they're eating. Most people know that rice and rice products are going to have arsenic in them. Most people know that that fish, that we want to be wary of the fish that are higher in mercury content.

But many people don't realize that a lot of our processed cheeses are processed with aluminum. So they may have higher sources of aluminum in them. So being aware of some of the sources of heavy metals, the different heavy metals. Mercury, lead, arsenic, and aluminum are the top four that I see in kids as problematic.

And then, we want to look at other heavy metal sources. Many people don't realize that now most of the vaccines that we're giving to our kids don't have the thimerosal, the mercury preservative, in them anymore. But they are going to be filled with aluminum, many of them. And some of them many high levels. So just being aware of that.

We want to think about, in terms, of our food that we're eating. And you talk a ton about glyphosate toxicity. And on the Thriving Child Summit, we had several speakers talking about glyphosate. But glyphosate, I think is probably, I will say probably the number one reason, I think, that kids are getting sick at such young ages because their glyphosate, this is Roundup, that's patented as an antibiotic, it's going to perpetuate gut dysbiosis and leaky gut.

And that's going to start from infancy because glyphosate has been found in vaccines that are given from the newborn period. It's been found in baby formula. It's been found in baby foods. So any of the foods that we're feeding to our babies and the medications we're putting into our babies, we want to be very, very mindful that they are organic, wild, free-range. All of the things that we're talking to our parents about.

But it's so critical in that infancy stage where we know that infants' gut microbiome is really going to be set and established within about the first one to three years of their life. And after that, it's exceedingly difficult to change. And so a healthy infant gut microbiome then sets the stage for a healthy immune system, healthy immune response to chronic infections, healthy detoxification capacities, and a healthy nervous system. So if we want to truly prevent our kids from getting sick, we're going to do everything we can to preserve that gut, baby's infant microbiome, from the very beginning.

We really want to focus on the water we're drinking. Having clean, clean, clean water because that's a source of heavy metals, and microbes, and hormones, and medications. So knowing what's in your water. Getting your water tested to know which is the right filter for you and your house.

I know you talk a ton about EMF, electromagnetic frequencies. But our kids now are exposed to EMFs from the in-utero period and pretty much from the moment that they're born because, as mommas, while we're nursing, we're maybe checking our email on our cell phones. Or our little babies are crawling around and we're doing some work on our laptops. And they want to crawl into our laps, so we're sitting with them while we're doing our work on our wi-fi connected, enabled laptop.

Or kids are walking around with their cell phones. When I drop my kids off at school, there are elementary school kids who are walking down the sidewalk on their way to school on their phones. So we really need to be aware of how much EMFs our kids are being exposed to in the home and in their school environment and just in their day-to-day lives. I think that's a huge, huge factor in the toxic burden that our kids face.

But then, other things that parents aren't necessarily thinking about are going to be things like exercise, and time in nature, getting enough sleep. Sleep needs to be preserved as one of the highest priorities and ways to reduce our kids' toxic burdens. You talk about the glymphatic system that's bathing our brain and how that really is so critical in detoxifying our nervous system. And every week, it seems like there's another article coming out on the importance of sleep for our kids. So really prioritizing that.

And then, there's emotional stress. We need to consider emotional stress as much of a toxin as an environmental toxin. So when we're reducing our toxic burden, we need to reduce our child's emotional toxic burden. And we could talk about the different tools that I recommend to kids and families, too. But all of these things to lower our toxic burden and lower our kids' toxic exposures, that's the first step. Because if we can keep our kids' toxic exposures low and at a rate that they're able to handle and clear out, then we're going to prevent them from further building up toxins.

Dr. Schaffner: Mmhmm. Mmhmm. I think these are all great points. And I agree, it's like reducing exposure. And you listed a lot of things for people to be aware of. I didn't know about cheese and aluminum. So it's like you just don't realize this. And I'm so happy you, also, brought a lot of lifestyle approaches, and the foundational tools like sleep, and like nature.

And the emotional part—Dr. Klinghardt, obviously trained me—and he calls it the Klinghardt Detoxification Axiom. And he talks about when there's unresolved psychoemotional conflict or trauma, that there's an equivalent of stored toxins or pathogenic like microorganisms. So to detoxify the body, you also have to address, not only the metals and the infections, but also the emotions.

So I'm so glad you're touching on that because there's that connection. And I think sometimes we underestimate the stress and the trauma that children are going through with all the pressures that they have in their young lives.

