Trauma And The Polyvagal Theory Transcript

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Introduction and reunion

– Welcome to another episode of Reversing Inflammaging Summit Body and mind, longevity, medicine. And I'm so pleased to have old and a friend of mine, Stephen Porges who's a distinguished university scientist at Indiana University. He is the founding director of the Traumatic Stress Research Consortium. And he's also a professor at the University of North Carolina.

And most importantly, he is the creator of the poly vagal theory, a brilliant synthesis and integration of how our nervous autonomic nervous system functions. And we're going to talk about that and how it relates to aging and longevity today. And Stephen is such a pleasure to have you here and to see you. I've been as I was thinking about us talking today, I was reminiscing with myself about this wonderful week that we spent together with Peter Levine, just brainstorming and the Caribbean.

What a what a wonderful concept. – Yeah. Well, it's a place and an experience of emergence. So that's where, that's how ideas flow. And when you feel the term I use safe enough to be who you are, – Right. – That's how creativity expresses itself.

Wonderful memories. – Yes. Thank you. And your, how is your wife. – My wife is fine and I see in the background, a picture of your wife. – Yes. So again, welcome. And I'd like to start by having you for this audience.

Polyvagal theory and autonomic states

Just talk about the poly vagal theory and it's evolutionary relevance to emotions and – Well, we can even focus it on health because health is focused on end organs.

So it talks about the heart, the liver, the gut, and you go to a different specialists when you have a manifestation of a problem. Polly vehicle theory is really a theory about the neural regulation of those organs, you know, regulation of the organ ah MC nervous system.

And it's something that's almost oblique to medicine. Medicine is very focused on organ damage and but not focused on organ regulation by the nervous system.

So we can visualize or conceptualize the issue of exercise. Like we would look at muscles or are we really about the neural regulation of those muscles?

So what is exercises challenging those muscles but more important allowing recovery to occur after the challenge. So the muscles build us a more resilience.

Well, the neural regulation of our visceral organs also develops a degree of resilience. Now, the political theory basically emphasizes that our autonomic state, our autonomic organs are really shifting in when we are in different states, we actually have different autonomic states and they're shifting in a very adaptive uh sequence.

They have a certain, let's say script or agenda when we're safe, our nervous system supports home static functions. So the autonomic nervous system does its growth, health and restoration and that of course will influence longevity. But when we're under challenges, we retract that neural homo static regulation and we divert our resources for metabolic demands, like running or fleeing or fighting or working.

So people talk about being under stress or being anxiety, anxious. It really, they're saying their autonomic nervous system is mobilized, its detected threat and it's really, it's diverting its resources. And finally, there's another neural circuit. It's basically, it's a last resort. It's the despair, it's hopelessness.

It's really a nervous system in withdrawal and severe. Let's use the metaphorically depressed, depression and that is where our bodies literally stopped functioning and we pass out or we reduce our metabolic activity and we lose all source of energy.

The interesting part is the three levels or three states that I've mentioned a safe calm, socially engaging, spontaneously, friendly, co regulatory think of the mother in the infant state enables all that home ecstatic function to work.

But that is a uniquely newer mammalian circuit in our own evolutionary heritage. Underneath it are more quote primitive. That means that evolved earlier and shared with virtually all other vertebrates is this fight flight, sympathetic mobilization system.

So the calming is this newer, what I call eventual vagal circuit. And then below it is this sympathetic fight flight. But underneath that is the oldest portion of the autonomic nervous system.

It's also vagal, it comes from the back end of the brains of the dorsal vagus and basically, it shuts us down. And if we didn't need much oxygen, it's a great defense mechanism. But what are mammals?

Mammals are oxygen hungry organisms. So they can't shut down, they need to bring Aaron. So, political theory basically identifies those three structures, three circuits and then explains that they are triggered by reflexes within the nervous system that are called your assumption, nervous system, detection of safety threat or life threat, safety, danger or life threat.

And you get this circuit to get this massive reaction. And we all know that we get a trigger of hypervigilance. Look around when a loud noise or thunder that's moving, that's no reception.

But we also know that a baby who's crying, who's mother engages and uses a pro Saadiq voice stops crying. That's new reception of safety because mammals, unlike the reptilian ancestors have the capacity of having a neurosurgeon of safety.

So they can turn off their defenses. And what does that enable on a social level enables a catchment co regulation trust. But on a physiological level facilitates health growth and restoration. So basically, that's, that's the nutshell. I'm sorry to elaborate so much on it.

