



How to Switch Off Cell Danger Response

Guest: Dr Elisa Song

Niki Gratrix: Hello everybody and welcome back to that Trauma and Mind Body Super Conference, and we are here today in this episode with Dr. Elisa Song. Dr. Elisa, welcome to the summit.

Dr. Elisa Song: Thank you so much, Niki. I'm really honored to be here and speak about this incredibly important topic.

Niki Gratrix: And we're honored also to have you. Dr. Elisa Song is amazing, she's a holistic pediatrician, she has amazing credentials. You've got Stanford in there, all kinds of high quality Ivy League school trained, might as well just namedrop there.

She's the founder of Whole Family Wellness, which is an amazing integrative pediatric practice here in California. And she's got an amazing website, a successful website, *Healthy Kids, Happy Kids*. And we're going to be talking about one of my favorite topics, it's such a key topic that we need to get out there and explain to people.

So Dr. Elisa you're going to talk about this in the context of kids, but it totally applies to adults. But let some let's just dig in first, because we're going to focus on the child community. It's sad to ask this, but there is this epidemic of mental health issues within children, that's happening and physical, chronic, complex illness.

Do you want to share a bit more about that and maybe what the stats are if they have stats as well?

Dr. Elisa Song: Yeah, absolutely. And I do want to emphasize exactly what Niki just said, that everything that I say right now and speak about absolutely also applies to adults. Our children become adults, if we have healthy kids we can help them grow to healthy adults.

If we have sick kids, then we want to make sure that they don't grow into sick adults. And of course, we know that those adverse childhood events that lead the way to all sorts of chronic adult illnesses, that starts in childhood. So we need to help understand how to really manage all of this starting in kids. And so the rates of chronic disease all around for kids is really astonishing and disgracefully high.

Currently the estimate is about fifty five percent of kids, a little over one in two kids has some sort of a chronic diagnosis. And by 2025, that's just five years from now, that number is projected to be eight in ten kids. And these are things ranging from anxiety and depression to asthma, autism, ADD, even autoimmune illness like Crohn's disease and

ulcerative colitis and juvenile arthritis. But then in terms of what we really want to understand for this Summit are the shockingly increasing rate of mental health disorders in our children.

So anxiety is epidemic in our kids, one in three teenage girls has an anxiety disorder. And what's really, what we need to mobilize around and really empower ourselves as parents and practitioners is that we can do something about this. But by the time teenagers are 18, the statistics are showing that one in two teenagers is going to be diagnosed with any mental health disorder.

That's fifty percent of our teenagers by the time they're 18. And we're thinking that they're ready to go off to college and adulthood. But there's a lot more that needs to be done. So this is such important work that you're doing to get this message out.

Niki Gratrix: Wow. I'm just in shock there. I had no idea about the statistics. So I literally got shivers just when you said that, it was the first time I've heard those stats. But of course, when we think about all that, just the autism explosion going on as well, okay, so this is super important.

So let's talk about the cell danger response. You'll have to explain what that is and why that's important in the context of mental health, and kids and so on.

Dr. Elisa Song: Yes. So Dr. Robert Naviaux, he is at UCSD and he has been a pioneer in researching something that he's coined this cell danger response, it's been really so beautifully explained by him. And if you are a practitioner or even as a parent, I would strongly suggest reading his papers in the Journal of Mitochondria. They are very dense, every time I read them, I mean a new piece of information, they're not easy reads, but they are beautiful reads.

So he describes the cell danger response. And we have to understand the cell danger response in the context of the health cycle and the healing cycle. Now, we all want to be in the health cycle. The health cycle is when we have our normal waking metabolic activities and we pair that with restorative sleep, because sleep really is the healer of so many things.

When we get faced with any sort of, quote, "toxic insult to our survival," And that insult overwhelms the ability of our bodies and our brains to heal and sleep. That's when our cells enter the healing cycle and the healing cycle are the stages of the cell danger response.

So what is a cell danger response? The cell danger response is a primitive cellular response to any threat to our survival. And what's really important to understand with this, is that threat to our survival that triggers the same cell danger response. It can include infections, it can include physical trauma, it can include environmental toxins, but it also includes emotional trauma and psychological stress. They are as much of a catalyst for our cells to enter the cell danger response as any physiologic stress, so very important to know. So when the cell danger response is triggered, our cells need to go through three distinct phases of the cell danger response, in order to completely heal and get back into that health state, where we are waking and sleeping and thriving.