Dr. Song: Yes. Yes. And it's really, I think that addressing the stress piece of it, in functional medicine we talk about the 5R program. It used to be called the 4R program to healing your leaky gut. And it was just, as you know and probably most of the listeners know, it's removing anything that's inflaming to your gut. Whether it's food or different microbes, it's replacing what's missing like digestive enzymes and hydrochloric acid. It's repairing the gut lining with things like fish oils and glutamine and zinc. And it's re-inoculating with all the good bugs.

Well, the 4Rs, many of us, as functional medicine docs and integrative practitioners, will go through the 4Rs. And our patients will get better. But then, they go back to being sick again. And it's like this push/pull. "Okay, now what foods are they sensitive to? Or now, what bug has cropped up on their stool analysis?"

But we're not addressing what has now been put in place as the 5th R, which is the rebalancing. Restoring harmony to that gut/brain, that mind/body/spirit connection. And if we don't do that, we're not going to get ultimate overall healing because we do need to reduce our emotional toxic load to reduce inflammation and help our body detoxify. So that's absolutely key.

And our kids nowadays are so stressed. And social media is placing a huge burden of stress on our kids that we are just at the tip of recognizing. We are in store for an epidemic of anxiety and depression in our teenagers because of the pressures of social media. And we, as parents, don't understand what to do and how to help our kids because that's not something we grew up with. This is completely uncharted territory on how to help our children and our teenagers navigate this world of social media. And I think that we need to really figure this out fast because it is, I think, one of the major challenges that our children are going to be facing as they grow older.

Dr. Schaffner: Mmhmm. Mmhmm. Absolutely, I think that's a great point in that this constant comparison and constant self-evaluation of not being good enough. There's all these themes. And obviously, we adults enjoy social media a lot for the connection and creating community. But from a young age, I know that these are complex issues that they're learning how to navigate from with a young social brain, so...

Dr. Song: Oh, absolutely, right. You know when you're on Facebook, and you see your friends beautiful load that they got from the farmer's market. And you're thinking, "Oh, my, gosh, should I be eating cleaner this week?" And you start to compare. And we all do that.

Or I know, as a mom, if I see another mom who's made the most awesome Halloween costume, and I'm thinking, "Oh, my, gosh, I bought mine at Diddams. Should I have made my kid's costume?" And so you can't help but do this. And so we get stressed as adults. But we can compartmentalize and rationalize it and understand, "Okay, this is a temporary stressor. It's not anything to fret over."

But our kids, as you mentioned, their brains are so immature for this social understanding and how to really know what to do with that information and do with those emotions and feelings. And so they're not ready to really handle the pressures of social media and the anxieties of social media.

So that is an area where I think whatever we can do to be with our kids when they're on social media and their screens. And talk about, talk about what they're seeing, and reading, how they're feeling, that's going to help them navigate that. But yeah, that is a piece of it.

Dr. Schaffner: Middle school was hard enough already. Right?

Dr. Song: Ha, ha, I know, right.

Dr. Schaffner: Oh, well, Elisa, how about just jumping in. I want to talk a lot about your tools, and some strategies, and some practical tips. But before we dive into that, I'd love for parents who might want to have some more like objective information or just some tangible evidence, do you have any like favorite testing that you use in order to assess a heavy metal burden in the kiddos?

Dr. Song: Yeah, so that's a great question. And so, yes because we don't want to do any of the more aggressive type detoxification or chelation if we don't know what we're trying to remove. And so what I start with, in all kids, unless they're under two or they're not potty-trained at night time, is it's a urine organic acid test.

And I use one by Genova called the Optimal Nutritional Evaluation. And it's a first-morning urine. It's all your overnight urine in your first-morning urine. But that gives me a good sense. It doesn't look specifically at heavy metals. But that gives me a good sense of how well is this child detoxifying? What are their mitochondrial stressors like? What is their methylation status like and their oxidative stress measures?

So then, I can see, “Well, do I expect this child to be a ‘good detoxifier’ or not?” There are some detoxification SNPs that may be helpful in looking at on genetic testing. But I don’t do a lot of that. I look at the really, not just theoretically what’s going on, but I want to know what actually is going on in that little body.

And then, when I’m looking at heavy metals, I start with a urine porphyrins test. Now, there are different ways to check for heavy metals. You can check heavy metals directly through the blood. And you could check red blood cell heavy metals. You can check just straight out blood heavy metals. You can check urine heavy metals directly. You could check hair heavy metals. You get stool heavy metals.