– Well, your elaboration of this concept has really created a revolution in a lot of therapy programs, particularly around trauma in which the most primitive mechanism is engaged.

Does that deeper level of sometimes refer to as the freeze response? Is that only engaged with people in trauma or is it found in all of us?

Freeze responses, trauma, and development

Well, this is actually investing, – You know, here, here's the interesting thing in my search to try to figure this all out. I made certain guesses. And then recently I went back and now that we have computer searches in terms of science, we can literally see that our hand searches that were done in the 90s are still valid or did I miss some things?

Well, I inferred exactly what's there, but I missed some studies from the late 1970s and they found out that there were species mammalian species differences in the sensitivity of stimulating the dorsal vagus. So they put electrodes in these mammalian species and they found out that animals of prey who freeze had an abundance of unm i elated dorsal vagal cardio inhibitory fibers, meaning that you stimulate that dorsal vagus state froze.

So that mechanism was there in a prevalent is prevalent in certain species like rats, rabbits, guinea pigs. However, a species of prey like dogs and cats, you stick the electrode in no slowing of the heart rate, no freezing, but it affects blood pressure and of course, it will affect the gut. So they're literally protected from shutting down. Now,

when we go into the human and this is really what your real questions about. We find out that the kids who die of sudden infant death syndrome have fewer of these ventral myelin aid vehicle fibers.

And we find out that preterm babies have prevalence of bradycardia instance, like they going to freeze. So they don't have that newer mammalian protective ventral vehicle system. They have tachycardia and then from there, they just go into this shutting down and for babies it's potentially lethal.

And that was really the motivation of the theory because I call that the vehicle paradox, how could the Vegas both protect you and calm you and serve your health growth restoration?

Yet, when going into this slowing of heart rate, this dorsal vehicle response, how could it kill you? And the answer was very simple, there were two different vagal circuits. It was one wire with different, it was a conduit with different wires in it and they had different functions.

Now, the real serious question for humans is, are we predators or prey species? And the other question about that is what have we done in the developmental process that would facilitate one or the other? And so we know that traumatic history affects this vagal regulation of the ventral vagus.

And we also know that, you know, malnutrition, hypoxia can disrupt the myelin ation of the circuit. So we don't know whether the propensity of people to shut down who represent a significant portion of those who experienced severe trauma, whether they're anti scenes to that means there is a threshold issue, they didn't have the resilience on board. It's not a intentional behavior.

Is that whether or not they have the neural resource or were they in a state that potentially this? So I am still since trying to gain enough information, I would say that we potentially are a prey species.

And I think that comes from this confusion in our nervous system of a need to give up vigilance, but give up vigilance in the, in a safe setting because it's vigilance and is metabolically costly.

We can't maintain hypervigilance who can't maintain fighter flight. So, metabolically the let's say the vectors are pushing us into immobilizing and we seek an environment meaning a trust individual where we can give that up or we seek a dog where we give up our hypervigilance and then relax.

So I'm still curious about the distribution in humans and whether we are predator or prey. And there's a possibility that there's a distribution, meaning that there are some who are and some who are not.

– Well, in my experience, there is a sort of like a bias toward vigilance where the tendency for all of us is to look for the danger, which is an evolutionary benefits, so to speak.

But it seems that gets us into trouble in terms of balance and the impact on our health. – So I would revise that. I think this is extremely important point because you're really asking what is our default is our default to be vigilant to be in a state of defense or is our default to be safe in the arms of another?

The default is to be safe in the arms of another if and only if they are accused of safety. So we instance recruit our entire repertoire of neural function when we're safe.

And the issue is when we're not, the system goes into defense like what you're describing. But the problem we have and this is societal and civilization, history is that we need to respect that we can't be in that hypervigilant state all the time. So we need to respect that it's not wrong.

Safety, co-regulation, and social engagement

It's not bad to be vigilant or to be involved, to be attentive, to work hard to exercise, to do all these wonderful things. But we need sufficient time to co regulate meaning we give up our desire and need to seek safety because we are now in a safe context to allow our bodies to function. I have conceptualized that as social t acting as a neuro

modulator.

So we have separated in our health world, social, social prescriptions or social behavior versus real medical problems. The answer is with the evolution of the, with the political theory where that eventual Vegas what actually happened?

It went on a migration, the cells of origin that create heart rate, slowing move eventually from the back of the brain sent to the front where they became involved in the nerves that regulate the muscles of the face and head.

To give us smiling, give its vocalization, affect our ability to extract human voice from background sound. So when we move into that ventral vagal state, we hear voices better. Arvo voices are more prasad IQ, we communicate to others use of safety and trust and their nervous systems like the crying baby, calm down. But the point of all this statement is that we cannot live in ventral vagal state forever because there's work to be done.

