Mind ↔ Body

& the Vagus Nerve Connection

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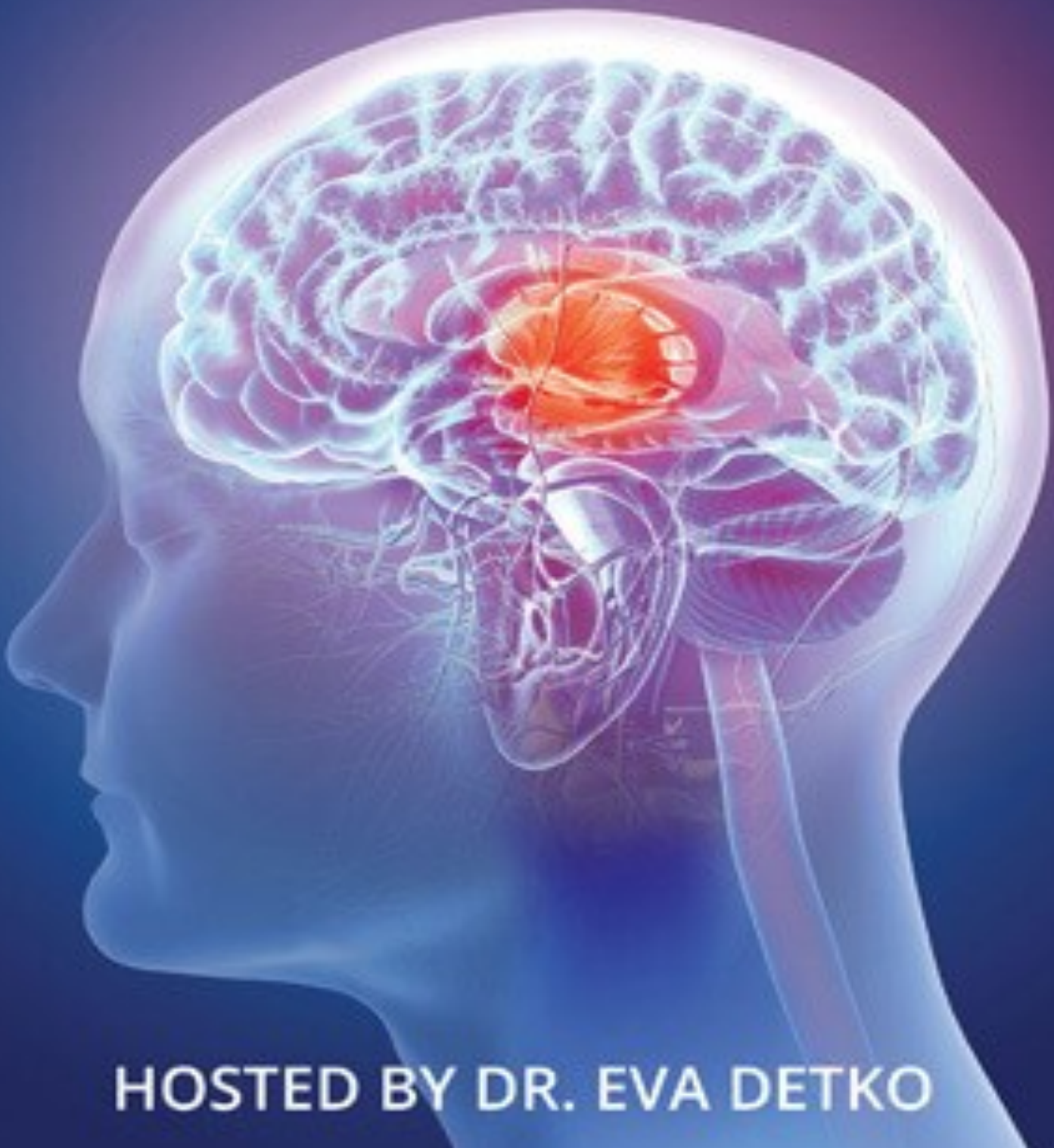

HOSTED BY DR. EVA DETKO

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Symptoms and Root Causes of Vagus Nerve Dysfunction
Guest: Dr. Navaz Habib

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Dr. Eva Detko: Hello and welcome, thank you for joining me for the Mind Body & the Vagus Nerve Connection Summit. I'm your host, Dr. Eva Detko, and my guest for this session is Dr. Navaz Habib.

Dr. Navaz is the founder of Health Upgraded, a functional medicine and help optimization clinic in Toronto, Canada, working with high performing professionals, athletes, and entrepreneurs in identifying the root causes of health imbalances, and addressing them naturally. These patients experience optimal health the way their bodies were meant to feel. Dr. Navaz is the author of Activate Your Vagus Nerve, which is a simple to follow guide to help you optimize your productivity, focus, and energy levels, and to allow you to experience the effects of upgraded health. So Dr. Navaz, welcome to the summit!

Dr. Navaz Habib: Thank you so much for having me. I'm excited to be here.

Dr. Eva Detko: I am excited as well because I personally think that you're an ideal person to open this summit, because you've got a brilliant book on the vagus nerve, Activate Your Vagus Nerve, as I said in the intro. And I think it's one of the best books out there on the vagus nerve. So I'm very excited that you're here and you're going to talk the viewers through the different aspects so we can have a bit of an overview before we go deeper into all of those aspects of the vagus nerve with speakers in those separate sessions.

But what we're going to do here today is to give people this sort of bird's eye view of what this is all about and why we're doing this summit. So let's start by introducing the vagus nerve, telling people what it is, and maybe anatomically where it is located as well.

Dr. Navaz Habib: Of course, and thanks for starting off with this. I really do think it's an important place to begin, so I'll just jump right in. The vagus nerve is that nerve that we don't realize has so much of an effect on our body, positive and negative. When it's working, obviously, very positive. And when it's not, it can have very negative consequences. The reason for that is the vagus nerve is connected to, and a lot of people don't believe this until they actually see it, but it's connected to essentially every single organ in our thorax, which is our chest area, and every organ in our abdomen, every digestive organ, every detoxification organ.

It's essentially the highway, the information superhighway, getting information to and from those organs and the brain. And so when we look at its physical location, where is it located? Well, the vagus nerve spelled VAGUS actually begins in the cranium. It's one of the twelve pairs of cranial nerves. So we have 12 nerves that begin in the brain stem, essentially right below the brain, just at that top area of the spinal cord almost. And those nerves generally will stay within the face and the neck area, and they'll stay within the cranium. And the tenth nerve of those numbered pairs is the vagus nerve. And this is the only nerve that actually leaves the cranial cavity and goes into other places.

It has so many different effects. It's called vagus, because the word vagus comes from the word wandering. So essentially, it goes to so many different places. This was something that anatomist, when they were studying this couldn't believe, that there was a single nerve that came from either side, there's one on the left and one on the right, that came down through the carotid sheath, which was very important, we'll talk about that in a moment, and it goes down to all of these different organs and it sends information to and from.

Now when it comes down, out from the brain stem, it goes down through the neck, and specifically is attached to, or right beside, the carotid artery and the jugular vein. We have a carotid artery and jugular vein on either side of our neck. And those are the blood vessels that take blood directly from the heart to the brain, and back from the brain to the heart. Those are the most important blood vessels in regards to brain function and the ability for our nervous system to do its job. And inside that sheath are those two blood vessels, as well as the

vagus nerve. So it really goes to show just how important the vagus nerve truly is in creating health and actually having optimal function in that nerve.
And actually, prior to going into the neck, it's going to send a branch to a part of the ear. It's going to send branches to the back of the throat, to the vocal cords, the muscles around the vocal cords. It's going to send branches as it comes down into the thorax, to the heart, and to the lungs. And it's going to continue on down beside all of these organs, down beside the esophagus and then pass into the gut, into the abdomen, and it's going to attach to the stomach, the small intestine, the large intestine, the pancreas, the liver, gallbladder, kidneys, spleen. And that's just how important the vagus nerve truly is. And that's just a basic overview of its anatomy.

Dr. Eva Detko: Excellent. And I think it was important to share that because we want people to have a very clear picture of what we're dealing with here. And that was very well explained. So thank you for that. So let's talk about the functions now, because they're so wide-ranging that it is almost hard to believe that one nerve could have these many functions, or one "anything" in the body can have this many functions.

Dr. Navaz Habib: Certainly, and the functions are wide-ranging, and essentially as diverse as the organs that it attaches to. Each one of the organs that it attaches to is going to have a different function. But let's talk about specifically what the vagus nerve in terms of information sends to each one of these areas. So about 80 percent of the information on the vagus nerve is actually coming from all of the organs, from the gut, from the liver, from the heart, from the lungs, and going up to the brain, telling the brain what's going on. These are called afferent, AFFERENT, signals. Signals coming from the body telling the brain, as status signals, telling it what's going on in each organ.

This is all also a really important thing to remember because that is the gut-brain connection, the physical connection of the gut and the microbiome to the brain. So very, very important function in that 80 percent of what's going up. We also have about 15 percent of the information going from the brain to each one of those organs specifically. So it's going to the heart, telling the heart to slow down, bringing down the heart rate, get to a point where it's not beating too fast. It allows us to come down using what's called the parasympathetic nervous system, which is a branch of our autonomic nervous system.

Now, dig a little bit deeper there. The autonomic nervous system is essentially the nerves and the connection between the brain and those organs that we don't consciously have to think about doing. So I'm not consciously thinking about

beating my heart. I'm not consciously thinking about breathing at this moment, or detoxifying, or digesting my food. I'm not consciously thinking about those things, but they're happening anyway.
And so our body has this automatic system called the autonomic nervous system that allows these things to occur. That autonomic nervous system is broken down into the sympathetic nervous system, which is the fight-or-flight response. This is our survival mechanism. It's necessary to have. It makes sure that we are alive and making sure that we are surviving. But it's not the thriving side. The parasympathetic is the opposite of the sympathetic, and that is the rest-and-digest system. And that is mediated through the vagus nerve.

And so we get signals in that 15 percent of information that's going from the brain to each of these organs as parasympathetic innervation, or parasympathetic information, helping to decrease our heart rate, helping to decrease our breath rate, helping to increase blood flow and digestion in our stomach, our small intestine, our large intestine, our pancreas, our liver, our gallbladder. And our spleen to help filter our blood, and our kidneys to help filter out the water and the blood as well. So essentially what it's trying to do is, allow us to thrive and recover from the stressors that come up when we are under stress.

And so the functions of the vagus nerve are 80 percent coming up from the gut and all of the other organs as status information, 15 percent coming from the brain, telling the organs that we are in a rest-and-digest state, that we want to function and we want to be optimal. And then there's two other little functions, and these are the ones that are important when we want to actually activate the vagus nerve. And so the first one is about 3 to 4 percent of the information is being sent from the brain to the muscles of the back of the throat and to the muscles around the vocal cords.

Those are really important because those information signals are actually stimulating my vocal cords right now. The reason I have any pitch or tone in my voice is because the vagus nerve is working. So one of the most common signs I'll see when a patient comes in, or I'm talking to them online, is that they'll have a very monotonous voice, and not be able to really raise their pitch or tone.

That is a sign that their vagus nerve is not working optimally and that they're actually having trouble getting to that parasympathetic state, that their body is remaining in a very stressed state. And that last little bit, that last little 1 percent of information, is actually from the skin of the ear, just on the inside area of the ear. That's sending information to the brain. And this is really cool

because we can use that information, we can use that innervation to help stimulate the vagus nerve using specific tools, which we can talk about later.

Dr. Eva Detko: Fantastic. I love it. That's a very good, clear explanation. Fantastic. I think that people are starting to get a really good idea on the importance of maintaining healthy vagus function. And what I wanted to also do is to give a little bit more of a background in terms of how the vagus nerve actually works. In fact, how nerves work, period. So what needs to happen for a neuron to have an effect on cells? That would be useful. Obviously not too much detail with that, but I think it's important to understand how it actually works.

Dr. Navaz Habib: Of course, that's a great place to start for those who don't have a lot of understanding of nerves and the nervous system. The way that our body send signals is from an electrical charge that comes up in a specific area of our brain. And that specific area of our brain lights up and there's electrical and biochemical activity occurring. And what happens is that electrical and biochemical activity stimulates from one cell to another, one neuron to the next through a space called the synapse.

And so an electrical charge actually passes from one neuron along its long axon, which is the really long fibers that allow it to be a single nerve that sends signals from long distances. And that electrical charge passes across the neuron. And then it comes to a space called the synapse, where it's going to send that signal using neurotransmitters from one cell to the next. And in the case of the vagus nerve, the neurotransmitter that is used is called acetylcholine, ACh.

And so what happens is as that electrical charge gets from one nerve to that synapse, it's going to stimulate release of that acetylcholine into a small little gap, where these neurons are then stimulated on the post synaptic membrane. The synapse essentially sends this information to the other cell, onto receptors. And that's how we start a new electrical charge on the next neuron, which is going to send information to the next cell.

That doesn't just happen from nerve to nerve cell, from neuron to neuron. That actually happens from neuron to any cell that it's going to innervate. So in the case of, for example, my nerve to muscles. For me to go and pick up my pen, I'm going to send a signal from my brain. I'm going to make a decision that I want to pick up my pen. And that signal is going to be sent to my motor cortex, and my motor cortex in the part of the brain is going to send a signal down through the axon to the muscle, and all of the muscles that are necessary, for

me to extend my hand to pick up the pen, and to pinch it. And that's how we send a signal from the brain to the muscle.

In the case of the vagus nerve, those signals are simply being sent from the brain to the organs, or from the organs to the brain. Or in the case of muscles to the neck and from the skin to the brain as well. It requires electrical activity. It requires a charge that moves relatively quickly from one side of the nerve to the other, or from one side of the neuron to the next. And it requires the release of neurotransmitters, or biochemicals, that help to signal on the next cell what's going on.

Dr. Eva Detko: Yes. Excellent. Wonderful. So, yes, of course, our bodies are electric and therefore a lot of the strategies and approaches that we take to health should also be along those lines. It's not just about biochemistry all the time, isn't it? So you mentioned one of the symptoms and that is a monotonous voice. So when somebody can't project, they're trying to get their voice out, it doesn't quite happen, so we know that's one of the symptoms of vagus nerve dysfunction. But perhaps you could follow up from this and talk about other symptoms of vagus dysfunction?

Dr. Navaz Habib: Certainly. So when we look at essentially what would be a sign that the vagus nerve is not working correctly, what doctors are going to pick up on when they're assessing you. What I look for when I'm talking to a patient is, I'm looking for the organs that are innervated by the vagus nerve, not functioning optimally. So I'm looking for the function of the gut. I'm looking at heart rate being very high. Essentially, numbers over 70 - 80 beats per minute are signs that we're not getting enough of that activity, or that nerve information, through the vagus nerve to calm the heart down. When our breath is very shallow and generally focused on chest breathing rather than belly breathing. And we'll talk about breathing down the road.

When I see that people's gut function is a little bit slower. They're having trouble digesting food, when their stomach doesn't work. There are certain specific conditions that will have these issues occur. And what we're not able to do when the stomach is not able to get that innervation from the vagus nerve, is it's not going to produce stomach acid. And so food often just sits in the stomach. And this is a really important thing to look at. So we're not getting movement of food along the digestive tract.

The next one is peristalsis. That we have slow motion of food through the small intestine and the large intestine. Or it can be the exact opposite and be really,

really fast. So one of the things that I look for is bowel transit time. I'm looking to make sure that food is moving along the gut from the mouth to the anus at an optimal amount of time. And that optimal amount of time should be between 12 and 24 hours. 16 is kind of that perfect number. If we can be at that 16 hours from when we eat to when it comes out, is what we're looking for.
The way to test this, a really simple test that I have my clients do is called the Bowel Transit Time Test, where we're going to use sesame seeds. And I highly recommend using white sesame seeds that you can get from any bulk store, organic where possible. You do your best to take a teaspoon, or a tablespoon, of it and put it into water and you're going to drink that water without chewing the seeds. Just let the seeds go. We don't have the enzymes and the ability to break down these seeds. And so they simply pass through.

So we're going to take a sip of that water with the seeds in it. And we're going to mark down the time that the seeds were ingested, that we took them in. And then what we're going to do is, we're going to look for it to show up in our stools, in the bowl. The best way to do that is to just keep an eye out. And when they're white sesame seeds, they're generally far more easy to see than, say, for example, black sesame seeds. This can also be done with corn, but I tend to stick to the sesame seeds because they're easier to take in.

And so what we're looking for is, when we first start to see those sesame seeds come out and when we last see any sesame seeds come up, when there's no more. And we're going to mark down those times. And the time between when we ingest to when we get rid of them should be around 16 to 20 hours at an optimal number. If it's anything more than 24 for anything less than 12, that's a sign that things are not working as well as they should be in the gut. So that's a really simple way to see from a functional perspective, from a functional medicine based perspective, that something is not working correctly. And those symptoms are signs that we're under more stress than we should be, and our gut is not working the way that it should be.

Dr. Eva Detko: So you're touching on some of the things that can indeed go wrong there. And excellent tips, particularly with the test. That's definitely worth doing. We need to know where we're at. Because too often people have actually, in fact, all sorts of digestive symptoms that they think that, this is normal. But a lot of this stuff that people experience, such as bloating, burping, things like that, they're not normal. They are a sign that something is not quite right. So fantastic tip with that one. So you started touching on the dysfunctionality, talking about the symptoms. So let's expand on this now and talk a little bit more about the different things that can go wrong with the vagus

nerve. All the things, such as dysfunctional breathing and dysfunctional digestive sequence, and so on.

Dr. Navaz Habib: So we'll start with the most common one that I see, is dysfunctional breathing. Oftentimes people have trouble breathing correctly and I did allude to it earlier, that oftentimes people are breathing using their chest. And oftentimes people have very tight muscles, their traps, their upper back muscles are very, very tight. And that's because they're using those muscles to breathe. So a really simple test that you can do and you can literally do it at this moment, is to put one hand on your chest and put your second hand right on your belly. And what you're going to do is, you're going to sit, eyes closed for a moment, and you're going to just take three deep breaths. And what you're going to do is focus on paying attention to which hand is moving. Is that your upper hand on your chest? Or is it the lower hand on your belly? So do that for three seconds and just kind of let those breaths come in and out.

And most commonly, people are having trouble breathing because they're breathing through their chest. Most of the movement, 70 percent of people that I've found, have more chest breathing than belly breathing. Now, if you're breathing with your belly, that's a very good sign that you're in a relaxed state and that your vagus nerve is probably working well, and that you're breathing correctly. But the vast majority of people are not breathing using their diaphragm, and the vast majority of people are breathing using their accessory breathing muscles more than their diaphragm. And that can be a sign. Because what happens with our body is there are certain inputs that tell us that we're under stress.

Now, for example, let's say you're sitting down at your dinner table and a tiger was to walk into the room, or a lion was to walk into the room. Immediately your body's going to say: "Oh, my goodness, what is happening?" And you're going to go into a state of fight-and-flight. And what that means is we're going into a sympathetic state. A state of being able to survive the threat that has showed up in our lives. So what's going to happen, our pupils are going to dilate, we need to be able to see everything around us. We need to be able to make sure that we can get away from the threat. What are all of our exits? These are survival mechanisms. At the same time, our heart rate is going to just skyrocket. Get up to 100, 120, 150 beats per minute for a lot of people. That's a sign that we're out of the parasympathetic and completely shifted to the fight-and-flight mode.

What else is going to happen is our breath is going to become very rapid and very shallow, and that is when we breathe through our chest. We're going to start to almost hyperventilate. And that is a sign that we're under stress. At the same time, we're going to shut down all of the nerve information and blood flow to all of our digestive organs, because at that moment when the tiger is trying to come at us, we don't need to worry about digestion, and liver detoxification, and blood flow to those areas. What we need is blood flow to our muscles so we can fight, and muscles to our legs so we can run away, fight and flight. It's our survival mechanism.

So when we breathe shallow, when we breathe through our chests, we're actually sending a signal to our brain that we are under stress, and we're actually shifting ourself from that rest-and-digest state into a sympathetic state of fight-or-flight. And we're essentially giving ourselves an artificial tiger walking into the room. This happens any time, let's say, for example, if your boss is to call you into their office, or your kids are screaming around you. Things like that are going to drive you to feel like you're under stress. And so it's very important to become very aware if you are artificially acting and putting yourself into a dysfunctional breathing state, because that's going to push you into that sympathetic fight-or-flight mode. So mindfulness of that is very important. So that's where dysfunctional breathing oftentimes plays a big part of this.

Now, for a lot of people, it's not conscious. We're not doing this consciously. And no time more so than at night. A lot of us have sleep apnea and don't even realize it. Sleep apnea occurs when our airway actually gets plugged up while we're sleeping, and we actually stop breathing for a period of time. That's a sign that what's happening is, there is a collapse occurring inside the muscles of the back of the throat. Either the tongue is falling backwards or the muscles are collapsing, and they're just not strong enough to handle the airway and keep the airway patent.

That's important because hypoxic events, events where we have low levels of oxygen coming into our body, are major stressors on our brain. Major stressors on all of our organs. And that dysfunctional breathing is a sign that our vagus nerve is not working well at all. So sleep apnea, or apnea at any time when we have breathing that is actually limited by physical blockages, is a sign that the vagus nerve is not working correctly. So a really important one to look at there.

Dr. Eva Detko: Absolutely it is. And you know, the issue is also that people can get on this vicious loop because the breathing may have been dysfunctional for them for a very long time. So maybe there was some early childhood trauma,

early life stress, and things like that. And we know that early childhood trauma makes you less equipped to handle stress. So even because of those sort of things, never mind postural issues, and stuff like that, but even that could mean that somebody may have had dysfunctional breathing all their lives.

So what then tends to happen is that they put themselves in the sympathetic state just because the breathing pattern is dysfunctional. So all the everyday stresses aside, they could be just feeling on edge all the time, just because they have that pattern of breathing. And then you go on that loop, because as you said, more feedback and then you feel more stressed, and then that again affects the breathing, affects the physiology, and so on and so on. So it's really, really fundamental to correct it if we're going to get anywhere in terms of improving vagus function, or just improving health overall.

Dr. Navaz Habib: Certainly, and dysfunctional breathing is one of the most common things that I'll see, whether it comes from childhood trauma, like you said, or simply just being conscious of what other people are doing around us. Oftentimes our parents don't realize, but when we're children, what we're doing is we're watching the way that they do things. And if you ever watch a baby breathe, I have a two and a half year old daughter, who is absolutely my favorite person in the world to watch because her motions and her breathing pattern is so pure.

It is just the way that we're supposed to be built. So when she was a baby, I used to just watch her breathe, and you would see her diaphragm and her belly raising. It was just the coolest thing. But over time, what tends to happen with kids is they start to actually have these conscious things saying: "Oh, my goodness, belly. My belly is a problem. I can't have a big belly." And we have sometimes these dysfunctional thought patterns that lead us to say: "No, I have to hold my belly really, really tight. I have to keep it in." And so we start to have to breathe using our chest. And so that dysfunctional breathing is actually the basis on which Pilates and yoga have been built to help people learn how to breathe properly again.

Dr. Eva Detko: Yeah, my PE teacher and my gymnastics teacher were the worst culprits for me in that respect because you always had to hold it in. It's true, it's true.

Dr. Navaz Habib: Definitely.

Dr. Eva Detko: So Okay, that's breathing and we just can't stress it enough that if you guys are watching and you're identifying that your breathing is a little bit dodgy, and that that pattern isn't right, to actually spend some time correcting that. It doesn't have to take an awfully long time when you actually focus on it. But once you reprogram your breathing pattern, then you're good to go because you will be breathing properly. And you mentioned breathing at night, we know some people get really good results with mouth taping.
Dr. Navaz Habib: It's funny you say that, I actually mouth tape every night, and I actually also make sure that I use some sort of Breathe Right strip, or something to help keep my nose open, because we should be breathing through our nose. Our nose is built as our breathing tube. Our mouth is our feeding tube. We have a back-up. The mouth is a back-up breathing tube. But we should not be consciously primarily breathing through our mouth. We should be breathing through our nose. And mouth taping is a great way to help train people to breathe correctly through their nose.

And when we breathe through our nose, it's actually a sign to our brain that we are calm. Because when we're under stress and we're running away from a threat like a tiger, we're tending to breathe through our mouth. When we're exercising at our absolute max, when I'm riding my bike, I'm breathing through my mouth. That's a sign that I'm under stress. Sometimes it's good stress, sometimes it's bad stress. But under stress, we breathe through our mouth. So if you're breathing through our mouth, we're telling our brain that we're under stress.

Dr. Eva Detko: Yeah, and this is the reason why I get feedback from clients who had difficulty sleeping that when they actually do this, their sleep will become more functional and they're actually able to sleep better. That's obviously the reason why, because they're now sending the right messages to their brain. Whereas before, they may have been lying in bed and not just even breathing through their mouth, but also have an overactive mind, the monkey mind, over thinking, and so on. And when they sent the right feedback through correcting their breathing with the mouth typing, everything comes down, the mind calms down as well, and then consequently sleep improves. So it's really quite a good tool.

Dr. Navaz Habib: Yeah, absolutely. That's a great place to look at. That when people are noticing those changes, when they're breathing through their nose, and they're more calm, and they're relaxed, and the vagus nerve actually can do its job, the parasympathetic system turns on, and our body is able to recover. Which is why people are able to sleep much more soundly, and those that sleep

more soundly recover better and are able to take on more stressors the next day. So sleep is actually a really great place to see if recovery is working well.

Dr. Eva Detko: Yeah, absolutely. It's that positive feedback, isn't it? So talking about dysfunctional sleep, do you want to elaborate a little bit what the connection is, and why that is such a big issue for the vagus nerve?

Dr. Navaz Habib: Yeah, absolutely. The sleep is absolutely imperative and we know this. We don't necessarily all have the exact same amount of sleep that we need, but we all need to be able to recover. And sleep is recovery. Sleep is when our body is able to handle and recover from the stressors that we've had from the previous day. And if we're not getting good sleep, then the recovery doesn't occur, and the next day we're just going to fall further behind and have more stress added on. And our body is not able to handle that.

So our organs start to get really tired when that occurs. So for sleep, a couple of the things that I recommend to people is mouth taping is a great one, and I'm glad you mentioned that earlier. I also recommend certain sleep hygiene habits to help improve your ability to calm down and get into a calm state. So deep breathing exercises right before bed where we're really using our diaphragm, it's a wonderful way to just get ourselves calm, get relaxed, get into a state of recovery so that we can then fall asleep. We all now are starting to realize the effect of blue light on our ability to recover. And blue light is a good thing in the daytime. But in the night-time it's a sign to not produce melatonin, which is necessary for us to get restful sleep and to recover.

So blue light is good during the day for a period of time when the sun is at its highest between probably 10:00 a.m. and about 3:00 p.m. But after that, that blue light and that ultraviolet light goes away, and the light becomes much redder and warmer. And that red warm light is a sign to our body that we need to unwind, that we need to de-stress. That we need to get to a point where the serotonin that we've produced during the day shifts to melatonin at night, and that allows us to get better sleep. So I know I've shifted a little bit into the hormones and the biochemistry a little bit, but melatonin production at night is necessary for vagus nerve function, and for recovery to occur during sleep. And sleeping in an absolutely dark and cool room is necessary to get optimal sleep and optimal recovery.

Dr. Eva Detko: Yeah. The temperature certainly has such a massive impact, and obviously light and as well as not eating too late, not exercising too until late. Those are other factors as well. So could we now talk a little bit more about

the connection with the vagus nerve and digestion? There's a major, major connection there. And not necessarily just microbiome, but also the impact on the liver, pancreas and so on.

Dr. Navaz Habib: Certainly. So that's the next big step when we're looking for things that can go wrong in the vagus nerve, but in any organ overall. We have to start with the gut. So when I look at the gut, what I'm looking at is function, peristalsis. Are the foods being pushed across the tubes in the right pattern at the right rate? And making sure that that is working. In the stomach, like I said earlier, we want to make sure that there is stomach acid being produced. So there's ways to assess these things. But if it's not functioning well, then we're not going to produce enough stomach acid, and intrinsic factor in the stomach. We're not going to have optimal peristalsis and movement of the bolus of food as it goes through the intestines. And we're not going to be able to get great information from the intestines up to the brain.

So we don't really get a great status update of what's going on with our microbiome, and the balance of what's happening with those bacteria, parasites, viruses, and yeast, that are living in the intestine, doesn't get up to the brain. So really important to look at gut function. Now, why that's so important is because about 70 percent of our immune system, the cells of our immune system by volume are located in the lining of the gut. And so our immune system is like our second line of defence. It's our major defender against things like toxins, bacterial toxins, food-based issues that are coming in that we react negatively towards. The inflammation is going to make sure that those things don't occur. The immune system does that, and it does so using inflammation.

Now, low levels of inflammation are good things, and necessary against toxins entering the body. But inflammation, when it's chronic, when it's uncontrolled, becomes problematic. And what is controlling that inflammation level, funny enough, is the vagus nerve. So that 15 percent of parasympathetic activation that comes from the brain and goes down to all of these organs has a very strong piece of it that is specifically involved in putting the brakes on the inflammatory system. It's called the cholinergic anti-inflammatory system specifically, and it uses acetylcholine, the neurotransmitter that is used primarily in the vagus nerve.

So what happens essentially is, we get a status update that something is breaking down, too much toxin is picking up in the gut, and we have maybe a leaky gut, for example, and some toxin is making its way into the body. And so

our body starts to produce an inflammatory response. Our immune system turns on. We send a signal to our brain saying: "Hey, this is going on. Tell us what to do?" And the brain processes that and through the vagus nerve, sends a signal to the gut to decrease inflammatory markers through using acetylcholine. So it's going to send the signal down to the gut, to the spleen to decrease macrophage activity, to decrease inflammatory cell activity. Essentially just put the brakes on it because we don't want it to be too strong.

Now, where that becomes a problem is if we have chronic inflammatory diets. If we have chronic small intestinal bacterial overgrowth, if we have completely imbalanced dysbiotic gut bacteria, when there's parasites that should not be present that are present and stealing nutrients away from us, when there is worms, or viruses or yeast, that are present that are causing breakdown of that gut lining. An over-activation of that immune system, that the vagus nerve can no longer put the brakes on and control.

Think of it like a car. If that inflammation is your accelerator, you are pushing that accelerator as hard as you can, inflammation levels are coming up excessively. And what we're trying to do with the vagus nerve is put the brakes, put the brakes, put the brakes. But the brakes and the brake pads are only going to work for as long as they possibly can. If the accelerator constantly is being pushed, then the breakdown is going to occur, and the brakes can't do the job that they need to do. And so the vagus nerve starts to have a negative reaction. And it starts to not be able to control the inflammation, it starts to not be able to send information to the rest of these organs. And that's how we get into the stressed states and decreasing function of the vagus nerve. So the gut play is really, really important. But when we get into the other organs as well, we can talk a little bit about that.

Dr. Eva Detko: Yeah. Yeah. Let's mention the liver and the pancreas as well, that's a good idea.

Dr. Navaz Habib: Certainly. So we know that the liver has so many different functions. For those who don't know, you can probably count it and it will be around 500 different functions in the liver. The liver is our master organ for making sure that things don't get in that shouldn't get in. It is our filter it is our detoxification pathway, it's our blood sugar monitor, it's so many different things all wrapped up in one. And that information that comes from the liver to the brain is imperative.

And what happens over time is, the toxins that build up, that come in from our gut, that come in from our environment, the stress that we put on ourselves, what that does is it actually causes liver function to decrease. And over time, what we see is decreased levels of glutathione, which is the most important antioxidant in the body. We see decreased ability to handle xylene exposure and plastics that are off-gassing in our environment. We see decreased ability to handle metals and environmental triggers from the personal care products that we use. And as those toxins build up, and build up, and build up on the liver, it shuts those functions down, and then the toxins end up getting to other parts of the body.
So it's very important that we limit the amount of toxin that's making its way to our body so that our liver can handle the function, so that it doesn't take on a major toxic burden. Sometimes we have genetic issues with this specifically, some of us have MTHFR gene transcription issues and we have different SNPs. So we have to be very careful with what's coming in because liver function is imperative to ensuring that we work at an optimal level that we're able to recover and we get that information to the brain. And I also talked a little bit of a blood sugar balance and the liver really is the organ that monitors blood sugar. And a lot of people are dealing with metabolic disturbances, insulin resistance, diabetes, type 2 especially.

And what we're talking about here is the inability to monitor accurately what's going on with sugar levels, blood glucose levels in the body. And the pancreas has a lot to do with that as well, because what the pancreas does is, it releases insulin in response to high blood sugar. So if the liver is not able to get that information to the brain, then the pancreas is unable to function at its optimal either. It's very important that the balance occur and that both of them are working together. So the pancreas is going to respond by producing insulin in response to high blood sugar. We're going to monitor that blood sugar in the liver, send a signal to our brain saying: "Hey, blood sugar is getting a little bit high. Let's get the glucose into the cells." So the brain then sends a signal, again through the vagus nerve to the pancreas to produce insulin in response to this.

Now, if our cells, for example, don't have the capacity to take on all of this glucose, then we're going to have trouble breaking down that glucose. We're going to have trouble reducing that blood sugar level. And over time, this leads to insulin resistance. So the vagus nerve is really important in making sure that, that function of insulin is optimal, that we're not overburdening the pancreas, and producing enough insulin to get rid of blood sugar.

So dietary levels of blood sugar are important, but also stress. And stress plays a major role in this. So when we're under stress, our bodies are producing neurochemistry, neurotransmitters such as adrenaline, to handle that stressor. But we're also producing hormones, such as cortisol. Cortisol is very important. It comes from the adrenal glands and cortisol's major effect to help us handle stress is by increasing blood sugar levels. It actually tells the liver to increase the number of glucose molecules in our bloodstream.

Now if we're doing that and we're adding on dietary glucose and sugars into our diet, then what's going to happen is we're going to raise blood sugar levels to levels that the pancreas can no longer handle to produce insulin. And the cells can't handle because they don't want to take in any more glucose. So it starts to store that glucose by shifting it into fat. And that's how so many people have overweight issues and weight-based obesity issues as well. And so that burden can be too strong for the vagus nerve, too strong for the pancreas. And that can lead to type 2 diabetes, insulin resistance, metabolic dysfunction, fatty liver. All of these things come up because of metabolic blood sugar disturbances and imbalances.

Dr. Eva Detko: Exactly. Thank you so much for explaining all this so well. So the conclusion being, there are quite a few things that can go wrong with the vagus nerve. But if you have anything that is that important, and has so many functions, then yes, by the same token, you're going to have a lot of things that can go wrong there. So we're talking a lot about the function, the symptoms of the function being compromised. And let's talk a little bit about how people can figure out what the function is. You did talk about the transit test, that's one of the indicators. But I'm specifically after the different ways that we can measure the vagus activity?