The issue with checking urine-toxic metals and fecal metals directly is that, for kids who are sick with any chronic illness, as I mentioned before, they’re not excreting well. They’re holding onto their toxins. And when they get exposed to heavy metals, the heavy metals, instead of going out through the normal routes of elimination—your pee, poop, and sweat—they’re not coming out. They’re staying in. And they’re going to the thyroid, or to the brain, or to their bones, or to wherever else is causing problems.

And so we don’t often see them in a straight out urine toxic metals or fecal metals. Your red blood cell heavy metal testing, you could check a red blood cell arsenic and mercury, and lead, those are really only going to be appropriate if you’re suspecting recent and ongoing metal exposures because your red blood cells have a lifespan of about 90 days.

But if your heavy metal exposure was when you were an infant chewing on your crib and eating through the crib, and the wood had arsenic in it, because arsenic is actually found in many treated wood products. On playgrounds, they found it on treated wood—and so if your child was a big mouther and a biter and chewed through the crib, which I have some kids like that in the practice—that exposure was maybe six years prior to when they’re diagnosed with autoimmune uveitis or Crohn’s disease. And so it’s not going to be in their blood anymore.

So I use a test called a urine porphyrins test because that’s a better gauge of your heavy metal burden in your body, wherever it’s hiding. And you can actually do a urine porphyrins test through a conventional lab like Quest and LabCorp, which I’ve done. I typically use the one by Doctor’s Data. But there are other companies, where I’m not wedded to any particular labs. But these are the labs that I use that I’ve just had more familiarity with.

And then, the pattern of urine porphyrins that are found in that child's urine sample can let us know if we're more suspicious for lead, or mercury toxicity, or maybe arsenic, or for maybe more suspicious for organophosphate and pesticide toxicity.

And from there, let's say, for instance, if I'm suspicious for lead, and the urine coproporphyrin III is very elevated, which is a marker for possible and probable lead toxicity, then what I'll do is something called the challenge test, where I'll do a baseline urine toxic metals. And then, afterwards, give a challenge of something that's going to pull out lead into the bloodstream. And hopefully have that child excrete it in their urine. So that might be something like DMSA. It might just be a big load of glutathione, or cilantro, and parsley. So we could do it in different ways.

But I'll do a challenge where I give something that's going to mobilize, move some of that heavy metal that's flooding the system. And then, immediately afterwards do another urine toxic metal test. So I'm looking at, in the baseline urine toxic metal test, if there's only a blip of lead, which many... We're all going to have some heavy metals in us. We all have some heavy metals floating around. But then, after the challenge, if I see a much higher level of lead coming out then I know, okay, there's lead somewhere in the system. And so then, we need to focus our efforts on lead detoxification, or mercury detoxification, or aluminum detoxification. So that's how I go about that.

And then, also, I always, even though we're not looking at toxins necessarily through the poop, I always do a stool analysis because if that gut has dysbiosis, if it's not regulated and you don't have a proper balance of all the beneficial bacteria in your gut, there's no way you're going to detoxify appropriately either. So that's another piece of the puzzle. But if I'm looking at specifically heavy metal burden, I start with the urine porphyrins. And then, move on to a urine toxic metal with the challenge test.

Dr. Schaffner: Mmhmm, I like this because it's like you can get a good overview of the system with the organic acids and then a screening test with the urine porphyrin. And then, you can decide whether or not you want to do a challenge test. So I think this is, yeah these are excellent recommendations. And as you said, too, I think it's a really important thing to say, "It's like, well, sometimes we can miss, right, a heavy metal burden if we just look at one." Just hair or stool or an unprovoked test because of the retention that can happen. The kids who tend to be sick with heavy metals are the ones that hold on to them and can't excrete them.

Dr. Song: That's right. That's right. Yep.

Dr. Schaffner: So we can miss that. So I think that's great. I think that's a perfect combination of using the best of our tools. And even, I think heavy metal testing is so challenging because the heavy metals we want to get out of the body are typically the ones that are hardest to find and demonstrate. So it's hard.

Dr. Song: Well, and I will say...And I didn't mention any energetic testing. I don't do any energetic testing in the office. But I know you and Dr. Klinghardt do ART. And I have colleagues who do ZYTO testing or other forms, CyberScan testing. And if those pick up heavy metals or parasites...

And heavy metals, they go hand-in-hand with gut dysbiosis. Rarely do I see a child who has heavy metals that doesn't have a parasite hiding somewhere, or a lot of yeast, or a chronic pathogen load, or a chronic infection that's more systemic like Epstein-Barr or PANDAS with strep or Lyme. And those are really challenging to detect with our conventional methods and even our functional medicine methods.