But we need places. And if we again think about the whole evolution of civilization going from basically nomadic people living out in the wild and then getting dogs or other animals to serve as the vigilance keepers so they can sleep and relax to the building of structures. And then we start thinking of what are the structures, their structures for sleeping these structures, for eating and their structures for doing our personal things. And that is because under those three conditions, we have to give up vigilance. So the structures became part of that evolution.

Then we start looking at what has society done with that, let's say intuitive knowledge. It said if you're wealthy enough, you can have those structures and be saved. But if you don't have the financial resources as tough luck, you know, your nervous systems are now vulnerable to all these cues of threat.

And if you flip this into a longevity model where what groups of people are really suffering from limited or let's say, shortened longevity. – Yeah. So, and based on that, we're talking about sort of like the requirement for these systems to be in a place of balance. But given our, how our world is working right now, where you have all these different levels of stress, including the pandemic, including, you know, wars and underlying issues.

What's your experience of how well we're able to keep those imbalance. And – I'll tell you all, I keep thinking about, you know, we're survivors. We've been here a while, you know, I'm talking about you and me and I'm talking about everyone.

And it's like from my perspective, I think patience is the most important thing I've gained over the years. And as opposed to this anxiety about the immediacy because we see the problem, you see the problem, I see the problem and we want to do something, but there's a realization that the harder you push, the more difficult it becomes. And this is again, I would say very poly vehicle because as you push your sending cues to others who are invested in their strategies to be defensive and you don't convince people of your position.

If they are in a state of defense, their physiology is not accepting the real point is that feelings of physiological safety are really meaning our bodies are calm and the emergent property of that is to trust others and to engage and that's reciprocal and that builds. So the issue is the world's messed up because we, the metaphor that I like I tend to use is just like the movies, the matrix movies, the matrix there in part, right?

But let's tell us, let's be honest about what the matrix is, is threat cues. We're being bombarded with threat cues which interferes with us feeling safe enough to be nice enough to be benevolent enough, to be compassionate enough and to be healthy enough because our bodies are triggered, if not tricked into locking into states of threat.

– Yeah. Give us your perspective on the consequences physiologically and with regard to the functioning of the body when this uh ability to self regulate gets distorted. – Well, let's, shift our priorities and from self regulate to co regulate.

And the issue in that statement is that we tend to think that self regulation is the goal in life and that it is an intentional behavior when in reality, our developmental sequences that we thrive with co regulation and the consequence of co regulation is the ability to self regulate. But what does self regulate mean from a co regulation

to self regulation? It means that we now have developed top down images of co regulation that we use to self regulate.

So the underlying message was that we were safe with someone and we were able to make others feel safe. And that became since the visualization that we use when we're challenged. So the part of it, we're in a world that doesn't understand that the true value is not in resources or money, the true value I'm going to basically is it's a term I'm now using the true value isn't being accessible to others.

And what does that mean? It means that we send queues of engagement cues that others can trust us. And when their bodies become accessible through our voice, through our face, through our gestures, they reciprocate and now we benefit from what they are doing to us. If you have pets, you're doing that all the time. When you have a Children, a child in a good family understands that a safe child, a child who trusts his parents is a child that will innately have greater flexibility in the challenging world.

Self-fulfilling prophecies and vocal cues

We have been brainwashed into believing that certain learning strategies, tough learning or tough, whatever, tough love will retune us to deal with the true challenges of life. Instead, they retune us to have low thresholds of trust in others – Very well put very well. But I like to refer to have this in terms of self fulfilling prophecies.

So like when I'm talking with clients, I will let them know that if they go into a social gathering where business gathering and they are expecting to be judged, they're concerned about negative consequences of the interactions that in fact, they walk in and the tone of their voice and their facial expressions are going to cause and effect and how they are perceived experience by others, which will actually result in that self fulfilling prophecy.

Can you explain the mechanism? – The mechanism is, I mean, you explained and described beautifully that our nervous system responds to certain cues reflexively.

It's and there's a reason why it's reflexive, that's how the species survived. It was able to cue others of con specifics of our own species that we were safe enough to come close to. And what that led to was cooperation, friendships, trust, division of resources and responsibilities.

So everyone in our world or any other person was not a threat after we got these cues. So it was able to turn off our defenses and there was obviously the health benefits, but there's also the societal cooperation.