In the first phase I'm just going to get a little into the science because this is important to understand. In the first phase, what happens is our cells go into a danger mode. They sense a threat and what happens with those cells that are injured is they literally disconnect from the rest of our body.

Why do they do that? Because the priority is for us as the host, the human being that's housing these cells to survive. And so those injured cells disconnect and then try to repair and contain the threat, whatever that original insult was, that's the first phase.

In the second phase once that threat has either been removed or contained. Then we can enter into the cell danger response phase two, and in that phase two our cells, repair, regenerate and new cells are formed that are healthy.

Then in the third phase, and this is what's key in the third phase of the cell danger response. Those cells that were disconnected, we can't have multiple cells that are living in isolation in our body; we need to be a unified whole. So those injured cells that have now repaired need to reconnect with the rest of our body and our brain. And that happens through the vagus nerve.

That's why the vagus nerve is so key and I know many of our listeners today have heard of the vagus nerve and have heard of why we need to get out of vagus nerve dysfunction. But there is a physiologic cellular reason and so once our cells can reconnect through the vagus nerve. That is when we get ultimate healing and we can go back into the health cycle and be well again.

Niki Gratrix: That's so interesting. I'm so glad that you've really studied the process, because I got the big picture and you've gone into detail which is great. So this whole idea about the vagus nerve, just does that mean that, can we induce phase three by starting to stimulate the vagus nerve or can we do it too soon?

Dr. Elisa Song: Well, that's really so interesting. And, I guess what I want to make sure people understand when Dr. Naviaux describes the cell danger response. He described many, many chronic illnesses as really being, quote, "stuck in one of the phases of the cell danger response." Because you have to complete each phase before you can move on to the next phase and back into health.

So when you look at it, I believe it's his second paper that he wrote where he describes different illnesses, including mental health illnesses that are really stuck in various stages of the cell danger response. And what's fascinating is that at this last stage, this vagus nerve dysfunction stage, we can see many, many chronic mental health illnesses like autism, generalized anxiety disorder, OCD, post-traumatic stress disorder, major depressive disorder, bipolar disorder.

These literally are examples of diseases where our cells are stuck in phase three. So during that phase three, if we can help the vagus nerve work optimally, we can help those cells move out of the cell danger response and back into healing. And this is one of the missing pieces for healing that we're missing in functional medicine, in integrative psychiatry. We know even as laypeople, we can understand the power of engaging the vagus nerve and

we're gonna go through ways to do that, things like breath work and Heart Math. But we need to understand that this vagus nerve optimization is really one of the most powerful medicines, one of those powerful tools that we have to really heal from trauma and emotional stress.

So when should we be doing this? I would say all the time. If you have a mental health condition, psychological trauma, have experienced an adverse childhood experience when you were younger. Even more important to do it every day because it takes a lot of work.

Once our vagus nerve is dysfunctional, it can take a lot of work to really move out of that, but it's possible and very doable. But I would say and I would encourage parents who are listening and practitioners who are working with children. The more that we can make the vagus nerve work a part of our daily routine, the more that we can become resilient. Not just at an emotional level, but at a cellular level. So that any insult, any injury to our cells that we encounter, our cells are able to much more quickly move through all of those phases of the cell danger response back into health. So I think that there's really not ever a bad time to start that work.

Niki Gratrix: So in the first two phases, is it the vagus vagal tone has got knocked out, it's become low vagal tone in the first two phases? And then if the vagal tone is still low in phase three, that's when it can't get out of phase three, and that's why we need to ramp up vagus nerve again. And that will help reconnect all the cells so they're speaking to each other again? That's my understanding.

Dr. Elisa Song: In a way. I think if the vagal tone is high or low, it's something you can have signs of both, it's just more dysfunctional. Because there are times where you can have vagus nerve dysfunction and be in kind of a low sympathetic state, adrenal fatigue.

There are times where for most of us, we're in the high vagal tone state with fight or flight in that sympathetic response. And we can't really, in this day and age, just yet say, well, well, I'm in phase one right now, so I'm going to do X, Y and Z, and I'm in phase two right now.

Through a functional medicine approach we actually do in phase two. And we have to presume that our kids, if we're an adult, if we have chronic health concerns, we're probably stuck in some way in all of these different phases. So we need that, we need all of that work in that first stage we need to reduce inflammation. And if there's an infection driving our anxiety, let's say, for instance, in PANS and PANDAS, we need to deal with that.