So and that's why I think enlisting all of your diagnostic tools is really, really important because too many kids and too many adults get missed with these chronic infections and chronic toxic overloads and heavy metal toxicity because we're just relying on some of our more "conventional standard testing."

Dr. Schaffner: Mmhm. Mmhm. Absolutely. And then, I think we obviously underestimate how much this impacts our children. And is, I believe, a root cause of a lot of the chronic illnesses we see. So--

Dr. Song: Absolutely. And we're finding back when I was in residency years ago—but that's nearly, it's 20 years ago now that I started my pediatric residency—and if you look at what the safe lead level was considered, it used to be 20. And then down to 10. And then down to 5. And now really, there is no safe blood level of lead. And so our knowledge of what actually is okay for our kids is becoming more accurate. And I would say there's really no safe level of any heavy metals.

However, in the world we live in, we're all going to have some heavy metals. I'm going to have some mercury, and aluminum, and arsenic just because I'm breathing and eating food in this society, even if it's organic. So the key is just figuring out then, how do we reduce that load? And then, really try to help

clear these out from our sick kids. And there are, absolutely there are ways to do that.

Dr. Schaffner: Mmhmm. Mmhmm. And so I think this is a great point to really talk about some of your tools and any other big toolkit of alternative and holistic approaches to help with heavy metal detoxification. But what are some protocols, strategies, and tools that you've had success with and would like to share today with our audience?

Dr. Song: Yeah. So I will say that even for kids who are very sick, I do not typically recommend a very aggressive detoxification program. Kids are amazing in that they can respond so well to little movements. By the same token, they can get sick pretty quickly. But then, they can also get well pretty quickly. And so I think if we try to move some of the major pieces and balance some of the major pieces, we'll find that a lot of other things fall into place.

So I am not a huge proponent of very, very aggressive detox because, in reality, our children are going to face this lifetime of chronic ongoing exposure to heavy metals and other environmental toxins. So I do do a bit more intensive detox for our sick kids. And then, we do gentle, daily detox, no matter what.

As you stated earlier, in the very beginning of our interview, detoxification must be a lifestyle. And that means detoxing the body and detoxing the mind and spirit. And one of the first things that we start with is lifestyle. Take things that we can do, our lifestyle tools.

So when we're detoxifying our body, we have to think about how our body gets rid of all the junk in it. And I mentioned before, we pee out toxins. We poop them out. And we sweat them out. And many of our kids are not doing these nearly enough, like any of these. And so I focus on all of these.

When we are excreting through our urine, our kids need to be as hydrated as possible. Our kids are chronically dehydrated. So getting them hydrated. And preferably—water is great—but electrolyte fluids like coconut water are awesome to hydrate, as well.

We have an epidemic of constipation in our kids, adults, too. So many of our kids are constipated. So whatever way we can to get them pooping every day, ideally, even a couple of times a day, but at least every other day. And typically, kids need magnesium. They need extra magnesium. And they can get Epsom salt baths daily. That's going to help, not just get magnesium

absorbed through their skin, but the sulfate and the magnesium sulfate, the Epsom salt baths are going to enhance glutathione, which is critical for heavy metal detoxification.

And then, most of our kids don't sweat. If you have a child with autism, or chronic illness, sensory issues, autoimmune issues...When I ask parents, oftentimes, they say, "Yeah, my kid doesn't really sweat," because that's another way. Our lymphatics are another really important way that our kids and adults get rid of toxins. And so we need to, not just get our kids moving, they need to exercise and get their heart rate up and really get their lymphatics flowing. But they may need things like an infrared sauna, an infrared sauna to get them sweating, appropriately.

And this is where when I use our whole integrative medicine toolkit, we have these lifestyle tools. But, also, I do use a lot of homeopathy. And I use drainage remedies to help with this elimination process. And by drainage, homeopathic drainage remedies are different than what some parents may know as your homeopathic remedy for a flu, or for a runny nose, or for a tummy ache. These are combination homeopathic remedies that are really targeted at organ systems to help them excrete more efficiently.

So when I have parents think about how these are working, I have them think about their garbage disposal in their sink. And if we think about our garbage disposal as our innate detoxification capacity, the speed that our garbage disposal runs, that's how it's made. We all have a baseline capacity to detoxify. And our genetics determine how fast our garbage disposal works. Our liver, and our kidneys, and our lymphatics, that's really determined by our genetic makeup.

And so then, you think about this garbage disposal. And you're throwing in your food scraps. And you're throwing in other garbage every day. If we throw in garbage at a rate that our garbage disposal can handle, then great, we get rid of the toxins. And everything's just fine. And we're in a healthy state.