And there's a biological evolutionary biologist, Theodore's Dobrzynski who basically gives us an argument that goes against the survival of the fittest as being the strongest and most aggressive in saying that at times the gentlest are the fittest. And I think we need to really take that to heart in this very, in a world that says, acquisition and power, our success. But in the world of mental health, we all know that those who have resources are not, not necessarily happy or feel successful.

And the, that gives us a real interesting insight into the fact that resources or the acquisition of resources or stuff is not what our nervous system wants.

Our nervous system really requests and screams for trusting relationships. But back to your scenario, the intonation of voice. If we go back to the mother and the crying baby, the Prasad IQ, the intonation of the maternal voice triggers physiological responses.

We published a study this past year using what's called the still face paradigm. It was developed by a tronic, that's where the mother is interacting with the baby.

It's a 6-9 month old baby interacting and then she freezes her face. No smile, nothing. But even if I did that to you within a few seconds, you start feeling what's going on here. Is he with me?

You know, did I do something wrong? You know, and that's how the baby feels, the baby starts to reach out to his

sense comfort and then the baby loses it, you know, off going into tantrum. Now what happens after that was two minutes, those very long two minutes is that the mother then re engages and uses a voice and tries to re invite the child to calm down. Now, if you look at the pros Saadiq features with an analysis of the vocalizations, there's a degree or a range of how pro Saadiq the maternal voices are, but it ends up being a linear regression.

The more Prasad IQ the mother's voice is, the more the baby's heart rate slows after the disruption, the more disruptive behaviors are diminished. So in a pre verbal infants, that infant is responding not to the words, but to the intonation. Now, if you have dogs or cats or horses, you know, the same thing you're doing the same thing yet, we are a co culture that is so vested in language, the word itself and not how the words are delivered. So back to your scenario, the way we deliver the words have great impact on the people who are there.

So we're going to distinguish between hearing versus listening. When the words are Prasad IQ, we are really recruiting nerves that regulate our face and actually retract the muscles tense the muscles in the middle ear where there are little bones.

And what that does is tightens the ear drum like a timpani. It's tim panic memory was like a tympani drum and now low frequency predator sounds bounce off the ear and human voice comes in so often, if you're giving the cues that aren't really safe cues to another, they're not even able to extract what you're saying.

They're responding to the fact that you're talking, but they're not pulling the words in. Now, we all remember this when we were younger and we'd go into bars and talk to people and we could hear every word.

But now when we go into the same places, we have difficulty hearing human voice and that's giving us the age related changes in the flexibility of those middle ear muscles in extracting cues of safety. Because when you were in the beer in the bar and you were engaging someone, all the background sounds functionally disappeared and you were now engaged with the person.

And that is when a person walks into a room to meet people, they're doing, they're, they're in a sense presenting who they are. And if they're presenting a high, let's say a person who is not as safe or accessible person, it's going to be in their voice. It's going to be in their posture in the gestures, right? – But all of that happens unconsciously.

But even though we, that's what we're responding to. – Yeah, but here's the trick of the trade here. It that's why I called it your reception because it was much more of a reflex, but there's something called intra reception. So your reaction to someone's uh to your, okay, let's say you have a no receptive response.

Someone comes in and you get this visceral reaction, you're aware of the visceral reaction. The interesting part is what do you make of it? And you know, what type of narrative do you make? Do you say?

Oh, hey, don't like that guy or you say that guy? That's interesting. I had this visceral response. I'm aware my visceral response. Is there something going on in that guy's day?

Is that person? You know, is it a bad days, the anxious rather than taking it personally. And this is how we tend to do. We tend to get that visceral response. And I use the term ride that pony, we get that visceral response that mobilizes us. And now we are justified in reacting negatively to that person. If we just kind of like sat still and used our body as this wonderful detector and explored it with enthusiasm and curiosity, we would say, wow, that's really interesting.

Chronic illness, functional disorders, and vagal efficiency

– And this address is how we make jump to conclusions and interpretations, making assumptions where we're better off in these kinds of circumstances to sit back and say, you know, let me wait to see what's going to happen rather than jumping to conclusions based on wrong stimuli. – Absolutely. It's the narratives that get us into trouble. And I always, I do this, you know, I said stop but listen, we live in the world and we're very conditioned to respond to patterns.

And that's part of things that happened with development and aging. We get locked into our response to certain patterns and in the trauma world, we call that triggers, they become triggers and triggers are hard to just stop and say, wow, that triggered me. Isn't that interesting?

As opposed, I'm triggered. I gotta get that stuff out of my world real quickly. – I so agree with what you're, what you're saying right now. I want to get into that.