Dr. Navaz Habib: Certainly. Vagus nerve activity is actually relatively easy to measure when you have the right tools to do so. So the Bowel Transit Time Test is probably the simplest, easiest, cheapest test for you to do to see what's going on. It's not a direct measure of the vagus nerve, but it's enough to tell us if your gut is functioning correctly, and if there is some sort of imbalance between the parasympathetic and the sympathetic side. When it comes to actually measuring vagus nerve activity, the best thing to look at is called heart rate variability. Not heart rate itself, but heart rate variability.

Heart rate itself is the number of beats per minute. Ideally, that number should be somewhere around 60 beats per minute. In a very healthy athlete, you can get as low as 35 to 40 beats per minute. And that's a sign of optimal heart

function, optimal recovery. But in somebody who's not an athlete, low heart rate levels can be a sign of over activation of the vagus nerve, which can be a problem on the other side, and lead to things like syncope, for example. But in the majority of cases, heart rate should be around that 55 to 65 beats per minute, telling us that we are functioning at a good level. But heart rate variability looks at a different measure. It's looking at specifically the time between beats per minute, and how much variation there is between that millisecond of time between beats.

So what we're looking at here essentially is, either we have very rhythmic beats per minute where it's almost like beat to beat to beat, and it's happening at the exact same amount of time, which means that the time between beats averaged out has a very low variability. That's not an optimal sign. That's not a sign of good vagus nerve function. We should have rhythms that are a little bit off. Where we're not skipping a beat, but those beats are not exactly rhythmically milliseconds apart. That those beats are slightly varied in the number of milliseconds between each of those beats. And over a long period of time we can average out that measure to see exactly how variable the heart rate is.

And heart rate variability does change over time and it's measured over a period of time. But we're looking at that beats per minute over time averaged and the variation that occurs in milliseconds. The higher the number of milliseconds, the higher the heart rate variability, the better it is for your vagus nerve, the better your vagus nerve is functioning. So there's different ways that we can test this. One of my favorite is a tool that I've used for many years, mine's just recently stopped working so I'm getting a new one very soon, it's called the Oura Ring, OURA, ring.

And it's just a ring, literally a ring that you put on your finger and you wear. Literally, you can wear it 24 hours a day, six days a week, and charge it for about 10 minutes, and it's great for a whole week. But what that tool does is, it measures your heart rate variability while you're sleeping. And at times when you can set a moment and you can set yourself into a deep breathing pattern, just to help you get calm and to improve your vagus nerve function. So the Oura Ring is one of those wonderful tools that if you can get your hands on one, if you're able to invest in one, that's a wonderful tool to use.

Another great tool to use is one that I have sitting right here, called my Core Sense Elite HRV tool. And literally, you put your finger inside it like that and on your phone you're measuring the function of the time between beats per minute. And you can actually do this at the time that you're looking at it. So you actually

get feedback on what's going on with your heart rate variability. Ideally, that number should be about 5 to 10 minutes. 3 minutes as the absolute minimum to get a decent average to be able to see what the numbers are looking like.

And then the amazing tool that I use to help people get into a state of coherence, which is heart rate variability is strong, we have really strong and low levels of breath rate and heart rate all combined, is a tool called Heart Math, which is a wonderful, wonderful tool that connects through Bluetooth to your phone as well. And you can actually see in real time what level of coherence you are in. Heart Math is an amazing tool, I am a big, big fan of it. There so many different ones and the cost for them is essentially minimal, it's like 120 dollars or 140 dollars for the Heart Math tool that connects to your phone, and you never have to pay for anything again with it. It's a very simple tool to use.

Heart rate variability is one of those tools that athletes use to see how hard they should push themselves that day. The higher their heart rate variability in the morning, the more they should be pushing themselves that day. And how quickly they recover is that direct measure of their heart rate variability. So that's why I like to use HRV as a major way by which we measure vagus nerve function.

Dr. Eva Detko: Excellent. And what I wanted to add to that is that I'm speaking to Dr. Rollin about heart rate variability and heart variability coherence in a separate session. So obviously, we're expanding on that. But yes, it's very good that you shared all your favorite tools. I love those too, they're absolutely brilliant. And I'm also doing a separate session on exercise and heart rate variability myself. So there's definitely going to be more information people to follow on from here. But fantastic, this has been such a wonderful session.

You've shared so much. You've got such an accessible way of sharing this information. I absolutely love this. Your book, very much likewise, the same, it's written in a very accessible way. So if people want to learn a little bit more about the vagus nerve, then this is the one book that I definitely recommend. And before we end, I obviously wanted to ask you about your favorite vagus nerve hacks, if you please.

Dr. Navaz Habib: Definitely. I've got a few that I use personally and with my patients. I go over about 20 to 25 different ones in the book itself. But my top three that I give to people are deep breathing, cold showers, and gargling. Those are the absolute three best. So deep breathing exercises we talked a little bit about. But if you can get yourself into a calm, relaxed, deep breathing state,

you're going to push yourself in that optimal vagus nerve function, into that parasympathetic rest and digest state, and calm everything down. In order to add a little bit of stress and add a little bit of difficulty to making your breath calm, cold showers are a wonderful way to do that.

So the best way to do this is to jump into your shower, go normal, keep it warm for the first ninety five percent of it, but for the last 30 seconds, what you're going to want to do is, turn that shower dial as cold as you possibly can. You're gonna put it on the most sensitive area. Everybody is a little bit different. Personally, I like to put it on the back of my neck and I let it get really cold, and all of a sudden we get really, really tight, and we start to be under stress. And immediately what tends to happen is we breathe through our chest. But what we can do is train ourselves over those 30 seconds to decrease our stress level, and start to use our diaphragm to breathe again. And all of a sudden the stress of that cold water starts to go away, starts to decrease, and we get into a very calm zone. So I like to think of the cold shower, almost like adding weight on to doing an exercise.

So, for example, doing squats, air squats is wonderful, but adding weight onto those air squats is just extra stress and extra work so that you can build through that. That's what a cold shower is in that specific case. And then the third one, and this is probably the easiest one besides the deep breathing to incorporate into your plan, is gargling. With gargling, what I recommend to people is keep a glass beside your sink, every morning and every evening when you're going to brush your teeth, add in 30 seconds of gargling practice into that. It's a very simple thing to do. Add a little bit of warm water into that cup, maybe a little bit of salt to help break down the plaque, or the bacteria, because of its antibacterial properties. And we're going to take a sip and we're going to gargle.

We're gonna hold that water in the back of our throat, but we're going to gargle as hard as we can. As hard as you can to the point where you actually start to tears from your eyes, because that's a sign that you're sending that signal to the right part of your brainstem to get the vagus nerve activated. At the same time we have to keep our airway open. We have to make sure that that water doesn't go into our lungs.

So we're trying really hard to hold that water in a place specifically. And we're calming ourselves down because we're using the muscles that we know that the vagus nerve innervates around the vocal cords. It's almost like adding three different things onto a single basic exercise. But gargling morning and evening

for 30 seconds at a time is one of the best things anybody can do to really improve their overall health, and their vagus nerve function. So those are my top three vagus nerve hacks.

Dr. Eva Detko: Fantastic. Well, thank you. Thank you so much for being here. You are absolutely wonderful. We appreciate you so much and everything that you shared. Any final words for the viewers?

Dr. Navaz Habib: Thank you very much, Eva, for this opportunity. Thank you for listening today. And thank you for taking on this challenge of really wanting to be healthier, to upgrade your health to the point where you can then function and share that health with those around you, with those that you love, with your family, with your friends. If you want more information, you can always check out my book available online, Activate Your Vagus Nerve. You can go to vagusnervebook.com. I have a bunch of little interviews that I've done with wonderful people to help teach you some of the tips and tricks that you can do. And you can sign up for our energy boost challenge as well to help you get to your optimal vagus nerve function.

Dr. Eva Detko: Great, well, wonderful. Thank you again. Thank you for everything that you've shared today.

Dr. Navaz Habib: Thank you and I hope everybody has a very wonderful day and gained a lot of knowledge today.

Connecting Energy, Emotions and the Physical Body
Guest: Dr. Darren Weissman

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind Body & the Vagus Nerve Connection Summit. I'm your host, Dr. Eva Detko, and my guest for this session is Dr. Darren Weissman.

Dr. Darren is a chiropractic, holistic physician, developer of the Lifeline Technique, and a best-selling author of four books: The Power of Infinite Love and Gratitude, Awakening to the Secret Code of Your Mind, The Heart of the Matter, and his children's book, The Daily Lessons of Infinite Love and Gratitude. He is also a contributing author to Dr. Masaru Emoto's best-selling book, The Healing Power of Water. Dr. Darren has been featured in the films: Emotion, Making Mankind, Beyond Belief, The Truth, and the award- winning documentary Heal. So, Dr. Darren, welcome to the summit!

Dr. Darren Weissman: Thank you, Dr. Eva. I'm so honored to be here with you.

Dr. Eva Detko: I am so pleased that we're speaking again. Always wonderful to talk to you. And you've got so many wonderful, unique insights to share. So I wanted to open up with this question about bridging the energetic aspects of health with the emotional, and with the physical. And I think you're a great person to make that connection between those. Because to me, we've got those three aspects of health. Obviously, the energetic aspect is hugely important and

that's not necessarily something that everybody is focusing on right now. But you and I both know how important that is. So, yeah. So let's make that connection between the energy and emotions, and the psychological, and then obviously down to the physical and biochemical as well, how it all comes together.

Dr. Darren Weissman: It's awesome. Because the whole thing about it is, people oftentimes think that the energy it's woo, it's esoteric. But just take for example, the essence of going to a cardiologist and having your heart evaluated. They're going to do a particular type of diagnostic test called an EKG, which is an electrocardiogram. Or I'm going to go to a neurologist and I'm going to have my brain evaluated, and they're going to do a specific test called an EEG, electroencephalogram.

Or I'm going to go to an orthopedic physician because I've got some kind of muscular challenges going on and they're going to be doing EMG, an electromyogram. So here's all these medical specialties, scientifically based specialties that are evaluating energy. And they're evaluating energy with these particular ways that allow us to see the range and how that energy is flowing, or it's not. And so the first thing is, it's not esoteric. It's downright science.

And the essence of it to me is, I really desired to be a medical doctor, I just didn't buy into the concept of taking a pill for every symptom. And so, fortunately through my own journey I discovered chiropractic, acupuncture, ayurvedic medicine, homeopathy, all these different energetic systems. And what's fascinating is, for thousands of years people have understood that there is a life force, and this life force in Chinese medicine is called chi, or in ayurvedic medicine it's called prana. Newton said in the laws of physics that energy cannot be created or destroyed and this is a very interesting concept.

And the essence of this is that there is a part of you and me, everyone that is absolutely eternal. That is absolutely infinite and that part of ourself runs in specific ways of our body. From our fingertips up to our head. From our chest, down to our fingertips. Same thing from our feet back and down.

These are called acupuncture meridians. What I've come to understand, which is really so beautiful, is that this chi, or this life force that runs through our body is actually emotion. It's actually emotion. I call them not acupuncture meridians, I call them emotional channels. And what's so interesting is that these emotional channels correspond with all the different organs of the body. So here, it's small but I'll just show you, here's the heart acupuncture meridian.

And it runs up this way. That's the small intestine. Here's the heart over here. Here's the gallbladder, runs from the side of the head all the way down. Here's the liver, here's the bladder. Run from the inner part of the eye and runs down to the pinky toe. And a lot of people are like: "Well, how do you know that's real?" So check this out. So I studied in Sri Lanka in 1995 with a gentleman, whose name was, he's passed, beautiful man, Lord professor Sir Dr. Anton Jayasuriya. Published over 30 books. Brilliant, brilliant professor.

And they did research where they would put a needle at the side of the baby toe, of the fifth toe. Specifically to stimulate the uterus itself if the woman's having a breech baby. The baby has turned the wrong way. That's dangerous during pregnancy. So they would stick a needle at the side of the pinky toe. They put an herb on it called moxa. They'd light it up and heat up that needle and the baby would turn. They did this for thousands of years. So then they were like: "Well how do they know that that corresponds?" So they did a PET scan of the brain and they evaluated. They put a needle in this bladder 67 point, and they noticed that the part of the brain, it's called the homunculus (the homunculus is the map of the brain), the part of the map of the brain that lit up in the brain when you put a needle at bladder 67, at the side of the pinky, was the uterus. How did they know thousands of years ago?

So it's fascinating. And so for so many years, thousands upon thousands of years, it's looked at as, wow, the longest standing research ever. But now acupuncture is in major hospitals throughout the world. When I started doing acupuncture it was still experimental and it was poo-pooed. Now we understand that the power centers that run up our midline, and are called chakras, and a lot of people go: that's woo-woo, that these power centers are absolutely real, and they represent the true essence of the nervous system.

And how that energy flows affects the function and the form and the feeling of every aspect of who we are. From genetic expression, to behaviors that are ones where you've got a skip in your step and an authentic smile on your face, to being an obsessive and compulsive, ritualistic, addictive behaviors, where you're on constant overdrive of survival.

So the bridge is actually simple once you know. But if you don't know, you don't know because oftentimes we judge a book by its cover, right? And so: "Oh, I've got a symptom" and we just look at the symptom. And "I don't want to be in pain". I don't want anybody to be in pain. "I'm scared". I don't want anybody to be scared. But we look at the symptom as something that's bad, or something that's wrong. And we end up understanding that the fundamental core of

healing when it comes to mind-body is energy in motion. Is the authentic flow of our emotions.

Dr. Eva Detko: That's great. I love it how you explained it. That's absolutely brilliant. And you did mention symptoms. And when people get a symptom, they assume that this is something going wrong. Whereas in actual fact, you and I know that by the time we're actually aware of the symptom, the body has done a whole lot of healing already, and it's actually trying to fix the problem to return back to homeostasis. Right? So let's talk a little bit more about symptoms so maybe people can get away from this session with a better understanding, and maybe somehow it will diffuse the fear and anxiety that people can have around symptoms.

Dr. Darren Weissman: Well, I really adore you for actually approaching the subject because it really is the crux of the divide of people being aware of the holistic model versus being caught into the trap of the conventional trance of: "Make the symptom go away and feel better" and "I'm healthy because I don't feel something." Just because we don't have a symptom doesn't mean we're healthy. That's dangerous.

I don't want to feel something then I can just numb out. In our world today, where there's phones and work, and drugs, and alcohol and sex, and social media, it's easy to numb out. And so the essence of actually feeling is at the core of healing. And I'm going to bridge this question of talking about the energy of the body and how our emotions flow, and the physical body, and what is the true meaning of symptoms. Because to feel is to heal. But there are certain aspects of ourselves that we don't realize are driving us.

The symptom is not the problem. What I call the symptom is what's called the portal. What is a portal? It's a doorway. And the doorway is to the next greatest version of ourself. So when we have a headache, or a canker sore, or an allergy, or cancer. When we have addiction or OCD, whatever it might be. As we've been taught to believe that that is something that we need to fix, or that is a reflection of me being a failure, or I've got to fight this. This is actually a very intelligent conversation. This is actually a dialogue. That's stemming from our subconscious mind. What's interesting, if we look at life in a spectrum. Here we are, we're conceived, we're born, we live this life, at some point everybody successfully dies at some point, right? Our spirit lives on forever, we are eternal and infinite. But what's interesting is as we get closer to death, there is this part of ourself, this process that's called pathology.

So pathology is diagnosable disease. And so if I do a urinalysis, a blood test, hair sample, checking for different things, this shows outside the normal reference range. Which is always an interesting thing, what normal means. And as a result, I can give you this disease: Parkinson's, autoimmune disease, cardiovascular disease, hormonal imbalances, digestive types of conversation, irritable bowel, all kinds of things. For a disease to be in place, the body must be broken down 40 plus percent. 40 plus percent for an actual disease to show up.

So here we are. And I'm not sleeping good, I have excess sweat, cold hands and feet, my bowels are irregular. All these different things. And so I go to a doctor and I get evaluated, I get checked out. And they do all the tests and they say: "Well, you're within normal records range. You're normal. Take this pill for that symptom, take this pill for that symptom. Take this for that, and take this pill for that pill." And that's the cycle that we're on.

Now we're in an interesting thing where we're playing Russian roulette with pharmacology. That has massive consequences, massive consequences. So the essence of symptoms are like: I'm driving my car and I got a light that goes on in my car and it says "your oil needs to be changed". You do not take the oil can and pour it on your dashboard! Right? You don't do that. It's just telling you this is where it is, but that's not where the problem is. That's the portal that: "Hey, I got to keep things lubed up. I need oil".

And I'm going to open up the hood and then I got to find that proper tube to put it in. The same thing goes on if we got migraines, headaches, or cluster headaches, or if we've got diarrhea, or constipation, or whatever it might be. Symptoms are a conversation. So when we can learn to participate in the dialogue rather than killing the messenger. Don't kill the messenger. It's just bringing a message. And the message is: "This is a doorway to the next greatest version of yourself".

So here's with the vagus nerve. Its relationship with symptoms, its relationship with trauma. The vagus nerve has different parts of itself, but the vagus nerve is run by the autonomic nervous system. And the autonomic nervous system goes into either stress mode, survival sympathetic, or goes into relaxation mode. And when we can learn to create a balance between these parts of our autonomic nervous system, when we can learn how to find a way back to the present moment, versus the memories that are not only stored in our subconscious mind but stored in our cells, and therefore affecting us.

When we can learn techniques that create a balance on this autonomic, automatic, reflexive level, then we directly influence digestion, heart rate, breathing, perception in any and every given moment. Symptoms are a dialogue. They're not a monologue. They're not a fight. They are a feedback.

Dr. Eva Detko: Fantastic. I'm still giggling because I've got this image of someone pouring the oil on the dashboard. I just can't get it out of my head. It's hilarious. But yeah, it's absolutely that, isn't it? And what is interesting is obviously that there will be a subpopulation of people who, when they get sick they will dig deeper, and they'll think that there is meaning to their symptoms. And then they will have to look at their emotions. They have to look at the energetic aspect of their illness. But the majority of people out there don't think that way.

So this is why we're talking about this. And what interests me is, you look around there's just sick people everywhere these days and we're headed unfortunately in that direction. This is just only going to, unfortunately, I think, get worse not better. In the Western world anyway. And it's interesting to me to see a lot of people stuck in their chronic illness or chronic symptoms for many, many years. And they keep going from protocol to protocol, from supplement to supplement, and granted, they're doing whatever they can.

They are obviously working with whatever the resources that they think they have. But you look at it and you go: "Please, come on, just look deeper because there is something that's stopping you from healing." And it's not a lack of zinc or whatever. It's not going to be that. It's going to be much, much bigger and deeper, and it is going to go right to the subconscious. We're talking about symptoms. Perhaps we can uncover some of the things that potentially could stop people from healing that are sitting deep, deep in the subconscious?

Dr. Darren Weissman: I had a guy today, a new client today, who was diagnosed with stage four pancreatic cancer on November 11th of this year, and he is in a prime example of what we're talking about. This gentleman has been doing all that one would think you're supposed to do. He's crossed his t's, he's dotted his i's. But he reached out to me because he knows there's got to be something else, and I tell you, it's the easiest thing to say but it's the biggest learning curve for everyone.

There are no problems, there are only portals. There are only doorways. And that is a tough pill to swallow when you're given a name that has a prognosis, such as stage four pancreatic cancer or other types of disease. When we're faced with that, and we have family, and finances, and different things like that that

are all interconnected here. The stress of it is absolutely profound because we're in this paradigmatic maze where the belief is driving certain patterns that ultimately limit us from emerging into our fullest potential.

And I want to just create a caveat here and just say: "You're not doing it wrong, and you're not doing it bad". It just feels bad and it feels wrong. And there is a process that literally we follow so that we can make a connection with something that's invisible. The energy aka the subconscious mind. There's a process with dancing with an invisible partner. How do I know how to dance with an invisible partner? So there's a way to do it. And how I do it in the Lifeline Technique is I use muscle reflex testing, autonomic muscle reflex testing. So that I know when the nervous system is truly being triggered in a way where we're out of balance and now we're in survival mode, or dissociation mode, or freeze mode, or fight mode. We don't heal when we're like that. No one does and that has to do, Dr. Eva, with memories.

Memories that live in our mind that are not YET (is the operative word here), memories that are not yet fully processed and bridged in the subconscious to the conscious. Those memories when they get triggered by our environment, and it could be a color, or a sound, a smell, a taste. There's patterns. They affect our biology. They affect our behavior and they get triggered long enough and it shows up as full 40 plus percent broken down - diagnosable disease and pathology. And the key is where do we start? We start with optimism and we say: "My body is designed to heal, completely regenerate and be whole." And I invite everybody just to say that: "My body is designed to completely heal, regenerate, and be whole". And my body is a reflection of my mind. So if I want to change my body, I've got to change my mind. But most of my mind, 90 to 98 percent of it is below the surface. Like below the tip of the iceberg. It's invisible.

And that part of our mind and our nervous system, that are all interconnected, control every biological function and influence the most important component of being human. It influences our perception. And so in any and every given moment, this part is just freakishly amazing. This part's so cool. In any and every given moment, a memory can be triggered, such as: "Here I am at three years of age. I'm in an environment of an alcoholic family. Mom and dad are just like cats and dogs. They're fighting full on. This is not a safe environment. I don't have tools to be confident, and love myself, and know that I'm worthy, and valuable, and special. And my environment is just in pure survival mode."

And this memory gets locked in Groundhog Day and I'm literally put into a trance. I don't even remember it but my body does. And my behavior and my

relationships become a reflection of it. And all it takes is the right color. It's Pavlovian. Sound, smell, taste, feeling. And I become a four or five year old little boy again and again. And when I'm a four or five year a little boy, I'm 51 years of age. So when I get triggered as that four or five year old little boy, I'm not adapting to the environment that enables me to be resilient. I'm maladapting. I'm reacting as if I'm still a child.

And my body has the means to say: "Hey, the four year old, five year old inside of you D., it's saying you now have the tools that you didn't have as a little boy. You now have strategies. You now have support like this summit." If you're here, if you're able to hear me right now, if what I'm saying is resonating with your heart, this is a sign that no matter what you're going through, you have an ability to move through it. And there's no cookie cutter approach. There's no silver bullet.

But once you know, now it's a step-by-step process. And you can change your life. You can evolve your consciousness and you can evoke what is your inherent nature. And that is to heal and to be a loving, compassionate, conscious human being. And when that happens, now we truly understand the essence of healing. Not only for our own bodies and relationships, but we become a light in the world. And this is my vision and mission. And therefore, we participate in world peace to inner peace.

Dr. Eva Detko: That's beautiful. What can I say, you are brilliant and I love the way you phrase things. And it is true, people step into their child all the time. People need to be aware that we all have our inner child right there, and it can be triggered so easily. And your inner child can be the curious, the creative, the wonderful, joyous child. Or it can be the wounded, the bruised and battered, the beaten, inner child. But it can be healed and there are so many different tools that can help us heal it and put the past truly behind us. And obviously, one of those wonderful tools is what you created and developed, the Lifeline Technique. And I do want to get to that, because I would like people to know a little bit more about the system and know how to access it and so on. But before we get to that, I will close with a Lifeline Technique, but I want to touch on gratitude as well.

Because obviously you are big on this and people may have heard that gratitude journaling is so good for vagal tone because there's been various studies to show how good gratitude journaling or meditation is for our brain, how it changes the brain. There's been studies in people with stage B heart failure. And when they did gratitude journaling, they actually showed the inflammation markers going

down, and situation massively improving and so on. So there's been lots of research on that. But please explain in your own words why you believe gratitude is so powerful.

Dr. Darren Weissman: It's so interesting because just bridging back to what you just said as far as leaving the past in the past. Gratitude ultimately represents: "I've received what I desire". When I'm in a state of gratitude, it means it's done and I say: "Thank you. I'm so appreciative. I'm so grateful." And in that state a future promise is present. And it is that future part of ourself that holds the power and the potential for the body to heal. There's really a dance when it comes to healing and the dance is being able to be in your fullest power while being present. Yet, the body is a reflection of the mind and the mind runs off of the past.

So that means the body is always running off of the past. So when we're in a state of gratitude, and whether it'd be active visualization, meditation, journaling, looking for things to be grateful for like you lost your car keys or your cell phone. You looked so hard to find your cell phone or your car keys. Look for gratitude that hard in your life. What can you be thankful for?

When you're doing that, when you're being that, the body can't help but (the word is) entrain. And entrain means that it creates a rapport with these reactive parts, and it raises the vibration of these reactive parts that have been ultimately driven from the past. And ultimately we can guide them through acts of gratitude to fulfil a destiny, to fulfil a heart's desire, to fulfil a passion. In life there are definitely moments, like this one for me. I adore you, and so when I get to connect with you my heart smiles and just a thought of Dr. Eva Detko makes me truly, genuinely happy. And it's emotional. I'm so grateful. You're such a bright, beautiful human being. You're such a courageous woman. And so this is easy gratitude. This is easy gratitude. I want to talk about not so easy gratitude

I want to talk about when the wind's out of the sail. When I'm down on my knees. When I can't see tomorrow. I want to talk about gratitude that says: "Thank you for this loss. Somebody so important to me is no longer in the physical realm. I lost this person. I lost this job. I lost my dream." When we are capable of exercising our heart, our mind, our body, our relationships with gratitude, this is a signal. This is a sign. That you are one kickass human being.

And what I mean by that is that when we're able to say thank you for the so-called negative things in life. The symptoms, the pain, the fear, the stress.

Thank you. No matter what. This is a sign of enlightenment. This is a sign that you know that in our world that negative does not exist in an isolated way. The positive has to be somewhere. I'm at the South Pole. I know the North Pole is somewhere. I can't see it but I know it, right? When we say thank you, when we're in a place and space of gratitude, we acknowledge that somewhere in the unmanifest, nonphysical, invisible realm is a positive vibration.

And by expressing gratitude, and by living in a gratitude practice: breathe in love, exhale gratitude, breathe in love, exhale gratitude, we start to attract into the visible realm that directly influences our health of our body, our health of our intimate relationships, our family, our professional opportunities begin to knock on our door really loudly. Different things start to happen when we have an exercise of gratitude. I would say that it just might be the most important thing that we could ever do is start to be grateful for, not just the things that are awesome, like you, which is important to be grateful and say: "Thank you and like, wow, what an opportunity!".

But when you're hurting and you don't know what to do. This is what I do. This means "I love you" in American Sign Language. And I put it over my heart, and I go: "Infinite love and gratitude", and just the words and the healing vibration, it's a universal healing frequency: "Infinite love and gratitude". And I just say it.

And I'm telling you, we as human beings cannot be in a state of fear when we're in a state of love. So when we literally just say: "Infinite love and gratitude". Even though. I can't even see the positive I know it's somewhere. "Thank you. I know it's somewhere, infinite love and gratitude". That is such a profound exercise and practice to show the reflection and the power of gratitude.

Dr. Eva Detko: First of all I have to reciprocate. Every time I talked to you I just feel so energized and buzzing afterwards for a long time, and I adore you too and for everything that you share and all your wisdom. And do you know what? I do have a confession to make. This obviously, it doesn't happen a lot, but occasionally you come across somebody who will say, "I really don't see what I could be positive or grateful about. There's nothing to be grateful or positive about my life." I do have to say that that makes me irritated because when we really want to, we can find it.

And even when things are really difficult, when we're in this moment of everything just seams rough, everything seems to be collapsing onto us. It just seems like the walls are closing in. I just want people to think about this for a moment. In the Western world we have, most people watching this will have a

roof over their heads, we'll have access to food, we'll have access to clean water, we don't live in a war zone, we haven't had our limbs cut off in combat, we haven't been, maybe some people have been shot at, but you just need to look around you and you will find it. You will find it but you do have to want to find it.
And that's basically it. And sometimes it's not easy. Yeah, it's not easy. There are those days, I'm sure everybody has them, where you just want to just shut down and you just want to push everything away from you. But these are the moments, these are the important moments to actually still be grateful. So, I thank you for making this distinction between easy gratitude and gratitude that is not so easy.

Dr. Darren Weissman: What I've come to understand is that no-one on a conscious level chooses to not have hope, and to be stuck, and to not be able to see tomorrow, and be depressed and dark. Nobody truly, genuinely wakes up and says: "It's a great day to have darkness in my life". I'm going to blow out my birthday candles and make a wish for the upcoming year. No one ever blows out the candles and says: "I just want to have just a horrible, horrible, destitute life and be negative." Nobody does that. And I want to teach this right now. This is a very important part of the Lifeline process.

When we find ourselves in that moment, where we're like: "I want to be grateful Dr. D. and Dr. Eva, I want to be grateful. I'm just so, I'm so stuck, I'm so overwhelmed, I'm so just caught in this trap of my mind that just won't shut the hell up." The question that will begin the process is called the truth question and the truth question is this: if you could choose to create your life, a day, or a moment, if you could design your best life, would you choose it with autoimmune disease, digestive disorder, cancer, cardiovascular imbalance? Would you choose to create it where you suffered with PTSD, trauma, loss, shock? Would you choose to create your life where you had this identity of a mask, where you show people an outer expression while inside you felt totally different, and therefore you felt fake? Hell no!

So why this is important, and this bridges to the beginning of our conversation of energy, emotion and the physical reality, is that when we're aware and we're very aware of what's going on in our body, we're very aware of the symptoms, when we're aware of things, we are what's called conscious. And in our consciousness, we have as human beings our greatest power and that is choice.

When we're aware of something that hell no, we'd never choose. I've never met anyone that says: "It's a great day for cancer. It's a great day for loss or trauma."

No way. Of course not. When we're aware of something that we would never choose, that's not the conscious, active mind or body, that's the subconscious reactive mind and body. And now just that stuff goes: "Well that's my dance partner. That's who I'm going to be dancing with." And now there's a process that we can learn to get present, to establish a relationship where we can lead this subconscious reactive part, rather than being driven by the tormenting mind. We can use the mind as a tool to evoke our fullest and greatest potential for healing, for manifestation of design in the most creative light that exists when we learn how to harness it. But it starts just by asking the question.

The question begins the quest of the evolutionary journey where we're awaken as spiritual beings. And it's really beautiful. And so many people struggle in our world today with: "I don't have purpose, I don't have meaning." You do. You do. It's just in disguise. It's behind the great wall of your heart, the Great Wall of China, the great wall of your heart. And there's a process. It's not about breaking down that wall. This is like an egg shell that's cracking and something's emerging from within. We're getting bigger.

And so the broken heart is not the broken heart where you are broken, this is time for a break-through. This is time for really stepping in and leaning in and being brave and taking the road less traveled and being honest with ourselves, and being bold enough to act on things that are true within, even though other people say it's not. This is the journey of human beings. This is the journey of being a human being versus a human doer. It's amazing.

Dr. Eva Detko: It's amazing and it's brilliant. Now, we've mentioned the Lifeline Technique a couple of times so I think we'd better go and explain a little bit more about this system that you've developed.

Dr. Darren Weissman: Yeah. And ultimately, it's about just turning on the light because if you're in a dark place all you need to do is even have a flicker. You have a flicker of light, it's no longer dark, and so that's what the process does. So when we get ourselves caught in these negative low vibrational emotions, from sadness to despair, from frustration to absolute, absolute rage to insecurity, to social isolation. When we're in these human experiences. And everybody has these emotions, I'll raise my hand first. It's part of the human experience. There's no bad or wrong emotion, and in the Lifeline we really teach how to process emotions and how to create a practice. I call it the mind gym, where we can exercise our mind with a daily practice of living every day with intention. Now, this can be as simple as just infinite love and gratitude, and getting ourselves present. Very simple.

But the Lifeline Technique is a full on process. It is a year-long certification program. You can do a process and learn how to do it in 5-10 minutes, or you can run as professional. Like my brother is a PsyD, is a psychologist, who specializes in trauma and OCD. But he also is certified in the Lifeline Technique because it goes into the multi-dimensional levels of the mind and it's a roadmap. This I woke up to in June 17, 2002. I had a moment of conscious awakening and I wrote out this roadmap of everything that I'd ever studied with all of these incredible people from around the world. Things that I was seeing new for the first time. And I wrote out this roadmap that is a 16-step process that helps people to shift subconscious programs and to live consciously every day. With consciousness.

And the by-product of this self-loving system, it's about loving yourself and valuing yourself. It's just the natural by-product of learning this, as you learn how valuable and worthy and deserving you are as a human being. That you were born with infinite value. That you start to shift your way of being of like: "Oh, I've got these dreams" to living your dreams. And I'm telling you, whatever your dream is, the Lifeline is about not only evoking self-healing potential, where your body has the fullest potential and your relationships have the fullest potential but it's about designing your life and creating and manifesting a life you'd love to live.

And Marianne Williamson, who's running for president at the United States right now, I really love this woman. She wrote in the Return to Love: "Our greatest fear is not that we are inadequate. Our greatest fear is that we are powerful beyond measure." It's our light not our darkness that frightens us. And so I acknowledge this because I've done well over one hundred thousand sessions with people, and I've taught thousands of people around the world, but I've come to appreciate that the journey of learning Lifeline is a journey of acknowledging yourself as a being of light, a person who has purpose and meaning.

And that you are not just a drop in the pond, that you make a difference when you show up as you. And the Lifeline is truly a lifeline that saves people's lives because it gets us out of that mundane hamster wheel to do life, the expectations, the assumptions, the programs of the matrix of the world that we live in, so that we can truly be free and be ourselves. It's very interesting and unique. Similar to a lot of things but different in its own way. It's almost like a blue sky, if you've never seen it, I can't tell you really what it's like. You got to experience it to know.

Dr. Eva Detko: Yeah, exactly. But all of the things that you mentioned, the purpose, the meaning, self-worth, coming into your own, truly connecting with yourself, and knowing that you're worthy, and you can make a difference. All the rather fundamental things actually in life. So thank you so much for sharing all this. And so before we part ways, do you have any final words of wisdom for people?
Dr. Darren Weissman: Smile. I mean, literally, when we simply and genuinely smile, even when we don't want to. That it evokes the vagus nerve and happy neurotransmitters are activated within us just by smiling. Be authentic with your emotions. If you feel them, feel them, but give yourself permission to be happy. Allow yourself, give yourself allowance. I remember when I was in college and I really struggled with my self-esteem, and I really struggled with my self-worth.

And I looked outside of myself to be validated or valuable enough. I used to have to write on my TTD list, which was my Things To Do list. I used to have to write: be happy. I literally had to write: be happy. It was amazing and I would purposely cross it out. OK, I was happy today, and I did happy.