But if we start throwing in garbage at a faster, faster rate than our garbage disposal can handle, and our garbage disposal starts to get rusty because we're not taking care of it and cleaning it up on a regular basis, all of a sudden, we start to have garbage overflow into the sink. And then, that overflow is when we start to see signs of illness in our kids.

And that can be just something as subtle as the dark circles under your kids' eyes. Or that little itchy rash on the back of their wrist that isn't going away.

These are subtle signs that we need to be on the lookout for that our kid's garbage disposal is flowing over.

And so then, I'll use these homeopathic drainage remedies to clear the overflow of toxins and get that garbage disposal running more efficiently. It's not necessarily going to make it run faster. It's not going to pull out toxins. But it's going to get whatever toxins are flowing around and overflowing to be removed more efficiently.

And so I target initially drainage remedies for the liver, and the kidney, and the lymphatic system. And there are different companies that do that. I happen to use the PEKANA line of remedies. But the UNDA Numbered by Seroyal and the Energetics line and their other various lines, they're all really good. You just want a practitioner who's comfortable and knowledgeable on how to use them.

And then, depending on where the other toxic burden is lying, whether it's in the thyroid or the brain or the gut, there are other drainage remedies that can target those organ systems as well. So that's another kind of a little thing that we can add to help our kids really with those lifestyle tools of peeing, pooping, and sweating.

And then, in terms of really keeping to help enhancing that detoxification process, you have to put in the right ingredients. You have to give your body the tools it needs, the ingredients it needs to clean up. So we need to have nutrient-dense, mineral-rich foods in our diet. When our body is picking up heavy metals, holding onto heavy metals, what are heavy metals? They're basically minerals that are just heavier than your zinc and your magnesium, and your selenium and your iodine. And so if we can flood the body with these mineral-rich foods, then our body's going to preferentially pick up those minerals and not those heavy metals.

So we need to really make sure that our kids' diet is as nutrient-dense and mineral-rich, as possible. And really while we're focusing on that, getting in those green smoothies with cilantro, and parsley, and turmeric, and beets that are going to help our kidney and our liver to detoxify.

I mentioned glutathione. All kids are going to be on glutathione when I'm doing heavy metal detox. And there are liposomal forms of glutathione. Glutathione is an amazing antioxidant and helps with liver detoxification. And it can help specifically with heavy metal detoxification.

So I use various brands. There are different ones. They, unfortunately, they taste sulfury because glutathione is a sulfur-containing molecule compound. And so, yeah, it's going to smell a little like rotten eggs. But I typically use the one by...Oh, gosh, I'm blanking the name right now.

Dr. Schaffner: Quicksilver.

Dr. Song: Quicksilver, the pump, also Readisorb liposomal, and also Research Nutritionals has a Tri-Fortify—

Dr. Schaffner: And the watermelon for the kids, right.

Dr. Song: Yeah, watermelon-flavored one. And you know what? I tell parents, just if you put it in a covered container, like a sippy cup and drink it from a straw, if you don't smell it, it's not going to be that bad. And then, just have something to chase it with because that sulfury taste can linger in your mouth a little bit. And then, all kids need a binder.

If we're having kids pulling out some metals and getting rid of them in their poop, we want something to bind up that heavy metal as soon as it comes out. And then, help it to get excreted in the poop without getting reabsorbed into the bloodstream. So that's going to be something like activated charcoal or clay or modified citrus pectin is very helpful, especially in terms of lead detoxification.

So we're helping kids really get all the nutrients to help their liver and their kidneys to detoxify appropriately and efficiently. We're using drainage remedies to help with more efficient excretion of those toxins. And then, we're using binders to help keep those toxins out. So there's different tools that you can use. But that's probably the foundation of it.

I also use homeopathy when I know specifically what heavy metal is causing the most problems, causing the heaviest burden. So let's say, a child has mercury toxicity. And we're trying to first start with the mercury. And your system can really focus on one thing at a time.

So most kids, when we start working on mercury and they're starting to dump out mercury from their system, then once the mercury load is lower, then we often find, "Oh, now, here's the lead coming behind it, right." And then, we can work on the lead. And then, "Oh, here's the arsenic chasing that, right."

But you can also use single homeopathic medicines, the dilutions of the specific heavy metals, while you're doing detoxification of the heavy metal to really help your immune system, and your detoxification capacities, and your nervous system to really wake up and identify that these heavy metals are causing problems and assist in the excretion process.