In phase two where our cells in our body are doing everything they can to restore metabolic balance. That's when those functional medicine interventions like healing the gut, healing your hormones.

Niki Gratrix: Supplements.

Dr. Elisa Song: Yes supplements to improve your immune functioning are so important. But then this last piece, the vagus nerve is where we're going to really get kids and adults to move out completely. Because what I've found in the past, before I was really doing a lot of vagus nerve work and mindfulness, meditation recommendations for kids.

We could get our kids well, quote, well, maybe even into, quote, remission from whatever they were going through with functional medicine approaches, but we wouldn't necessarily keep them there. And this is what we see for a lot of adults, right? With function medicine, yeah, all of our supplements, and our interventions, and our testing.

We can get them better but then at a certain point, either they're stuck and not getting better all the way or they get better, but they keep getting sick again, better getting sick again. So my goal is to really figure out, how do we get kids well and keep them well?

Niki Gratrix: Fantastic. So I'm just gonna come back, draw back, big picture here, and also speak to some of the psychology community as well.

So they might have had an early life stress, could have had a trauma, could be having trauma childhood. I've had that, obviously, I have kids in that state as well.

The first thing in stage one, is we want is part of the healing of that, it changes. If you have trauma, it doesn't just have to be emotional trauma, it can be mold toxin, could be heavy metals, could be chemicals, could be all of those different stresses and infections, as you've mentioned. That starts phase one of the cell danger response. We want to get out of phase one by taking the source away of what could be the toxic source away.

Stage two is like rebuilding the body, so we start doing what you say, the functional interventions to repair what's happened at the physical level that may have started emotionally.

And then I love that because step three, well let's get into the vagus nerve. I mean, the vagus that is the communication between the brain and the body. So we're bringing the brain back online.

It's like a full circle, maybe something that started as emotional trauma, goes through this whole journey at the cellular level. Only for us to have to stimulate the vagus nerve to get the brain and the body all connected up and back online again. So I love that.

Dr. Elisa Song: Yeah, that's beautiful. That's beautifully put and what I would also say in that first stage of removal, removal doesn't mean avoidance.

Niki Gratrix: Right.

Dr. Elisa Song: Avoidance, as you all know, listening is one of the least adaptive forms of coping. And unfortunately for our children, what they're learning and what many of us have learned as adults at this point is that avoidance is the only tool we have.

Pretending like the stress isn't there or as parents making life, too, quote, easy for our kids and not allowing them to face stressors and traumatic events. But instead just trying to take it away, if school's really stressful, well, I'm going to see if my kids can get a lighter workload, or if there's absolutely bullying that needs to be dealt with. But the answer is not necessarily then changing schools.

I mean, we have to figure out a way, even within the context we want to keep our kids safe. But safety doesn't necessarily mean, and resilience doesn't necessarily mean avoidance. And that's where going through the cell danger response successfully, experiencing emotional trauma, coming out the other end, better, thriving at a cellular and emotional level is really key.

Because what Dr. Naviaux describes is when we can go through the cell danger response successfully, those cells actually remember how to do it even better the next time, they literally build cellular resilience. That's something called mito-cellular homeostasis all of the science geeks out there. But even still, that's why, as we go through emotional trauma, emotional stresses and we overcome them, we become more emotionally resilient, our brains become more resilient, our cells become more resilient.

So I do want parents to understand this, because stress is not a bad thing. How we manage stress is what we really want to make sure it is productive.

Niki Gratrix: That's such a good point. It's quite interesting that I also, applying that on more of the physical side, you'll do the psychology side. I think applying some of that on the physical side, we do want to unburden ourselves of the unnecessary toxins and things like that.

Let's avoid the chemicals, let's filter our water, that's all great. But then again, we can get into avoidance patterns around food and we can even get psychological avoidant symptoms towards, I can't eat that because it's going to do this, that and the other.

In my experience, when you do this truly holistic approach, and you bring the vagus nerve back online. Yes, it might be a temporary period where somebody may need to do a short term kind of limitation. Maybe they need to do the paleo diet, maybe that is relevant and needed. I have actually found that as you truly heal somebody, you're not meant to be on a paleo diet necessarily for the rest of your life.

The aim for me with what I've seen with clients now, is that we can get people fully back up and they start eating more of a Mediterranean diet, shock, horror. As long as they can manage their stress. I think, quite honestly, the whole paleo movement, I'd be very interested to hear what you think of this.