I would do happy because at one point I'm going to be happy. And I remember, in part of my experiments of going through my own portal is, I would smile at people even when I wasn't feeling it. I would just smile, but I would notice that when I did people that I smiled at smiled back, and that affected me. And I was aware of the subtle art of being happy in the present moment can begin or end with a smile.

And you never know what another person is going through, and we're all healing from something. We're all going through something. Everyone right now is. And so, God bless each and every one of the listeners and God bless you for being so cool and so awesome, and providing these great summits that you do. It's really, such a real blessing to the world.

Dr. Eva Detko: Thank you so much, this is so true. When people are sitting there watching this feeling that nobody gets what they're experiencing, just remember that we're all on a journey. We all either have had to work through something, or currently working through something. So yeah, everybody's got something to deal with. Well, that's life isn't it? So thank you again so, so very, very much and infinite love and gratitude to you Dr. Darren, and everybody watching.
Dr. Darren Weissman: Infinite love and gratitude. Thank you.

Balancing Neurotransmitters to Optimize Vagus Function
Guest: Trudy Scott

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind Body & the Vagus Nerve Connection Summit. I'm your host, Dr. Eva Detko, and my guests for this session is Trudy Scott.

Food mood expert and nutritionist, Trudy is best known for her expertise in the use of targeted individual amino acids, offering help and immediate relief from anxiety so other underlying root causes and dietary changes can be addressed with ease. She also educates about the social anxiety condition pyroluria and the harmful effects of benzodiazepines. Trudy is the author of *The Anti-anxiety Food Solution, How the Foods You Eat Can Help You Calm Your Anxious Mind, Improve Your Mood and End Cravings.* And she's also the host of the Anxiety Summit, an online educational platform for both consumers and health professionals. So Trudy, welcome to the summit.

Trudy Scott: Thanks very much for having me Dr. Eva, I'm really excited to be here. I think this is such an important topic and I'm excited to share what I can contribute to the discussion.

Dr. Eva Detko: Oh, and I am excited too. Well, we all are excited to hear what you have to contribute because it's going to be quite a nice mix of different things. But we're going to incorporate what you usually do, how that fits in with

the vagus nerve, so it's going to be great. So let's just start by sharing the research that is coming out on the vagus nerve in relation to anxiety and mood.
Trudy Scott: Yes, it's really interesting looking at some of the research and one of my favorite papers is a paper that was published in 2018. It's titled: *The Vagus Nerve as a Modulator of Gut-brain Axis and Psychiatric and Inflammatory Disorders.* The vagus nerve, which represents the main component of the parasympathetic nervous system has these bodily functions, and this includes: mood, the immune response, digestion, and heart rate. And what they're saying in this paper, there is preliminary evidence that vagus nerve stimulation is a promising add-on treatment for treatment-refractory depression, post-traumatic stress disorder, and inflammatory bowel disease. And you and I know that when we hear the term treatment-refractory depression, it means we haven't got to the root cause of it. It just means that medications haven't worked for it.

So this allows us to extrapolate and say, well, there's other lifestyle and dietary, and nutritional approaches that we could use. But they're saying that stimulating the vagus nerve, activating it, can actually help in this area. And with my work in anxiety, whenever I see depression, I feel like I can replace that with anxiety as well. But later on in the paper, they do actually mention anxiety. The other thing that they say is that there's this impact on inflammation.

So treatments that target the vagus nerve increase the vagal tone and inhibit cytokine production. And we know that when we've got inflammation going on in the body, that's going to contribute to mood disorders. And then the other thing, they actually specifically talk about neurotransmitters. Stimulation of vagal efferent fibers in the gut influences neurotransmitters that play a crucial role in major psychiatric disorders.

And they mentioned serotonin and dopamine, and GABA. So the conclusion is that vagal tone is correlated with the capacity to regulate stress responses and can be influenced by breathing. Its increase through meditation and yoga is likely to contribute to resilience, and the mitigation of mood and anxiety symptoms. And we know from other research, and we know from just doing it, that using meditation and yoga is going to affect anxiety levels. We've seen research showing that it raises GABA levels, which is one of the neurotransmitters that helps us feel calm, but now we're also seeing from the research that good vagal tone has an impact as well.

So it's really exciting to see that there's many different ways that we can use to approach someone who does have anxiety issues. My work is primarily using

the neurotransmitters and using dietary changes, but I think that we don't want to forget about these other approaches. And if we can improve a vagus function, then we're going to get even better benefits.
Dr. Eva Detko: Yeah, and there are obviously so many ways. We're sharing a lot of those strategies in this event, of course. And yes, it is an exciting area. There's more and more research coming out all the time. And it's fantastic because actually that more kind of rounded approach can be a real winner for a lot of people. So I know that you have your own vagus nerve story. So are you happy to share what actually happened and how you managed to recover?

Trudy Scott: Yes, I'm happy to do that. And it was a really, really scary story. Until that happened, I didn't know much about the vagus nerve. This was a number of years ago, and I've since learned more, and it's helped me connect the dots even more. But I was on this really, really terrifying plane ride. I'd actually just come from a conference in New York City. I was flying back to Colorado. We took off from Denver, and within 10 minutes of taking off the plane started to shudder.

And then we had this huge drop and everyone was screaming. And the parents behind me were saying: "Don't worry, it's just like a roller coaster. Just enjoy it." And the guy next to me was he in the Navy and he said: "They taught us how to go down in a boat. They didn't tell us what to do if a plane goes down". And it was terrifying. And I've got goose bumps just thinking about it. It was so, so scary. I've never, ever experienced anything like this.

And I got home. I got a bad cold. And I don't normally get a cold when I fly because I use Biocydin, which is a herbal throat spray, before I fly and while I'm flying. And I use a nasal spray that has xylitol in it, which helps you prevent getting infections. So I don't typically get a cold but after this trip I had a bad cold. I was sick for two days. And then I got this cough. And it ended up being a dry cough that persisted after the cold got better. And it turned out that I had these throat spasms.

And after about 15 or 20 minutes of speaking, I couldn't speak anymore. I could feel these spasms and it would go all the way down to my gut. I could feel my throat spasming up. And it was starting to keep me awake at night. I was doing interviews like this and I couldn't talk. And because of my work with GABA, knowing how GABA affects physical tension, when you've got stiff and tense muscles, I thought: "Wow, I've got this spasm going on in my throat. I wonder if I use GABA if that's going to relax it."

So I used GABA, and I use GABA sublingually with my clients, and I did it sublingually and within five minutes those spasms disappeared. And I thought, wow, this is pretty interesting. So I started to do some research and I couldn't find anything. And then I reached out to some colleagues for help. And Joe Tatta, who's a physical therapist and a nutritionist, he said, "I know what this is. I know why your cough won't go away".

And at this time, it had been going on for about three weeks. And it felt like asthma but I've never experienced asthma. So I didn't know what it was. And he said to me: "It's Arnold's nerve cough reflex". And he shared a study with me. The whole title of the study is: *Arnold's Nerve Cough Reflex, Evidence for Chronic Cough as a Sensory Vagal Neuropathy.* And it was just enlightening to me.

It turns out that this cough was neuropathy of the vagus nerve. In other words, it was hypersensitivity of the vagus nerve likely triggered by this scare and the shock that I've gone through. In this paper, they present two cases where GABApentin was used. And this is a drug, a medication that is used to support GABA levels. And with my background, knowing about GABA, knowing about the side effects of some of these medications, that wouldn't have been something that I would have considered. But I always like to extrapolate.

If GABApentin is working, then maybe GABA could work as well. The reason I don't like GABApentin is, we know that there's withdrawal symptoms when someone discontinues GABApentin, and there's actually one paper where they found an increased risk of suicidal thoughts. So here I had my solution. I had the GABA solution which was easing those spasms, but I needed to now heal my vagus nerve so I could get past this. What Joe had me do is breathing exercises. It's called a three, six, six second breathing exercise. So you breathe in for three seconds, you hold for six seconds, and then you breathe out for six seconds.

And you breathe like you're breathing in and out through a straw. So it's very controlled. And he had me do that ten times a day. So every hour on the hour, I would do that. And then he had me hum. And this was also every hour on the hour for a few weeks. And it ended up being about ten times a day and it was so lovely. He said to me I need to hum a song. And I'm totally musically challenged. I cannot sing at all. I can't hold a tune at all. But I thought Happy Birthday would be an easy one and I had to think about a specific birthday.

So as well as humming, which was going to start vibrating in the throat area, I had to think about something positive and smile. He said: "Well, what could you

think about?" I said: "Oh, I can specifically remember my baby sister's seventh birthday party when I was 18 years old. I'd just come from Australia, I'd missed my whole family and we had this party by the pool. So I had to do the breathing exercises and the humming every hour. I also took GPC, Glycerol Phosphoryl Choline, and Acetyl-L-carnitine a little bit later.
And I didn't need to take those for very long. I think I only took those for about two weeks. I also did yawning and that was really helpful for the neck area. And then he said: "Wait. Don't do the gargling right away." And I hear a lot of practitioners say do the gargling right away. And that was too much for me. He said: "Wait. Do these other exercises and then let's see how you do with the gargling."

And once I started the gargling, which was about two weeks in, I had a setback and the throat spasms started to come back. But the interesting thing is, overall, it took a few weeks to totally recover. In the meantime, I would use the GABA, as needed for the throat spasms. But all of these other exercises and the nutrients, which are acetylcholine precursors for nerve rehab, gave me this recovery. Now, the interesting thing was, I remember doing one or two summits during this period and I'd warned the interviewer.

I said: "At some point in the interview, maybe 10 or 15 minutes, maybe 20 minutes in, my voice is going to start to go." And I had a little saucer next to me with some GABA and a teaspoon. So as soon as that happened, I just took the GABA as a powder. I held it in my mouth and within five seconds the spasms went away. So that's how quickly GABA works. So I'd love to share with you a little bit about the work that I do with GABA and anxiety.

Dr. Eva Detko: Yes, that would be wonderful. That's very interesting that you get an effect this quickly. But obviously the mode of delivery I'm sure will have something to do with it, of course. But also very interesting about the vagal exercises because your sort of, let's say, vagus nerve injury was, let's say, it was an acute injury. It was obviously something that was triggered by this stressful event. And in this case, the few weeks of doing the exercises, really did the trick. If somebody has poor vagal tone and maybe their vagus function has been really, really bad for many years, or many decades, then possibly it will take longer. But in this case, that's really great to know that it was relatively quick, with relatively simple solutions.

Trudy Scott: But it's interesting, you talk about if it's been going on for a long time, because I wrote a blog post about it. I did some videos showing what I did and what I was experiencing. And I've had a number of people contact me since

then saying I've had this dry cough for years and years and years. And I started to do the vagus activation exercises and I used GABA, and it's resolved. I don't know how quickly it resolved but it's interesting to hear, and it's unfortunate to hear, that for some people it's gone on for years. And I'm a person that if I have any health issues, I want to try and get it resolved as quickly as possible. So I was very fortunate to have my colleague Joe show this connection so I could dig a little bit deeper and get results.

Dr. Eva Detko: Yeah, I'm with you. When something like this is happening, I can't just leave it. You need to get to the bottom of it. I agree. Fantastic. That's really interesting. So potentially even with maybe more chronic vagal issues, the resolution can also be relatively quick. So that's really good news, I'm sure for a lot of people listening. So, yeah. So let's talk a little bit more about GABA. Because it's interesting that you were talking about taking powder. When people take capsules, they may not necessarily have the same effect, right?

Trudy Scott: Yes. I have been working with my clients using the amino acids, targeted for their unique needs. So we use GABA and we use tryptophan. And I'll talk about tryptophan and serotonin a little bit later. But I'll use them to relieve the anxiety symptoms, relieve that physical tension. And the best way that I have found for it to be used is sublingually. So to either use a sublingual capsule like GABA Calm, which has a very small dose, 125 milligrams, or getting a capsule and opening it up and using it on the tongue. And the results are very, very quick. I said, with me in that instance it reduced those spasms within five seconds. I've had people say it takes 30 seconds for anxiety symptoms to be relieved. Some people it takes a little bit longer.

And if they swallow the capsule, in some instances, they will get results. Maybe not as profound. And certainly if they've got gut issues, which we would expect if they've got vagus nerve issues, that then we might expect it not to work as well if they swallow it. So I just have everyone now use the GABA sublingually. We have a questionnaire and say what kind of symptoms do you have that relate to anxiety? Is it physical tension?

So if you've got this physical tension in your back and your shoulders going up into your neck. Do you have any kind of muscle spasms? So this is where I made that connection. So if you've got stiff back or you've got stiff legs. If you've got insomnia and you're lying in bed feeling really, really stiff, that could be low GABA. And then the other things that I've seen, as far as the muscle tension goes, is there's now research showing that visceral pain in the gut can be alleviated by GABA.

So when you've got SIBO, or small intestinal bacterial overgrowth, and you've got bloating, and it's pushing on the gut. That can cause pain and GABA can help relieve that. And then also I've had results personally and with clients with rectal spasms. So really, really bad spasms in the rectum. I've had some of my clients tell me it's worse than childbirth. The pain is so, so excruciating. And within 15 seconds of using sublingual GABA, it will alleviate those spasms.

So there's the connection to the spasms. And for me, it alleviated those throat spasms. I knew how much I could take when I had the vagus nerve issues because I had had anxiety in my late thirties, and this is how I got into the work that I do. I had developed severe anxiety. I had panic attacks. I developed social anxiety. And I had this perfect storm of low GABA, low progesterone, low serotonin, heavy metals, gluten sensitivity, pesticide exposure. You name it. I had this perfect storm of all of these factors that were contributing to my anxiety.

But one of the things that really helped me so much was GABA. So addressing the low GABA levels, addressing that low progesterone. We know GABA and progesterone go hand-in-hand. That made a huge difference. So I knew how much I could tolerate. So take a step back. I'll have my clients do that questionnaire. If you've got the physical tension, if you've got the anxiety, the panic attacks, the insomnia, stiff muscles in the neck. And then the other thing with low GABA is we'll see cravings in order to relax. So often it's alcohol. End of the day someone gets home, they need to have a glass of wine to unwind, to relax. And they use alcohol to do that and really, it's because they've got low GABA.

So I'll have my clients rate their symptoms on a scale of 1 to 10. We'll do a trial of GABA. And I like to start with about 125 milligrams because it's a nice low dose. I'll have other people contact me and say they've tried GABA and they didn't feel good on it. Often because they used 500 or 750 milligrams. So we start low. We do a trial and we say, okay, how much did your physical tension and how much did your anxiety improve? Was it a nine out of ten? Yes, it was a nine out of ten before. You take the GABA and within five seconds to maybe thirty seconds it goes from a nine out of ten, to maybe a six out of ten, maybe a five out of ten. Then, you know, that low GABA is one of the root causes of the anxiety. And this is just one root cause. Obviously, there's many different root causes.

And using GABA over the course of the next week or the next two weeks, they'll increase their GABA a little bit more and see if they can get it down from maybe like a five to a four. And then they'll increase it a little bit more the following week to get it from a four to maybe a three, or a two. And if they increase it and they're not getting added benefits, then they just come back down to the previous dose.
My own experience with GABA, and because of the work that I do with my clients with GABA, and this connection that I made with the spasms and the muscle tension, that's why I tried GABA with my vagus nerve issue. And at the time, I had actually gone up to about 300 milligrams of GABA in the day, and at night I was able to take 500 milligrams of GABA when I had the anxiety. So when I did the GABA, when I had the throat spasms with my vagus nerve problem, I actually ended up taking 500 milligrams as well. Now, I wouldn't recommend someone start on that but that's what worked for me.

Dr. Eva Detko: Yes, certainly if people have not taken this before, then it's common sense and it's prudent to start low and slow, and obviously build it up, just as you described. That makes perfect sense. Absolutely. And you did already mention serotonin. So perhaps we can explore the connection between serotonin type anxiety and the connection with the vagus nerve as well.

Trudy Scott: Yes. But before we do that, I wanted to share a very interesting study that brings the connection to GABA and the vagus nerve together very nicely. This was an animal study done in 2011 and it's titled: *Ingestion of Lactobacillus Strain Regulates Emotional Behavior and Central GABA Receptor Expression in a Mouse via the Vagus Nerve*. You may have had other people in the summit talking about this. I can see you nodding there. Let me just bring it back to this discussion because I've got something to add about this. But what they found is Lactobacillus rhamnosus increased GABA in hippocampus. It reduced cortisol levels, which were caused by the increased stress, and it reduced anxiety and the depression in the animals.

And they found that when they severed the vagus nerve in some of the mice in the study that these neurochemical and behavioral effects were not found. So as soon as the vagus nerve was severed, the effects of the Lactobacillus rhamnosus, which was increasing GABA levels, was not affecting the anxiety and it was not reducing those cortisone levels. And the biggest question that I get about GABA is: "How could GABA possibly work if it can't cross the blood brain barrier?"

And maybe this is one way that is having an impact on anxiety. We know that we've got a lot of GABA receptors in our peripheral tissue. We've got GABA receptors in our muscles, which probably is the reason why we feel it when we've got this physical tension, or we've got the spasms. We've got GABA receptors in our pancreas. We've got GABA receptors in our endocrine system. But maybe this vagus nerve connection and the fact that when it's severed we're not getting those effects, maybe this is another way that GABA is having an impact on anxiety. And a lot of people are saying: "It can't possibly work. It can't possibly make a difference." But we are seeing new research now saying there are other mechanisms that may be at play here. And I suspect we're going to see more about the vagus nerve. And you'd asked about the connection between serotonin and the vagus nerve. And we actually have a study that came out 2019 about exactly this and I'd love to share that with you.

Dr. Eva Detko: Yes, absolutely. Yes. That is a good one. But also, you're talking about the severed vagus nerve. There was another study on Bifidobacterium longum as well. And it was very much the same thing that it showed reduction in anxiety but when the vagus was severed that signaling was obviously affected. There was still some effect but we didn't see the same effect. So that's really, really interesting. So yeah, let's talk about the serotonin study. That's an interesting one.

Trudy Scott: It was actually on issues SSRIs, and they are saying that SSRIs activate the vagus nerve. Study's called: *Oral Selective Serotonin Reuptake Inhibitors Activate Vagus Nerve Dependent Gut-brain Signalling.* So an SSRI is like Zoloft or Paxil, or Prozac. They're antidepressants often prescribed for anxiety. Primarily prescribed for depression but often prescribed for anxiety. They'll be prescribed in autism spectrum disorder. They often prescribed in dementia. And there's a whole host of issues that we have with SSRIs. And certainly the similar issue that we see with GABApentin, where you'll have serious withdrawals symptoms in some people. We have a lot of side effects with SSRIs. So as a nutritionist, I'm always looking for other options.

And many people will come to me saying that they want to get off their SSRI and I'll work with them in conjunction with the doctor in order to help them taper. So if we can find another way to achieve the same results, I would rather use dietary changes and amino acids, like tryptophan and GABA. But I always find that we need to look at the research. Even though there's research about some of the medications because we can extrapolate. So what they found was something very similar. We had this gut-brain communication with the vagus

nerve and they felt that the SSRI was boosting serotonin levels. And we know that it doesn't really boost. It just recirculates what we have in the body.

They were proposing that SSRIs were having an effect on serotonin and it was the vagus nerve that was now communicating to the brain with those increased serotonin levels. And the same thing, when they severed the vagus nerve of the mice, they did not see the same benefits from the SSRI. And I feel like, we could probably say, well, could using tryptophan as an amino acid have similar effects? And this means that using the amino acid in the same way that we use GABA to raise those neurotransmitter levels is one way. But then supporting the vagus nerve is another way. Because if we've got a healthy vagus nerve, then this communication between the gut and the brain, and the rest of the body is going to be more effective.

Dr. Eva Detko: Absolutely. And could you, just in case people are wondering, you mentioned tryptophan as opposed to 5-HTP. Could you just comment on why you use tryptophan?

Trudy Scott: Yes. So let me take a step back and just talk about the low serotonin symptoms. So when someone comes to me and they got anxiety, we assess for low GABA, obviously, which is the physical tension. And then we also asses for low serotonin and in the same way we use a questionnaire. And with low serotonin, it's the worry, the ruminating thoughts, the mental thinking, over-thinking, the negative self-talk, the obsessive thinking, thinking: "Who am I to be doing this?"

So the imposter syndrome is often very common with people with low serotonin. We'll see anger issues and irritability, PMS, hormonal issues, insomnia as well. With the low GABA, it's more physical tension kind of insomnia. With low serotonin insomnia, it's the lying in bed and you just can't switch your mind off, and you keep re-processing a discussion or a conversation you had, or you keep worrying about something.

So we again, we'll rate symptoms on a scale of one to ten. Pick one or two of them and then do a trial. And I use either tryptophan or 5-HTP. I typically start with tryptophan. I have really good results with tryptophan. But that being said, some people do better on 5-HTP. And if you have high cortisol, you might want to think about using tryptophan first because there is one study that shows that 5-HTP can actually raise cortisol levels. And I've had a number of clients say that when they take 5-HTP, they feel more wired. So they're tired but they

feel more wired. And that could be the 5-HTP. So with 5-HTP 50 milligrams is typical starting dose.

With tryptophan, typical starting dose is 500 milligrams. And again, we start low. We do that trial. We see how much symptoms have improved. Did it improve one notch? Did it improve two notches? And then over the course of the next few weeks, increase until we get good sleep, until that worry is going away. When it comes to PMS and perimenopausal symptoms, and menopausal symptoms, it's usually two or three cycles before those symptoms go away when we've added in GABA and tryptophan.

Because that can have an impact on the hormones as well as directly addressing hormone imbalances. And then, if someone's got menopausal symptoms, they may not be actually cycling anymore but within two or three months we may see some of those symptoms alleviate. So it's pretty interesting how quickly both the GABA and the tryptophan can start to have an impact. Certainly, as I said, it takes 10 seconds to 30 seconds to notice something. Then, you know, yes, this is one of my root causes. And the nice thing about the amino acids is that they give my clients hope. That you feel hopeful right away and now you can deal with all these other issues.

You've mentioned that maybe the vagus nerve issues are chronic and they've been going on a long time. If that is the case and maybe it is going to take longer to address that, at least you're getting some relief from the anxiety, and some relief from the cravings and the insomnia very quickly, while you're addressing the vagus nerve, while you're addressing gut health, while you're addressing heavy metals, while you're addressing parasites, or whatever else might be going on with you. You're getting results very quickly. You've got hope.

And it makes the other issues that you're dealing with a lot less overwhelming. It makes it a lot easier to deal with. And there's less of a fear factor: "How can you tell me I've got to give up my chocolate chip cookies? This is my reward. This is my treat." When you've got the amino acids on-board, it breaks that addiction and it just makes it easier to do, so you're not using willpower. So it just adds so much to the healing journey that you're on and it just makes it so much easier.

Dr. Eva Detko: Yes, absolutely and when it comes to addressing root causes, I just wanted to emphasize addressing early trauma, of course, because most people with chronic symptoms will have a level of at least developmental trauma. I'm not necessarily talking about PTSD but I'm talking about

attachment type traumas. And that goes a long way. You get wide-ranging benefits from addressing that. So let's not forget about that. But you know what I love? I love that you have this very simple way of monitoring somebody's progress by just scoring the symptoms.

It's simple, but it's so effective because sometimes when we get better, and it could be psychologically or physically, we sort of tend to forget how bad we were even a few weeks ago because this now feeling better is becoming our new normal. And that can show somebody how much progress they've made. So I really love that tool. It's a very simple tool but very effective, right?

Trudy Scott: It is. And it's very empowering because you've got control. You can feel the results. You can see the results. I'll have my clients log what their symptoms are each week so you can see how many notches it improved. And the nice thing too Dr. Eva is that things can change. Maybe you've had this trauma, like I had with the plane, or maybe you've developed Lyme disease. I actually discovered that I have Lyme disease now and I'm addressing that. And yet the fact that I've learned about the neurotransmitters and used this way to assess if my levels are low and used a trial of the amino acid, and to see the results, I can now use it again.

The same with low serotonin in the winter time. We have the winter blues, where our serotonin takes a dip in the winter time. And many of my clients will do great in the summer but in the winter they need it a little top up of their tryptophan, or they 5-HTP, to raise those serotonin levels. So it's something that it's a tool that we've got that we can use forever.

Dr. Eva Detko: Yeah, yeah, absolutely and there are no side effects. If obviously we use it at the rate that is right for us. So that's really awesome. And you did share, obviously when you were recovering from your vagus nerve injury, you shared some of the exercises that you did at the time but are there any other vagus nerve hacks that you like particularly?

Trudy Scott: Yes. One of my favorites is social interaction. And I actually interviewed Dr. Navaz Habib on my last anxiety summit. I believe he's a speaker on this summit. He was one of the favorite speakers. So when I heard you were doing the summit, I thought: "This is great. People really want this information." And he shared how social interaction is a tool that improves vagus nerve function. And this is another area that I'm really interested in, is social anxiety. So my expertise is using the amino acids. I talked about GABA and tryptophan. And there's other amino acids I use. I also use DPA to raise endorphin levels,

when you've got this sort of weepiness and this very strong emotional connection to food. And then tyrosine for low catecholamines and glutamine for low blood sugar.

So that's my one area of expertise. The other area of expertise is social anxiety. And there's this condition called pyroluria, which is a social anxiety condition, that it's debatable whether it's genetic, or whether it's caused by some kind of trauma, or caused by some kind of environmental impact. I have it myself. So if I'm not using the right nutrients, I don't want to socialize. I don't want to go to events, I don't want to go and speak in public. I don't want to even hang out with friends when I'm not on the pyroluria protocol. And the protocol is zinc. The foundation is zinc and vitamin B6. It addresses the social anxiety that people have if they have this condition. And so the symptoms are: the social anxiety, preferring one-to-one connections rather than being in large groups, not liking small talk, early morning nausea, not really big on animal protein.

Dr. Carl Pfeiffer noticed something where people with pyroluria have lookalike sisters. And this seems to be because people with pyroluria, if they have a miscarriage, they're going to miscarry the little boy. So there's more girls around and they often look very similar. Moms and sisters all look alike. Certainly my mom and my sisters, we all look exactly the same, pretty much.

So it's very, very interesting to see all of these connections. I'll have my clients do the questionnaire and then the response to the supplements will tell me whether we're on the right track. There is a urine test you can do. There are false negatives with the urine tests. A lot of people think they've got pyroluria. They'll do the questionnaire and then they'll go and do the urine test, it'll come back negative, and then they stop doing anything about it. But bringing this back to the vagus nerve.

When I interviewed Dr. Navaz on the summit, he talked about social interaction and how this was really important. He has these little tips for his patients where he'll say: "Just take one step at a time. Just go out to one meeting a month and see how you do. And then the next month, maybe go to a meeting and then a social gathering with people that you know. And then the next month maybe do three social interactions."

And that's all well and good if you don't have pyroluria. If you have pyroluria, nothing is going to make you go. And if you do go, you'll do what most of my clients with pyroluria used to do, and I used to do, is you force yourself. So you go there and you feel uncomfortable the whole time. You wonder if people are

noticing how uncomfortable you feel. You're putting on a brave face and you actually "extroverting". And one of the issues with pyroluria is, stressful situations make it worse. So there's a vicious cycle.

So you're forcing yourself to socialize. It's a very stressful situation in doing that, and then it makes your pyroluria worse so your social anxiety gets worse. So when you have pyroluria and you have the stressful situation, you end up dumping high levels of zinc and B6. So it makes things worse. So if you don't have pyroluria and you get these suggestions, that's great. If you do, it's either very stressful or you just don't even do it. So my contribution to the discussion is: let's address pyroluria and that's going to in turn allow people to get out and socialize without feeling uncomfortable, without feeling awkward, without having to stress, without feeling absolutely exhausted afterwards, and it's going to help vagal tone.

And there's actually a study done where they found that the more social interactions you have, the more it improves vagal tone. And then that improved vagal tone, improves your mood and makes you more social. So we've got, as I said right at the beginning, we've got many ways to heal. Getting out and socializing is one. That's going to help the vagal tone. But if you've got pyroluria, it's stressful and it's not going to help your health overall. So let's address both. And when I was getting ready for this interview, I was looking for some research on some of the nutrients for vagal tone and I did find one study that showed that zinc is important when it comes to vagal tone.

So the nutrients that we're using for the pyroluria to eliminate the social anxiety are helping the vagus nerve. And then it's going to help with so many other areas that we're dealing with. It's going to help the GABA be more effective. It's going to help the tryptophan be more effective. And then the other thing I just wanted to add with this is, the zinc and the B6 are nutrient raw materials that are used to make our neurotransmitters. So at the same time as using the GABA and the tryptophan, if we start to give the body these raw materials, the zinc and the B6, then it's going to help us make our serotonin and our GABA down the road.

Dr. Eva Detko: Yes. That's excellent Trudy. It's an excellent point because actually what people need to know is that social connection is good for your vagus nerve only if it's perceived positively by you internally. So if you're in a situation where you're forcing yourself to interact with other people, you're actually not going to have a positive knock-on effect on your vagus nerve because it's going to be the opposite. You're going to stimulate the sympathetic

nervous system response because you're there, as you described, completely uncomfortable and basically stress out. So those social connections need to be positive. Need to be meaningful. And then, of course, we're going to have a positive knock-on effect on our vagal tone.

Trudy Scott: Thank you for tying that all together at the end. That was perfectly said.

Dr. Eva Detko: Fantastic. This has been such a wonderful conversation. You've shared so many valuable things that people can go and implement pretty much straight away, and it will make a difference. So before we end, is there anything else that you wanted to add that you haven't already covered, or maybe some resources you wanted to share?
Trudy Scott: One other thing I was going to share is cold showers. Because that's something that is often talked about and I've heard people say: "Well, how do you even start?" And some people say it's too much. And I'll just share what I use as a cold shower method. The objective is to get in the shower and go "ughhh". That just gives you that stimulation. But when you first start, there's no way you can do this. So what I did is, I would just stick my arm in the shower and just get a little bit of that. And then I would stick two arms in the shower and get a little bit of that. And then I'd stick my legs in the shower. And this went over the course of about a week. And then I thought, okay, I'm going to step under the cold shower.

So then I would step in the shower and then quickly step away. I did that for a little bit longer. And slowly but surely get to the point where you could step in there with your chest, and put that under the shower, and then turn around and get your back. And then that was bearable. And then eventually stick my head under the shower once I washed my hair. And then eventually stand there and turn around a few times and really enjoy it. So that's my contribution for the cold showers because I think some people just feel like they're never, ever going to get there. And I just wanted to share my little tips for the cold shower. And then I'll be happy to share some of my resources if people want to learn more about the work that I do.

Dr. Eva Detko: Yeah, about the cold showers. I have to say, not my favorite method of stimulating the vagus nerve. But yes, when you build it up gradually like this, it does actually make it more bearable. And I know that there's been some research somewhere, I can't remember the details of that, but what also can stimulate your vagus nerve is submerging your face in freezing cold water. But of course you have to be careful obviously, if you put it in ice cold water,

that you don't cause some damage. So you can't do it for too long. But I know just submerging your face in ice cold water initially, whilst you're building out to having cold showers, can also work really, really well. So that's also great. So tell us a little bit more about your resources, your blog.

Trudy Scott: Sure. I was just going to make one more comment about the cold showers. And it's interesting that you say that's your worst thought. And I think what's really interesting is there's so many different approaches that we can use and we need to find what works for us. I've heard so many practitioners talk about gargling and that did not work for me.

So I think the message here is, find something that you like. And you alluded to that when you talked about socializing and it having an opposite effect. If you're doing something that you find very stressful doing but you think it's going to help your vagus nerve, then don't do it. So I think we need to be at peace with what we use.

Dr. Eva Detko: Yes, I decided to actually challenge myself with the cold showers because of course that adaptation that you get from that is just massively impactful throughout the body. And it is about longevity for me as well, not just about the immediate effect on your vagus nerve. And so I've decided that I'm going to embrace it. But that is true. It's true that if you're doing something that you perceive that as stressful, then no, it's not actually going to do anything for your vagus nerve. Because don't forget, activating the vagus nerve is activating the parasympathetic nervous system response. So if you're feeling stressed out about doing something, then obviously that's the opposite.

Trudy Scott: Yes, absolutely. So as far as resources, my book, the Anti-anxiety Food Solution has a whole chapter on amino acids. It has a whole chapter on pyroluria. And then it's got everything else, diet, and gut health, and hormones, and adrenals, and everything else. And then I've got online group programs for anyone who wants support beyond the book. Some people need that online connection, that group support working, being able to ask me questions. So that's where the online group programs come in.

I have a GABA quick start where I teach people how to do a trial of GABA, and how to use GABA and what to look for. I also train practitioners in using the amino acids, because I'd love to have more and more practitioners doing this with their clients, because it's so, so powerful for just shifting everything. And then of course, I host to the anxiety summits. I've hosted five summits. And I

do interviews like this and share great practitioners, and share great resources. So lots of resources to learn a little bit more about what I do.

Dr. Eva Detko: Absolutely, and if what we've shared today, if what Trudy has shared today, has appealed to you in any way, then Trudy is definitely the go-to person for this information if you want more in-depth information on this. Because obviously there's only so much we can share in the short time that we have. But there's obviously a lot more to it when you really start digging a little deeper. So thank you so much. You've been absolutely wonderful. It's been a pleasure having you contributing to this summit. So on behalf of myself and everybody else Trudy, thank you so much.

Trudy Scott: Thank you so much for having me. I'm really excited to share this with my community and then tune into the other interviews as well. So thank you for having me and thanks for doing this great summit on this great topic.

The Biology of Belief
Guest: Dr. Bruce Lipton

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Dr. Eva Detko: Hello and welcome, thank you for joining me for the Mind, Body & the Vagus Nerve Connections Summit, I'm your host, Dr. Eva Detko, and my guest for this session is Dr. Bruce Lipton.

Dr. Bruce is a stem cell biologist and best-selling author of The Biology of Belief, Spontaneous Evolution, as well as the Honeymoon Effect. His pioneering research on cloned human stem cells precedes today's revolutionary new field of epigenetics. And his research at Stanford revealed the nature of the biochemical pathway by which the mind, meaning our perception and our believes control our behavior and genetic activity. In addition to being listed in the top hundred of the world's most spiritually influential living people, by the United Kingdom Watkin's Journal, Dr. Bruce received the 2009 prestigious Japanese Goi Peace Award in honor of his scientific contribution to world harmony.