So what do I mean by that? If we're working on mercury, I will use Mercurius Solubilis as a homeopathic remedy, typically in the 30c dilution. And do three pellets twice a day while we're doing the green smoothies with the garlic, and the parsley, and the cilantro, and the chlorella. And we're doing the glutathione. We're doing our exercise and our other drainage remedies. You can use them together. You can use them concurrently.

For lead, there's a homeopathic remedy called Plumbum Metallicum. For arsenic, there's Arsenicum Album. For aluminum, there's Alumina. So you can find homeopathic preparations of each specific metal. You're not going to increase their heavy metal burden. You're not giving them heavy metals because they are so diluted that there's not actually the heavy metal in the remedy. But you're waking up your body's energetic systems to the fact that, "Hey, heavy metals are in here. We have to get them out. They don't belong in here."

Dr. Schaffner: Mmm hmm. I love that you said that. We use that, as well. And just it's individual, but we'll use some Alumina or Merc Sol. And that can absolutely combine well with a detoxification protocol. And I love drainage remedies, too, Elisa. I feel like that they are, especially for the kiddos, they respond well. And they're gentle. But they're really, really effective. So we have a lot of similar tools that we use. And again, it's a program.

And that's why, of course, we want people to be educated and know about tools that they can utilize. But really to do detoxification safely...

Dr. Song: Yes, absolutely.

Dr. Schaffner: I would, of course, go to your local functional medical doctor or a naturopathic physician to get the best care. But I think that we all know that parents can improve upon lifestyle. All the lifestyle things that you've shared and all the ways to just support our normal organs of elimination and their functioning.

I have actually a curious question. Do you have an age in mind that you recommend for an infrared sauna? Like, for the kiddos, you don't want them

to go younger than a certain age? Or how do you feel about kids and the infrared sauna? I'm just curious.

Dr. Song: Yeah. If it's for a brief period of time. And I've had kids with autism as young as like five or six going in them. I think for toddlers, I don't know. I might put them in, but maybe for like five minutes.

Dr. Schaffner: Right. Right. Just warm them up. Mmhmm.

Dr. Song: So yeah. But I think for your kids who can really, and you're with them to assess how hot they're getting, and if they're starting to sweat, because if they start to sweat after a couple of minutes, you come out. That's what we want. We just want them to really start to be able to sweat. And they'll start sweating faster and faster, earlier and earlier, in the process, then the further along you get in your detoxification. Because once your body's cleaner, you're going to sweat more easily. You'll see these kids' parents will say, "Oh, they're on the playground now. And they're actually beading a sweat on their upper lip while they're running around."

Dr. Schaffner: And you think about and as I'm thinking about this, too, it's like, I know in Europe, there's a lot of cultures that sauna from a very young age. So our bodies are meant to sweat. And I think just being mindful. And, of course, not doing anything too fast, too sudden.

Dr. Song: Yeah, and replacing with minerals afterwards. There are ways to do it safely. And so these are just some suggestions. Examples of what I do in the office. But I would say all the lifestyle things like sleep, and exercise, and getting kids to poop, and drink enough water, and having a green smoothie every day, those are things any parent can do starting today right after you listen to this interview.

But anything that's a little bit heavier duty, absolutely find a practitioner to work with because we need to really be able to watch how your child is doing. And pull things back if they're having a harder time. Or move things forward a little bit more quickly if they're doing well and follow their progress.

And I will say, one of the things I'm hoping that parents of kids who have some of the increasingly common neuropsychiatric disorders, like PANDAS and PANS are the listening because heavy metals, as I mentioned before, go hand-in-hand with infections. And so when you have a child with PANS, Pediatric Acute-onset Neuropsychiatric Syndrome with, let's say it's from Epstein-Barr virus or it's from strep, in which case we call it PANDAS, or they

have a combination of Mycoplasma and Bartonella, oftentimes, we'll get some leeway and traction using antimicrobials, whether they're pharmaceutical or herbal, and different supporting nutrients.

But when you get stalled or you're not seeing the progress that you'd like to, you think about heavy metals, even if you can't think of where or when your kids may have been exposed, because heavy metals exposure, it's ubiquitous. We're all exposed. So oftentimes, there's something holding that immune system hostage so it's not able to appropriately deal with these chronic infections. And very often, it's heavy metals.

And then, also, that emotional piece I think that for parents, many parents, that's probably—when I do well-child checkups—that's one of the things that every single parent want to know, “Like, how do I help my kid be less stressed and less anxious?” And this is even preschoolers. It goes from toddlers all the way to high school kids. And so I think we, as parents, we're not sure what to do. And there are so many tools out there.