But before I do can you, share how you explain how the dis regulation, let's call it because we're going too much into danger and not enough into safety has an impact on chronic illness, for example.

– Yeah. Okay. Let's really the word too much. It's gonna have to be always personalized because we can disrupt home ecstatic function by going into danger or turning off our home ecstatic needs for periods of time, but our body needs recovery. So we have the sense aware of what our bodies can tolerate. And there's gonna be ranges in that.

So that part it becomes a real, I would say an important marker for us to understand. So it's not like we're in danger too much. We have to be aware that our autonomic nervous system shifted state.

So we might just have a bad day and feel bad and we feel viscerally and we don't want to see people, but we have to see people. We have to get this granted or deadline or paper. It's always gonna be something and our body just doesn't have that time to relax and we need to structure relaxation.

We really need to know what our bodies need, which is not necessary to drink alcohol, which is going to stump those feedback loops. But in a sense in environments where the demands don't exist. And I think there's been danger during the pandemic because we gave up vacations. It's not even in my worldview anymore.

Vacation doesn't exist. And that's only the three year period. So the notion of we work hard, then we play hard is almost messed up because so many people work hard, don't play at all. And now they're working hard at home and it's remote. So they have access to laptops and work all the time. So their nervous system doesn't have this neural predictability of giving up threat cues.

So our nervous system really thrives on expectancies. So we can expect work, work hard. But if we expect uh relaxation, social engagement, like we going out to eat is really the interesting neural exercise because it's not only totally social, but it's ingested while being social.

And the nerves for ingestion are the same nerves we use for social itty. So we love to eat because it stimulates the same thing when we're in a social setting.

And if we are stimulated by the social environment, we tend to eat less. We, you know, so we don't using the food as a state regulator, we're using the nourishment of sociology. So the part that we need to learn is that the world has these threat views that's part of life.

But we need to really structure times and, and context where we can be safe and you know, whether it's in our own home or with some friends. And even the notion of rituals. So like religions and different groups always had rituals or cultures and the rituals were really in expectancy of something that was predictable. So they, it took away the uncertainties and uncertainty to our nervous system can be threat unless the uncertainty is structured within a safe environment. And when structured in a safe environment, it's an amusement park. So we love that we love the unexpected, but we know we're not going to get hurt but the unexpected in a part of town that you're not familiar with is very challenging to your nervous system.

– And so again, can you share how um not going into the recovery mode? The safety figured by safety, how that leads to this regulation and chronic illness? – Okay. So we have, we're going to first talk about the mechanism. If you don't go into that safe mode, what happens, then we're going to talk about what is chronic illness.

Let's kind of separate those two. So if we don't go into the safe state are the feedback loops of the nervous system, regulating those organs doesn't have a chance to do it servicing because it's been getting signals, don't service the

organs because we need the organs to support our defenses, mobilization, metabolically costly events.

The body didn't get the message that it's now time to recover because we have learned over time to keep pushing our bodies and not listening to people, talk about listening, listening to your body.

And then we go into the world of trauma and we realize that people who have experienced severe trauma, they don't even feel their body, their bodies are numb.

So we start putting this all together and realizing that turning off the feedback loops of the system is synonymous with or numbness is synonymous with turning off the feedback loops.

I don't feel my body. Now, my body is totally a slave to me as opposed to drive. So the first part is that our nervous system, our bodies need to be in states of safety so that they can service so they can recover, they can repair. And this really is a model of science.

Medicine doesn't totally integrate this model. And it's very interesting because in 1949 a very famous Swiss physician got the Nobel Prize. So he was a physiologist position. His name was Walter Hess.

He got the Nobel Prize on describing how the brain regulated the fiscal organs. Now, I'm going to ask anyone who listens to our dialogue here to ask their physician if they learned anything about the brain regulating the organs, or let's say I would say their physician, their internist or their cardiologist or their gastroenterologist about how the nervous system impacts on the organ of specialty that they're doing.

And they will tell you they don't know very much about it. And the reason is they weren't taught anything about it. It's not in the medical school curriculum, it's just not there.

So neural regulation of organs isn't there. And that results now in a whole new category of illnesses called functional disorders. And what that is really saying, we can't measure in the end organ the disease, but the organ is not, you're having symptoms in that organ.

Now, what a political theory model would say is that first you disrupt the neural organization of neural regulation, the organ and then the organ without the feedback loops working will develop organ disease.