So for this session, I have selected the highlights from one of my interviews with Dr. Bruce, and what you will hear is obviously highly relevant to what we are focusing on in this entire event, promoting, of course, healthy vagus function. And you may already know that from other sessions but basically, our mind is one of the key sources of chronic stress. And because of that, our mind can make or break the parasympathetic nervous system. It can make that vagus

nerve stronger or it can make it weaker, depending on what sits at the deep levels in the subconscious mind really.
And so before we proceed with this presentation, I just want you to remember that Dr. Bruce was one of the key scientists who brought forward this new understanding that we now have about how our bodies actually function. And he is, of course, an absolute legend. And it is thanks to scientists like him that we no longer have to feel disempowered because we're stuck in this conviction that we are victims of our own genes. We know that's no longer true. It's no longer the case. And so now, instead, thanks to this updated understanding that we have that the new science of epigenetics, but also, of course, psychoneuroimmunology is offering us, we can feel more empowered. And of course, now we know that we have a lot more control over our health than what we previously thought, which is absolutely fantastic. So I just wanted to acknowledge that Dr. Bruce played a big role in this new understanding that we now have. So with all of that said, let's hear from Dr. Bruce Lipton.

Dr. Bruce Lipton: Dr. Eva, thank you so very much, I hope you call me Bruce, and I'm so happy to be here with you. But more especially with your audience because this is a time of awakening. Awakening to how powerful we really are. Sometimes we perceive ourselves as victims of a world, not really knowing as the new quantum physics and the new biology epigenetics reveal that this is the farthest thing from the truth. We are all powerful.

We are creators of our world. Unfortunately, we only create from our beliefs. And if our beliefs are wrong, then our life doesn't work out very well at all. And we've been operating from misperceptions, beliefs that are totally wrong. And yet when you take those beliefs and run your biology by them, then your biology doesn't work well anymore. We're moving from an age where we used to think all illness and disease was related to a breakdown of the human body.

And in fact, here's a very important new fact. Less than 1 percent of disease is connected to genetics. Over 90 percent of health problems in this world are not the result of a body breaking down. It's the result of how we are running our biology. Because we have to recognize that our consciousness, our mind, is shaping not just our internal biology, but what's happening in the world. We were all brought up with a belief which is based on what you call Newtonian physics, in the Newtonian world.

And this is where the problem comes from. It says that matter and invisible forces, energy, are separate from each other. That matter can only be affected by matter and not by invisible forces. If you look at biology and you say the body

is matter and it can only be affected by matter, then this is why we take things like drugs. Drugs are physical chemicals that in our mind are going to be physical and affect our physical body.
Well, this was the belief of a Newtonian world, separation of energy and matter. But quantum physics, is nearly a hundred years, quantum physics says that's an illusion. Everything is energy, everything is connected. There's only one universe. There's not like an energy universe and a matter universe. It's all one. Why is it relevant? Because in quantum physics, the energy is what gives shape to the matter. They call the energy the field. That means the energy that's surrounding us.

Wherever you're sitting right now, there's cell phone broadcast and television broadcasts, and radio broadcasts, and solar energy, and planetary energy all around us. And what we're led to believe is that, that energy is not relevant because we say: "Only matter is relevant". But quantum physics says: "Not only is that energy real, but that energy controls the physical body".

And all of a sudden wait a minute! Energy controls body? I go, yeah, more than matter. So why is that relevant? Because consciousness overrides the physical body. It's your consciousness that is giving shape to this reality. If your consciousness is not in harmony, your health is not in harmony. That's the bottom line. Simple as that. We haven't paid much attention to the mind. And I go, listen, it's almost a hundred years now that science has recognized something called the placebo effect. The placebo effect is: I'm given a pill. I believe this pill is going to heal me. I really believe it, this is the newest, best medicine. I take this pill and I get better and everyone will go: "Yes, the pill healed you." I go: "Yeah, but it was a sugar pill." I see. So what healed you? Not the pill. Your belief in the pill. Your belief that: "I'm going to do this. I'm going to get well." Your belief made you well. Now people say: "Oh yeah, that's called the placebo effect".

At one time it was thought that one third of all healing on this planet, be it medical, drugs, surgery, one third of all healing was due to just the placebo effect. Now the numbers moved up. Now they believe two thirds of all healing is based on the mind and the placebo effect! So what about negative belief? Negative belief is equally powerful in shaping your biology. But when you're operating from a negative belief, the shaping, the result is not health, but disease. Negative belief in biology is called the nocebo effect. Placebo - positive belief can heal me. Nocebo, negative belief. And this is important. A negative belief can cause every disease on this planet. A negative belief can cause death. A negative belief can cause your whole world to come upside down.

And this is the understanding of quantum physics, and let me emphasize why this is so important. The most valid of all sciences on this planet, the most truthful of all sciences on this planet, is quantum physics. The reality that we observe is the result of consciousness that is from physics. It says our mind is creating the world. Now, is this a New Age idea? Well, it's been a New Age idea, except it's foundational science of the world.

Why is it relevant? Because if you don't realize your thoughts are controlling the world, and you don't like the way your world is experiencing for you, then recognize you're the one that can change your thoughts. You're the one that can change the world. We must own who we are. We are creators. We are creating with our consciousness. Basic quantum physics, basic biology. If you like your life and the way everything is going, congratulations. You are creating a beautiful experience.

But if you're not happy with your life, your health, what's going on in the world around you, then recognize you are also creating that. And why is it relevant? Not to put blame on you, but to give you power to say, well, if you're creating it and it's not working right. You can create different, you can create completely different. And this is to me, the most important message. Why? Because if we all recognize we're creators, essentially the entire world population wants exactly the same thing. They want heaven on earth. Love and happiness, and joy, and safety, and security. That's ninety nine percent of everybody on the planet. So if ninety nine percent of the people finally said: "I am going to change my world by changing my consciousness", the world will change overnight. Now that sounds like: "Oh, magic! magic!"

I go, OK, let's step back one step. And here it is. Everyday your life could be just miserable, bad life. I don't like my life. And then one day you meet a partner and you fall in love. And what happens? 24 hours later, your world is completely different. It may be bad every day of your life until you meet this person. And then 24 hours later, when you're fully in love, experience what I call the honeymoon effect, the joy, the juicy-ness of being in love. It's a new world. It's a joyful world. It's happy, healthy, fun. I can't wait to be awake, to share love and be in heaven. You went from miserable life to heaven on earth overnight. And now we understand why. Because this is the one time in your life that you've taken the power back into your hands as the creator.

Up until that point you have been programed and your program is not supporting your health, or the planet. But I just want you to recognize this. In

just 24 hours after you meet that special person that jazzes up your life, your world goes from hell on earth to heaven on earth. This is not an accident. This is not a coincidence. This is an example of creativity. You created the honeymoon effect.
And the point about that is, if you can create a honeymoon effect and have heaven on earth, you could create that every day of your life. Whether somebody is there or nobody is there. Doesn't make any difference. You are the creator. And once you understand that, we take the power back. And that's why I am so appreciative to be on this program with you Eva. It is because you are helping people become empowered. Taking their power back and creating a life that's different because the world is not in good shape. But it's interesting because the crises that we are facing is causing us to think different.

And your audience, yourself in particular, are cultural creatives. Because every one of you, including you as the leader in this, is offering an opportunity to think different. Is offering an opportunity to use your consciousness and recognize that using that consciousness, you are powerful. When you come into the quantum world, everything is energy.

So guess what? Yeah, physical things can affect me. You push on me, I feel that, and stuff like that. But it says energy, thought, consciousness is more powerful at affecting your biology than is the chemistry. That's where the placebo effect comes in. Whatever is going on chemically in your body. It was repaired not because of chemicals. It was repaired because your consciousness, your positive thoughts changed it.

And this is a quote from a quantum physicist, simple, you're ready? "The universe is immaterial. It's mental and spiritual. Live and enjoy." That's a quote from a scientific article in the journal Nature. So quantum physics brings out the reality. It says your consciousness, your mind is not passive, just a coincidence. Your mind is giving shape to this. And if you look at your health and it's not healthy, we have a tendency: "Oh, my body is broken." I go: "No, no! New physics. Your mind is not sending harmony to your body." And when your mind is not in harmony, the 50 trillion cells that make up our body, they're not in harmony. And when cells are not in harmony, that's called dis-ease. And why it's relevant? Because only 1 percent, actually less than 1 percent of disease, is in any way connected to our cells and our genetics.

And this is why if we start to exercise mind consciousness and use it as the power that it is, and recognize, since your consciousness is creating, what are you thinking about? "I'm a victim. I'm weak. Things are going to attack me. Oh

my God, I'm going to get disease! Oh my God, I get cancer!" If that's your thought, then you're sending that information to the biology, and your biology matches your thoughts. Your biology and your life is an expression of your thoughts.
You're not happy with your biology, you're not happy with your life, we have a tendency to go out there and physically change everything. I go: "No, no! Go in here and mentally change everything." Because we are creating. Your consciousness is shaping matter. That is a rule of physics. I'm not making it up. It's not a New Age idea. It's built into the world of science. Of the most valid science that exists.

So let's own that. We start off with physics. My consciousness is creating this. And then let's go into biology. The second myth is: "Genes control us." That's what we bought. Why is it relevant? Because if you believe you have a bad gene, YOU BELIEVE you have a bad gene, the thought of a bad gene, a negative gene, will create a biological complement. "Oh, I have a cancer gene. I could get cancer. I got cancer. Surprise. I had the cancer gene." I go: "There is no such thing as a cancer gene!" There is not one gene that causes cancer. That's not the way at all. Not at all.

Even to get a cancer started, it takes a minimum of 12 to 15 genes working together to create a cancer. That's not an accident. That's a coalition. You brought that many genes together. That's not an accident that they came together. They came together because of your consciousness. If I believe I'm going to get cancer, I can get cancer. In fact, less than 10 percent of cancer is even connected by genetics in any way.

And I really would love people to, if they haven't, to read a book by a dear friend of mine. The book is called Dying to Be Me by a wonderful author Anita Moorjani. Anita Moorjani had cancer four years. She was in her last week of life. Her body shut down. She was on machines to keep her alive. She was so emaciated that cancer lumps were sticking out of her skin. You could see where the cancer was growing. She was so thin. She went into a coma. Her oncologist said to her family: "Come, this is Anita's last couple of days. She's going to die now." What happened was, she had an outer body experience and she realized that this struggle in her life was not because of the physical.

The struggle in her life was an emotional issue with her family, her culture, her father, especially. And she resolved that in that coma period. She was out of body and had an experience of resolving that. She woke from the coma and said:

"I'm well". And of course, she was on the machines and she said: "Take the machines off."

And they took the machines off. She didn't need the machines anymore. She came back and within two or three weeks, 90 percent of the cancer was gone, and then two or three more weeks after that no cancer was left. Why is it relevant? I want people understand that this woman was on her last day of life. She had four years of cancer. It wasn't a misdiagnosis. She was filled with cancer. I want people to understand. Changing her consciousness caused her to come from the last day of life back to full health again. Now if people get nervous that they think they have a cancer, I want you to know, Anita revealed you can have so much cancer that everyone calls you dead and you can still in an instant change it by changing consciousness.

This is a new science called epigenetics. The old science that everybody has been programed with is called genetics, your life is under control by genes. That's what we believed: "Oh, you got the bad gene and you got this bad gene, then you're gonna have a bad life." Too bad you are a victim of your genes because we believed incorrectly that genes could turn on and off, and control our lives. A gene turned on. A gene turned off. This is phony! Not real. Totally false. Genes are blueprints. Go into an architect's office and let's say she's working on a blueprint. And you lean over the architect and you say: "Is your blueprint on or off?" And the architect will look at you and go: "What are you talking about? It's a blueprint! There's no on and off. It's a blueprint!" I go: "Exactly. A gene is a blueprint."

The new science is not called genetic control, it's called EPIGENETIC control. Sounds like the same thing, epi, epigenetic control. What does it mean? I go: "EPI means above. Control above the genes." The control isn't in the genes. We now know that control is in the environment, and your consciousness is the main thing controlling the environment. And if you change your consciousness, you change your genes.

You're not a victim of your genes. You're the one that turning your genes on and off. If you have very positive thoughts, then the genes you will turn on and off are genes of health. But if you have negative thoughts, if you have negative beliefs about your health, then you can turn on any gene to make any disease. You can create cancer because you believe you have cancer. Stop trying to fix the cells and start trying to fix the consciousness. It's the consciousness that is the source of everything.

You can, in eight hours change your genetic activity just by changing the way you're living. In eight hours. All of us, me, Dr. Eva, every one of you in the audience. It is your consciousness, your thoughts that are creating this world. Now, I have to answer one last big question. Because I am sure there's so many people out there going: "Yeah but I have very positive thoughts and my life still is not happy. My health is not better and I have very positive thoughts." This is the most important piece of the picture. The mind is controlling biology. Yes, but there are two minds. Conscious mind is the one connected to you, your spirituality. What makes you different than everybody else? Conscious mind, which is the part of the brain right behind your forehead. The wishes and desires you tell me about - conscious mind.

What about your subconscious mind? Nobody's in there. It's just a machine. It's autopilot. Everything you've learned how to do, the subconscious has a program. It knows how to walk. You don't have to tell yourself: "Oh, I want to go the other side of the room so I'm going to tell myself, OK, left leg, right leg." I don't have to tell my legs how to walk. I just have to have the idea I want to walk. My program and my subconscious will do the walking. I get in the car and I drive, and I can be involved with a conversation with a passenger. And then I look out the window and I haven't looked out the window for the last five minutes. I've been talking to my passenger. Who's driving the car? And the answer is subconscious. It knows how to drive the car. You programed it. You practised so it knows how to do it.

So here's the point. Conscious mind is you, your spirituality, your creative force. Subconscious mind is autopilot programs. When the conscious mind is busy, the subconscious takes over. Whether I'm walking down the street and having a thought. My consciousness is my thought, so if I'm thinking my consciousness is not paying attention. If I'm thinking, my consciousness is inside thinking. Well, then if I'm thinking, then who's controlling what's going on outside?

If you're walking down the street and you're thinking, who's controlling the walking? The subconscious. It's autopilot. It knows how to walk. We believe that we are creating our lives with our wishes and desires. I get up in the morning and I go: "Today, I'm going to be healthy. Today I'm going to find that great relationship. Today, I'm going to get the best job ever." And you start out in the morning and then you come home in the evening, and it didn't work. You still are not healthy. You still don't have a partner, and you have a lousy job.

And you say: "But all day long I wanted to have these." Here's the answer to the problem. The conscious mind, which has wishes and desires, spends 95 percent

of the day thinking. Yes, so what? Well, if it's thinking it's not paying attention. If it's thinking, then the rest of your life is now run by the autopilot. The programs. I go: "Oh, so my wishes and desires, conscious mind, only works, what, 5 percent of the day." Ninety five percent of my life is program. I've been programed. You know what? Those programs then run our lives. Now here's the problem. Where did you get your programs from?

From age 0 to age 7, we get the basic programs by observing other people because your mind until age 7 is in hypnosis. Whatever you see, it's like a television recorder. That's how my mom behaves, I got the program in my subconscious. I behave now just like my mom. I see how she did it. Oh, that's how my father behaves. I downloaded that now. It's a program. I know how my father behaves. And here's the problem. 5 percent of the day you are creating what you want, conscious mind. But 95 percent of the day conscious mind's thinking, and when it's thinking life is controlled by autopilot. But the programs in the autopilot came from other people. So therefore when you're playing those programs, they don't answer your wishes and desires, they just emulate what the other people did. And you say: "Oh, we've been programed!"

This is not a new idea. The Jesuits for 400 years have told you, they're programing you. They said for 400 years, here's the quote: "Show me a child until the age of 7 and I will show you the man." Do you understand what they just said? If they get the program for the first seven years, they control your life. Scientifically we now know why. Because the program in the first seven years is the subconscious programs. And ninety five percent of your life comes from those programs. So whatever programs you got in the first seven years. Those are the programs that control your life.

But since those programs came from other people, then recognize most of those programs do not support you. 70 percent of the programs that you're operating from are disempowering, self-sabotaging, and limiting. The story of the honeymoon. How come your life wasn't good every day until you met this person? Because every day you've been operating ninety five percent of your life from the programs of other people, and most of those are negative. So you have a negative life.

Well, then what happened the day you fell in love? That's the one day you stop playing the programs. The moment you are in love you stay what is called mindful. You keep your conscious mind present. Instead of thinking so much, you're being present. Why is that important? Because as long as you stay present, then your conscious mind is driving the vehicle. The conscious mind

has your wishes and desires so as long as you're in the honeymoon, you're staying present. You and your partner are creating from wishes and desires and what did you create? Heaven.

That was always there. You just waited until you fell in love to use it. You can use it every day. You don't have to fall in love. You just have to know: "Wait! My thoughts are creating this life." And then stop long enough and listen to your thoughts. Because if you listen, most of them are negative: "Oh, this won't happen." I'll be late for that." Or "I won't be able to do this." These are thoughts.

But if those are the thoughts and the thoughts are controlling biology, then your life matches those thoughts. And if their negative thoughts, your life is negative. So if you want power, you have to take it back and say: "What are my thoughts? What are my beliefs? What is my program?" Let me just summarize this little piece because everybody's going: "I got the program in the first seven years! What was the program?" You were programed when you were zero and you go: "I don't remember." OK, you were program when you were one: "I don't remember." You were programed when you were two: "I don't remember." So what is my program? And here I want to help everybody. 95 percent of your life IS the program. Your life is a printout of your subconscious program.

The things that you like and love that come into your life. They come into your life because you have a program that lets them come into your life. But, and here's the one, anything you work hard at, anything you struggle over, anything you're putting a lot of effort in, "I want this to happen, I'm working really hard." Why are you working so hard? Answer. Because that destination is not in your program.

As a matter of fact, your program does support that. And that's why: you are trying to override your program with more work, harder effort, more sweat. It's simpler just to change the program because once you change program, then those things can come into your life. So I just need people understand, you want to know what your program is. Look at your life and recognize that ninety five percent of what's happening in your life is just from the program.

And the things that you want and you don't get, you have to change the program. It's the program that's preventing you from getting things. Not the universe, not God, not spirit. No, no, it's the program. And when you change that program, you become creator of your life. Your psychology is affecting your brain. Which is then affecting your immune system. Your psychology controls your immune system. If you're in stress, you already opened yourself up for

disease. And we have to recognize, our thoughts are going to either help us heal or our negative thoughts, nocebo, can actually shut off the immune system and cause us to get any disease. So we have to recognize that the immune system is directly tied in to the psychology.

So if you say: "Oh, I'll just get rid of the cancer. I'll go to the doctor and we'll cut out the cancer." That wasn't the problem. The cancer was reflecting a higher problem up here. So if I cut the cancer cells out down here, that doesn't prevent me from getting another cancer. The cancer started up here. It didn't start down here. The cells, they weren't bad, they were just reflecting you were not psychologically healthy. So cutting out bad cells does not stop the problem. Changing consciousness stops the problem. Anita Moorjani. Everyone can do that.

In one of my lectures, I show them a weightlifter, powerful man, big muscles. And he's lifting up a car and he's grunting. And it's like, oh, he's very strong. He can't hold it up very long, but he can lift it a little bit. And then I show a series of news articles from around the world where women, mothers especially, lift up a car if it has fallen, or crashed, or in some way their child is caught underneath. A woman who's not even an athlete can lift up a car for five minutes until help comes to get her son out from the car. This is not one time. There are articles all over from history, all over the world. The same thing. Amazing power.

A woman who's not even an athlete can lift up a car and hold it up until help comes to get her child out. How does that happen? The answer was, because most of us believe we can't lift up a car. If I say: "Go out in the parking lot and lift up a car." You'll go: "I can't do that." Even before you walk down in the parking lot. "I can't do that." You believe you can't lift it and you can't lift it. An accident. The mother gets out of this wrecked car. Her child's under the car and then I say tell the mother she can't lift the car. She's going to lift that car. That's her kid. Her belief is: "That's my child. I will lift this car." And she does. And why is this relevant? We were all capable of lifting the car. She was just put in a situation where it had to be true for her because she couldn't leave her kid under the car. OK. That's one.

And the other one, which I really love. In the south, in the US, we have religious fundamentalists. They work themselves up into religious ecstasy. They play with poisonous snakes. They're called snake handlers. The point is, they have a belief that says: "I believe in God so much that I will handle these poisonous snakes and God will protect me." And guess what? Even when they get bitten, most of the time, they have no effect. But that's not the one I want to talk about.

The one thing I want to talk about is, some of them prove the power of God by drinking strychnine poison in very toxic doses to show: "I will drink this poison and God will protect me." And guess what? They don't get sick from the poison! They're drinking strychnine poison and they're not getting sick. How? The belief system is stronger than the poison.

And this is really relevant for us because we have such screwy belief systems. But the reality is this we can drink strychnine poison and not have an effect. We can lift up a car. We can walk across hot coals. You can cure a four year cancer in one day. Yes. Yes. But all this is done with the power of the mind. And the idea about belief is, you either believe it or you don't believe it. It's like pregnancy.

You can't be almost pregnant, you're either pregnant or you're not pregnant. You either believe or you don't believe. But there's not "almost belief". That's not belief. You think you are running your life with your conscious wishes and desires. But the statistics reveal, ninety five percent of that life is not coming from that, it's coming from subconscious autopilot. And you are the one that does not see it.

Go back in your life, you probably had a friend you were very close with and you knew your friend's behavior very, very well. And you happen to know your friends parent. And one day you see your friend has the same behavior as the parent. So you want to tell your friend. You go: "Hey, Bill, you're just like your dad." Back away from Bill. Bill is the first one to go: "How can you compare me to my dad?! I'm nothing like my dad!" And people laugh and that's because they're all familiar with it. This is the most profound story that I can tell you. For number one, everyone else can see that Bill behaves like his dad. The only one who doesn't see it is Bill. How can that be?

And the answer is simple. Bill spends 95 percent of his time thinking. That means ninety five percent of his behavior is coming from the subconscious program. But he can't see the program because he's busy thinking. So he's not observing the program. He only sees the results of the behavior, but he doesn't see the behavior. And since most of the behavior is disempowering, all Bill sees is: "My life's not working. I don't know why. I have great wishes and desires." And I go: "But you're not operating from wishes and desires. You're operating from the program and you can't see it." And we are all Bill. That is the most important part. Every one of us is Bill. Every one of us is operating ninety five percent of the day from programs that we do not observe.

And since the vast majority of these programs are negative, then this says most of the day we're shooting ourself in the foot. And then wonder how come I got a bloody foot? Where did the bloody foot come from? You haven't seen, all day long you were shooting yourself in the foot because it was sub-conscious, below conscious. I can change all the programs of negativity into positive programs. Then, whether I'm thinking or I'm not thinking, I'm always playing positive programs. My conscious mind loves positive programs.

And if I make those part of the subconscious, the automatic pilot? If I'm automatically playing programs that give me better life and health and happiness? Hey, then it doesn't make a difference if I'm thinking or not thinking, both minds are going to create heaven on earth for me. And that's the resolution. If you don't like the reality you're in, don't try and change the reality, change the consciousness.

Vagus Nerve Stimulation with Essential Oils
Guest: Jodi Cohen

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind Body & the Vagus Nerve Connection Summit. I'm your host, Dr. Eva Detko, and my guest for this session is Jodi Cohen.

Jodi is the best-selling author, award-winning journalist, functional practitioner, and founder of Vibrant Blue Oils, where she has combined her training in nutritional therapy and aromatherapy to create unique proprietary blends of organic and wild crafted essential oils. She has helped over 50 thousand clients heal from brain-related challenges, including anxiety, insomnia and autoimmunity. Jodi has been seen in The New York Times, Elephant Journal, and numerous other publications. Her website, vibrantblueoils.com, is visited by over three hundred thousand natural health seekers every year and has become a top resource for essential oils education on the internet today. So Jodi welcome to the summit!

Jodi Cohen: Thank you so much for having me. I'm so excited to talk about the vagus nerve.

Dr. Eva Detko: I'm excited to talk about the vagus nerve and of course essential oils. Absolutely adore essential oils, and I studied clinical aromatherapy for a bit myself. And I know that you absolutely love them. That is what you do. So you're going to have so many wonderful valuable insights to share. So is it OK

if we start talking about the nervous system? Just give people an idea of just how much of an impact essential oils can actually have on our nervous system. And maybe you can weave into it how they actually do that, how they work, because not everybody might be aware of the fact that, you know, what the smell does and how that impacts the brain, and so on.

Jodi Cohen: So essential oils can affect your nervous system in a variety of ways. I want to kind of lay the groundwork of how you can get essential oils into your system. Most remedies we assimilate through digestion and so that has to go through the stomach and the liver. And if there's any compromise in digestion, it somehow can delay or impede the ability to get into your system. But it's interesting. Most people don't realize that you're olfactory cells, your nose cells, go directly to the brain. They're brain cells.

And so just smelling something, it actually goes directly to the frontal lobe, and to the part of your brain that kind of controls your stress response. It's the primitive brain called your limbic brain. And so it's your amygdala, which controls your fear response, and then also your hypothalamus, which controls all of your hormonal signals. And those hormonal signals are what impact your nervous system. Your sense of smell started as kind of our most important resource because it helped us avoid danger. We could avoid fire. We could avoid predator odor. So if we smelled danger, our body knew to turn on that fight-or-flight state of our nervous system, called the sympathetic nervous system, and to mobilize so that we could avoid that danger.

And then when the danger passes, our nervous system knows to switch in to that parasympathetic state where we're safe. And so smelling things is a really good way to alert your nervous system. Either that there's danger around or safety. And since so many people are stuck in that danger state of the nervous system, the sympathetic state, smell is a super easy way to calm you down. Do you want me to elaborate?

Dr. Eva Detko: Yes, please.

Jodi Cohen: OK, so there's a Nobel Prize researcher named Linda Buck, who happens to live in Seattle. And she did research on specific olfactory cells in the nervous system and identified, it's very much a lock and key system. So certain odors stimulate certain responses in the body. And she was super curious about the predator odor, and what olfactory receptors that stimulated. And then she took it a step further and she figured out what would kind of turn that off. So

that you didn't have the danger response. And it turned out it's rose essential oil. So that old adage "stop and smell the roses".
There's scientific evidence to back up that smelling rose oil helps to turn off your response, your fear response to predator danger and helps to calm you down. So many people have that experience. Like for me, it's smelling blackberries in the summer. I feel like I'm 10 years old again, on the dock at my parents cabin. It just brings you back. And because what happens is your brain wants to avoid danger and keep you safe.

So we store those memories. If we we're in a fire, I was actually in New York for 9/11, I remember what it smelled like, and if I ever smelled that again, I would probably hightail it out of there. So memories are really linked to smell and smell can powerfully trigger you. It can also powerfully calm you down.

The other wonderful thing about oils is that because they're fat-loving, they can go through your skin and actually go through your cell membranes, and especially your blood-brain barrier. Your blood-brain barrier is super small, tight junctions. And it only lets very, very small fat-soluble things through like essential fatty acids, essential oils. It's very hard to get in there. So essential oils are a wonderful remedy for actually accessing the brain when so many other remedies can't get in there.

Dr. Eva Detko: That's fantastic. Great explanation. Thank you. And actually, since we're talking about the fact that they are oil-loving, we should probably mention that essential oils are not actually chemically oils. And that's quite interesting because obviously they're called that. But there are quite a number of different constituents within those essential oils that have the health benefits that we can enjoy. But they're not actually chemically oils.

Jodi Cohen: No, that's true. Basically, the way they're distilled from plants is kind of like how you make nutrients bio-available, right? You can soak and sprout nuts when you heat water. Water and time. You distil the oils out of the plants and it comes in different parts of plants, for example, it's the citrus peel that contains the oils, it's certain leaves, it's certain bark. So it's basically extracting the very, very concentrated kind of healing essence of the plant. It takes I believe one drop of peppermint oil is the equivalent of 50 cups of peppermint tea. It's super-concentrated. And so you really want to be very careful with it. A little goes a long way. You don't necessarily want to pour an entire bottle on your body. You want to maybe take one drop at a time.

Dr. Eva Detko: Absolutely. This is one of those situations where more isn't necessarily better. And yes, it's a very important safety aspect of using essential oils because they are extremely powerful. And as much as we can in acute situations use maybe larger quantities, what I do, if I'm dealing with an acute infection, I will use a little bit more. But if are we talking about calming the nervous system down and using them more regularly then, definitely those tiny amounts, as you said, go a long way.

Jodi Cohen: Well, if you think about it, if you're at a concert, having it louder isn't necessarily better. It's kind of finding that perfect rhythm, that perfect balance. And as you're pointing out, if you see a client and they're super deficient in, say, vitamin D, you would mega dose to get them back into balance, and then you would cut it down. So there are times when you want to apply oils more regularly or use potentially less dilution. And then there are times when you kind of hit maintenance where less can be more. And sometimes even like homeopathy, where it's a very, very small amount, and that's all you need is that tiny little push to get your body back in balance.

Dr. Eva Detko: Actually, that is a great, great way of using essential oils, is using them energetically. I do love energetic aromatherapy. That is actually obviously something we're not going to go too much into but I do want people to know that, that is another application of aromatherapy. And using essential oils, using those minute quantities, you can have an impact on your biofield, on your energetic field. So obviously, as you know, we're focusing on the vagus nerve a lot in this summit and I know you love the subject of the vagus nerve, and you know it quite well. And people may or may not be aware that there is such a thing as vagus nerve toxicity. So let's talk a little bit more about vagus nerve toxicity. Maybe you could elaborate on this and also how we can treat it with essential oils.

Jodi Cohen: If you think about your vagus nerve almost as a highway that goes from your brain down to almost every organ in your body. And it starts at the back of the head in the brain stem. The upper third of the brainstem signals the sympathetic fight-or-flight. And the lower two thirds is that parasympathetic rest and digest. And it travels down just like you might think of a river that flows. And just like a river, if a tree falls, or there's a build-up of debris that can block the information from flowing down, that can happen in the vagus nerve. Because the vagus nerve is so long, it's super vulnerable to getting damaged and then blocking the signal. One of the very common places where the nerve can be damaged is kind of right behind the ear lobe. If you feel behind your ear, you can feel that mastoid bone.

That's actually where your vagus nerve is the most accessible to the surface and also where it's the most vulnerable because it's a bit of an intersection. So your jaw nerve, your trigeminal nerve kind of drains right there, and it crosses like an intersection. And if you think of all of the toxins that live in your mouth, if you have mercury amalgams, if you have a cavitation from a poorly done root canal, or wisdom tooth that was being removed, or even just the normal toxins.

Your mouth is one of your first physical barriers where you interact with the world and say that your system is trying to drain that toxin. This is the exit route and it intersects with the nerve, and nerves have a really high affinity for toxins, especially for metals. And so what can happen if your lymph is congested and say it's just moving slowly and so it's lingering here. Those toxins can be up-taken into the nerve.

And then what happens are two things. It kind of blocks the signals from the brain to the rest of the body. So it can over-signal, and this is believed to be the vagus nerve hypothesis, is believed that when the vagus nerve is congested or toxic, that all of a sudden these signals become amplified. This whole idea of when you're sick, your body goes into sickness behavior, right? You're tired so that you have time to heal. You're in pain so you don't move around so much. So if this message, this sickness behavoiur message, is over-firing your body's always going to feel tired, or always going to feel in pain.

So it's correlated with chronic fatigue syndrome and fibromyalgia, all of these ailments. Or the other thing that can happen is that the right signals aren't getting sent. Your vagus nerve is what sends the signal for digestion. It tells your stomach to release hydrochloric acid. It tells your pancreas to release enzymes, your gallbladder to release bile. It actually is part of that motility housekeeping wave that move your food through your body. So if that motility wave isn't moving, you might experience constipation.

So digestion symptoms are a very early indication that your vagus nerve isn't firing well, and that can be from a number of issues, including any toxicity. There is a whole paper. Tufts researcher wrote an entire paper on this. But it's really an important area to consider when you're looking to have healthy function of your vagus nerve. It's interesting if you think about how do you get something in there? Because essential oils are fat-soluble and they can get into the skin pretty immediately, I started thinking about how dentists had been using Clove oil for centuries to help alleviate pain, and how Clove oil also has so many antiviral, antibacterial, anti-parasitic functions.

Then I started formulating a combination of Clove which has this component called eugenol, which is amazing for detoxifying, and then Lime, which has incredibly small molecules and also is high in limonene. It's the actual peel of the citrus fruit that has all these healing qualities, which is why so many detoxification recipes have you use lemon peel or orange peel. The peel is where the oils come from and they have this constituent which contains glutathione, which is amazing for detoxification and cell health.

So if you combine Clove and Lime essential oil and apply it right here, you're doing two things. You're helping to actually stimulate almost like the electrical charges that stimulate the vagus nerve to turn it on, and then you're also helping to detoxify it. To get all of those toxins that might be causing congestion to leave so that the signaling goes forward better. So you're actually healing it at the same time that you're stimulating it.

And a good analogy for the congestion. If you ever think about a parking lot after a sporting event. I live in Seattle and Seahawks' games are crazy. You know, the game ends, you're trying to get out of the parking lot and you sit for a good half an hour to an hour because it's so congested, and so many cars have to leave. And as each car leaves, there's more space for everyone else to get out.

If you think about your vagus nerve crowded with toxins, the more you can help kill off and alleviate the toxins, the more it heals that inflammation. And not only allows the signal from the brain to the body, but also allows the flow of your lymphatic fluid to kind of help move toxins out of the body, your vascular system to move oxygen and glucose into the brain. It helps with so many aspects and helps to put you in balance so that everything functions in a more healthy way.

Dr. Eva Detko: That's excellent Jodi. I love you analogies.

Jodi Cohen: Oh thank you.

Dr. Eva Detko: They really explain things well so that people can connect with it and understand. One thing that I would like you to clarify for people. Basically, when we're talking about the vagus nerve, we talk about stimulating the vagus nerve. That's what we want, we want to stimulate the vagus nerve and it's the stimulation of the vagus nerve that activates the parasympathetic nervous system response. And as you said, Clove, you mentioned Lime, also,

we know that oils such as Bergamot or Lavender, they've been actually shown in studies to increase heart rate variability.

So that means that they allow this parasympathetic response to kick in. So that's why we use this word "stimulation" of vagus nerve. But at the same time, when we're looking at essential oils and we're looking at properties of essential oils, sometimes we see that an essential oil is a stimulant. I don't want people to be confused about it that if you see that an oil is a stimulant like, say, for instance, Ginger. Ginger's been hypothesized to actually prevent nausea and vomiting by inhibiting the vagus nerve. You often see it in books, if you have a book on essential oils, it will tell you it's a stimulant. So I wanted to make the distinction between what we understand by stimulating oils and what we understand by oils that stimulate the vagus nerve. Do you know what I mean?