I love paleo diet, it does great things for people but I think if people aren't managing things like circadian rhythm management, they're not resolving emotional stress, and that's the reason why the guts have gone out of balance, the vagus nerve link. Then they have to restrict the food to the rest of it and then they're not getting the vagus nerve back online. And these other interventions that go beyond diet, beyond supplements and if they get that piece in, to your point, you've become more free in your life.

You can live life more because you can face the stresses, you can eat more foods and you become resilient again.

Dr. Elisa Song: Yes, absolutely. And there is going to be a time where we do need to think about these functional medicine approaches.

Because in that phase two, it is the metabolic derangement in the cells that we see with vitamin D deficiency, and gluten intolerance, and gut dysbiosis, and all of those things that we know from functional medicine can make a huge impact.

Where we have trauma and psychological stress, supporting the gut microbiome is key. So it's not an either or but absolutely. I mean, my goal for kids is not that they are on supplements for the rest of their life.

Now, there are some foundations I think that most of us could benefit from, an omega 3 fatty acid, essential fatty acid or fish oil, Probiotics and vitamin D. I mean, those are the things that I focus on for me and my family. And then at times when we're sick with whatever X, Y or Z, we might add a little more. But the goal is to really get back to this way of living, this diet and lifestyle that works for us. There's not one single diet that works best for everybody; it has to be individualized.

And then, as you said, the circadian rhythm. I mean, when we're sick, whether it's with the mental health disorder or a physiologic illness. Circadian rhythms can become so disturbed. But sleep, I mean, that is why Dr. Naviaux in describing the health cycle, sleep is so, so important for us to stay well and when we're sick to get well. It is really in sleep that our brains detoxify, our immune system kind of cleans itself out, kids literally grow in their sleep. It's actually true sometimes that you wake up, you're like, wow did you just grow an inch in your sleep?

So sleep is so restorative and so healing and that has to be a priority. I mean, the vast majority of at least in America, of children and adults are so chronically sleep deprived and it's no wonder then that these toxic insults that are around us every day, and we should have the resilience to kind of brush off.

That we're not able to because in our sleep, we're just not getting the right amount of sleep and the right quality of sleep to help us heal.

Niki Gratrix: That's so true. And it's very interesting, you mentioned Dr. Robert Naviaux. We talk about him quite a lot in this summit. And I think the fact that he's a hardcore conventional mainstream researcher.

The ex-president of the Mitochondrial Medicine Society and in his paper, he literally says sleep is medicine.

Dr. Elisa Song: Yes.

Niki Gratrix: Yes. Thank you. Like the conventional people are getting it. Sleep is medicine. So let's talk about all the ways that we can stimulate the vagus nerve, and we could throw in a bit of circadian rhythm. Because I think circadian rhythm management does also probably stimulate, it supports the vagus nerve probably as well, we could chuck that in too. But fire away, what are all the ways that we should all be doing it?

Dr. Elisa Song: There are a lot of ways and I should have brought some of my tools to show you, there just in the other room but I'll describe them to you, I have some little show and tell. But the first thing that, for parents, practitioners, if you are looking at your kids, if you're looking at yourselves, looking as a practitioner at your patients in front of you.

You can see telltale signs of vagus nerve dysfunction and most of the time kids are going to be in that fight or flight, that sympathetic fight, flight or freeze. And so when you really look at them and you look at their eyes, you will see that their pupils are dilated. That's what happens when we're in that alarm, alert state. We're getting ready to run, our pupils dilate so we can see even in the dark. So oftentimes kids, when they come in, I will see very dilated pupils even when it's bright. And then the other thing to really listen to, it's fascinating, but I'm sure many of your speakers have spoken about something called heart rate variability. And that is one of the best measures of calm, quiet, coherence, I mean, whatever you want to call it. But it's actually a great measure of physiologic and emotional health when you have normal heart rate variability.

Now, one thing that we can do, just as a very crude way to assess, are we in a state of good heart rate variability? Is to listen to your heart rate while you're taking a deep breath in and a deep breath out. There is something called sinus respiratory arrhythmia which is very, very normal for children, it can be even more marked than in adults. But as we take a deep breath in and you're listening to your heart, you're feeling your pulse, your heart rate should speed up. And as we exhale slowly, our heart rate should slow down, so that's a very easy way.