Is that sequence. But if it's in the level of functional, it means its neural and the intervention again from Apollo vehicle informed strategy is can you poor cues of safety into that nervous system to move it out of this chronic state of defense, which operationally is disrupting the home a static functions.

So we can see literally the progression of illness as the metaphor of that progression is the duration of disruption of homo static function or the disconnecting of the brain from the brain regulation of the visceral organ, you're separating the two.

So even in a sense, these mind body or brain body orientations, at least acknowledge that the nervous system is involved in our visceral experiences. – And this is such a common experience in people visiting their physician because they have these symptoms, very upsetting symptoms.

And the diagnostics do not find what the problem is. They don't find what's wrong and of course, what you're, what you're sharing with us is the reason and where, where the problem stems from.

– Yeah. So I developed a new metric developed it in 19 nineties, but I resurrected it recently, it's called vagal efficiency. And it looks at the relationship, the dynamic relationship of respiratory science arrhythmia, which the index of the ventral vagus on heart rate.

So it's really saying I have this bagel brain. How efficient is it when I turn it off, there's a heart rate go up and put it back. Does it go down? Basically, it's measuring dynamic resilience of that system.

And when you look at any individual who carries or let's say in general, individuals who carry these uh diffused diagnosis, like this autonomy to, they're vagal efficiency is very, very poor. Meaning that the systems are no longer tightly linked, meaning that the neural regulation the end organ, even though I think my brain thinks it's manipulating vagal tone.

Safe and Sound Protocol and acoustic regulation

I'm not getting any change in heart rate from it. So it's not helping me uh move. Now, we found out that people who have abuse histories, not PTSD, but just it's a maltreatment college students there vagal efficiency is noticeably lower than controls without that.

And we noticed that individuals who suffer from these disorders, one was cyclic vomiting disorder, which is a G I problem. Those kids were noticeably different than the controls is that's extremely poor vagal efficiency. And the same thing was found in a sample of individuals with Taylor's Dan syndrome, which is hypermobility and interestingly, the gastroenterologist I'm working with, she was doing a study using actually vagal nerve stimulation. And I wanted her to tell me who her clients were. What did she know about the people in her, in her clinic that they all have gut pain. But I want to know more what coco comorbidities.

And in her clinic of the adolescents who had gut problems, 51% had Ehlers Danlos Syndrome, which I thought was a rare syndrome until I saw that. So the bottom line is that these and with Taylor's downloads were literally able from that sample, we could tell who was a lease downloads just by looking at vagal efficiency. So the system is disrupted.

Now, when we get into the notion of chronic health and chronic illness, it becomes the issue is uh when people get a injury or get a disease and that's the issue. Now, chronic illness now has to be differentiated from acute and this also becomes an issue within medicine because the treatment for acute tends to bleed over into the treatment for chronic.

Now, let's even talk about long COVID or COVID COVID is a true threat to the nervous system. It's a pathogen, but long COVID is the symptoms of having COVID persist. Even though there's no pathogen.

Chronic pain is a similar parallel, the injury has healed, but the body didn't get the message that the injury is healed. The same thing along COVID. So what happened is that under these challenges to the to the health of the individual, the nervous system moved into a state of threat.

In terms of pain, it's sympathetic excitation, body tenses up and pain is a signal of threat. No ambiguity to that. And with an illness with a virus, with a pathogen, you have inflammation, you have fever, you have a whole array of bodily reactions of threat reactions.

But in general, when the pathogen, when the body has won the battle, then the systems normalize again. Now, chronic illnesses that they haven't. Now, from my perspective, what that means is the nervous system didn't get the message.

So this is where we've been actually doing research on this. How do you get the message to the body that's safe? And a few years back, I developed this acoustic stimulation model, which is called the safe and sound protocol. And some of the insightful uh providers who actually are using it, decided to use it on long COVID.

And it's really quite amazing. And what, what the intervention truly is is the manipulation of acoustic features. It's basically taking a vocal music and amplifying the pro Saadiq features of that vocal music like a mother would come her baby.

So in a sense, the nervous system here's these cues and the nervous system becomes accessible. – So, are you saying it modulates? – Yeah. – In that way, the autonomic. – Yeah. Well, it is if we take the mother's voice and say, what does it do to the child, the child picks up the intonation of the signals and the baby going from, this goes to accessibility, calmness.

Now, if we talk about our dogs or cats or horses, it's the same thing. Our intonation of our voice is queuing their nervous systems that we are safe to approach.

And so in a sense, our bodies can trust another body. And so when that Q gets in the autonomic nervous system shifts from defense state, too accessible.