Jodi Cohen: That's a great point, and it's interesting because we have stimulatory and inhibitory chemicals in our body all the time. And sometimes by stimulating a stimulatory neurotransmitter that causes stimulation, by inhibiting a stimulatory neurotransmitter, it calms you down. You have a lot of choices basically with how to shift gears in your body. And what's interesting to me about plants in general, be it adaptogenic herbs that you might use for adrenal support or essential oils, is they tend to meet you where they're at. You know, if you're using a pharmaceutical drug that has one gear, you're either turning things on, you know, stimulating, or you're turning things off, inhibiting. If you're using an essential oil, it tends to do what your body needs.

So let's use your energy levels, for example, your adrenal glands. If your adrenal glands are putting out way too much cortisol, which is your energy hormone, then it can calm them down. It meets it where it's at. If it's been putting out too much cortisol for so long that it can't really release cortisol anymore, because it's almost like you've been deficit spending on your energy and you've run out of energy, then it helps to boost you up. So it's hard to do it wrong. So even if you are using a stimulatory oil, be it ginger, be it peppermint can be stimulatory, Clove is stimulatory, oregano, thyme. If your body wants to be calmed and not stimulated, a plant will not basically hurt it. It will not take it in the wrong direction.

Dr. Eva Detko: Yeah, and it was important to note that because I've had somebody ask me this question before and I think more people may wonder about this and perhaps be confused. But that's the thing, we're dealing with intelligence here.

Jodi Cohen: Yes.

Dr. Eva Detko: We're dealing with plant intelligence and this is basically what you're talking about. And I think the analogy with the adaptogenic herbs is probably a really good one because people tend to be more familiar with that.

Jodi Cohen: What you're trying to do is, it is really like shifting gears on a bike. If you're biking uphill and you're in the highest gear, you're working way too hard. You need to downshift to the lowest gear to make your life easier. And what your vagus nerve does, it's the gear shift between your sympathetic fight-or-flight, and your parasympathetic rest and digest state. And what happens to some people is that they are so in the parasympathetic state, it's a vasovagal condition, that they practically faint, so they're also very worried. It's all about being able to match where you're at and go there.

And so that's what you're trying to do. You're trying to enhance your vagal tone. So you're activating it or stimulating it so that it's able to recover more quickly. And that's what you're doing with essential oils, or any of the other vagus nerve activating or stimulating techniques. You're just boosting your resilience so that the little things don't faze you.

When you're driving in a car, there are some days when someone cuts you off in traffic and you really don't mind, you maybe like the song, you're not in a hurry. You give them a lot of grace. Other days the exact same thing happens and four letter words are flying out of your mouth. And the only difference, the only variable is you, and your state of resilience in that moment. And if you think about it, you can go through life in a more resilient state. Everything's easier because things go wrong. You know, flights get delayed, children get sick. There's always something. And the only thing you can really control, you can't control anything that happens outside of you, you can control your response.

You can decide in that moment: "I'm gonna be really angry and really upset because I'm gonna get in an hour late". Or: "I'm going to use this time to go buy a really good book and read something I might not have experienced". And the more you can strengthen your vagal tone by stimulating your vagus nerve, the easier your life is going to be because you're going to be able to choose your reaction, and choose a better reaction. And that's going to help in your healing as well.

Dr. Eva Detko: Absolutely. Very well said indeed. So just for a moment, going back to vagus nerve toxicity, could you actually talk about maybe some other aspects of how we can support the body in that situation through supporting the lymphatics, liver, kidneys and so on?

Jodi Cohen: Yes. Absolutely. So if you think about how toxins leave your body. First, they have to leave your cell and then they go into your lymphatic system, which can get super congested because it doesn't have a pump like your heart. So essential oils actually are great for moving the lymphatic system, especially mints, like Spearmint, Peppermint. If you think about plants, they have to carry the nutrients and the water from the roots up into the leaves. So they're really wonderful at helping things flow, especially helping things flow through the body. And then things go into the blood and the liver where they're processed. And then they moved the gallbladder where they're carried to your intestines, where they then go to the toilet and leave your body.

And at any point in that flow, things can get stuck or congested. So the more that you can support these other organs of elimination, you're sure that things really leave the body. I make all my clients take binders at night, things like charcoal, psyllium, clay. And basically what that does, binders bind things and make them leave the body. Because so often either the liver is overtaxed and fatigued. Or the bile that comes out of the gallbladder is supposed to flow like water, sometimes it's like molasses and it just doesn't move quickly or fluidly, or things get into the intestine and get reabsorbed. I lived in New York when the garbage trucks used to go on strike. You take your garbage out, it just sits there and starts to smell and then build up. You don't want that happening in your body. You want to make sure that when your toxins and waste are mobilized, that they actually leave the body.

So the things that you can do to support that are anything to support your lymphatic: dry brushing, rebounding, essential oils like mint. Anything you can do to support your liver: castor oil packs, milk thistle. Anything to support your gallbladder: coffee enemas, binders, bitters. And then anything to make sure that the toxins leave the body. So I love binders for that. And I think it's really important when people start to do any kind of detox and they feel worse, that's a big indicator that you're toxins are just being mobilized and not leaving the body. And a big indicator that you should potentially pause and make sure that your drainage pathways are open and flowing.

Dr. Eva Detko: Absolutely, and you mentioned mints for the lymphatics. But could you make maybe some specific oil recommendations for the other pathways?

Jodi Cohen: Oh yeah. Absolutely. The liver does really well with White Grapefruit and Helichrysum. Blue Tansy from Morocco is my absolute favorite. And what's interesting to me is you can always topically apply oils over the actual organ system, or you can apply them over some key acupuncture points. Acupuncture points are also kind of like freeways that travel through your body. So say, for example, when your liver is really toxic, that might present as being really sensitive to smell. People would say: "Oh, I can't smell essential oils, they're too much for me".

So if that's your situation, your foot has a lot of great reflex points on the bottom of the foot, especially right between the toes. Right here is a fabulous point to put essential oils if you're trying to support your liver and they mix really well with castor oil.

You can do what I call "the poor man's castor oil pack". Castor oil, you can put a burlap over it and then use a heating pad, and wrap it in plastic. Or you can just wear a t-shirt that you really don't mind if it gets stained, and just apply it over your liver at night. I like to layer healing modalities, so I like to layer essential oils on castor oil. And then heating it in an Epsom Salt bath. I love Mark Hyman's recipe of two cups of Epsom Salt, one cup of baking soda, and then if you wanted to mix oils in, Lavender is a good one, be sure to put the dry ingredients in the bathtub and then just drop in the oils, and mix it into the dry ingredients before you add the hot water. That way, the oils are not going to float on top of the tub and actually get assimilated into that salts.

Dr. Eva Detko: Great tips. That's great. I love it. And so we're talking about application, and we mentioned obviously inhalation and then application on the skin. And some people are keen on using oils internally.

Jodi Cohen: Yeah.

Dr. Eva Detko: Could you actually comment on internal use?

Jodi Cohen: Well, you know, if it's not broken, don't fix it. If people live by that and they love it, then everyone gets to pick whatever they do. My personal observation and experience is that it's far more effective to smell something or topically apply it, than to have it traveled through the digestive system. And

there's been some research that when you're drinking oils, like if you add it to the water, you're actually inhaling it, and it's getting in kind of through the blood vessels of topical application anyway, kind of like liposomal remedy would. So if you've been doing that forever and it works for you, I'm not going to say stop doing what's working.

But if you're new oils and you just want to dabble in them, I really do find that literally smelling a bottle. I can show you, just a couple inches from your nose works really well, or topically applying. Especially one of the reasons that people apply things behind the ears, or on the wrist, is pulse points have more blood flow, so it gets into your system more quickly.

Dr. Eva Detko: And in terms of safety, Jodi. Because obviously there are a few safety aspects of oils for people who may be new to this, such as phototoxicity, for example.

Jodi Cohen: Yes. Yes. Some of the citrus oils are phototoxic. I have a friend who actually tells a story that she had Lime oil on her hand, and then she went out in the sun and it can make you more prone to sunburn. So just be careful. As you're starting, a really good guideline, especially if you're just going to smell them or use them topically, less is more. And always start with a lot less and dilute with another kind of oil like coconut oil, or jojoba oil, or sesame oil, anything else. And if it gets at all red, then you're not going to want to put water on that because oil and water don't mix. You're going to want to just apply more oil on top of it to just help dilute the essential oil.

Dr. Eva Detko: Yeah, that's obviously a very good point. There are a few exceptions to this, but we should really discourage against applying those very, very highly concentrated essential oils, which is what they are, they are highly concentrated substances, as we said at the beginning, applying them neatly. Particularly, if you have sensitivities, in terms of skin sensitivities.

Jodi Cohen: Yeah. Yeah. I mean, there are exceptions, and like Lavender and a sunburn can do wonders. But yes, always test. It's kind of like you wouldn't necessarily dump a pound of salt on your food before you test it. Think of it like salting your food. Take just one drop of oil and one tablespoon of another oil, you can use olive oil. You don't need to go buy something. You can start with just coconut oil in your kitchen and see how that does. And then you can increase the intensity as you prefer. There's not necessarily a hard, fast rule for everyone. I would say I don't recommend using oils on children under the age of two. And for any children I do recommend diluting no matter what, and

diluting more than adults. But be overprotective to start, and then you can kind of test into more.

Dr. Eva Detko: Yeah, it's all about respect. Just remember in a tiny little bottle, even five mil, we're talking about kilograms and kilograms. I'd say Lavender, for instance, you gave an example before.

Jodi Cohen: It's two hundred pounds of lavender is one pound of essential oils. It's incredibly concentrated.

Dr. Eva Detko: Yeah, a very good tip about just dipping your toe in, and then seeing how you respond before you carry on, and perhaps use it more regularly or use it at higher concentrations. Another thing is, if you have any sensitivity in terms of your airways, for instance, maybe asthma something like that, you have to be careful also diffusing oils because certain oils are actually irritating to the airways such as Clove, Cinnamon, they can actually be irritants.

Jodi Cohen: You know, it's really interesting. A toxin is anything that you can't detoxify. So rat poison is actually vitamin D. Cats can't really process essential oils. So if you own cats, I don't recommend you diffuse in your house.

Dr. Eva Detko: Yeah. Exactly. So it's like with everything else, things can be good or things can be bad depending on where you're at, what your medical history is and so on, and whether you can actually detoxify a substance or not. Absolutely. That's an excellent point. So, you know, I know you like using oils specifically to enhance brain function. So maybe you could actually talk about brain function specifically?

Jodi Cohen: I mentioned that your olfactory nerve goes directly to your brain and to your prefrontal cortex. So there are different areas of your brain that perform different functions, right? It's your prefrontal cortex that kind of helps with what we think of as concentration and focus, and executive function. And that works very closely with the part of your brain that is the danger center, your amygdala. And what's constantly happening is, they're communicating. If you think about your hiking in the woods and you think you see a snake and then suddenly your prefrontal cortex looks at it and says: "No, it's just a snake, you're good."

But what sometimes happens, it's called an amygdala hijack, where you think everything is a snake and you think everything is dangerous, and you start to get tremendously anxious and have panic attacks and anxiety attacks. One

thing you can do with oil is, if you ever have a headache or something, you kind of naturally touch your head or if your kids have fevers. What you're doing when you touch your hand, when you put something on your forehead, is you're drawing blood flow and energy to that part of the body, right? You can do that with oil. So it's kind of three points, it's just right along the temples.

The other interesting thing, usually it's the right side of the brain that activates the left side of the body. But with your frontal lobe, your right nostril goes directly to your right frontal lobe. So there's actually a great trick for anyone who suffers from anxiety. Our colleague Titus Chiu talks about how anxiety is often over-activation of the right part of the brain. And so to balance that, you can smell an oil, anything, it can be Lavender, it can be whatever you want, through your left nostril. And you can only smell through one nostril at a time, and that goes directly to the left frontal part of the brain and helps to activate that part of the brain. So suddenly the brain is in balance. And so you're less anxious. And this is my favorite trick, especially for teenagers with test anxiety, or anyone who suffers from panic attacks. You can really use oils in a very specific way to stimulate various specific parts of the brain that then put your brain into balance so that it functions better.

Dr. Eva Detko: That's an excellent tip. Yes, I love that. That's really very good. Thank you so much for everything that you've shared. Before we finish, tell people a little bit about your own blends, because you have some wonderful blends that you've put together. And of course, the purpose of that is to make it easier for people, right?

Jodi Cohen: Exactly. Exactly. Like I joke when my son and his friend went raspberry picking and we made our own jam, and I never need to make jam again because I have so much in the freezer. And so I feel like with oils, everyone's encouraged to do it yourself. And if that is something you love, then absolutely continue in that vein. But I was really trying to make it easy for people. I've worked with a lot of practitioners and created blends that helped to activate the frontal lobe, or stimulate the pineal gland to return to balance so it can naturally release melatonin, or activate your vagus nerve. And if you want to do it yourself, I list all the ingredients. You're welcome to make your own. But if you just want to buy, one blend that's already been formulated and tested. I am happy to offer that option for people.

Dr. Eva Detko: Yeah. And as we were saying before we started, you know, sometimes when people are in the middle of dealing with chronic illness, they

just want simplicity. And it's just nice that you can go to a trusted source. I just don't think about it but just straight away I use it. Yes?

Jodi Cohen: Well, I think people fear when they're not feeling well, they tend to spend a lot of money, and they start to get anxious that maybe that wasn't their best spending choice. Or they start to question themselves: "Oh, I did it wrong. Oh, did I make a mistake?" I just want to alleviate any of the anxiety and doubt and say: "Look, this is exactly how practitioners are using it". If you want to use it this way, it's one less thing to worry about.

Dr. Eva Detko: Yeah. Fantastic. Thank you so much Jodi for everything that you've shared. Before we say goodbye is there anything else that you think you might want to add to what we've already covered, anything else that comes to mind that could be of value?

Jodi Cohen: I really think that if people only did one thing, activating the vagus nerve and that's what meditation does, because the vagus nerve innervates the lungs. So, you know, deep breathing, yoga, coffee enemas, using essential oils here. Anything you can do to activate your vagus nerve, it's almost like preventative hygiene. All of us know to brush our teeth twice a day. All of us know to wash our hands after using the restroom. I just would love to encourage people to consider activating their vagus nerve and adding that the list of their daily rituals.

Dr. Eva Detko: Fantastic. Well, thank you again. It's been an absolute pleasure having you on the summit. Thank you for everything that you've shared Jodi.

Jodi Cohen: Thank you.

Vagus Nerve Stimulation and Neuroplasticity
Guest: Dr. Peter Kan

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind, Body & the Vagus Nerve Connections Summit. I'm your host, Dr. Eva Detko, and my guest for this session is Dr. Peter Kan.

Dr. Peter is board-certified in integrative medicine, functional medicine, and board-certified Chiropractic Neurologist. He supports patients with chronic conditions, managing the exciting advances of functional neurology and functional medicine. And to date, he has helped over 5,000 clients through online consultations. Dr. Peter is the creator of NeuroMetabolic Integration, a science-based program that identifies the root cause of autoimmune and other chronic conditions. Born in Taiwan and living in the US, Dr. Peter has deep appreciation of both Eastern wisdom and Western advances in natural medicine. So Dr. Peter welcome to the summit!

Dr. Peter Kan: Thank you so much for having me, Dr. Eva. It's a pleasure to be here with you again.

Dr. Eva Detko: Well, I always enjoy talking to you because you always have valuable insights to share. So looking forward to this one. And I'm going to start this interview by asking you to explain, you're specialize in functional neurology amongst other things, so I would like people to understand what functional

neurology is, and also how you use it to correct some of the autonomic nervous system dysfunction that you may come across in your patients?

Dr. Peter Kan: Yeah. That's a great question. You know, in western medicine and allopathic medicine, we're all familiar with different specialties. So you have your regular primary medical doctors, but then you have specialists who are neurologists and cardiologists, and internists. In chiropractic we have that specialty as well, and one of that specialty is called chiropractic neurology. Chiropractic neurology utilized the principle of what's called functional neurology. So what's functional neurology? Functional neurology is something that can be practiced by anyone. Any healthcare practitioner. It's really looking at how our nervous system works and using non-invasive ways to affect change in the nervous system to bring about a benefit.

So, for example, people may have balance issues so that we can identify, through a neurological exam or through questioning, the exact longitudinal level of the lesion, and then implement specific type of neuro-rehab therapy, exercises, balance exercises, even mental cognitive exercises to help improve certain aspects of neural function. So that's what we do. Now, how does that tie into the greater scheme of people with chronic disease? Well, we know that the brain is a very vulnerable organ. It's sensitive to toxins, sensitive to inflammation, sensitive to autoimmunity. It's also very sensitive to stress and the chemicals of stress.

So a lot of people have a lot of these neurocognitive symptoms that may be a result of chronic disease. And so we can use functional neurology combined with functional medicine, which is what I do in my practice, integrating functional neurology with functional medicine. It's a holistic approach looking at the whole person. And how can we tie the brain into the gut, and the gut and the brain. And how hormones and immune function all tie into the brain, and how we can use different therapies, nutrition supplements, and even meditation and cognitive therapies to affect the whole system. So the way I look at function neurology, maybe a little bit different than other people who also practice that, is that I look at it from a very holistic lens.

Dr. Eva Detko: Yeah. And that's when you get the best results. Obviously, I know it, you know it and probably most of the viewers will have an idea that that is the best way to approach things. So what we notice these days, in the Western world in particular, is that obviously there's a lot of neurodegenerative diseases. And it's on the increase, we know that. So could you talk a little bit

about symptoms of neurodegeneration, but also the main factors, key factors, that lead to neurodegeneration if you could?

Dr. Peter Kan: Right. So neurodegeneration. Let's first define that. Neurodegeneration means that you're losing brain cells. You're losing neurons. And the fact is, we start to lose neurons after infancy, after the first two years of life. We are born with the most number of neurons and it's all downhill from there. Meaning we're losing brain cells as we grow up. Now, why is it that an infant has a lot less function than, say, a 12-year-old or 18-year-old? An infant can't feed themselves, they can't walk, they can't control their urination and bowel movement. They need to wear diapers. So why is it that they have the most neurons but the least function? It's because we build plasticity over time. So these neurons have to connect for us to have learning patterns and motor patterns.

So what that means, is as we grow older, even though we lose brain cells, we actually can increase our plasticity, which means how our neurons are myelinated and how we build these neural connections. Now, neurodegeneration is a normal process. We all experience neurodegeneration. But that does not mean we have to lose function. Just because we lose brain cells doesn't mean we have to lose function, if we can maintain plasticity.

And so neurodegenerative disease then is a disease of where we're losing brain cells, and we're losing brain function before it's time. So someone may have early dementia symptoms in their 40s and 50s, or even earlier. And some of these neurodegenerative symptoms are things like brain fog, short term memory loss. You lack motivation or just the zeal for life. You have depression or even anxiety. You have balance problems.

So these are all neurodegenerative type symptoms. They can happen in the very, very early age. I've seen patients in my practice in their teens, in their 20s and 30s having brain fog and short term memory loss. So this whole thing about dementia. Dementia is a late stage phenomenon. Meaning, by the time you get diagnosed by allopathic medicine as having dementia, you're already deep into the disease process. Meaning you have lost so many brain cells that you've already lost those functions.

And the problem is that once you lose the brain cells, brain cells are post-mitotic, meaning they don't go through mitosis and cell division. Meaning you don't really grow brain cells back once you lose it. So once you lose it, that's it.

Gone forever. So you want to do everything you can to maintain as many brain cells as you have, which means that you have to start this process early. Early detection and prevention is the key.

By the time you have dementia, Alzheimer's, Parkinson's, by the time you get that diagnosis, it's almost too late. So we want to do as much as we can. So neurodegeneration is such a common phenomena. Like I said, people kind of associate that with dementia diagnosis, but the goal is not to wait at that point. Now you asked another question, which is the most important question to me, is what causes it?

And what causes it to me is mostly environmental. Yes, genetics play a role, but you can't really change your genes. You can only control your epigenetic expression through environmental exposure. So always I tell people to really focus on exposure and what they can change in their life, which is: diet, nutrition, toxicity, infections, stress, blood sugar. Those are the big ones that tend to cause neurodegeneration due to the inflammation that it causes.

Dr. Eva Detko: Absolutely. There is obviously going to be more than one thing that's going to land you in that situation. Hopefully, not in your teens, later on in life. But as you said, this is definitely not normal when it happens so early. It's actually quite alarming because we know the prevalence of this is growing. It's actually getting worse overall, as observed in the Western world I'm talking about, obviously. So there is a lot we can do to prevent ourselves from actually getting dementia, Alzheimer's, and so on. And neuroregeneration as a concept, as I understand it, and you read in different places, encompasses neurogenesis, neuroplasticity, and neurorestoration. So are you okay to talk a little bit about the three components? And maybe the differences between them and how it all sort of comes together?

Dr. Peter Kan: Yeah. So neurogenesis, the term genesis means making new brain cells. And there are studies, a new study that shows that our brain in fact can make new brain cells. But the rate at which that can happen is so slow that it's not clinically relevant. Meaning you're not going to be able to do some therapy to rebuild enough brain cells to get function back. So the way that you get function back is by building neuroplasticity. So now neuroregeneration simply means to me that you're regenerating function.

Again, we lose brain cells after the first couple of years of life. We start to lose brain cells over the course of our life, but we continue to improve function, and we can continue to improve function even into old age, as long as we keep our

brain functioning correctly and keep it healthy. So, for example, people like Warren Buffett, right? He's pushing 80 and beyond. He's still very clear and running a company. And so age does not define us. Age does not mean we have to degenerate, as long as we do the right things to keep things going. So I want to make a point to say that there has been science that shows that we can increase brain cell regeneration, we can build new brain cells. But I think the rate at which that happens at this point, as we understand it, is not fast enough to really make too much of a difference.

So the way we want to go after it is through plasticity, by building neural connections. We have to look at two aspects of that as far as building plasticity. One is how can we increase plasticity by building more connection. That's through doing exercises, and stimulation, and so forth. The other side is by reducing inflammation. So one is a building up of plasticity. One is a reducing the damage to that plasticity. So there's two aspects we have to look at. So one side is more about toxin levels, reducing inflammation. The other side's about actually exercising and building that up.

Dr. Eva Detko: Yeah, that's great. Thank you for explaining that. And as you know, we're talking a lot about the vagus nerve in this summit. And so I wanted to bring into this conversation the studies that have been done. There's been a number of them actually on neuroplasticity and stroke. What they actually did was, they stimulated the vagus nerve and showed that vagus nerve stimulation more than doubled the benefit of rehabilitative training.

So compared to if they did just rehabilitation, without the VNS, without the vagus nerve stimulation, when they included the vagus nerve stimulation that recovery doubled. And it had long-lasting results. So of course, this was vagus nerve stimulation by implanting a little apparatus. And we don't need to be that extreme. But the point I really wanted to make is that: "Hey, people! Vagus nerve stimulation impacts neuroplasticity." So that can only be a good thing and we can run with that. Right?

Dr. Peter Kan: Yeah, absolutely. When I saw that study, there's several of them, actually. One particular one was published by the University of Texas Medical School. And typically, traditionally, you don't think of vagus nerve as impacting volitional motor function. You think of vagus nerve as impacting the autonomic nervous system, which is that part of the nervous system that controls things that are on autopilot, things you don't have any voluntary control over. So to see that vagus nerve stimulation actually impacted stroke recovery to help people regain motor function that was just kind of mind-blowing for me.

Vagus nerve stimulation has been around for 20 to 40 years in literature, and it's been approved by the FDA since 2005 for epilepsy, and also around 2007 for depression. So we know that stimulating the vagus nerve can have a wide-ranging effect. And mainly because the vagus nerve has both efferent and afferent projections. Meaning vagus nerve is a nerve that not only sends a signal out from the brain, from the brainstem to the gut, to the rest of the body, primarily the vagus nerve traverses through and has impact over our respiration, our cardiac function and into our gut and digestive system, impacting bile flow, impacting pancreatic enzyme secretion, stomach acid secretion, impacting blood flow to the gut, impacting gut motility.

So it has a far-reaching effect on the digestive system. But what's important to note is that there's a 4:1 ratio between the nerve that goes out and the nerve that comes back into the brain. So it's actually a bi-directional process. So what that means is there's only 20 percent of the nerve that goes from the vagus nerve that's going out, but 80 percent of those nerves are afferent that go from the gut back up to the brain, to tell the brain what's actually going on in the gut.

And in fact, the vagus nerve actually picks up the microbiome metabolites. The beneficial bacteria in our gut produces different chemicals and peptides, and metabolites. And the vagus nerve actually senses signals from that gut metabolite and triggers signal back up to the brain to tell us about what's going on in the gut. And that actually can impact our mood, our behavior, cognition and so forth. So it's not really surprising that stimulating the vagus nerve can have wide-reaching effect.

We also know that the vagus nerve, as it comes up, there's a main center called the nucleus tractus solitarius in the brainstem. And from there it has projection to the cerebellum, which controls our balance, and also can impact on our sense of nausea. From there, it also has projections into the hippocampus in the temporal lobe, which controls our circadian rhythm, which is our sleep wake cycle, as well as controlling memory. It also has projections into the brain stem, which can impact our reticular formation, which controls our alert and sleep cycle. And it also sends projections into other parts of the basal forebrain, which again, that's where that possible motor function can come from.

Now, remember, once we stimulate the vagus nerve, is it stimulating one direction going up to the brain, or the other direction going down the gut? Again, it's bi-directional. So typically what they do with the vagus nerve stimulation is

that they implant an electrical device into the chest wall, and then they have wires that wrap around the vagus nerve. And so when they're stimulating that, they send a small electrical impulse and it's going to stimulate that vagus nerve in both directions. So the efferent and afferent both are going to get stimulated. So when you do vagus nerve stimulation like that, you're going to stimulate both the gut, descending influences control over the gut, and also ascending influence, which's gonna impact brain function.
In fact, in those stroke studies, when they stimulated the vagus nerve, these people not only experience better muscle function, when they recovered the loss of muscle function, they also experienced better mood as well, as a side effect, which was not the intended purpose of the rehab there. So to me, that is just a validation that if you actually go in and stimulate something that has a wide-reaching effect, that of course you're going to get a positive benefit. Now, do you have to get an electrical implant to get that benefit? Clinically speaking, I have not noticed the need to do that. There are different electrical stimulation devices, or even non-electrical stimulation ways that can stimulate the vagus nerve.

One of the ways that I do it in my practice is, I use a little electrical probe that's like electro-acupuncture device. You can buy it from Amazon. So it delivers a very imperceptible electrical signal where you don't even feel it. Maybe you feel a little tingle when you put on your skin. And these are used by acupuncturist to stimulate certain meridian points. You can actually stimulate the tragus, which is this part of the ear, a little bump right in front of the ear. That area of the tragus of the ear has sensory nerves from the vagus nerve. What that means is that when you stimulate this area of the ear, that nerve goes directly into the vagus and can stimulate the vagus nerve.

So this is the same vagus nerve stimulation, but instead of the implant, you could do it very cheaply using the electro-acupuncture device, or other electrical devices, to stimulate that area, to stimulate the vagus nerve. So that's one way to do it. Now, could you stimulate it without an electrical impulse? I would say so. You can simply pinch it, or hold it, or do acupressure, and most likely get some type of stimulation as well. Although most of the studies done it through using electrical, there's not any study done using pressure, but again, if you understand physiology, you're getting a sensory stimulation. Touching, electrical, it will work.

Another way to stimulate the vagus nerve is using the muscles of swallowing because the vagus nerve controls all the muscles of the throat and swallowing. So there are three things that I have people do, clients do. These are gagging, humming and gargling. And this doesn't require any equipment. So that's great.

It's very non-invasive. So when you brush your teeth twice a day, hopefully you should do it twice a day. That's two opportunities to stimulate the vagus nerve. So while you're brushing your teeth, you can simply just brush the back of your tongue.

And that should stimulate a gag reflex. Gag reflex is mediated by the vagus nerve. Now, the way you would do this, you can brush the back to your tongue, or you could just push down on the back of the tongue. Now, this is not to poke the back of your throat as you can hurt yourself. Just simply push down on the back of the tongue and push down like tongue depressing. What that will do is induce a gag reflex and that will stimulate the vagus nerve. Then after you brush your teeth and do the gag reflex, then you can drink some water and you gargle. But it has to be a very strong gargle. The same thing with the gag. You have to do it until the tears come out. Basically, you have to do it very intensely. This is like doing push-ups and sit-ups but for your vagus nerve.

So you're not going to get a stimulation in just doing it one time. You don't expect to get big muscles working out one time. You've got to do it repeatedly. For some people, this can work within a couple of weeks where they feel a difference. For other people may take longer. What kind of difference are you looking for?

Well, if somebody has constipation, this would be a great way to stimulate the vagus nerve to get peristalsis and get gastric motility. So this will be a great therapy to help with constipation, although it's not an immediate response, but over time you're building up that tone in that vagus nerve to where eventually you're going to get better nerve flow to the gut.

So again, gagging and gargling after you brush your teeth. Now you have to do it really intensely. So it's not just to say simple, grrrrr, spit. It's got to be so intense that if somebody captured it on video, it will go viral. So let me help you go viral right here, Eva. So you have to go like this. You drink some water and you go grrrrrrrrrhhhhhhh, you're shaking, you're almost out of breath, and go (spit). Uh! It's got to be that intense or it's not going to cut it. Right? So you gotta max out, so to speak, when you're lifting weights. Same thing when you doing vagus nerve exercise. So that's what you do.

And the third thing you can do, you can do humming, or singing. Now, the louder you sing, the better. So it's almost like you got to do this in the shower or in a car when nobody's around. So you have got to do it really loud and intense, sing like an opera singer, like, whoa, whoa, whoa, whoa la! Like really

let it belt out. That's when it will stimulate the vagus nerve. So a lot of people kind of see, oh gargling and humming, OK, hmmm hmmm. Well, that's not going to do it, right. So you've got to actually really do it intensely. Now, if you do this on an everyday basis, over the course of several weeks, you're going to build up that tone in that vagus nerve, and that's how it's going to help.

The last thing I will bring up with vagus nerve stim is coffee enema. So now the swallowing muscle, you're going from the top down. Coffee enema then is stimulating the vagus nerve from the bottom up. Now, why does coffee enema help? Well, there's two reasons why it helps. One is the fact that you have fluid in the rectum, and that actual sensation of having fluid up in the colon and rectum area is stimulating the sensory nerve going up to the vagus nerve.

And the fact that you actually have to hold the enema in for as long as you can. Typically you work your way up to about 10 to 15 minutes. That muscular contraction then is a motor stimulation of the vagus nerve. So you've got sensory, where you are feeling the fluid in there and then you're also contracting the muscle of your rectum to hold it. That's a motor stimulation.

And then also to mention the coffee itself. Coffee with the caffeine stimulates the nicotinic receptors in the gut, which also stimulate the vagus nerve as well. So coffee enema is another great way to stimulate the vagus nerve, along with gagging, humming, and singing along with doing tragus stimulation. So those are very simple things to do. And I would be remiss, Dr. Eva, if I didn't mention, really meditation is a great way to stimulate the vagus nerve. And in my practice, I use the Heart Math, a device to measure heart rate variability, to help our clients learn how to get to that state of that tranquillity in a meditative state. But meditation can be a tremendous tool and is so easy to do. And you can use biofeedback as a way to measure whether you're effective.

Dr. Eva Detko: Thank you. That's fantastic. And thank you for demonstrating. You can't do it in, let's just say, this half-arsed sort of way. You really need to put your back into it and really, really go for it. And then that's when you have an effect. Thank you very much for stressing that because actually people may have already read or heard that gargling works for the vagus nerve, or the gag reflex.

But yes, that said, it's how you do it. That's what's going to make a difference in the end. So thank you for sharing those strategies. I wanted to ask you, we mentioned that a lot of things can lead to autonomic nervous system dysfunction, and in this summit, throughout, we're covering the things that can

help it, and we're explaining the things that can mess up that vagus function. But one of those things potentially will be a mechanical issue.

Dr. Peter Kan: Now, you can have mild mechanical irritation, or some type of tonal problem, where you have a tone issue with a nerve. So that can happen. Or swelling around the area that can impinge on the nerve. So, if you have vagus nerve impingement, typically it's going to show up as trouble with again, swallowing. So you may choke on things easier. You drink fluid, just water goes down the wrong pipe easily for you. You may have again a problem with digestion, with peristalsis. You may have even a problem with malabsorption due to lack of enzyme secretion, and so forth. Now, I will say on the other side, besides impingement, you can actually overstimulate the vagus nerve too.

Anything is a balance. If you overdo the vagus nerve stim, like we talked about some of these things. Not so much the gargling and the humming. It's hard to overdo with that. But if you do some kind of electrical stimulation yourself, you can overdo it. And if you overstimulate the vagus nerve, you might bring too much parasympathetic function. So that may slow things way down for you. So that's why there's a condition called vasovagal syncope, where people actually pass out. They pass out because they get a vagal response. So much so that it suppresses their blood pressure. So they actually lose blood flow to the brain so they pass out temporarily.

So if you over stimulate the vagus nerve, you could potentially get low blood pressure, you may get dizzy. Some people may get hoarseness, choke temporarily, just because that vagus nerve just over stimulated. So that can happen as well. In fact, those are some of the side effects to the vagus nerve stimulation, the implanted one that they've kind of looked out for. So everything's a balance. So that's why in functional neurology, when we work with clients, we're teaching them how to, or we're monitoring it for them, to make sure we don't exceed their capacity to deal with something. Because you don't want to over exercise a nerve because that can also create problems as well.

Dr. Eva Detko: Thank you for explaining that. That's what I meant. Because potentially there could be all sorts of things, like swelling, like perhaps nodules, and things like that, that could press on the nerve and cause the irritation of the nerve.

Dr. Peter Kan: Vertebral subluxation. Spinal subluxation or misalignment of spine, especially in the upper cervical spine, C1 or occiput misalignment that

can put ever so slight pressure. Not an impingement per say, but enough alignment issue to create that feedback problem where it can cause some type of dysfunction in the vagus nerve. But usually when you have that, it's not just the vagus nerve. It's everything else will become dysfunctional as well.

So yes, upper cervical chiropractic adjustments have been shown to impact the vagus nerve and autonomic function. There are studies that shows that upper cervical adjustment actually normalize blood pressure. And probably the effect of that is due to stimulating the autonomic, or taking the pressure off the autonomic, nervous system, or restoring that normal efferent and afferent connection in the autonomic nervous system. So absolutely, there could be mild alignment issues that can create dysfunction. So that's where you need to seek out the right practitioner for the right thing. And in that case, the adjustment could be a benefit.