When I listen to kids and listen to their heart and their lungs when I haven't taken a deep breath in and out. I'm not just listening to their lungs I'm listening to see what their heart rate is doing. And if their heart rate is just fluttering at a constant fast pace and not varying as they breathe in and breathe out, they're not in good heart rate variability.

Niki Gratrix: Interesting.

Dr. Elisa Song: And so that is something as I've done some vagus nerve work with kids in the office. Literally within five minutes, you can see their pupils start to get less dilated and their heart rate variability, their sinus respiratory arrhythmia starts to improve.

Niki Gratrix: That's amazing.

Dr. Elisa Song: Respiratory sinus arrhythmia. So really look for that and listen for that. So one of my favorite ways to teach kids how to really engage their vagus nerve is breath work. Just that deep belly breathing, that diaphragmatic breathing.

There are really great ways to teach kids how to do that, I wrote a blog article just on that because it's not just breathing. And you also want to watch your clients or your patients when they're breathing, are they breathing with their shoulders? So many parents and adults have forgotten how to breathe with their diaphragm and really breathe with their bellies, expand their bellies and their chest fully, and then as they're exhaling their bellies, like a balloon deflates. Somewhere along the way, we've learned to suck it in and breathe with our shoulders, which is not the way to get a healing diaphragmatic breath.

But that belly breathing really does increase heart rate variability. For kids there's a really fun video with Elmo they can look up on YouTube with Colbie Caillat, the beautiful singer and Carmen, who's a rapper, and they do a song about belly breathing, which is super fun to watch.

I always like to give parents and kids practical tools. So my son, who's 8, loves that the app for kids is called Stop, Breathe, Think. And it's an animated app that has multiple, quote, missions that are just several minutes long, not very long. And one of the missions is called square breathing, where there's this little fish in an ocean. The fish is just going along the square and as the fish goes up, you inhale, then you hold your breath at the top. And then you exhale as the fish is going down and you hold at the bottom.

Niki Gratrix: Yeah. I'd like to do that.

Dr. Elisa Song: That's for older kids. In fact, a 12 year old boy turned me on to this app. And so for older kids and teenagers and adults, there's a breathing app called Oak, like the Oak Tree that can just guide you through some breath work. And my favorite, I start every morning off.

I'm sure many of you have heard of Insight Timer, which is the free meditation app that you can download for your smartphone. But I will have kids in the office, if they have a phone and the parents too, download the Insight Timer app. Which just looks like a meditation bowl and gets it down and then bookmarks my favorite breathing meditation. It's by Meghan Winckler, I'm going to show everyone this, Meghan Winkler, five minute breathing meditation, only five minutes, right.

Niki Gratrix: Yeah.

Dr. Elisa Song: And I tell parents and kids, if you don't have time for five minutes, it's because you don't want to. This is another way to really get that in, so there's the belly breathing another. There are a couple of other ways that are really, I would engage the whole family in this, but laughter. They found that laughter yoga can increase heart rate variability. Now, you don't have to do laughter yoga. But even just forced laughter actually does work, too, making yourself laugh.

Niki Gratrix: Yeah fake it.

Dr. Elisa Song: The power of positivity or you fake it till you make it. But laughter really, really has been found to consistently improve heart rate variability.

So I know sometimes when you're anxious and worried or sick, laughter is the last thing you want to do. But really and truly, if you can find something every day to have a big belly laugh over, with your kids, then please do it.

There's even been a study, there was a study of college students, there's something called the Duchenne smile, which is the true smile of happiness. And that smile engages all the muscles around your mouth, so you're lifting up the corners of your mouth and you get your crow's feet right, your nice little wrinkles on your eyes that are happiness lines. And so

that's a true smile of happiness that also engages our vagus nerve. And so they took these three groups of students and gave them the very same, difficult, unpleasant task to do. And one group they instructed to really try to have Duchenne smile the whole time on their face while they were doing the task. Another group was asked to hold a chopstick in-between their teeth to fake that Duchenne smile and then the third group wasn't really given any instructions.

So what was fascinating was that the group who had the real smile and also the group with a fake smile, with a chopstick in between their teeth. They both found the task to be not nearly as unpleasant as a group that didn't have that smile on their face. The task was easier, more pleasant, and they accomplished it more effectively and quickly.

So again, fake it till you make it. But really you want it, every day if you can, if you find yourself with that frown on your face. I mean, sometimes I will find myself in that stressful situation. And I can tell my face is frowning and I just have to force myself to smile, but it really does make a difference.