So I just wanted to mention a couple because these are also things that you can start right now, tonight, tomorrow with your child. Do it with them because when our kids are stressed, we're stressed. And vice versa, when we're stressed, our kids are stressed. So we need to really understand, not just how to help our children's body/mind/spirit connection and balance, we need to know how to do that for ourselves, too.

And so one of my favorite, favorite resources are all of the books by child psychologist Dawn Huebner. And her last name is spelled H-u-e-b-n-e-r. But she pronounces it Heebner. And she has a whole series of what-to-do books that are meant for kids.

So one of my favorites is *What to Do When You Worry Too Much*. But she has *What to Do When Your Brain Gets Stuck*, *What to Do When Your Temper Flares*, *What to Do when You Grumble Too Much*, *What to Do When You Dread Your Bed*, this whole series of amazing books to teach kids cognitive behavioral techniques to help them manage their worries and their stressors more effectively.

And her brand-new book that came out in October of 2017, it's called, *Outsmarting Worry*. And this is for older kids. Probably 12 and up or even 10 and up who want a little bit more understanding of how their brain is keeping their worries stuck. And what they can do about it. So that's amazing. And I use many of the tools in her books myself.

And then, as much as I don't want kids to be on screens too much, there are some amazing Apps for meditations, guided meditations for kids. My favorite one is the Calm App. It's just C-A-L-M, Calm, that has sleep meditations, specifically for kids. But they can listen to any of the meditations. And then, also, one called Headspace. So there are some great resources.

I know you're familiar with HeartMath, which is a heart rate variability program. But the HeartMath program is amazing that you can just download the Inner Balance App on your phone. And kids can immediately get this feedback on their breathing and their heart rate. And get into that calm space, that state of coherence where they're just in that meditative zone. So I think the more we can do to help our kids learn and use these tools and, as parents, learn and use these tools with them, the better able we will be to, not just help them to detoxify, but also to stay clean and detoxified.

Dr. Schaffner: Mmhmm. Mmhmm. You have so much practical tips that I think that this is so important. And it's like it can be overwhelming to implement all of this. But if you can just do a few of these things and make these habits and lifestyle tools for the children, I think that that's a great start.

So we went over so much information, which I'm so happy that we did. And we're asking, Elisa, all of our speakers, really what are your two favorite detoxification tips or tools that you do personally? So I'm putting you on the spot. So what are you doing these days to stay healthy?

Dr. Song: So I will say, my number one is hydration because that is an area that I struggle with because just day-in and day-out when I'm just running around with the kids or really all day long in the office with barely a breather, it's very, very challenging for me to get in enough fluids to stay hydrated, which then, of course, affects my stooling and my sweating. So that's, for me, my goal is to get in at least 80 to 100 ounces of water every day.

Dr. Schaffner: Good for you.

Dr. Song: And so this is where we can't just say we're going to do it. We need to have practical tools. And have a practical way that we are going to do it. And be successful at it. So what I have in front of me—I know you can't see this—but I have a mason jar that's exactly 20 ounces. So this is my gauge. I need to drink at least four to five of these. And my goal is to do this during the day while I'm at the office because I get home around six. And I don't

necessarily drink too much water with dinner. And I don't want to drink 20 ounces right before bed because I want to get a good night sleep.

So I have this. And I know exactly how much it is. And I know exactly how many times I need to refill it. So I'll fill it first thing in the morning when I get to the office. My goal is to have 20 ounces by the mid-morning or lunch time. Have another 20 ounces at lunch time. Another 20 ounces by the middle of the afternoon. And another 20 ounces by the time I leave the office. That's very doable if I have this in front of me and I can gauge it. Otherwise, I have no idea how much I've had to drink. And I'm not necessarily listening to my thirst signals.

And so this is where, too, for children, I'll say...This is what we do every well visit. Once I weigh a child, then I ask them, "Do you think you stay hydrated?" And most kids, even at young ages know what hydration means and how much water they're drinking and if they're drinking enough. And so parents usually say, "No." Kids usually say, "Yes."

And so then we actually calculate it out. We take their weight in pounds. And we'll divide it by half. And I'll let them know, "That's the minimum in ounces of water that you need to drink. But if it's a hot day or you're playing soccer, you need to drink even more than that."

And then, we actually take out their water bottle and measure it. And if they have a 12-ounce water bottle, then we know, "Okay, you need to drink two and a half of these in the day." So it gives them that just visual, and that practical, and that concrete way of knowing how much they need to drink. So that's my number one.