Dr. Eva Detko: Yeah, because obviously when we're talking with other speakers, we're talking a lot about the gut function and toxicity, and various things like that. So I wanted to almost complete that by saying there could also be some mechanical issues. So if you're doing all the right things in terms of fixing your gut and all the rest of it, maybe that is one thing that you've overlooked. Or maybe there was a brain injury and that had a knock-on effect or something like that. So obviously the mechanical side of things is also important to look at.

So thank you. So that's really great. And you know, we were talking about the different things that affect neurodegeneration. And of course, we know that, likewise, we can do an awful lot to help the plasticity. And diet, we're talking in other sessions at length actually, how we can improve nerve function, nervous system function overall with foods, but what about the lifestyle-related factors that can actually help us improve or enhance neuroplasticity?

Dr. Peter Kan: Yeah, absolutely. And I think of lifestyle again, very holistically. I think of lifestyle not simply just whether you exercise, whether you manage your stress, and prioritize your days so you're not over-running yourself. I think of lifestyle also as environmental toxins that we're exposed to. So, adopting organic lifestyle, looking at personal care products and cleaning products in your house, and getting rid of things that are toxic. I see lifestyle as that. Not just, exercise and meditation, although certainly those are important as well.

So, the lifestyle things I will look at to improve plasticity will be absolutely exercise. It seems really simple but remember, there's different intensity of

exercise. My undergraduate degrees is in exercise physiology. I'm four-time certified personal trainer, and strength and conditioning coach. So that's an area of my passion in my former life before functional medicine. So with exercise, there's different intensity and different types of exercise. And that may be appropriate for different people in different stages of their illness or recovery.

So, for example, if somebody has adrenal fatigue and is severely inflamed, and is just very fragile, they need to start with just gentle yoga, just walking. So it's always about exercising up to a level of intensity that they can handle but not beyond it. Because if you exercise beyond your intensity to handle it, then you crash. You're going to create fatigue, even more so. Just like when we stimulate the vagus nerve, or stimulate any nerve, or brain function, or brain rehab, you have to be careful not to exceed the capacity. Meaning if somebody is a beginning exerciser, then you don't have them do a triathlon or something, and a marathon, because that's too much. Right?

So by the same token, you have to exercise to their level. So people with adrenal fatigue may have to start with very low activity. And people who are relatively stronger and have recovered and doing better, which is what we do in our program, we have people, they may have started out with adrenal fatigue, we'll have them do very gentle exercise, and once they get better, immediately, if they're able to handle, I get them on weight training, or doing some type of more intense exercise. Because higher intensity up to their threshold is what causes our body to adapt and grow. So if you don't do it up to the level you can handle, then you're always working under your capacity, so your capacity never increases.

So it's all about increasing functional capacity. So we have to push people and that level has to be carefully monitored. So we can monitor by doing heart rate variability, or just heart rate period. Breath, you can monitor it by a lot of ways and is subjective to how they feel. But I think that it's really important thing to work with a practitioner that can help them to design an exercise program that's just right for that person, depending on the level of their recovery. And the other things to develop plasticity, the big thing is to always have people doing things that are novel for them.

If you're doing the same old familiar routine day in and day out, certainly there's some benefit to having routines like brushing your teeth and exercising. Those are routines you want to have. But if you're doing this same type of exercise, or even brushing your teeth the same way all the time, then you're building plasticity just one way and all the other side is just not being simulated. So very

simply you can just brush your teeth with the other hand to develop plasticity in the other side of the brain. If you're always walking, maybe one time you bike, maybe one time you swim, maybe one time you pick up some weights and you do some weight lifting.

So changing the modality can bring novelty to the brain, which is what the brain likes. It likes novelty, so then you're myelinating and create plasticity in a new area of the brain that you never even thought to use. Even traveling. Why is travel such a good thing for people sometimes? To get out of their own space, to go to the country, go have a walk or hike in nature. It's because you're seeing something, you're being in a new environment which stimulates your brain in a different way by exposing yourself to the new environment. So always some kind of new experience, learning a new skill, a new language, pick up a new hobby, doing something novel is really important for brain function.

And then lastly, I want to say this, with plasticity, we can't overlook the importance of nutrition in building plasticity. And this is to me something that when I first started out in functional neurology, I thought building plasticity is all about just exercising and stimulating the brain in a certain way. But your nutrition can stimulate plasticity in a large way. For example, there are certain nootropics, or supplemental herbal compounds, that can actually bring about neurotransmitter production and stimulate neuroplasticity.

Things like huperzine can be used to stimulate dopamine production. Things like St. John's Wort can help with serotonin production. So that was a big revelation to me when I first got into functional medicine, is realizing that nutrition can impact neuroplasticity as well. So we want to look at it from a very holistic lens.

Dr. Eva Detko: Absolutely. We do, of course. And I do also want to touch on sleep, because dysfunctional sleep is a big issue for a lot of people. And of course, if we are going to build plasticity we need to get the sleep right, correct?

Dr. Peter Kan: It's such a big topic, right? And out there you see a lot of books and articles on the internet about sleep hygiene, and I think that's really important to kind of cover the basics. Make sure the room is dark and the right temperature and all that stuff. But there's so many aspects to it, depending on your stress level, PTSD, inflammation level, there's certainly adrenal factors, blood sugar factors. So sleep is something definitely to be had and there's a lot to it.

I would say one of the things that people want to look at when they are looking at sleep issues, if they're having problem sleeping, the biggest thing, obviously, is that the mental aspect of it. Meaning, if you're constantly in fight-or-flight, sympathetic overdrive, it's going to be very difficult for you to get enough sleep in restorative state. So again, bring meditation practice, stress management techniques, mind-body connection, those type of things are crucial. I think that's actually the first step. But an overlooked area in hacking sleep, I feel is blood sugar dysfunction.

A lot of people have blood sugar dysfunction that's driving their sleep pathology. Meaning, they're either hypoglycemic because they have a low adrenal function. So then they experience night time hypoglycemia. So then what happens to your body? You have to compensate by producing cortisol that'll wake them up to increase blood sugar level at night. So that's where I see a lot of people having the sleep problems, and that's something to be evaluated.

Certainly another aspect of sleep is inflammation. When you're inflamed, there's a part of your brain the mesencephalon, which controls fight-or-flight response. Your mesencephalon has a lot of receptors for interleukin-6 and cytokines, inflammatory cytokines. So if we become inflamed, the mesencephalon, or the mid-brain reticular formation, gets activated.

And of course, when you go to sleep that mid-brain reticular formation supposed to become deactivated, so you actually go into sleep state. So if you're constantly inflamed, that mid-brain reticular formation gets activated. You may not be able to get into a deep sleep. So what happens is, then you don't get a deep sleep, so you're poking out of that awareness state. So this is the person that will wake up every couple hours and have a hard time going back to sleep. Or they wake up three to four, or five times a night because they're constantly poking out of that awareness state, because they never got into the deep, delta sleep. So that's another thing. Inflammation and blood sugar is something that we look at quite a bit in people who are not sleeping well, as well as managing the stress level.

Dr. Eva Detko: Yeah, absolutely. But if it is a problem, it needs to be looked at and whatever the root cause is, that needs to be addressed. And usually if the root cause is addressed, then obviously that corrects. And then we've got a knock-on effect, a positive knock-on effect on the entire system and of course, the brain itself as well. So fantastic. Thank you so much. You've shared a lot. It's really great. Is there anything else that you want to add that we haven't said already, that you think may be helpful or relevant?

Dr. Peter Kan: Well, I think one thing important to touch on, since we're talking about the vagus nerve, is that the vagus nerve has been shown recently, there's an explosion of studies that show that, neurodegenerative disorders such as Parkinson's starts in the gut. We have studies now in both human and animal models that shows that alpha-synuclein, which is the protein aggregate that forms in the brain in people with Parkinson's, actually starts forming in the gut first. And that these protein aggregates that are supposed to be found in the brain in people with Parkinson's, start in the gut. And these protein aggregates actually crawl up the vagus nerve, eventually making its way in the brain, and that's what starts the Parkinson's disorder.

So it's important to know that the vagus nerve has huge implications in a lot of the chronic diseases that we're seeing in the brain. And so optimizing the vagus nerve is really important. And then one of the ways that we can optimize the vagus nerve is by improving gut health. And that's a lot of what I do with our clients, is looking at the gut-brain connection, and how the microbiome health impacts how that influences our brain health. And actually impacts the future of our brain health. Things like Parkinson's, dementia and Alzheimer's. So that's something to look at. So when we're talking about what people can do. People keep talking about gut health and how this relates to microbiome, and how they have to take fermented food, and maybe even probiotics, and how can we influence that.

Remember, if you're stressed, I'm big on psychosomatic, because even though I practise functional medicine, anybody who understands the brain, they've got to understand how important stress is, and how our mindset, and how we think, and negative self-talk, how that impacts plasticity. How we're rooting negative plasticity by having negative self-talk and having stress constantly. We're literally recreating our own dysfunctional pattern by not even realizing it. By living the day-to-day, just repeating a pattern.

And these negative self-talk and stress patterns can definitely affect the brain, and that can start to impact cortisol levels. And that cortisol level starts impacting gut, secretory IgE, leading to leaky gut. And that has a cascading effect from brain down to the gut, and then the gut has a cascading effect back up to the brain, causing that Parkinson's pattern that we talked about, or Alzheimer's.

We talk a lot about how the dysfunction starts in the gut. I say a lot of our dysfunction starts in our mindset, not necessarily the brain, but in our thoughts

which superseded the brain. It's that consciousness and awareness. So this is where you're an expert in, and I just want to bring that awareness there, what important work that you're doing. Certainly, I think all of us would agree that a thought is our most important tool. We have to start there and that doesn't mean you can just have proper thought and affirmation, and think well, and then eat gluten, and eat terrible, and that's going to be fine. We've got to do it all. But certainly, I think the brain and how our mindset is, it's kind of where I would start with that.

Dr. Eva Detko: Yeah. Fantastic. And anybody who knows me, they already know, I couldn't agree more. Absolutely. Gut is a very important piece of the puzzle, but it's not the actual, in my opinion, root cause because there is something else that screws up the gut. That's the issue, often times it's actually early trauma and early exposure to stress. And then, as you said, just even everyday stress can have that impact. But of course, once the gut is messed up, then we're running into all sorts of problems, and pretty much every chronic illness we can think of will bring us back to the gut.

So that's fantastic. I'm really, really happy that you emphasize it yet again. Quite a few people are bringing this message forward, obviously. I always bring that message forward, but I'm so happy that I'm not the only one saying this. So that's really awesome. Thank you so much for everything that you've shared. It's been really, really brilliant to have you as a contributor. Thank you so much.

Dr. Peter Kan: Thank you, Dr. Eva. It's been a pleasure. And I'm just glad that there's a platform for us to share this with the world. The world needs this. They need to hear it because there's not enough of this information out there. And the information out there is pretty biased toward the Western medicine side. And we need a balancing act, right? And it's not that medicine is never useful. There is time and place for everything, but when there's no balance or no options, no alternatives for people, that's when it becomes, I believe, a monopoly. It becomes a problem. So thank you for the opportunity to share. And I am very glad to be part of it.

Dr. Eva Detko: Absolutely. We need to be balanced in our approach. When I broke my elbow in four places last year, I obviously went to a surgeon who put it together for me beautifully. And no amount of probiotics or herbs at that time would have put that elbow together for me. And this is obviously why we need to have respect towards what modern medicine can actually do for us. But when it comes to chronic illness, we know it's deficient. And this is why we need all

of those different options. So here we are, right, sharing this information. Thank you again, it's been absolutely brilliant.

Dr. Peter Kan: Thank you.

Optimizing Vagus Function to Promote Healing
Guest: Alex Howard

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind, Body & the Vagus Nerve Connection summit. I'm your host, Dr. Eva Detko, and my guest for this session is Alex Howard.

Alex is founder and CEO of The Optimum Health Clinic, one of the world's leading integrative medicine clinics specialising in fatigue-related conditions, with thousands of patients in over 40 countries. Alex and the team are currently running a randomised controlled trial on their ground-breaking approach to treating fatigue. Alex is host of the Fatigue Super Conference, and creator of the 12-week RESET Program, and in addition he is also author of the book WHY ME? He is also published in journals such as British Medical Journal Open, and Psychology and Health. So Alex welcome to the summit!

Alex Howard: Thank you so much for having me.

Dr. Eva Detko: I know this is going to be a really great session, lots of very interesting concepts that we going to string together for people. And some of it may be familiar and some of it probably won't be for most people. So this is good, really important to understand all this and see how it all fits in with stress, with trauma, with vagus nerve, and try and put it all together. But before we get started and get into the acute versus the chronic stress, and various other

things like that, can you just share a bit about your own experience because we've got actually a very similar history.

I was diagnosed many years ago with chronic fatigue, in fact knowing what I know now I also I definitely had fibromyalgia as well, I definitely fitted those criteria. But I was officially diagnosed with chronic fatigue and I had an interesting journey that led me into the field of psychology and psychotherapy. So very similar for you I take? So why don't you share that to give a bit of context first?

Alex Howard: Yes. I like to think I was a normal teenager, but maybe I wasn't. I was living a relatively normal kind of teenager life until one day I woke up, and it was almost like if there was a plug of energy into my body someone had pulled that out, and I was struggling to get through the day. And I was then soon struggling to get out of bed and it was obviously initially: "You've got some kind of virus, this will pass in a few months". Then a few months it didn't pass. Fast forward two years and I was just basically in a living hell. As a teenager I lived for music. I played guitar in a very bad punk rock band. Sport, I love playing sport, I was not very good at it but I loved it, and then my girlfriend that then disappeared 6-months into my being ill because I wasn't much fun to be around.

And I kind of reached a point that it wasn't like I wanted end my life, I just couldn't see a way forward to continue on the path I was on. Because it was so horrific and frustrating with such severe fatigue and muscle aches, headaches, dizziness all these kind of things. And along that time if anyone had inferred, and some people did, or suggested to me that this was in my mind, or this was to do with my thinking, then that was one of the few things that would give me a temporary lift of energy because I want to rearrange their face, or have some kind of physical confrontation.

I just felt so misunderstood and I think anyone that's watching or listening to this suffering from a medically unexplained illness, one of the things that so difficult is when you feel so seriously ill, and yet people say things like: "Well, you look fine, it looks like there's nothing wrong with you". Or "We all get tired". Yeah, we all get tired but you can get out of bed in the morning. And so it was after 2 years of this I really reached the point that I just could not see a way forward. I had a conversation with my uncle and my uncle's a bit like the character called Gandalf in Lord of the Rings.

He was not there much of the time, you kind of tend to think that in Lord of the Rings if Gandalf had just hung around, it would have been a lot easier, but

when he was there, he just had all the right words at the right time that then move things in the right direction. We had this conversation where he really helped me realise that if I wanted the circumstances of my life to change, then I was going to have to be the one to change them. And it's a long story but it catalysed really the next five years of this obsessive interest in health, in nutrition, in psychology, emotions.

I had to swallow my pride and recognise that if I was going to leave no stone unturned in my path to try and find a way to recovery, I also had to look at psychology and the kind of irony is that really psychology became my first true love. I ended up doing psychology at university and going deep into a lot of other related areas, and one of the things that I really connected to along the way was the potential and the capacity in all of us to create change and transformation in our lives. I live in London in England and particularly here talking about emotions and psychology is not the done thing. How sometimes challenging and difficult that path can be to go on. And yet the potential we all do have to create dramatic changes in our health and in our lives, in our healing, by really exploring the role that psychology can have. And I ended up making a full recovery and then setting up really the organisation that I'd wanted to exist in the years that I'd been ill. So that what I've been doing for the last 16 - 17 years.

Dr. Eva Detko: Thank you for sharing that. I certainly did also resist this idea that any of my, what appeared to be purely physical experience, was anything to do with my mind initially. But actually it was a complete breakthrough when I took on board that actually the dysfunction within the automatic nervous system was a lot to do with what I was experiencing in the end, and it all sort of fell into place after that. But yes, it's also why we're talking so much about the automatic nervous system in this event. It is a game-changer, it can make you or break you.

And ultimately its main purpose is survival and even if the cost is high it will make adaptations and it will make necessary changes that we may not like, but it is essentially all about survival in the end. So let's get into the subject and perhaps talk about the difference between acute stress and chronic stress because we talk a lot about stress having a negative impact on health, but I think it's important to make a distinction between the two, the different types of stress.

Alex Howard: The way that always say it to people is really your body can be, at any moment, it can be in one of two states. You can be in a state of stress or it can be in a state of healing. And in a state of stress you are burning or using

more resource than you are creating. And in fact, one of the ways of looking at stress is placing more demand on the body, or the emotions, or the nervous system than supply is available to meet that demand at that time. Or we can be in a state of healing, where effectively the body is in a repair mode. And we can see all the research on the impact of healing state, that digestion works better, the heart rate settles, we breathe more deeply, the whole system starts to go into a repair in a healing mode.

And so in a state of acute stress it's completely appropriate that the body goes into a state of stress to be able to respond to what's happening in the immediate environment. So for example, you know we can finish this interview and one of us goes walking down the road and we're going to go and cross the road, and then we don't see the enormous big red London bus that is about to run us over. And in that moment you want to have an excess of adrenaline and cortisol. You want your blood flow to go to your arms and your legs. You want to get a sense of urgency. You want to get a sense of danger because you've got a split second to respond to that threat.

So that's a totally appropriate use of a stress response in the body. If we go back thousands of years back to caveman days it might be that we were walking along and suddenly out jumps a sabre-toothed tiger and in that moment we've really got one of three choices: we're going to fight the sabre-toothed tiger, we're going to flight - we're going to run away, or we're going to freeze - we're basically going to be still and pretend the sabre-toothed tiger hasn't seen us. Or what you will see in some animals do in nature is we will almost play dead, we can feign death. We can pretend that we're dead in the hope that the sabre-toothed tiger has already had its tea that day and it thinks there's not much point in hunting that prey.

If we are eaten by the sabre-toothed tiger then it all becomes irrelevant. Assuming we survive the threat of the sabre-toothed tiger, if we fight and we run away, then we escape, or we kill it, we escape at some point, we basically know that we are safe. And so we go from being in a stress state, in responding to the threat, to going back into being in a healing state.

Now, if we are not sure if we've killed or survived the sabre-toothed tiger, it might be that that night we're lying in bed, we are lying in our cave trying to sleep, and actually we've got one ear open because we are kind of listening out to see if that sabre-toothed tiger is going to be coming after us. But let's say that we know that we have survived, we go into our calm, healing state we might be a little bit more depleted or tired, but the healing system kicks in and we're fine.

And maybe we're fine for a couple of weeks, or months, or a few days. There's another threat and we have an acute stress response.

So the body is designed to handle stress in that way, to have a sudden threat, be it the bus on the street in London or the sabre-toothed tiger 1000's of years ago. We either don't survive, in which case it's irrelevant, or we do survive and we go back into being in a healing state. And being in a healing state becomes, should be, our norm in terms of how our system functions. When we're in a state of chronic stress, it's almost like to our nervous system the sabre-toothed tiger is hunting and chasing us all of the time. It's like everywhere we go, when we're sleeping, when we're eating, when we're out with friends, when we're making the campfire, the whole time our nervous system is in this constant state that it is under treat. Now we can see how, if you're living in a in a war zone for example, you can see how it would make sense that the nervous system will after a while, this is why people get things like post-traumatic stress disorder, but after a while the nervous system just can't handle that level of overload and stress that it is under.

But one of the things that people often say is: "Well I don't feel stressed". And in fact, I remember years ago someone came into my clinic room and we had these kind of swivel chairs, these normal desk chairs and they were sat there and were literally kind of swivelling backwards and forwards in this chair, almost like running their feet on the floor saying: "I'm not stressed". I was like: "I feel stressed just looking at you". How could you not know you're stressed? So the way that I describe this, this is not an experiment that I've done or that I'm recommending, but if you take, so I'm told, if you take a frog, you put it in a glass of boiling water, it jumps out. Put a frog in a glass of cold water and you gradually heat the water, it stays in there and it gets fried. We normalise to whatever is happening in our life in a consistent and regular way.

So if we live in an environment which from time to time has threats but the rest of the time actually is kind of safe and calm, and our internal environment is also safe and calm, and we are not finding lots of unhelpful physiological patterns, then we normalise to being in a healing state with moments of acute stress to deal with. If we live in an environment with lots of external threats, or we have lots of internal threat responses that may be disproportionate or inappropriate, like the frog in a glass of cold water that starts boiling we normalise to that.

And that state of chronic stress in time has an enormous impact upon our body's ability to heal, upon our immune system, upon our digestive system, as

we will get onto a bit later, even onto our energy production and mitochondrial function. And so often we don't realise when we are in a state of chronic stress because we normalise to being in that state.

One of the most stressful things that we can experience is suffering from a chronic illness, particularly a medically unexplained chronic illness that has all kinds of uncertainty of: are we going to recover, are we getting worse, should we try this treatment? I did this treatment, I feel funny, is it working? It's a constant sense of uncertainty that comes from living with a chronic condition, or trying to understand a chronic condition, that alone can be a major state of chronic stress in the body. The question that I'm often asking with people is not necessarily what causes someone to get sick in the first place, although that can be very important in terms of finding an effective treatment path, but what is stopping them from healing. And when we are in a state of chronic stress in our nervous system that means that you can be doing everything right, taking the right supplements, eating the right food, doing the right interventions, but if we're in a state of chronic stress, the body is often unable to effectively heal.

Dr. Eva Detko: Yeah, absolutely. And you know, if people just take one message away from this then this is something that I know you stress that a lot, I stress that a lot: you cannot heal in a stress state, you can only heal in a healing state. That's why it's called the healing state. And so that's really really critical to take on board. And another thing that I really again want to emphasize is, that just because you may think that the threat has passed doesn't mean your nervous system thinks the threat has passed.

And oftentimes, you mentioned nature, and we observe that when animals are under stress they will then afterwards discharge that nervous energy, whereas in modern life we often don't have an opportunity to discharge that energy, and we can get stuck. And we will obviously get to that and talk about that more in a moment, but that is the thing, just because we can have a conscious perception of that: "Well, I am not consciously being threatened", doesn't mean the nervous system reads it the same way. So that's the distinction to take into account. Right, so we are talking a lot about the vagus nerve in this summit so why don't we make that connection and mention the Polyvagal Theory whilst we are at it?

Alex Howard: Yeah, so it is actually from my point of view quite interesting because this understanding of stressed state, healing state, different stages of stress on the body, all of this is work we've been doing clinically 16-17 years, and then in more recent time I came across something called Polyvagal Theory.

And it's one of those things that when I came across it, I felt like a bit of an idiot because I was like: “How have I not heard of this before?” But it was a kind of fascinating confirmation of a lot of things that we already knew to be the case, and a few additional pieces of the jigsaw that actually are really helpful to understand.

So just to give a little bit of initial context, So Polyvagal Theory was created by a guy called Dr Stephen Porges, who's a professor of psychiatry at the University of North Carolina. And his kind of body of work, his life's work, really has been looking at the psycho-biology like the impact of stress on the physical body and the nervous system. Rather than just talking about stress as a generic kind of thing that happened, how does stress actually affect the body, like what's the mechanics? What's the process of that?

And I think part of what is so helpful about this is I mentioned about this fight, flight, or freeze response, and a lot of the things that you see out there, people talk about fight-or-flight, but they don't talk so often about the freeze response. Now actually, you just touched something a minute ago, I think deliberately, which is very interesting, which is if we are in the fight response, there is a lot of energy that goes into having the physical fight. If we're “flighting” and we’re running away there's a lot of energy that gets discharged in that processed. If we freeze, there’s still all of that adrenaline, all of that cortisol, all of that activation in the system but it doesn't get to go anywhere.

And this is interesting. It's like the freeze response is a state of shutdown in the system. But it's not a state of shutdown where it's like the whole system just collapses, although it can feel like that. It's actually a state of extreme stress beyond even fight-or-flight. So Polyvagal Theory breaks down three categories really in terms of mapping what can be happening in the system and it's also maps two different kind of strands of the vagus nerve. And I'm sure you've already talked in other places in the summit around the idea that vagus is the Latin term for wondering and it’s a nerve that really connects us from the brain right through the chest right, through the abdomen, and really is the biology of the mind-body connection. People talk a lot about, and I know it’s something that you feel really strongly about, people can really emphasize how important the microbiome is but don't take that step back and go: “Well, why is the microbiome out of regulation?”

So these three categories in a sense, you've got what they call the ventral-vagal, or the safe and social. This is what we really talking about as being in a healing state, so in a safe and social state we feel relaxed, our nervous system feels like

we are in a calm and grounded response. We can accurately read the cues from the environment so if someone looks at us in a kind of encouraging warm way, we'll feel a sense of kind of safety and calmness and okay-ness with that person. And more often than not, a good place to go to when you might be in a safe and social state is what's your happy place? Is that watching Netflix under a blanket on the sofa? Is that lying in bed with a spouse or partner that you feel close to and you love? Is that playing with your children when they're behaving? Like the times in your life when you just feel that time just disappears and you are just in the moment, and it's pleasurable and you feel good.
There's then the fight-or-flight response, or what people often talk about as a sympathetic nervous system response. And in this response, we have raised stress hormones, things like adrenaline, cortisol, our blood supply tends to go away from our digestive system, which is why digestion gets impaired, goes more to our arms and legs because we need to be able to fight or flight. We need to have that kind of capacity to do that. Interestingly part of Dr Porges's work around Polyvagal theory shows that in fight-or-flight we often will misread the cues from other people.

So it's almost like we're looking for danger, and when we are looking for danger we'll often see danger when it's not even there. So there is an interesting self-perpetuating quality of being in a fight-or-flight response because we're already stressed and then we look at things and we interpret things as being dangerous that are not dangerous so we become more stressed.

It's almost like a confirmation bias of being in a stressed state that the more stressed we get, the more we become stressed about things that actually you don't necessarily need to become stressed about. So we can think about it much like a ladder. So we go from safe and social up to fight-or-flight with an increased activation, and if we get activated even further, we go into a freeze response, or the dorsal vagal nerve. And in this response, it's almost like we become so wired and so stimulated that the system shuts down.

And that can be the animal which is kind of feigning death and just pretending that it's dead. It can be someone that goes to give or do public speaking and they have been kind of nervous leading up to it, they have already been in fight-or-flight, they walk out, they are in front of the microphone, the spotlight's on them, and they go another level, and their system just shuts and they just freeze. They can't speak, they can't get their words out, they also can't even run off the stage because they are just frozen to the spot.

So in that freeze response that is enormously draining and depleting to the body. So in a freeze response, this is interesting in the context to chronic fatigue when you can have people which are super light and sound sensitive, housebound or bed-bound, and your talk about fight-or-flight, and they will genuinely be like: “I just don't resonate, that's not my experience”. Then you talk about shut down and not really feeling emotions, feeling numb, feeling reactive to everything, feeling really tense but also totally exhausted, and suddenly you're on the right track, and suddenly it starts to make sense to you.

Now, there are different things that will cause us to move up and down this ladders, is one way of talking about it. But just one other thing that I’ll say. One of the things that was really striking to me in Dr Porges’s work was also this idea of neuroception. This is the idea of detection, like noticing and responding to things without awareness.

One of the things that we noticed working a lot with the fatigue population is the nervous system can be super activated. We were trying to get people to understand what were the thought processes, what were the anxiety patterns that are happening, and actually it was that some of these reactions in the nervous system is preconscious or preverbal. So it's like your system is responding to the environment, either the internal environment or the external environment, so fast because this has been trained through tens of hundreds of thousands of millions of years of staying safe with external threats in the environment.

So Polyvagal Theory is really helpful way of mapping and understanding, and realising, it's not just a simple as stressed state / healing state, although that's a very helpful kind of frame, that there are different stages of response that we can go into when we are under stress.

Dr. Eva Detko: That’s right and I think a lot of people will relate to that hypervigilance and the safety aspect. This is so important in this whole process as well, isn't it? But what’s also important, and that is what I want to go to next is, that whenever you speak to Dr. Bruce Lipton, or you hear him speak, or you read any of his stuff, he always emphasizes how the cells are the basis of everything for us humans, and then what happens on the cellular level also happens at the system level. And you can observe those parallels and similarly with this. We can draw the same parallel, and we actually have this mechanism almost going on at the cellular level as well, so do you want to speak about that because I think that's just really incredibly interesting?

Alex Howard: Yes, of course. So another fascinating researcher, Dr. Robert Naviaux who is a professor of residence at University of California in San Diego has published a series of papers in recent years looking at this idea of Cell Danger Response, which we will talk about in a second. Part of what I find so inspiring and fascinating about his body of work is the number of applications that he is looking at. So we're looking at applications from chronic fatigue and ME, to autism, to trauma. But a kind of broad reach, the kind of the essence of Cell Danger Response is the when under threat, so when we're in some sort of stress that could have been our caveman being chased by the sabre-toothed tiger, or it could be someone living with a chronic illness, with that constant medical uncertainty in terms of what's happening, but under stress the body shifts to a different mode and focus.
Effectively the body protects itself on a cellular level when we're under threat. And self-defence is one of nature's oldest laws. John Driver back in 1681 was talking about self-defence, the different ways that organisms have developed through evolution in a sense to protect themselves and keep themselves safe. And there is some enormously complex biochemistry behind Cell Danger Response, some of which is quite frankly way beyond my capacity.

But one of the ways that Robert Naviaux looks at this, which I think it's really interesting, is looking at how the mitochondria respond when we're under threat or when we're under stress. The mitochondria being the body's energy power houses in our cells. If people remember the Krebs cycle from the school biology, mitochondria is our body's ability really to manufacture and make energy, and so the mitochondria have two quite contradictory and different responsibilities. So outside the cell of the mitochondria effectively, is a signalling molecule that signals to neighbouring cells there is stress in the environment.

So the mitochondria are really responsible for keeping us safe by communicating to other cells that there is a threat, and things like we need to conserve energy rather than spend energy, or the immune system needs to become hyper-reactive to defend ourselves from the immediate threat that's coming in. Inside the cell, the mitochondria is an energy carrier, is the cells way of manufacturing energy. But the fascinating thing is, the mitochondria will prioritise one or the other. So if we are in a healing state, the mitochondria are producing energy, our body is calm, we are making energy that gives us more, in a sense allows us to be more calm because we have more resources.

But when we're under threat, and particularly more severe threat, the mitochondria de-prioritise energy production and they prioritize signalling to other cells that there is a threat, and we need to shift how the body is

functioning to stay safe. It's almost like the mitochondria are like the canaries in the coal mine back in coal mining days. Coal miners would go down and have a canary in the cage, and then if there was some kind of gas leak the canary would die, and that would be a warning sign to get out quickly. It's kind of like what the mitochondria do. They are the body's way of looking out for the threat identified, of signalling and communicating that threat.

So to summarize, stress is not just, when we're stressed we don't digest food as well. When we're stressed, our immune system is impacted, we don't heal as quickly, although there is fascinating research on that and I am sure people will talk about some of that as part of the summit, there is a direct shift in the function of our mitochondria under a state of stress, where we move from healthy normal functioning to self-preservation and self-protection, which is why it's called Cell Danger Response. I think that is enormously important to understand for anyone that's watching this that either has fatigue or even chronic fatigue, or is suffering from any kind of chronic health condition, where their body is struggling to heal, if you are in a state of chronic stress.

Just to try and tie up the various bits we have touched on so far, if you are in a state of chronic stress then that means looking at Polyvagal Theory that your system is going to be in a fight-or-flight, or freeze response, and there's a clear biology to that. But that means, you on a cellular level, your body is not prioritizing healing, your body is not prioritizing energy production, your body is prioritizing survival. For the body to heal we need to turn off that Cell Dander Response. We need to bring the body back into a safe and social, calm and healing state, and that is where healing can actually happen.

Dr. Eva Detko: Yeah. Yeah. That's great. And a great summary and really interesting that the actions of this acute fight-or-flight are actually really consistent with the acute Cell Danger Response. And then obviously in chronic illness, you've got the situation of the stuck-ness going on. And I do actually have a quote here from one of Naviaux's papers. And it says that: "When the Cell Danger Response persists abnormally, whole-body metabolism and the gut microbiome are disturbed. The collective performance of multiple organ systems is impaired. Behavior is changed and chronic disease results." So, that is basically just another way of stressing the importance of understanding and addressing this.

And obviously the cellular responses. This is not just about chronic fatigue. You did actually say that there's a lot more. He I think identified over 100 diseases that this is definitely relevant to, including a lot of autoimmune diseases, such

MS, rheumatoid arthritis, inflammatory bowel disease, and so on. And so that's basically the crux of it all really, that when the Cell Danger Response is chronically activated, this co-ordination between the two limbs of the vagus nerve, the ventral vagus complex, as you described previously, and the dorsal vagus complex is completely thrown off. It becomes disrupted, it becomes dysfunctional. And then in fact, that obviously results in also this inhibiting of the sympathetic nervous system, which basically causes just the great big mess, and the whole autonomic system becomes really dysfunctional. So this is really a big deal. And obviously we said a lot about this and how much of an issue it is. So perhaps we should go on to give some solutions now.

Alex Howard: Yeah, I think it's one of those ones that when the penny really drops, when we really understand, and realize the significance and the importance of the impact of this, I think it can sometimes feel quite overwhelming. But I think it can also feel quite liberating because I think often people have tried a lot of things to support healing. They've tried endless supplement programs or diets, or drug therapies, and it's like people have spent tens of thousands of dollars, hundreds of thousands of dollars, and seen dozens and dozens of practitioners, and just cannot understand why they seem to be the common denominator of each of these practitioners. They go to these people and they do great work, but they don't heal.

And I think that the liberation is the realization that health and healing is like having the right codes to open a safe. And you can have the right numbers in the wrong order or you can have five out of six numbers. Right? But until you get that six number, you're not going to go anywhere. And things aren't opening. And my experience is not that you just have to get in a healing state and healing miraculously happens. In the Optimum Health Clinic, which I lead, we have a team of over 20 full-time practitioners and half of that team are working on functional medicine, a nutritional approach, because that's also still really important, but for that work to be effective, the body needs to be in a healing state. So in terms of what we can do, the first thing that I always say to people is we need to have awareness.

Firstly, just one of things I get people to do is to start to track and monitor their nervous system throughout the day and throughout the week. So you can start to see on a scale of nought to ten, ten being like full on shutdown freeze response, and zero being in a calm, relaxed, safe and social healing states. Tracking where about people are, because sometimes it's a bit like the frog in the glass of boiling water. We don't realize.