Niki Gratrix: Great.

Dr. Elisa Song: Gratitude, loving, kindness, meditation. There is science to this, that it can increase heart rate variability in this time as we speak, where we're in social distancing. And very likely by the time the Summit airs, we will continue to be in many places social distancing. We can't let that mean social isolation, it has to be a physical distancing, but not a social distancing.

Niki Gratrix: Thank you. Yes. Yes.

Dr. Elisa Song: It is so important to stay connected. And what they found there, again, college students are perfect subjects, right? This group of college students had them repeat this loving kindness meditation that I have been doing every day, because it can increase heart rate variability, which is what we want. It can also increase a greater sense of connectedness with others, which we so need during this time. And increase those positive feelings of joy and calm and hope, which is so needed right now.

So when we do this loving kindness, meditation, these students do it for six weeks every day. The first key is to really extend that loving kindness to yourself. Because so often it is our own self-talk that is way more toxic than anything else we're experiencing.

So first we sit, extend loving kindness to ourselves and really repeat ourselves in earnest and believe it. "May I feel safe, may I feel happy, may I feel healthy, may I live with ease." And then once you do that, you think about your friends and your family, your community, those workers in the front lines, the world. Because post Covid my goal and my wish is that we are a stronger world together, united.

And so they extend that loving kindness out to each and every person out there that you can think and envision. "May you feel safe, may you feel happy, may you feel healthy, may you live with ease."

And that, just doing that, I mean, it's amazing, even if you're in that stress state, if you can extend that loving kindness to yourself and to others and have a little grace, it really does make a difference. And imagine if we collectively did that as a world together every day.

Niki Gratrix: Yeah. And boy do we need that right now. We've got a little bit more time to do that right now. So maybe you can use this to reset ourselves and we know we're physically healing ourselves at the same time isn't that an incredible thought. This is cellular healing, this is the proof, here it is, here it is guys, this is what we're all looking for with this mind body connection. This is the explanation about how these mind body interventions heal at the cellular level. I just realized that it's really important for this Mind Body Summit to kind of go, why do we keep talking about the CDR response and the vagus nerve? Because that's it, guys, that's right, this is the next phase, the future expansion of functional medicines as we will bring in the ways to do the vagus nerve. Any other tips or final thoughts or more tools?

Dr. Elisa Song: So tools for practitioners especially. But this is a tool that parents can use and kids can use, I've had kids use this too. I've mentioned Heart Math, but that is a very, very powerful tool. And right now, Heart Math is offering free videos and instruction on how to engage your vagus nerve. To really get into that state of coherence and optimize your heart rate variability, even without the Heart Math app. So this is a tool, this is an ear clip that just goes on your ear and it plugs into your smartphone and finds the free inner balance app and this, it measures your heart rate variability. And what you can see, what happens is you will see this flower contracting and expanding and you slowly inhale as it expands, exhale as it contracts. And it measures your heart rate and also measures the heart rate variability.

Remember that respiratory sinus arrhythmia where a heart we should speed up when we breathe in and slow down when we exhale. And this is a great biofeedback instant tool for kids and adults to see, am I in a state of coherence? Mine is not doing it right now, it's probably not set up, but you can see this black dot there. When you are in that coherent state, it will turn green, that's cool to be in the green state. When you're kind of medium, it will turn blue and if you're in that state where you're stressed and your heart rate is not variable, there'll be red. So you get that instant feedback of, how can I breathe? Why do I feel like I'm in coherence? So that when you get stressed, even if you don't have your phone with you, you can get back to that.

Another tool that I love for practitioners, but also I teach parents is ear acupuncture. Now, I don't expect parents and those who are not trained in acupuncture to stick needles in people's ears. But you can use, there is a stimulator, electro stimulator that I use, it's called the Stim Plus Pro. It's a really small handheld device that can find acupuncture points and they offer training on their websites too. But they have found that stimulating some of the ear points. I'm going to say them slowly. So one point is called shenmen, that's also called the spirit gate, but shenmen, s h e n m e n. Another point called the sympathetic point, and another point called Point Zero. If you stimulate those with either needles or E-Stim, then it's been found to increase heart rate variability and act in a very similar way to vagus nerve stimulators. And we can't really find vagus nerve stimulators that are, I haven't found one, that is really affordable or practical or even accessible to patients and so this is such a fantastic way to do that.