– And so let me just check in with you on this because I'm wondering if, based on what you're saying, a person can develop their own personal tone that they express that can help them in that process of regulation.

Can I like – That's helpful but that's different. – Okay. – This goes back to like what Peter Levine does with the Voodoo Woo. And that is, it's stimulating, it's also stimulating the ventral vagal circuit. But this is cues of safety and not producing safety, not producing, it's listening. It's the nervous system becoming accessible because it's heard cues. Now it's the modulation, it's not the tone itself, it's the modulation of it that we are nervous system feels or interprets as inviting accessible.

– So, one of the things that I talk about in my own work is how we adapt to our childhood environment. And if it's not a completely safe environment, we sort of learn uh about danger and then that sets us up as adults. Again, to expect you talked about your assumption, which is, I believe just under the level of awareness that our nervous system is, is tuning into the environment, but it could be sensitized by our child lessons of childhood.

How do we break that pattern in which before we know it, our body is responding to danger even when there may not be any danger. – So here's the paradox. If you come from that history that you're describing use of safety have already now become cues of threat because they have moved from accused of accessibility to accuse of vulnerability.

So the body says I'm not going there and we've watched this with the intervention with people with severe trauma and that is initially the body can't reject it.

So the body goes like this. But then you have the interception, the body feels this and now we perceive that And what happens is that's a trigger in itself.

The body feeling vulnerable and the person gets anxious and moves basically gets out of there won't tolerate the intervention. Give you an example. We were using the intervention or should say a provider was using it in Poland with Ukrainian refugees. And the mother came in and she put the headset on, listen to the Pacific music. She lasted 42 seconds before her body says they've got to get out of there. Well, she came out of a war zone.

So it was very incompatible for her body to become accessible. She had responsibility to take care of her child. And what they really insightful trauma therapist did was they realized they could work with this.

Therapeutic strategies for safety and recovery

So they did titrate in at very few seconds and they used the visceral feedback, the interception as a psycho educational component to now understand what their body and the beauty of the intervention was that it was, it was orthogonal disparate from the narrative. It was just music.

So and it wasn't a person there. So, so the body going into these defense reactions just by listening to music is profound in terms of a clinical trajectory because you can see literally on a cause and effect as a trigger without creating a over overlapping narrative. – So in terms of how we sort of break out of if we're in a pattern where we're more reactive to danger, where we spend, we're spending more time in fight or flight, either because of childhood lessons and expectations or because of what's going on in the world today or our personal lives that have a lot of different stresses.

What would you advise our audience as some of the first steps to help this regulation? – This is, I mean, you're asking the big question and the big question is I would say, don't try this at home.

You need, you need a professional person whom with whom you trust the issue of that is you know everything that we're discussing is about. How do you give up your defenses?

How do you give up your hypervigilance and you can't do that on your own. You need a context set up for you because you literally have to give your trust to someone to make sure to get into that co regulatory state. So the, the part of this is that the first part of it is an awareness of what's going on inside and we can all do that on our own. We can say whoa my body shifted state.

Now, the real question is, can we interrupt those reflexes? Can we diffuse them? So can we get out of the narratives? We know we're going into narratives when we get that?

But can we get out of that? And that's where I would say insightful therapist, trust, trustworthy, insightful therapist can literally titrate people by allowing them to be quote triggered but not triggered a lot. So they get the physiological reaction and move the sense of the physiological reaction from the complex narrative.

So if you can pull those apart, you can now, I believe progress and this is what we're learning. So a lot of the music, music was an intervention but was never designed to be an intervention unto itself.

It was designed to be quote a state shifter to move the state of the individual to make them more accessible to the work, to the therapy. And it has been interesting buy in from somatic oriented therapists because it works real well in their modalities because they focus on what's happening in the body.

So they build on the psycho educational platform of being able to shift those physiological states. – Right. Right. Right. So yes, there is that challenge to have a person, let go of that hypervigilance.

If we go back to my example of a person going into a meeting, a social situation, one of the things that I coach a person like that is I first of all explain how they influence the people inside by their voice and their facial expressions.

So I coach them to take a moment before they go in to take a few breaths and to get into a calmer state and change as best as they can, their mindset of expectation to help them go in and express themselves a little bit differently. And then I'll do some dress rehearsals to help them prepare for it. And so the goal is for them to come in and give different signals to the people that they come in contact with.

– Yeah. Well, the dress rehearsal concept, it's a psycho educational. You're basically preparing them for their own bodily reactions and, and explain deconstructed in a sense what political theory gave too many therapists and many survivors of trauma was a script.