So it's being aware of the states that our nervous system is in, and then it's being aware of the different loads that are causing that impact on our nervous system. And I talk about loads on a boat. So the boat being kind of your nervous system, or your body, and then different loads might be historical loads, like you've been through a divorce, or you've been in a traumatic accident, or things like that. It may be personality types. I talk a lot about things like achiever patterns where you define your self-worth by what you do and what you achieve. Helper patterns, where you define your self-worth by what you do for others, anxiety patterns, perfectionist patterns, control of patterns.

So there's a bunch of personality types, which are kind of stress-causing. They cause our system to be activated. So getting awareness around those patterns, and then getting awareness around the underlying emotions of what's going on. Often the impacts of ongoing stress in the system is, we get more and more in our minds and less and less in our body. For the body to heal, we do actually need to live in it. And I know that it may seem like a bit of an esoteric statement, but when we we're in trauma or stress, we tend to disconnect from the body and go more into the head.

So I always start with people, I have a 12-week coaching program called the Reset Program, we spend the first three weeks of that just working on building awareness, seeing the different personality patterns, tracking the nervous system, to get real clarity on what's happening there. But then the second thing is, we need to have strategies. We need to have tools and techniques to shift the response in the nervous system.

I'm a big believer in the power of mindfulness and meditation. I think what it will often do is if our system's wired up kind of here, it will help calms us down. The problem is, as soon as we start, throughout the day, the system starts winding back up again. So we have to understand what are the triggers, thought patterns, the personality patterns we're playing out that are causing that ongoing activation in the system. So then there are tools, and we have a series of techniques, but it's called the stop process, which is a way of learning interrupts to catch and stop such thought patterns.

I also think often what happens is you calm the mind and then as you come more into the body, you start to feel the feelings and emotions that have not been dealt with. The feelings, perhaps you are trying to escape by going into the mind. So also then having technique like learning to feel emotions, learning to digest emotions, things like EFT, Emotional Freedom Techniques, tapping, can sometimes be helpful there. So we really have to have a comprehensive way of

working with calming the mind and the patterns that are running. Having awareness to the personality patterns and how to better work with those, and how to work with our feelings and emotions as well.

Dr. Eva Detko: I love it. And I really love it that you brought personality typing into this because we're doing a session, excellent session with Coleen-Joy Page on Enneagram for that reason, So people can build a little bit more awareness around their own personality type, and also what triggers them, and various things like that. But it's certainly true that the awareness is really oh, you're almost halfway there when you really understand where you are, and can recognize the signs.

So this is really huge. And I can definitely tell you that even though we talk in the summit here a lot about, there's going to be a lot of strategies on how to stimulate the vagus nerve, again, it's not going to be one thing that's going to solve it for you guys. It's going to have to be a range of different strategies that you're going to adopt in addition to building awareness to where you're at.
And this is absolutely true. I'm actually at the moment working with somebody, we're just at the beginning of our journey together with this client at the moment. Unfortunately, she's still stuck very much in this sort of victim mode, which we all go through when we first get diagnosed with chronic illness, right? But there's a little bit of stuck-ness there.

So even though she's doing her vagus nerve stimulation exercises, and various things like that, like you said, the moment that's finished and she's finished listening to her guided meditation, or brain entrainment, or whatever else, it's coming back up. The stress is coming back up because of the overall mindset that is currently present. And so, yes, that's really quite important to note that there has to be stages to this process.

Alex Howard: I think that's absolutely right. And I think that sometimes people will come in with a quite unrealistic expectation that they think should be happening. It's like they've spent decades training their system to be in a high state of stress, and then think that they do a couple of meditations, and the whole thing's going to get switched off again. It doesn't have to take decades, but it does have to take a commitment to a journey of healing. And that's why having structures, supported programs, I think is really important. And you know, I often say to people that it's not what happens in the therapy room which actually matters, it's what happens all the other hours of the day and the weeks in between those sessions.

It's like I see my role as being, sure, helping people see things they can't see, and giving them tools and giving them strategies, but really my role is also to give them the confidence to be able to use those tools by themself, because that's really what creates change. It's not like what I would call simplistic issues where someone's got a very specific phobia about a very specific thing, and you do a very specific intervention, and that one thing is gone. When you've got a generalized impact of a nervous system that's got over-activated, you need a number of different things. And sometimes sequencing is really important. So knowing that you need to do this thing before you do this thing. And if those things are wrong way round, it may not be effective. But having that kind of sets of tools that you can respond to different things in different ways is really important.

And it is absolutely possible for this to change. It is absolutely possible to rebalance a nervous system that's spent decades out of balance. And it is possible for people to recover and heal from chronic illnesses that may have seemed impossible for many years previously. I would run a million miles from any one that makes these things sound over-simplistic.

Anyone that says: "The only thing you need to do", my eye glaze over and my brain tunes out because it tells me they don't know what they're talking about. Because people that are working with these complex issues understand the complexity and the nuance. And there are patterns. And when there are many, many people that have walked these healing paths before, there absolutely are themes and patterns, which can really help map that path to make it easier.

Dr. Eva Detko: Yeah, absolutely, absolutely. This is so true. And the yes, it is complex, but it is possible and we are both living proof that it can be achieved. Right? So we going to end on this very hopeful message. And I want to thank you so much. It's been an absolute pleasure. It's always a pleasure talking to you. You're absolutely awesome. So thank you so much, Alex, for contributing. And do you have any final words of wisdom?

Alex Howard: First, this is very kind of you. Thank you. So it is always a pleasure to talk to you as well. And I think it's great that you've put this together. If I could have a shameless plug, one of the things that I would also say is, I do a daily video blog, but particularly on Tuesdays, I film, I show films of mini sessions with me work with people. And I think sometimes a helpful way to really bring these ideas to life is to actually see them happen in the real world with real people. So if people want to find out a bit more about the work that I

do, check out the therapeutic Tuesdays. You actually see real people working with these issues in a real life context.

Dr. Eva Detko: Fantastic. Well, thank you so much again from all of us here and obviously myself. Thank you for your time.

Alex Howard: Thank you for having me. It's been a real pleasure. Thanks Eva.

How Dysfunctional Sleep Affects Your Vagus Nerve
Guest: Dr. Nasha Winters

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind Body & the Vagus Nerve Connection Summit. I'm your host, Dr. Eva Detko, and my guest for this session is Dr. Nasha Winters.

Dr. Nasha is a licenced Naturopathic doctor and a fellow of the American Board of Naturopathic Oncology. She's a global health care authority in integrative cancer research. Dr. Nasha's first experience with cancer was at the age of 19 when she was diagnosed with stage four ovarian cancer and given only a few months to live. Her metabolic approach to cancer stems from her nearly three decades of personal and professional experience in the field of integrative oncology. Dr. Nasha is a sought-after speaker and consults worldwide. So Dr. Nasha, welcome to the summit!

Dr. Nasha Winters: Thank you, it's wonderful to be here. Great topic.

Dr. Eva Detko: Thank you. Yes. Wonderful to have you and to connect with you. Brilliant. We're talking about sleep and circadian rhythm management. So fundamental, absolutely fundamental, to get right from every single aspect of health really. So we're talking specifically vagus nerve here. But really, if people were to just get one thing right, if they couldn't get anything else dialled in when they first start their journey, if there would be just the one thing that they need

to do, it needs to be getting their sleep and their circadian rhythm right. Because that's going to have a knock-on effect on so many things. So why don't we start by talking a little bit about the consequences of dysfunctional sleep? Why is it important to get it right?

Dr. Nasha Winters: Well, this is a great topic, as I said, that you've chosen both for your audience, but also for me to speak on. And we were saying before you started the recording that personal experience is often what leads us down these paths. And I'm no different than that. And I had years, and years, and years of disrupted sleep patterns from just having kind of an anxiety, and other things in my life, and kind of an unsavory living situation that made sleep time kind of scary, kind of dangerous, with how I was growing up. So my sleep was quite disturbed and I was definitely a night owl and I worked my jobs. The first two years of undergrad were graveyard shifts. I worked swing shifts and night shifts both in a detox environment.

So I was a certified addictions counsellor. But I also worked really late in the restaurant industry. And I also worked grave shifts in a nursing home, I worked on an Alzheimer's unit. So I did that 11:00 to 7:00 shift, as well as went to school full-time. So basically sleep was non-existent in my life. That was where I started to learn, as you noted, the aggressive changes in my chemistry, which is why I go back to this, to default to the importance of sleep, for all the patients that I work with. And of course, in my world, I work with cancer. But this applies, as all of your speakers will be attesting to, to all chronic illness in general. So what happened after my diagnosis in 1991 of a terminal cancer, I was working swing shift at that time, and I started to do some research.

And it's when I started to stumble across the work of people like Candace Pert, and I saw Bruce Lipton is gonna be one of your speakers, yay, a little fangirl there! But I basically changed my major from biology-chemistry to biology-psychology. And I started to create a personal constructed major known as psychoneuroimmunology. And it was in the year 1994, several years into my diagnosis, as well as quitting my graveyard shifts, and working better on getting myself into a rhythm again, that the work of Dr. Porges hit the airwaves. And I'm sure someone in your lovely line-up will be talking about Dr. Porges's work, and the Polyvagal Nerve Theory. This is what completely aligned with the work I was doing with psychoneuroimmunology.

And I realized if we have lost our rhythm, our circadian rhythm, we've lost our connection to self, we've lost connection to other, we've lost our connection to seasons, and cycles in, on, and around us. And we've lost down to the

microscopic, and even genetic level, communication and rhythm within our cells, and the processes happening in those cells. So it's a little bit of a back story as to what brought me into the interest of this field. All of those years ago, and even a couple of years into my own healing journey, but it is informed every single thing I've done since then. And so when you talked about the foundational work, that we can have people eating the perfect diet, exercising absolutely in the most stellar way, dealing with all of their emotional baggage in an expert way. But if they're not sleeping and following the natural rhythm of nature around them, they're missing probably one of the most fundamental ways that we can tune up our bodies.

Dr. Eva Detko: Yeah. And, you mentioned two of my favorite things, Polyvagal Theory and psychoneuroimmunology. So I love that! Brilliant. I want to just summarize what you said with this statement that: deep restorative sleep is basically like the gym for your vagus nerve. If you don't sleep well, you will lose your vagus function, and you may not even have good vagus function to begin with for various reasons. Because we know loads of things affect it. But if you don't sleep as well, that's going to make it deteriorate even further.

And we know all the consequences of that, because obviously we're talking about this throughout the summit. So it's really fundamental. That deep restorative sleep is really, really key for the vagus function. So you did mention obviously the sleep, and then you talked about the circadian rhythm. So let's single that out for a moment and talk about the circadian rhythm specifically, and why is it so important to manage that?

Dr. Nasha Winters: Well, each of us, every one of us, have our own little inner clock. We have kind of our master clock, but also down to every single cell, and organ, and tissue, and as of recent, we're understanding that our microbiome also has an internal clock. And all of these clocks have to sync and line up, and communicate with one another. And we've come from a very, very long lineage of being at the mercy of the rhythm of the world around us.

We lived by the starlight, we lived by the moonlight, we lived by the sunlight, and the access to fire. We lived very close to nature, and at the natural rhythm of the environment around us. We have gone completely opposite of that in the last hundred or so years in efforts to modernize the human experience, and utilize our noggins in really powerful ways to bring really amazing things to the world around us.

But in doing so, we have created this major, sort of circadian mismatch, complete malalignment in trying to achieve optimal living. That kind of whole concept of better living through chemistry. Those ideas put out there by the pharmaceutical company. Or better living through technology, like having Siri tell you where to go when you're driving down the road. We think these things are really powerful in making our lives easier, but what they're actually doing is scrambling all of these internal clocks, and they're creating a lot of mush and mismatched communication within our cells, our organs, our chemistries, our hormones, even the way we relate to one another. And so these circadian rhythms that have always been innately tuned in, we all have about a 24- to 25-hour clock within each of us. And we don't deviate from that very much, right?

And what happens though, is when you try to defy your inner nature, defy the natural circle of rhythm of the world in, on, and around you, you start to jumble up that clock. You basically take out the batteries, you wind the arms back in a different direction, or speed it forward. And that's a problem. And we've now learned this over the years, is that all the things we've done to make our lives easier, have actually made us much sicker. Sicker than ever, and we can really take it right back to the essence of being completely out of rhythm, and out of touch with our innate ability to tune in, and be responsive to the environment around us.

These little clocks depend on us for input. So they depend on light, temperature, meal timing, sleep timing, menstrual cycles, you're making love cycles, and reproductive cycles, as well as external environment cycles, and rhythms of nature itself. And we're changing these things drastically in what we're being exposed to, and our clocks are quite frankly messed up.

Dr. Eva Detko: Yeah, as you said, we've basically turned it on its head, it's true, in the modern world, in the Western world. And what's interesting is that one of the main causes of fatigue is circadian rhythm disruption and poor sleep. And what's more, people may also find interesting that it's actually possible, for some people it's possible to rebalance hormones and heal adrenal fatigue by just doing this. By just fixing their sleep and their circadian rhythm. Of course, it's not going to be the same for everybody but for some people, this one single thing can be so impactful that they could recover from issues that they struggled with for years, and years.

And what's also interesting, it's connected obviously to all sorts of health issues across the board. But one of the issues with circadian rhythm disturbances is

increased risk of thyroid dysfunction. And it's been found to be 200 times higher in shift workers for that reason. So shift work, not so good for health, right?

Dr. Nasha Winters: Exactly. And it's funny you talk about the shift work. We've done multiple studies on shift works impact on thyroid function, as you just alluded to. Off the charts difference from folks who don't work shift work. We also have studies on metabolic disorder in shift work folks. So diabetes, pre-diabetes, those processes that are around blood sugar balance, that has been well illustrated in the research. We also have loads of studies on the impacts of loss of sleep, or doing shift work, impact on our cardiovascular system.

So a huge spike in cardiovascular events. Just think about when we change to daylight savings time, we have a massive spike in cardiovascular deaths, and heart attacks, just when we make that one hour shift twice a year. So to even show that a single hour of disruption, forward or backward, can really impact our little circuitry of our cardiovascular system. And then even more importantly, just given the work that I do, is the focus on research around the impact of shift work on cancer diagnoses. Much higher levels of cancer in patients who work shift work versus those who do not.

And we've seen these studies, a lot of nurse studies over the years. And guess what? These are the same people. The nurses in these studies that are working shift work, they've got thyroid disease, they've got metabolic disease, they're usually dealing with joint pain issues, they're usually dealing with depression, as well as cardiovascular symptomology, and cancer. So the whole package goes together, as you just alluded to, and that drives right back into that beautiful vagal nerve. When the circadian rhythm is out of sync, that gymnasium of the vagus nerve is also very out of sync.

And that nerve, as all of your speakers will talk about over this summit, innervates all of those important aspects, our breath, so our lungs, our cardiovascular system, our GI tract. So it's very interesting that all of the major sort of bodily functions, and organ functions, and hormonal functions, are completely under the impact of the vagal nerve, which is dependent on us being in rhythm to function most properly.

Dr. Eva Detko: And you mentioned those key factors that modulate circadian rhythm. You talked about light, temperature, food timing, obviously physical activity as well, and those various other factors that you mentioned. Could you elaborate on some of the key ones, just in case people don't really understand how that all fits together?

Dr. Nasha Winters: Sure. Well, part of the signaling, we talked about the temperature and the light, these are things that have changed drastically with our modern technologies. So good old Thomas Edison, his light bulb hasn't really been around that long. We lived by the light of candle, and lantern light, or fire, for millennia. And the spectrum of light in that color is more in the amber, and the red, and the orange, and the golden hues. And those lights are much more conducive to the first part of the day, and the last part of the day. When our sunrises and sunsets makes these beautiful kind of red, glimmering light, that is washing our body full of signals to do certain duties based on that particular frequency of light.

Once we sort of fabricated our environment to have a different spectrum of light influencing us that changed our workflow. That changed our living flow, that changed so much in our lives that really now we could work around the clock doing things that we could only do in the light of day previously. And that started to change things. But even more so, is today's technologies, the screen technologies, that you and I are even communicating with one another right now, has got this spectrum of light known as the blue spectrum, which is incredibly stimulating to the brain and to the nervous system, and puts us in a sympathetic hyperdrive. Which is the antithesis of our vagal nerve and the antithesis to the rest-and-digest component of our circadian rhythm.

We want to be active during the daylight. We want to be engaged, but we want to be calm and relaxed, able to digest our food at night, and sleep. So the blue light technologies of our screens, our computers, our televisions, our telephones are drastically altering that light, even more so than good old Thomas Edison's light bulb that has joined our culture, our modern culture of the day.

So we take so much of that signaling through our eye and even through receptors on our skin. So just wearing an eye mask is not enough. You actually have a little sort of eyeballs, if you will, on every surface of your body. So you might go to bed with a beautiful cover over your eyes and think you're getting a nice darkened room. But you have one false light streaming into that room and it's hitting your fingertip, and stimulating all of that hyper-activity within, which is further throwing off your circadian rhythm, your HPA axis, your gut-brain axis, your gut-microbiome-brain axis. All of these patterns we're now seeing in the research are impacted by things like just light. The other modern technology that we're dealing with today is this climate controlled environments. We like it always 72, or always 74 degrees. And if you deviate a little bit higher or lower,

we're uncomfortable, and we have the ability to set a thermostat around us all of the time.

And yet what we're finding is, we should be sleeping cooler, or cold, to change certain patterns in our chemistry, and to signal different things in our circadian rhythm. We should also be warmer in the summer and cooler in the winter by default. But when we're now living in this chronic level of 74 degrees year round, waking, sleeping time, our bodies don't know what to do with that, because we depend on changing signals based on changes of temperature. And then the food eating. The timing.

We really, again, for millennia, we ate when we had the access to light and now we can eat, we can graze, 24/7. People have to have a snack, even go to sleep. They have to get up oftentimes the middle of the night to have a snack to stay asleep. They have to eat the second they burst out of bed because they're so metabolically broken. Because with our disrupted sleep patterns from maybe street lights, or getting on your computer right before you turn off the light, or having a snack right at bedtime, or having a warm bedroom at night, is messing with your circadian rhythm, even if your eyes are shut.

It's keeping you from going into that restorative, rejuvenative gymnasium vagal nerve of sleep patterns. And it's preventing you from getting into the natural rhythm and clean out of your cells, and your tissues, and the lymphatic clean out of the brain, and the liver that does all of its restoration and clean-up between 11:00 p.m. and 3:00 a.m. If you're up during those times, you're not taking out the garbage. So the wonders of modern times are incredible. We can do these things, but it's not helpful for our longevity, which is obvious, as we get less and less longevity here in the West. And we are more deranged than ever with depression, and pain, and obesity, and diabetes, and cancer, and cardiovascular disease. All of these modern diseases that are killing us today are thanks to all the modern technologies, and ease that we've created from these sort of unnatural environments that have taken us away from our inner wisdom, and from our inner rhythms.

Dr. Eva Detko: So we want to share strategies with people. Because ultimately, like we said, if you're going to do that one thing straight away, that could elevate your health very quickly, this is what you should be focusing on. And it's not to say that you shouldn't be focusing on what you eating, and the microbiome, and emotional work. Obviously, you still have to be focusing on those things, but this can be quite impactful very, very quickly as well. So let's talk about the

different things that people can do easily and in a cost-effective sort of way to make those improvements straight away.

Dr. Nasha Winters: The simplest way to restore your circadian rhythm is to go camping for a week off the grid. That's the easiest way, honestly. We've got several research projects showing just that, that you can actually restore the circadian rhythm with as little as a week off the grid. And by that, I mean going to a part of the world that doesn't have light pollution that you are sleeping on the ground. We're not talking glamping. We're talking being on the ground. We're talking in bed by sunset, up with sunrise, because that's just the nature of it. And if you are up past sunset, you've got a fire in your midst. You want to preferably be in a place where you don't have cell signal. And if you do, turn off all of your devices completely, not airplane mode them, turn them off. These are some simple strategies just to get yourself back in nature.

We're all dealing with nature deficiency, nature deficit disorder now. The average American spends less than 15 minutes a day outdoors. That's horrific. So our bodies don't even know if we have a full moon, that we just had a couple days ago. Our bodies don't even know if we have a new moon, or if it's Equinox or Solstice anymore. We don't even know what those mean. When I talk to the average person today, there like: "What's an Equinox?" It's like we don't even recognize that we planted and harvested based on the stars, based on the moon cycle, based on the sun cycle. We did everything around these cycles, and we don't even know where we are in those cycles today. So get to know those cycles. For my women who are menstruating, or trying to get pregnant, or have issues with their hormones, I have them moon bathe.

If you actually Google moon bathing, then you'll see that there's loads of information out there on how to do this. But basically, I make sure that women are out, even if it's cloudy, in the nights leading up and around a full moon, and in the nights leading up and around a new moon. And start to make sure they're outdoors in that to kind of get the moon light on their body. That is sending messages to that superchiasmic nuclei, little inner clock in your body that says: "Hey, we're going to sync you with the tides, we're going to sync you with the cycles of the moon." I can't even tell you how many times that's created fertility and hormonal balance in my female population.

So men and women will benefit from moonlight walks in the full and new moon time, to reset and calibrate their tissues. Making sure you sleep with absolute darkness, unless it is coming directly from the moon itself into your bedroom space. So if you have to get crafty, get creative, make your own blackout

curtains, preferably turn off all of the electricity to your bedroom, you can actually get kill switches on your devices at home that turn that off. So you're not getting that constant input of information that is keeping your nervous system revved.

You want to keep your phones away from your bed. These are the types of things, distance is key when it comes to these. And then blacking out. An eye mask, as I said before, is not enough. So some of the most profound ways we can reset someone's circadian rhythm, and even get their cardiovascular system back in tone, and get their blood sugars down is to have them sleep in a completely blacked out bedroom, where you can't even see your hand in front of your face unless it's pure moonlight only.

So those are strategies. And the other strategy, again, notice these are all free, is go outside at the first light and the last light of the day, even if it's for 30 seconds to take in a few deep breaths to start your day, or to give gratitude at the end of your day. Most of us are so busy running around that you can at least even pull over on the side of the road on your way to or from work to do that, or take a walk around the block, or go sit out on a patio at your home and take this moment for yourself. That light will signal many pathways in your body. And when you are out in the sunshine, do go without your sunglasses sometimes. You want to get that full spectrum penetrating your eyes, penetrating through your skull here to your pineal gland to send off various cycles as well.

And you want to make sure all of your devices, your computers, your iPads, your cell phones, everything, have blue blocking technology, and that you're wearing, as you can see my weird lenses here, a blue-blocker glasses. So in front of me, you look very orange because I keep the light on my computer at a night-time light all of the time, and on my phone, and on my eyes because my work is virtual. I'm always in front of the screens.

So I have to go to these levels to filter it so that my body does not stay in that place. And I can tell when I go to a conference, that I'm inundated with fluorescent lights and not natural lights, I get sick very, very easily. And so I really try to make sure I'm outdoors three to four hours every single day, no matter what the season, no matter what the climate. So these are free strategies that can reset your patients immediately.

And then the other simple thing is food timing. Eating more in a narrow window is key, and definitely three hours before bed is what we always suggest. Really

as a simple rule of thumb, don't eat when it's dark, eat before. So in the winter months, you're going to eat shorter periods of the day, maybe from 9 a.m. to 4 p.m. and in the summer months you can get away with it a little bit later. And that's also more out and social, so go with that. And so if you could get out in the morning and have your workout first thing in the morning outdoors, that's preferable. And if you can get out for a little stroll after dinner while it's still light out as the sun is setting, even better. And you will see pretty quickly that you will feel a difference.

And then turning off those devices after sunset is really key. And if you must work after sunset, change all of your screen exposures with all the blue-blocking technologies that are available to us today. So I know I just kind of gave you a whole lot of pieces here, but my hope is that you recognize the things I'm describing is what we've done for millennia. It's always been that way, what we do today is what's so unnatural, and so it's against our nature. So it's going to take you to kind of get back into practice with those habits again.

Dr. Eva Detko: Yeah. And obviously, as you previously said, keeping the sleeping temperature low, because if you sleep in the heated room, that massively, massively disrupts the sleep and the rhythm.

Dr. Nasha Winters: Exactly. And so they even have technologies like chilled blankets or chilled pads. And I just think, we're doing all these things, we're spending an enormous amount of money on toys and devices to restore us back to a time that we just did this naturally. As we bio-hack, biohackers of today are doing some super cool stuff with technologies that are helping restore us to kind of more of a primal, primitive way of being in our circadian rhythm, and our vagal nerve tone.

And it's funny we have to fabricate what is natural, and yet the access to what is natural is all around us to enjoy on a regular basis. And it's very interesting because the other thing that reconnects us, we've talked about the tangibles to keep your rhythm, but ways to even stimulate your vagal nerve, and how it can even communicate better with the rhythm are simple things.

Like in Ayurveda, for instance, we've been tongue scraping for 5000 years, or gargling with saltwater. And guess what? The monks had it right. Starting your day with chanting, humming, very powerful. Sing in your car and the way to work, sing in the shower in the morning. Sit and do a few "OMs" in your yoga class. That is also a really powerful way to reverberate through the vagal nerve.

And then, there's also really cool studies about letting your cat lie on your chest as they're purring. That purr is their vagal nerve simulation, and you lay cat on you, it's incredibly healing and powerful. Whether you're a cat-lover or a cat-hater, the evidence is there to back this. And so it's just interesting that some of these simple ways of connecting or communicating, or celebrating the world, we also overly compartmentalize, or just downright ignore. And yet they've been part of our cultural upbringings since man first started walking on this planet.

Dr. Eva Detko: Yeah, those are all awesome, awesome tips. For those who currently can't take a camping trip, in the clinical setting they have done this, they kept people up for a full day so that they are then so tired that they will actually go to sleep early, and that can help reset it as well. So that's another possible strategy if you can't go on that camping trip. But also for other people, they can actually slowly do it. Gradually over a period of time by just going to bed half an hour earlier for a bit, and hour earlier, and so on. So that could work for some people as well, can't it?

Dr. Nasha Winters: Definitely. A lot in my extreme night out folks that I've worked with over the years, let's say they were more inclined to go to bed at 3:00 a.m., and they were getting their 8 hours of sleep because they'd sleep to 11:00, or noon, the next day. But the studies have also shown that that latter part of the night is not as restorative as is the earlier part of the night. So I do exactly as you suggested. Okay, right now, 3:00 a.m. is your bedtime, let's try 2:45, and then we'll do that for a couple days and then okay, great, then 2:30. It might have to be as slow as 15 minute increments to start.

And I do just encourage them, again, turn off any stimuli, because those folks that are up at 3:00 a.m., they're not sitting there quietly by candlelight. They're not knitting in the dark. They're engaged in some technology that's keeping this on, which is damaging, creating little like shrapnel to your cardiovascular system, and your breathing apparatus, and your metabolism, and your insulin response, and your hormonal response. This is dangerous.

And so you're not repairing and cleaning up, and taking out the garbage and inducing autophagy, and things like that, and the way we take care and clean our cells out every day. So it accumulates over time, and while we can get away with this when we're like 16, party all night and sleep all day, is because our mitochondria are young and robust and come back online pretty easily. But as we get older, and as more and more these technologies start weighing us all down, at even younger ages, such as even room monitors, ultimately we have to start to retrain ourselves. So if you are someone who stays up late, at least

do it without the technologies. Find other ways because your brain will reset pretty quickly with that. And I love how you said just incremental steps backwards. I shoot for people trying to be in bed, lights out, no later than 11:00 p.m.

Because in Chinese medicine we've known from 11:00 to 3:00 is when the body does its biggest repair work, clean-up work, take out the garbage work. Interestingly enough, that's also how it coincides in our physiology, or physiologic processing. That's also where it coincides with the glial lymphatic flush of our brains, is in that window of time. And it's also from basically sunset to sunrise is when we do autophagy, when we take out the garbage.

So simply not eating for 13 hours every day. So let's say you finished dinner by 6:00 p.m, you don't eat until 7:00 p.m., is enough to take out all the garbage. And what better time to use that garbage removal system but through your sleep. So you're not obsessing on food, or watching commercials at 3:00 a.m, they're making you hungry for that late night Domino's run. So these are just the strategies that I'm assuming most of your listeners are way ahead of the game and savvy here, but I'm telling you ninety eight percent of the population is a slave to their devices, to their technologies, to modern day thinking and living. That's keeping them completely out of sync.

Dr. Eva Detko: Absolutely. And to me, bedroom, number one thing, should be absolutely EMF-free, free of devices, free of TVs, free of screens, phones, whatever they are. To me, it's a no-go. We're actually having a separate session on how disruptive that is to the body. But creating that relaxing bedtime routine, whatever that may mean for you, because it's going to be different for different people. But just whatever it is, have that bedtime routine, that really does bring the system down and makes it ready to fall asleep naturally, and that is really what should happen.

But another thing I wanted to say is, that I don't know about you, but I certainly noticed this every single time, if I have a later tonight, I actually need more sleep and I don't feel as restored. Whereas if I go to bed at a decent time, which sometimes I am guilty of not doing, particularly with the move and things that have been going on for us in the recent weeks. But if I go to bed at a decent time, I don't need as much sleep, and I wake up more refreshed and regenerated. And I notice that. This is not just a one thing, I notice that every single time I get it wrong.

Dr. Nasha Winters: I love it that you brought that up because I'm the same way. If I'm in bed by 9:30, that's my favorite time, that's my zone, that's my magic window. If I'm in bed by 9:30, I'm waking without an alarm between 5:00 and 5:30 a.m. Just up, ready to go, and that adds a beautiful extra hour to my day. What I can get done when I'm most fresh in the morning, mostly that's usually self-care, get in the sauna, get in front of the joovv light, take a walk on the beach, whatever that may be.

But if I go to bed after 10:00 or 10:30, and especially, I had family and friends in town recently and went to bed at midnight for a couple nights, 7 o'clock rolls around and I'm dragging myself out of bed. And I'm getting the same amount of sleep I got before, as far as time frame. But I am wrecked the next day. And it is, it's funny, I can get much less with feeling refreshed with the same amount of sleep on the front end, then the same amount of sleep on the latter end. And often, as you noted, I need even less if I go to bed earlier.

And that's a place that again, some of us are more wired to be more of a lark, or an owl. So a morning person or night person. But ultimately, we still need that night-time window to our physiology from that signaling pathway of the light, and the cool cycles that are important for our own rhythms, in our own processes, chemically in our body, that you have to adjust with that. So maybe as a lark, you're going to be most productive in the morning, and maybe you know as an owl you'd be most productive in the afternoon. You start to organize your life around that without compromising your night-time restorative time. That's key.

And how do you help folks who have to work shift work for whatever reason? How do you help those folks? What I try and do with those patients is basically say: "Let's try and get you out of that job as quickly as possible," because sometimes you can't correct anything with that. That's just the reality. I can't fight your physiology. That's sometimes a challenge. But sometimes it takes us a while to make those transitions. So these are the patients, I want them to have the strongly wrapped red lenses constantly.

I want them basically fasting through their nightshift. I want them definitely taking brisk walks and getting out in that moonlight on their breaks. I'm wanting them to really have blacked out rooms during their sleep time, and really check their melatonin levels on a regular basis and adjust accordingly where need be. These are some important hacks that we can start to do with folks. And then of course, life happens, like moves or children, or stressful

exams, or whatnot that are going to impact that. Get yourself back in the routine as quickly as possible.

Dr. Eva Detko: Yeah. Thank you for sharing that, that's so important and I agree with you. Sometimes we just need to prioritize our health and we do need to let go of certain things. Sometimes that is really the only way we can do this. But nonetheless, thank you for those strategies, so people can apply this in the meantime, while working on getting a new job. Another thing I wanted to say, if people are into intense physical activity, or high-intensity interval training, and that sort of thing. That's probably not something you want to do just before going to bed, so that's another thing. That's going to be too stimulatory to the body and the brain.

Dr. Nasha Winters: I love it, and a lot of folks, if they do an evening workout, I'd like them to do it right at the end. That might be where you become the strategist who doesn't really eat dinner and you go to the gym instead. And then you come home, you take your hot shower, or your hot bath. And then a couple hours later, right before bedtime, a strategy is actually to take a quick cold bath, or cold shower, to quickly lower your temperature, because that heat that you just described that's created in those later day workouts, it's hard to cool down from that.

So a lot of biohackers will actually take a cold shower right before going to bed to already get their core temperature down a bit. And then maybe switch out, maybe you need to sleep a little cooler, or maybe you take an extra blanket off. Maybe you need to turn the thermostat off entirely in your bedroom. Maybe you need to have a place where you can wall it off, and just have the windows depending where you live open to get nice fresh cold air at night.

But those are just some of those strategies we just don't think about anymore. So I love this conversation because our cardiovascular system, our breath won't work as well, our digestion, our hormones, our metabolism, and our insulin response. None of those work well when our circadian rhythm is off, and when it's lost its communication with the vagal nerve. When those two separate, that's when we see chronic illness.

Dr. Eva Detko: Absolutely. And just circling back to the vagus nerve for a moment in terms of some of the hacks relating specifically to sleep. There are some studies that suggest that sleeping on your right side increases heart rate variability, and it does so more so, compared to the left side, or on the back is actually the least. So you get lowest heart rate variability if you sleep on your

back. So that could be just another little hack there. If you can obviously manage to stay on your right hand side for most of the night, then that will also help vagal tone.

Dr. Nasha Winters: I love that. That is one of the cool technologies we have today, are heart rate variability devices that give us the instant feedback. So we might actually be able to see, my later-in-the-day workout, or my later meal, or my fight with my child or my partner, or my inability to get to bed at a normal time is impacting that rhythm. You get the instant feedback on devices like a Fitbit or an Oura ring, or some of those others on the market, to know what works and doesn't work for you.

So it's not that you need to depend on those forever, but it certainly teaches you your own patterns, and helps you start to make immediate adjustments to make it work. So again, like you talked about, do some experiments, see what it's like when you sleep on your left, or your right, or your back, and see what you notice. Those are going to be kind of the cool little hacks that you get to learn about your biochemical individuality, and how to tweak it that works for you.

Dr. Eva Detko: I just want to thank you so much for everything that you've shared. I love your energy. You are absolutely awesome. And before we say goodbye, is there anything else that you think you might want to add to what you've already shared? Any final words, any resources perhaps that you want to talk about?

Dr. Nasha Winters: I don't know. You are incredibly complete with your thought process, your questions. I'm incredibly honored to be part of your stellar line-up. I can't wait to hear some of the speakers on this summit myself. And I just wish everyone the ability to restore their own natural rhythm. And I hope to see you out there in nature somewhere. So all the best.