And my number two, which really has nothing to do with supplements and diet. I try to eat as clean as possible. And I take a variety of supplements, more or less, on a daily basis. But the number two is sleep. And I mentioned this before is the priority for kids.

But it is one of my priorities because once the kids are in bed by around maybe 8:00-8:30, we all just as moms, we feel like, "Now, it's me time. Or now it's time to catch up on some work. Or catch up on some emails to friends." So often that then leads to, "Oh, it's eleven o'clock, or it's midnight, or it's one o'clock." And then, you go to bed. But then, the kids are up at 6:30. So I do have a chronic sleep deficit that I'm really, really working hard to heal.

And that just means if I know that my kids are going to be up around 6:30 or 7:00, and I work backwards, and I want to get a minimum of seven hours of sleep, I know I need to be in bed by 11:00. And really, I do better, I know I do better on eight or nine hours of sleep. So I need to move back the clock even more. But that's a work in progress.

Dr. Schaffner: Mmm hmm. Well, I admire that work in progress that you're doing because yeah, absolutely those are two really foundational, but game changers for your health. And so I think that those are...I always say, "We teach what we want to learn, as doctors."

Dr. Song: That's right. That's right.

Dr. Schaffner: And it's a work in progress, right?

Dr. Song: Yeah. Well, and I love that you said that those are game changers because they really are. When our kids are sick, we're looking for, "What's the best vitamin to take? What's the best diet to put them on? You know, how do I detoxify them? Should I look at chelation?" But if we're forgetting these foundations, we're going to constantly be fighting a much bigger uphill battle. And the foundations are things that anyone can do and start at any time.

Dr. Schaffner: Mmhmm. Right. And they're accessible to everyone, right?

Dr. Song: Yep. Yep.

Dr. Schaffner: And so I think that's a really important point. So, Elisa, you've shared a ton of great information. And I'm so happy that you were on the summit today. And I would love for us just to leave with, you have a lot of great education that you're doing for your community and really for society with sharing really how to keep our kids happy and healthy. And so where can everyone learn more about your work and learn more about all this great information that you're putting out into the world?

Dr. Song: Yeah, well, thanks for asking because my passion and mission now is to try to get this knowledge of holistic pediatrics and pediatric functional medicine out to the world because there are not enough practitioners to go around to see all the kids who need to be seen. And our children can't wait. Really, it's the mamas and the papas who are up all night doing the research and trying to find the answers for their kids, even if they don't have a practitioner to guide them.

So I started a blog called “Healthy Kids Happy Kids” to try to bring as much of the holistic pediatric and integrative pediatric knowledge that I’ve been fortunate enough to gain and experience with my patients over the last 12, 13 years to share that with the world. So that’s www.HealthyKidsHappyKids.com.

And then, for the past two years, I hosted a summit called the Thriving Child Summit to bring together experts around the world, including you, who was on my last summit, and Wendy Myers, who was on my first summit in 2016, to really help parents get even more knowledge on how to help their kids thrive naturally.

And then, I love sharing news articles that I come across, and just fun tips, and different fun pieces of advice, or different things that I’ve seen or read online on my Facebook and Instagram pages. So if you, guys, do that, which a lot of parents do, the Healthy Kids Happy Kids Facebook page, you can find easily online if you just search on Facebook for Healthy Kids Happy Kids or just my name, Dr. Elisa Song, MD.

And my Instagram user name is Healthy Kids_Happy Kids. I love Instagram because I love pictures, and I love visuals, and I love graphics. But those are just like some fun ways that I love to keep in touch with everyone.

Dr. Schaffner: Mmhmm. I love it. I love all the work that you’re doing, Elisa.

Dr. Song: Oh, thank you.

Dr. Schaffner: And I so appreciate knowing you and all the work that you’re doing. And I know we all are grateful for your talk today.

Dr. Song: Oh, well, thank you so much for having me. And I’m so grateful to you and Wendy for really bringing this Heavy Metals Summit to the world because it’s an issue that touches everyone. And I think we all need to know what our options are for really clearing heavy metals from our system.

Dr. Schaffner: Mmhmm. Mmhmm. Well, thank you, Elisa. And have a wonderful evening.

Dr. Song: Thank you. You, too.

Dr. Schaffner: Thank you again for joining me for the Heavy Metals Summit. You can take this amazing talk home with you by purchasing the summit.

Just click on one of the banners on this page. And don't forget to check out the talks from the rest of our renowned speakers.

I'm Dr. Christine Schaffner. And I hope that you and your family experience abundant health. You can learn more about my work at DrChristineSchaffner.com. Remember, detox can literally help you get your life back. See you again soon.