And if you don't have the device, you can also actually get little Ear Seeds. And in fact, there's a company called EarSeeds.com that has these little 24 karat little beads that you can apply to those points and massage those points when you need a little extra calm, so a little physical tool there. There's not as much data on the Ear Seeds, but I know I've used them. I had to give a big talk to a huge audience one time and of course, you tend to get a little bit anxious right before I had those Ear Seeds. And they're inconspicuous little gold balls that you can barely see and I massaged them and it so helped.

They also have kids for Bodi and Kenzie, when they need a little extra calming. They have little Swarovski crystal ones in rainbow colors. So I just let my kids choose which color they want and then we put it on and so they get a little extra bling. So just some practical things that you can do right there.

Niki Gratrix: That's amazing. I will add one little, just a contribution to this. I might have found a vagus nerve stimulator. I had no financial connection with a company that is affordable, it's about five hundred dollars. It's called Modius Health, ModiusHealth.com and it is being marketed as weight loss, or they're just about to redo it for sleep.

But when you stimulate the vagus nerve, there's so many benefits you get to pick one. So it's really a great device, it works simply with an iPhone or a smartphone. And all you do is you connect two electrodes to the back of the ear. It stimulates the vestibular nerve, which in turn stimulates the vagus nerve, so it's actually vestibules stimulation.

There are good, really good science papers on the website as well. Because I talk about the vagus nerve a lot, people ask me all the time and I've been using this for months now. It has changed my tolerance of supplements, it's changed my sleep. My clients are sleeping better, they're less reactive to things. I'm finding for me it worked and my clients.

Dr. Elisa Song: I love that.

Niki Gratrix: I thought because it's not being marketed. You just do one hour a day and you can do other things, you can be sleeping and everything. So I just wanted to get that out there to more people as well.

Dr. Elisa Song: Oh, thank you. That's amazing. The more we can do, I mean not that we want to do everything passively, but let's face it. I mean we're all busy and honestly being in, at shelter at home right now, life is not less busy.

In fact, for many of us, life is more busy because we're trying to work from home, and homeschool our kids, and really manage in a much more stressful environment. So the more that we can have passive tools that supplement our active tools, so that we don't always need that passive tool, even better.

Niki Gratrix: I agree. EMF exposure, all these things that are stressed on us, it is more stressful than it used to be, so a few extra tools.

This is where technology, I love technology when it can be used positively in this way. We've got our iPhones, we're using them to calm down instead of the opposite. So very, very good.

Dr. Elisa thank you so much, it's been a really great interview, so many practical tools, brilliant science as well. Any final words of wisdom, a final word of wisdom for our audience?

Any final comment you'd like to make?

Dr. Elisa Song: I would say that really we can't underscore the power of resilience in ourselves and in our kids. We really need to trust that no matter what state of health you're in, our bodies are meant to be resilient, our bodies and our brains are meant to heal and to thrive. And really they're trying their best to be well.

And so if you can find the tools that help you just give your bodies and your brains that little extra nudge, you can get there.

This is where the hope is so important, the hope, the mindset, whatever you want to call it, but just trust. Trust that you and your kids can be well, trust in your emotional resilience and trust in your physical resilience.

Niki Gratrix: Thank you. That's wonderful final great words of wisdom.

So Dr. Elisa, where can people find more about you? What's your website address? Any event you've got coming up? Anything you'd like to share just with that?

Dr. Elisa Song: So the best place to find me is on my blog, my holistic, integrated pediatric blog, it's called Healthy Kids Happy Kids. So that's www.healthykidshappykids.com and I published, I try to publish really relevant articles, once or twice a month and send out only relevant information to the parents and to practitioners who are working with children.

And then I post a lot more information and fun information, but also great kinds of medical resources and advice on my Facebook page and my Healthy Kids Happy Kids Instagram page.

If you go to Instagram, it's [@Healthykids_HappyKids](https://www.instagram.com/Healthykids_HappyKids) and then Facebook if you just search 'Dr. Elisa Song' or 'Healthy Kids, Happy Kids', you'll find me.

But those are the best ways I'd love to stay connected with you guys. The children really are our future and we want to make sure that they have a beautiful, thriving future. So if you work with kids or have kids, definitely I look forward to connecting.

Niki Gratrix: Thank you so much, Dr. Elisa. So there you go to the audience, another amazing episode in the Trauma and Mind Body Super Conference. So thank you, Dr. Elisa, and thank you everybody. See you in the next episode.