Dr. Eva Detko: Thank you so much again. From everybody who's watching, and of course, myself, massive appreciation for everything that you've shared. Thank you.

Impact of Perfectionism on Heart Rate Variability
Guest: Dr. Eva Detko

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Dr. Eva Detko: Hello and welcome. Thank you for joining me for the Mind Body and the Vagus Nerve Connections Summit. I'm your host Dr. Eva Detko and in this session, I'm going to talk to you about perfectionism, and how perfectionism affects your nervous system. I just need to let you know first that I have been studying the mind-body connection, and I've practiced mind-body medicine, for over 20 years now. And I do work with complex physical illness, and of course, I work with complex emotional layers, patterns. And in my work, I do deal with perfectionism a lot.

And the number one issue with perfectionism, of course, is that it dysregulates the nervous system. And because of that, it then has a negative impact on the physical body. So first of all, let me start by saying: perfectionism is a curse. There is absolutely nothing positive about perfectionism whatsoever. Let me explain. There are two different things, actually, that could be happening for somebody. Somebody could be striving for excellence, or somebody could be a slave to perfectionism. This are two completely different things.

So let's, for example, take somebody who climbed to the top of the mountain. If that person is a perfectionist, then the moment they climb that mountain, they will not sit down, they will not admire the view, they will not stop and think what they've just achieved. There will be no reflection. All that's going to be happening is that they're going to be thinking how they could have done a

better. So in contrast, somebody who strive for excellence, somebody who wants to achieve great things, could also choose to climb a mountain. But in this case, this person will be more inclined to sit down, admire the view, congratulate themselves, think about what they've achieved, and be proud, and be happy with what they've achieved.

So I hope you can see how those two things are very different. They're completely different things. When you are a perfectionist, you are never good enough. What you do is never good enough. It's just never enough. And how is this a problem? Why is this a problem? It's a problem because perfectionism is a source of chronic stress. But because people think that that's how they've always been, it is a type of stressor that often goes undetected. It's just something that happens under the surface of your normal everyday thinking. And you may even think of yourself as a perfectionist. And most people do. Most people think of themselves as a perfectionist. They don't just do the perfectionistic behaviors. They actually identify with being a perfectionist.

And there is, again, a big difference between doing a behavior and identifying with something. Because we're talking about behavior versus identity here. And in therapy when you deal with those two issues, you basically look at them and work with them slightly differently. Because when you think of this onion, and all the different layers of the onion, and you think about those as your emotional layers, you think about that analogy, behavior is going to be one of the outer layers.

Whereas when we're talking about identity, we're talking about the very core of who you are. So when you start identifying yourself with something, whatever it is, whether it's being an alcoholic, or whatever it may be, and in this case perfectionist, that right there is, you basically, define your identity right there. So that becomes a problem because identity takes a little bit more work to straighten up than just doing a behavior.

And of course it can be addressed but it's just more deeply-rooted. So therefore, we need to use slightly different strategies. And it will take longer to work through it. So let's just for a moment focus on how perfectionism connects to heart rate variability and your vagus nerve function. Basically, there's been quite a number of studies that have shown that people who identify as perfectionists have lower heart rate variability, compared to the control participants that they've used in those studies.

So what has been shown is actually quite alarming because when they asked people who identified as perfectionists to get involved in activities such as mindfulness meditation, their ability to have a positive impact on the nervous system was reduced. So what that means is, a perfectionist personality hinders relaxation and reduces your vagal tone.

Now, that is a big deal because what that means is that even when you follow a lot of the advice in this summit, if you identify as a perfectionist, when you follow this advice with regards to vagus nerve stimulation and everything that was sharing, the positive impact that you have with all these strategies is actually reduced if you feel that you are one of those perfectionistic people.

And this could be because perfectionists will have much worse vagal tone to begin with, of course. But also because their engagement with anything must be scrutinized. By definition, if you're a perfectionist, you will be over-thinking and over-analyzing, stressing about things being perfect. Right? So, if you scrutinize and assess everything for perfection that will interfere with the process.

So say if it's a mindfulness meditation, this will interfere with this process, which will obviously interfere with the process of engaging the vagus nerve itself. And so that is a big issue. And as I said before, perfectionism is actually stressful. So straight away, what it does, it stops you from healing because perfectionism continuously activates you sympathetic nervous system. And obviously, as we already know, we can only heal when the parasympathetic nervous system is in play.

So the point to emphasize here is that if you are one of those people who suffer from perfectionism, it is not an on and off thing. It is constant. Perfectionism is a constant stressor. That's the problem here. So often times it even stops people from sleeping because they will go over things in their heads. And they'll ruminate, and they'll over-think, and they'll scrutinize everything and their own behavior, and themselves, for being perfect. So it becomes almost a 24/7 stressor.

And you can appreciate just how much of an impact that's going to have on your physical health over time. And another thing that is important to remember is that perfectionists have a reduced capacity to deal with stress. And somebody once said that perfectionists can make smooth sailing into a storm and a brief wind into a category 5 hurricane. And it's true. Perfectionists tend to respond more harshly in terms of their emotions and they tend to experience

more guilt, more shame, more anger. So all this sort of negative chronic emotional states that are so bad for the vagus nerve and our nervous system overall, perfectionist experience them more profoundly. And there are also studies that suggest that the higher the perfectionism, the more psychological disorders this person can be suffering from.

So we're talking about disorders such as depression, anxiety, OCD, and so on. And it's also worthwhile stressing here that perfectionism has been linked to higher suicide rates, higher mortality rates from cardiac events as well. And all of that obviously is due to the reduced heart rate variability, which is what we are focusing on in this session and in this summit. So let's for a moment just dissect this and look at what is underneath perfectionism.

Because obviously, just like with many, many emotional things people experience, this is just a symptom. So you may think that perfectionism is your personality trait and it can be. Type one on the Enneagram is the "I'm trying to be good" type, and at its lowest expression type one's will be perfectionistic, and that is true. But you can actually suffer from perfectionism regardless of your personality type.

So, for instance, I am type three on the Enneagram and I used to suffer from perfectionism. And obviously that used to cause me a lot of stress, and I ended up with chronic fatigue, fibromyalgia. Part of the healing was to heal from perfectionism because nothing was ever good enough. I was not good enough. And there will be a number of things going on here other than potentially a personality trait. So most of the time people who identify as perfectionists will have a level of attachment trauma. So attachment trauma, as you may already now, is particularly prevalent in the first few years of life. And it is to do with lack of bonding.

And you may remember that we talked about attachment trauma in a few other sessions. It may have occurred because there was emotional and physical neglect, of course. It may have been because of that, but most of the time with attachment trauma it is about children just simply not getting enough emotional nurturing. So it is a lot of the time about what was not being present rather than what was being present. And so you could ask a question: "How do you end up with perfectionism as a result of attachment trauma?" Well, quite simply, when you are not properly bonded with your primary caregiver when you are a child, you very, very quickly, already by the age of four-five most of the time, you will end up believing that you are not

good enough. In other words, your identity is already starting to be affected at this point, literally at the age of four, five years old.

And one of the strategies to deal with this feeling of not being good enough is trying to be a good girl or a good boy. And this is particularly true if a child observes that they tend to get more affection or attention when they are being good. And so this is then carried into adulthood, and unless it's specifically addressed with therapy, this is going to be here to stay. This "having to be good" in order to get love, affection, attention. And so now as an adult, you will still not feel good enough and your strategy to feel better about yourself is going to be perfect and do things perfectly. And what can also happen actually is conditioning.

So, as much as a lot of people with perfectionism have a level of attachment trauma, what could also be happening is that parents may be perfectionists themselves and they may manifest certain behaviors that the child will just copy blindly because that is what is perceived as normal to the child at the time. And parents may also be even using words such as "perfect" a lot. So it just becomes so ingrained. And again, all of this will obviously filter through into the child's psyche. And it almost becomes this belief that this is what is expected of them because mommy and daddy talk about being perfect, of things being perfect, all the time. So it just becomes something that the child thinks it is expected of them. And it's something to aspire to.

Also, what could be happening is that the parents are very strict and they could be demanding perfect behavior from the child. So for this child now, being perfect can be not just about acceptance or getting attention, but it is also more importantly about safety, about being safe. Why? Because if they don't behave perfectly all the time, as demanded by the parents, they can get in trouble. They can get yelled at, or they can get hit, or whatever may happen.

So that is of course a traumatization as well. Of course, if that's the case, the child is going to be traumatized and that trauma again will be carried into their adult lives. They will have their identity affected by it. They will have the beliefs and behaviors affected by it. And it will remain this way unless this trauma is resolved. What's also important to know, is that perfectionism is connected to fear of failure and fear of losing control, which are interlinked.

And essentially, I did say at the beginning that perfectionism is a curse because you can never actually be perfect. Humans are not perfect. Life is not perfect. And by trying to be and make things perfect, a perfectionist just sets themselves

up to fail, which is the very thing that they fear. So it becomes a bit of a vicious cycle because perfectionism isn't possible to achieve. So they try and be perfect and sometimes it works. Most of the time it doesn't. And so then failure is the perceived outcome. And guess what? Obviously, failure is the opposite of perfection. So somebody who identifies as a perfectionist will have a massive issue with failure.
Failure will be something that they will run away from. It is very difficult to swallow for perfectionists, failure, so it causes them to be more stressed, and then they beat themselves up, and through that they feel more unworthy. And they just feel useless, they feel more unlovable. It is really a vicious cycle. It just breeds more negative emotional input and it can go round and round and round. And another thing that will be going on for perfectionists is also fear of rejection, judgment, criticism. Again, very connected those three things. So perfectionists will have a fierce inner critic. This is, by the way, when you remember from Transactional Analysis that we touched on in one of the sessions, we've got that inner child but we also have our inner parent. And in this case, this is the critical inner parent in the psyche, and it's very, very strong.

So perfectionist will judge and they'll criticize themselves all the time, and they will project this onto other people. So they will always assume that everybody around them is rejecting them and criticizing them, and judging them. And in reality, most of those feelings of rejection and criticism, and judgment, is actually coming from them. It's coming from the inside. And what goes with that also, because they're so highly critical of themselves, they're also highly critical of other people. And they expect perfection from themselves but they also expect it from others. Perfectionists would very, very often use words such as "should", "ought to", "must". Those words will dominate their language quite a lot.

And what this means is that they don't necessarily do things because they want to, but they do certain things because they feel they have to in order to be good or perfect. So, again, they tend to use those words with other people as well. And they will be telling people around them a lot, what they must do and how they should or shouldn't behave. And it's important to remember that perfectionism is a spectrum. And when it is extreme, it is actually called maladaptive perfectionist behavior. And that's actually quite damaging because maladaptive perfectionists believe that they can control their environment and achieve their unrealistic standards every time. And they become really, really obsessive with that. So they will try and control every aspect of their lives.

Remember, I mentioned the fear of losing control, or a fear of not having control, is a big, big aspect of perfectionism. Those maladaptive perfectionists can be

quite aggressive with others. This obsessive behavior can turn aggressive. They will be ultra-critical of others but be ultra self-critical as well, and they will be prone to mental illness, such as depression. They will go out of the way to seek approval from other people around them because whatever they do, they always want that validation that they are perfect and they're doing things perfectly. And when we're dealing with maladaptive perfectionists, then definitely we're talking about early trauma as the root cause of this issue. But remember this, you can actually heal from perfectionism. You can heal from this. This is the important point here.

And in fact, you already know that perfectionism is a source of chronic stress and it messes up your vagal tone. So you really, really do want to move away from perfectionism to striving for excellence. Because like I said, it's two different things. First of all, you do need to become aware of why you have become a perfectionist. I do find that quite helpful and quite important. Is it about acceptance for you? Is it about safety? What is it about?

And you also need to become aware of your own patterns of behavior. That self-awareness goes a long way and it's actually quite an important part of this process of healing from perfectionism, and what you also need to do is you need to reframe perfectionism for yourself in a way that works for you. You have to address your attachment trauma, of course. If that is at the root cause of your perfectionism, which most of the time it is.

And you need to also look in-depth at your belief system because there will be quite a lot of work around the belief change that needs to happen here. Of course, part of this whole process will be to learn to see mistakes as feedback rather than failure. Because human beings learn by making mistakes and then adjusting their behavior accordingly. So if we never made mistakes, for instance, we would never learn to walk. So when we are small and we try to walk and then we fall down and we trip over, and then eventually we figure it out.

This is all based on what you could say: "Well, we failed the first time. Essentially we made a mistake." Maybe we got our balance wrong and we fell over. But then that was a feedback to us. And then we can correct that because we're using that mistake as feedback. And now we can balance a little bit better. We can find our center of gravity a little bit better and hey, bang, we’re able to walk.

So making mistakes is an essential part of development for human beings. And so that's one of the things to do when you're dealing with perfectionism, is to

reframe that making mistakes is part of learning and ultimately perfectionism is completely self-defeating. So as you can see, there is some work to do, but it is absolutely possible. I have done this myself. I have helped other people overcome perfectionism.

We have to overcome it because, like I said, it's that chronic stressor that otherwise will never go away on its own. We do need to actually address it. Put some work into this. And you know what? If you feel you may need direction with this, ask for help. Work with somebody, at least initially, to get to a point where you can do some of your own work. Maybe you do need to work with somebody for a few weeks or few months.

And remember that healing perfectionism does not mean that you stop caring about doing things well or getting things right. This is really, really important. It does not at all mean that. It doesn't mean you just stop caring about doing things well. You don't want to be mediocre. Giving up perfectionism is not about settling for anything. Because as we said at the beginning, when you strive for excellence and you appreciate your efforts, you praise yourself for your efforts, you reflect on how well you've done, then that's great. That's really where you want to be.

You don't want to be mediocre because why would you? But what you do want to aim for is to soften, to accept that you are worthy. Not because you do everything perfectly, but just because you are. Just because you are the unique individual that you are.

So that's it. No conditions. Don't put that condition on your worth. That unless you're perfect, you do things perfectly, you can't feel worthy. Because you can actually get to a point where you feel worthy just because you are. And what that also means is that you will start doing things because you want to, not because you have to, or because you should, or because you think somebody expects you to. And that's a big deal because that gives you more freedom. More freedom to be who you want to be and to live the life that you want to live. So I hope this has been helpful and I hope that you will take this seriously. And I wish you all the best and I know you can do it. I know you can do it.

Rebalancing the Gut-brain Axis with Homeopathy
Guest: Dr. Ameet Aggarwal

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Dr. Eva Detko: Hello and welcome, thank you for joining me for the Mind Body & the Vagus Nerve Connections Summit. I'm your host Dr. Eva Detko and my guest this session is Dr. Ameet Aggarwal.

Dr. Ameet has helped thousands of people with mental and physical health conditions by combining naturoppathic medicine, psychotherapy, and family constellations therapy. His online program is the only online program approved by both the Commissions of Dietetic Registrants and by Naturopathic Professional Association for Naturopaths, Nutritionists, and Dietitians. Born in Kenya, Dr. Ameet started mobile clinics for poor communities through his charity FIMAFRICA and loves to support communities with your help when you buy his online course and books from his site, health.drameet.com. So Dr. Ameet welcome to the summit!

Dr. Ameet Aggarwal: Thank you.

Dr. Eva Detko: Well, I'm excited for this conversation. We're going to talk about something that I think not many people would have expected to see on this summit. We're going to talk about homeopathy and how we can utilize homeopathy to treat not just the vagus nerve, but various related aspects of our health and healing that still connect obviously, to the vagus nerve because

everything is connected to everything else, right? But we will look at it from a few different angles. And so, let's actually start, before we get into the subject, you're obviously originally from Kenya and you run your mobile clinics there, and you utilize homeopathy in those mobile clinics. So tell us a little bit about that first.

Dr. Ameet Aggarwal: OK, so I started mobile clinics a long time ago when I graduated from Canada and then I wrote a book and an online course to help me fund these mobile clinics. And so whenever I have enough sales, book sales and online course sales, I go back into the bush. The areas I treat with the mobile clinics, they're extremely poor. And a lot of the people are nomadic. They're not there all the time. So I sit under a tree and I take the case, and then I prescribe these homeopathic medicines to the people. And why I love homeopathy is because one, it helps to treat the root cause. Number two, you need very little of the medicine to have a long term effect, and to have a very deep effect.

And so a lot of people in the communities are telling me that: "You know, Dr. Ameet, your medicines are a bit different". Because they don't know the difference between homeopathy and normal medicine. It all looks like little tablets and a lot of long term problems, a lot of difficult cases are going away. "But we only have one problem with you. You're giving too little medicines." They want a large amount, or they want an injection. Because the stronger the medicine, they think the more powerful and better. But they're liking it. So I'll sit under a tree. Usually it's the Masai community, sometimes a Samburu of community, and I'll take their case. I used to have volunteers from around the world and I'd supervise them, and we'd treat together.

Dr. Eva Detko: That is amazing because you're going back to your roots and you're giving back. That's amazing. I'm sure everybody is going to be impressed by this initiative. I know you're not doing it for glory, but nonetheless, it's very commendable. And what is interesting to me is that western mindset of using medicine in the first place. The fact that they're thinking that medicine is what is going to heal them and also that more is better. That's very interesting that that's actually filtered through all the way to those tribes and people, tribal people, who not so long ago, I'm sure, wouldn't have used any pills whatsoever.

Dr. Ameet Aggarwal: Right and their herbs are being forgotten and that's why I want to start working with the herbalists to rescue that knowledge and bring it back into communities as soon as possible.

Dr. Eva Detko: It's crazy because all those South American, Asian and African herbs are making their way into the western way of working. Not necessarily western conventional medicine but in terms of naturopathic western medicine. And yet, they are sort of losing that themselves. So I can see why you want to recover that. But let's backtrack for a moment because you did mention that obviously with homeopathy it's not necessarily about giving a ton of the active substance. It's not how homeopathy works. And people, most people, will probably have some idea on how homeopathy works but actually just summarize how it works just in case people may still be a little confused about it.

Dr. Ameet Aggarwal: Perfect. It's one of my favorite subjects. So homeopathy is based on the law of similars. And what does that mean? Like cures like. So if I cut an onion in front of your nose, you're likely to have a runny nose and tearing eyes. And so the philosophy of homeopathy is that, if I give you a large amount of one substance, like the toxic dose of it, like a cut onion, later on in life if you have symptoms that resemble taking a toxic dose of anything, so let's say you come with an allergy, with runny nose, and watering eyes. I'm oversimplifying. Then, if I give you a very diluted form of the onion, the homeopathic form, so diluted multiple times, so it's just the energy of the original substance, of the original onion, then that diluted form will cure the symptoms that the toxic amount would create in a person.

So typically also, for example, if you take the poison arsenicum, you'll get a lot of diarrhea and vomiting. So a common remedy for food poisoning is homeopathic Arsenicum album. So the diluted form of food poisoning. So vomiting and diarrhea can come from food poisoning, can come from different factors. But the picture resembles that of the toxicity of arsenic. So you take the diluted form and the diluted form has the energy that matches the picture of the toxic form. So it can cure food poisoning.

Dr. Eva Detko: Yeah, that's an excellent example. Thank you for explaining that. And just to add that homeopathy is a form of energy medicine really, much like, we in another session we're talking about infoceuticals and sort of information medicine. It really falls into the category of information medicine. It is not so much about the active substance. The same you could say very, very similar to flower remedies, for instance. It's a slightly different concept with flower remedies, but again, similar. It's not really so much about the active substance but it's the energetic imprint really that's going to, if you like, to stimulate the immune system or the body enough to create the right reaction and the healing response, the right healing response.

Dr. Ameet Aggarwal: Exactly. It's based on the essence of a remedy. So the vibrational frequency. Because our body, everything is frequency, everything is energy. And we're just condensed vibrating molecules. And when you are in a diseased state, your frequency, your vibration changes. And so we need to find a remedy that matches that changed frequency. And homeopathy is amazing for that because there's thousands of remedies available. So you can really narrow down a unique disease state, or a unique disease frequency in a remedy. Meaning, so let's say you have asthma and there are thousands of remedies for asthma.

So I will understand what's the unique picture of your asthma? And I'll find a remedy that matches that unique picture. So your unique picture might be your asthma is worse at 4:00 in the morning, rather than 8:00 in the morning. Or your asthma is better drinking hot water versus somebody else's asthma gets better drinking cold water. And so the cold water asthma has a different remedy and the warm water asthma has a different remedy. And that's why homeopathy is amazing because you can really individualize the treatment and get a deeper cure.

Dr. Eva Detko: And it's actually part of the reason why it doesn't lend itself very well to research studies as western medicine likes to do them. It's because of that, it's because it's highly individualized. So then, of course, the conventional medicine will come along and say, "oh, this is all stuff that, you know, is unproven or it doesn't work or whatever". But the actual fact is that there are a lot of natural therapies and things that we know work beautifully but they don't necessarily lend themselves very well to placebo-controlled double-blind studies and things like that.

Dr. Ameet Aggarwal: Exactly. Yeah, It's hard to do double-blind studies with homeopathy because each person in your case study needs an individual remedy. But the good news is W.H.O., World Health Organization, recognizes it as therapeutic science, therapeutic medicine. And I would say like probably 80 percent of the population in India are using homeopathy. It originated in Germany and in Germany it is widespread. In Europe you can buy homeopathic pills in a pharmacy. So it's widely accepted and is gaining popularity. And is treating the root cause. It's excellent for children. It's super safe. So, yeah, let's support the movement.

Dr. Eva Detko: Yeah, absolutely. And so you mentioned that you use it on your communities in Africa. And I know that you would use homeopathy, for

instance, for shock and trauma and that also relates to the vagus nerve. So tell us a little bit more about that particular aspect of using homeopathy.

Dr. Ameet Aggarwal: Homeopathy is amazing, amazing for shock and trauma. In fact, it goes deeper than psychotherapy in so many ways because there's individual remedies for different types of trauma. So if somebody is being sexually abused, for example, I have a selection of five or six remedies that can help somebody who has been sexually abused. Versus me spending an hour, once a week with the client for three or five weeks, you know, working on the different layers of the trauma.

When I combine it with homeopathy, the homeopathy goes deeper to help the person release the energetic tension in their body. So we have remedies for, you know, grief from loss of a loved one, if somebody dies. Then Ignacia is a homeopathic remedy I use often for break-ups, somebody who has been betrayed and is feeling very tearful and anxious.

Versus natrum Muriaticum is another beautiful homeopathic remedy I use for grief when somebody has lost a loved one, especially related to missing your mom, or losing a parent, or even also going through a break-up where there's less anxiety but more withdrawal. So homeopathy is beautiful in that way. It really understands the unique characters of a person. Aurum metallicum, great remedy for somebody who has gone through a serious loss and is having suicidal thoughts from shame and guilt.

So I'll understand the uniqueness of the trauma and the uniqueness of the presenting symptoms, and match that to the homeopathic remedy. And my online course goes through all these different remedies and different shocks. And there's a book called The Repertory, which homeopaths use, that people can look through and say," OK, you know, if somebody has been betrayed, what are the different remedies?"

So then I look at the different remedy and say, OK, which of these remedies most closely matches the person's symptoms in that category? And I'll give it. And the beauty of homeopathy is that you can actually heal old shock and trauma from the past. So let's say somebody comes in with stomach cramps and ulcers and things like that, yeah? Rather than give a homeopathic remedy for stomach cramps and ulcers I'll say: "OK, when did this start?" And if it started after a betrayal, and I see this all the time in my clinic. Honestly, even last week I had a case like this. They'll say: "Oh, after I was betrayed" or "After

I had this fight", or something like that, I'll give them the remedy for the conflict. And boom, the symptoms, the physical symptoms disappear because it started with an emotional shock. And we know that's possible because of the connection of emotions to the vagus nerve, to the different organs in the body.

Dr. Eva Detko: Yeah, that's excellent. These are really great examples and just one more time emphasizes how, yes, there could be issues at the physical level. Maybe there's some toxicity, maybe there is digestion insufficiency, or problems with digestive sequencing, or whatever. But that emotional trauma can actually push somebody over the edge and they will start manifesting that illness. And that happens so often. So that's very interesting. Thank you for sharing that. Have you got any other examples?

Dr. Ameet Aggarwal: If somebody is going through a lot of stress in the present time. So remember, there's emotional shock and trauma that stays in the limbic brain and then exhaust the adrenal system. And there's also present day stress as well. That exhausts the nervous system as well and creates irritability in somebody. A typical example, then I'll use something called Nux vomica, which is great for present day stress, a lot of stress and causing irritability and constipation. So I'll look at both the mental picture and the physical picture. If somebody has burnout, adrenal burnout, there's three or four different remedies that I use. Based on their unique symptoms, whether they have a dullness in mind, or they're more anxious from their burnout.

And I'll also ask them, do they have erectile difficulties? If they have poor erections after a burnout period of grief and stress, then I'll use a different remedy. I had a lady who used to have vaginal spasms after her partner shouted at her. And it was a surprise for her, shock, and I tried remedies, homeopathic remedies to help balance hormones and heal vaginal spasms but when I gave her a remedy for the shock: boom. It was done in one session.

Dr. Eva Detko: And, you know, I hope that people watching this, if they haven't before, then they're really starting to connect the dots. How different a result you can have when you actually consider the body and mind as one system rather than trying to separate it and just look at the biochemistry, for instance.

Dr. Ameet Aggarwal: Absolutely.

Dr. Eva Detko: Yeah. So you mentioned adrenal fatigue. That's great because obviously that's a very common complaint in a lot of people with chronic illness. I mean, it can be at the source of it, or it could be a resulting symptom. But

either way, a lot of people suffering with chronic illness will have this problem. And what about the gut, liver and adrenal connection? Because obviously that also relates to the vagus nerve and it affects it and it's affected by the vagus nerve. So can you talk a little bit more about that relationship?

Dr. Ameet Aggarwal: So this might be repetitive to some of you, I apologize. You have the gut, which has a nice lining, kept healthy by good bacteria and good food. With antibiotics, poor diet, etc. the gut gets damaged. You get leaky gut, you get holes in the intestines. Toxins go all over the body. Creates systemic inflammation, leading causes of chronic disease and irritation to the vagus nerve. All these toxins go to the liver. Liver gets bunged up, produces less bile, you get more gas, bloating, constipation and digestion gets worse you get leaky gut. And that causes chronic inflammation again. The systemic inflammation stresses your adrenal glands to produce cortisol. So your adrenal glands are going to burn out both from inflammation and from emotional stress you're going through in life. And from history of trauma.

So these are the fundamental systems to heal. Emotional trauma, stress, as well as the gut-liver-adrenal system connection. When you heal all these, then the body resolves many chronic diseases, including hormonal imbalances and headaches, and things. So I will pick the right homeopathic remedy depending on what system I feel needs support. So in my online course I talk a lot about liver remedies. One great example is lycopodium, I love lycopodium for the liver because it helps the gallbladder stimulate bile release, more bile into the intestine.

Most people have a stagnant gall bladder. Nux vomica is also excellent for stimulating bile flow, especially from the liver. It helps detox the liver. Because if you just heal the gut, you only do probiotics all the time and you change your diet without correcting your liver, you'll get 50 percent of improvement, not the full improvement. So even if I give herbs for the liver, I'll always give a homeopathic remedy also for the liver. Because homeopathy goes much deeper into the liver.

So now if the adrenal glands are wiped out, I'll give burnout remedies. Those are typically like the acid remedies in homeopathy phosphoric acid, fluoric acid, muriatic acid, all these different ones. And these really help somebody recover from burnout, while I'm also giving them herbs to nourish their adrenal system. Because remember, if somebody is burnt out and they have this messaging from their subconscious, that's a fight-or-flight response, even if we keep on giving them herbs, the messaging still goes on and keeps you in a locked state of fear.

So when you take homeopathy, it actually undoes the stress response. So you come out of that fight-or-flight and the herbs work much faster and you don't deplete the herbs. You know what I mean, if you don't resolve the stress, you just take the herbs and you deplete the herbs. But if you resolve the stress, then the herbs become more nourishing. You need less herbs over time and you recover faster.

Dr. Eva Detko: Yeah. Because ultimately what you're doing is, you can look at it as you're treating the symptoms, but without addressing the cause. Because all you're doing is throwing herbs at the liver that is compromised but then you're not really addressing anything more underlying. So what you're saying is that with homeopathy, we can go deeper in that sense and address the underlying autonomic nervous system dysregulation. And through that, we're actually making the body more receptive and responsive to whatever else we're going to give it, whether it's on the food level, or herbal, supplements, or whatever.

Dr. Ameet Aggarwal: Absolutely. The deeper you go energetically, the more transformative the therapy is. Otherwise, if you're just taking the physical substances, like supplements and herbs and stuff. Yes, you will get some long-term cure, and sometimes permanent cure. But for a lot of people, they remain dependent on supplements because they're not shifting the vibrational frequency, or the energetics of their state of being.

Dr. Eva Detko: Yes, absolutely. It makes perfect sense. I wanted to ask you, when people want to use some of those remedies themselves, what is your opinion on this? Is this something that you would say it is OK for people to just go and look this up and perhaps try and self-remedy? Or would you say that this is something that needs to be worked on with a practitioner?

Dr. Ameet Aggarwal: I much prefer people go to a naturopathic doctor, or a homeopath. Because it's hard to be objective when you're treating yourself, one. Number two, a practitioner, a well-trained practitioner, will understand the root cause. So like if you have headaches, for example, migraines, it could be due to blood pressure issues, it could be a muscular issue, it could be a progesterone issue. Or it could be food sensitivity. And a good naturopathic doctor can help distinguish what it is and really treat the root cause. And then you might be biased in your own emotional state. You might not know that there's an emotional cause to your state. And a very clean, observant therapist can hold

the space to allow you to go into vulnerable places that you might not be able to do if you're treating yourself.

And those vulnerable places that you visit with a good practitioner, help the practitioner determine what the actual trauma is, what the belief system you have is, and therefore select a better remedy for you. The problem with self-diagnosing is you might take the wrong remedy. You'll get disappointed and say homeopathy doesn't work, or you might mask symptoms and not really treat the root cause.

Dr. Eva Detko: Yeah, I completely agree and I hear what you're saying. And I would definitely echo that because we were talking about going deeper with this. And to go into your own emotional experience and process that, you need to be subjective and connect with that. But at the same time, in order to help yourself, you need to be objective and step out of it. Now it's not possible to be both at the same time. And this is why having that other person who is well trained to point you in the right direction, and also perhaps uncover some of the things that you're not seeing because these are your blind spots, that will mean that you can go much deeper because you will go after that root cause, rather than treat the symptoms. And that obviously is what this whole thing is about.

Dr. Ameet Aggarwal: Absolutely. There's a famous saying, I don't know how it goes, but it's something like "you cannot cure a problem with the same mind that created it", or something like that. So it's hard to treat your own mind because you're observing with the problematic picture.

Dr. Eva Detko: Yes, exactly. I love that quote. That's really great. This is really fantastic and really helpful. Is there anything else that you want to add to what we've already said? Any other advice or words of wisdom?

Dr. Ameet Aggarwal: So we've covered adrenal-gut-liver connection. There's free videos if people want to watch on my website to summarize this whole thing. There's the homeopathy for healing the emotional stress and trauma. Then I always combine, of course, homeopathy with supplements for a lot of people. So I'll heal the gut with the probiotics, the vitamin D, etc. And then heal the liver with some herbs and support the adrenal glands with some herbs as well. Because you're going to nourish the body with some herbs as well while you're shifting the energetics. Really, that's it. And then the word "love" comes to mind. I'm reading a course in miracles right now. I am trying to study it to learn how to do therapy through the course in miracles.

And really, self-love is very present in my mind. Working on self-love and forgiveness, and letting go of attachments. I believe this frees up energy so that you can have more energy for healing. And then I also practice family constellations and I'd love people to look at that because there's so many emotional entanglements we have with our ancestors and family members. That I'm finding family constellation therapy just goes beyond normal psychotherapy and it's helping me in my practice so much. My people are needing less therapy, it's going so deep and so far into the root cause, beyond what conventional psychotherapy can do.

Dr. Eva Detko: Thank you so much for sharing all this and that's a really great tip as well. And of course, a lot of the work that you do and the resources that you produce, a lot of this proceeds go towards your charity. So why don't you take this opportunity and just say a few words about your charity just in case people want to help you support this cause.

Dr. Ameet Aggarwal: OK, so my goal is to sell a million copies of my book. If you know any publisher from Random House, Hay House, etc., or Oprah, please pass on my book. Because I'm doing a lot of private practice in the city and it's burning me out. And I want more time to do my community work and discover the herbs and stuff. But I don't like fundraising too much. So the way I fundraise is people buy the book and the online course, so that they get something in exchange for giving me support. I like doing it that, where it's more of a fair exchange that way, so the more books you get or the more promotion you can do for me to a publishing company, I'd really appreciate it.

And what comes up for me is just support these communities so we can gather their knowledge again before it disappears. I know everyone assumes that the communities use holistic medicine. They don't. They're overusing sugar. They're overusing antibiotics. So we really need to protect them from this onslaught of mismanagement of health before it gets too late. And I'm lucky enough to study naturopathic medicine and live in Kenya. So hopefully I can make an impact when the time is right.

Dr. Eva Detko: Brilliant. It's been such a pleasure to talk to you, Ameet, and have you on this summit. Thank you so much again for everything that you've contributed to this event.

Dr. Ameet Aggarwal: Thank you very much as well Eva and blessings to everyone. Lots of love.

If you are interested to address the root causes of your nervous system dysregulation, I have actually designed a 12-module online program to help you achieve that. Without exaggeration, my program is the most comprehensive resource you find on this subject anywhere online. The program is supported by me personally and it is the best professional assistance you can get without spending thousands of dollars on 1-to-1 therapy that does not always deliver because it relies heavily on your practitioner having a detailed understanding of this area, as well as the right tools. **For more details about the Addressing Psychoenergetic Root Causes of Chronic Illness Program go to this page.**

About the Author

Dr Eva Detko is a natural healthcare practitioner, author, and speaker. She has studied natural medicine and the human mind for 23 years. Dr Eva successfully recovered from chronic fatigue and fibromyalgia, and reversed Hashimoto's thyroiditis. She now helps others recover their health. Dr Eva has an extensive knowledge and experience in the field of human physiology, biochemistry, nutritional sciences, and bio-energetics. She also uses a wide range of mind-transforming modalities, including: Havening Techniques®, BrainWorking Recursive Therapy®, NLP, psychoanalysis, hypnotherapy, mindfulness, and applied psycho-neuroimmunology.

info@dr-eva.com

www.dr-eva.com