It was saying, look, this is very predictable. Therefore you're not nuts and if it's predictable how can we work with it? – Right. Right. Right. Well, this is a fascinating subject, Stephen, I'm so happy that we had this, having this opportunity. We have just a couple more minutes left.

Can you give any other kinds of suggestions in terms of how a person, particularly someone who grew up, perhaps in a dangerous childhood environment can help themselves go more into this place of balance. Get, get into a place where they feel a sense of safety. I talked about people finding islands of safety in their day in their lives. How about you?

What are your, – I would basically say the same thing that I, I will tell you that when I was a youngster, I came up with a model that called the closed tree model Mental health, which was basically the clothes street had to be in the closet was the idea that you could create a safe environment of something very soon small, but that could be your visualization. And the close tree was what you're going to hang on that in that safe place. And I think many therapies have that type of model as an expanding model. But the core, what you're really saying is if I can get the visualization of safety, if I get the visualization that enables me to self regulate on partially way there, you know, I can build on that.

And this was a question that I asked some of my colleagues who work with foster Children who basically are in such their developmental history is so disrupted or dis regulatory because there was no one in their lives for many of them that they could trust.

So the visualizations are hard to build and they are working. It's a very hard population to work with because of exactly what you're saying, they don't have the mental images of what a safe experience is.

So, in a sense, in my naive clinical mode, I'm not a, I'm not a therapist, but I not eve clinical mode is always ask people, what do they like to do? What gives them a smile on their face?

And that's your hint about where that personal safe space, the ability to self regulate can come from. – Right. Right. And you know, one of the things that I do is biofeedback, which is, you know, training people to go more into that parasympathetic mode.

And you know, some people really struggle with being able to on their own, being able to do that. And so you really need those kinds of approaches. – Well, biofeedback because what you're really focusing on a lot of it is because you brought up earlier was breath.

And that is when we exhale slowly, we are literally giving our nervous system permission of the vagal break to come on to calm us down. But if we're in dangerous environments, do we want the vagal break to come on the vagal break is literally our enemy because it gets in the way of recruiting our metabolic resources or energy to fight.

So the efficient way of being in a dangerous environment is to get that system out of there.

Aging, resilience, and closing reflections

So we have permission to defend ourselves. So it's not just, it's hard for people. It's that the nerve system doesn't want to be calm even though they may be coming in for therapy.

There's part of them that is literally wedded to the state that they're in. It's predictable and it has succeeded in keeping them alive. And the nervous system basically has this excuses to a moral belief system that their survival is everything.

– Right. And so a very simple approach would be number one, find some way of getting into a place state in which you feel safe and then engage in some of this very slow exhale breath that will help you move more into that parasympathetic mode to help you in this process of balance – And build on that is that when you go into that mode, use the intercepted WCI skill set where you now describe those feelings and expand on that because a lot of people are pretty numb to their own bodies.

And again, for a person like me, that's always been a shock. But you start realizing that a lot of people just don't have those feelings. And I wrote a paper which I will share with you and with the summit registers participants.

It's called Political Theory. Science of Safety. And the whole goal that paper was to move feelings of safety into an objective concrete level that it couldn't be dismissed because we tend to say, oh, that's your feelings, it and it doesn't have any validity.

But what I try to say in the paper is that when we have feelings of safety, feelings or safety are a natural derivative of our autonomic nervous system being a state that supports homeostasis and feelings of fear are really derivative of the home of our autonomic nervous system disrupting homeostasis. So in states of fear, we don't heal and we don't recover. Right. Right.

– And however, one wants to approach this, it's a, it's a process, it's a developmental process. You can't just automatically find it. But any effort I say any effort that you take that moves you in that direction you build on that. – You are mentioning a couple in very important things. Effort is basically it's internet intentionality, it's something I want to do. And the other point is that it's not a prosthesis, we're not replacing, we are exercises we're recruiting.

And the whole notion of even like vagal nerve stimulation is really sold more as a prosthesis versus biofeedback, which is a neural exercise. So neural exercises are ways that our nervous system learns to be more resilient, more flexible. And we don't need the stimulation on all the time. The system now has that capacity.

And this is the whole theme of our discussion and that is to enhance the nervous system's ability to regulate and heal itself. And that when that nervous system is disrupted, to deal with challenges, which are valid challenges, often of threat, it needs time to recover and go back into its healing mode.

And it can only do that efficiently if it absorbs or receives the appropriate template of cues of safety. – Right. Well, that's a great way of summarizing which I appreciate and it it also gives the audience direction and some things that they could be thinking about in terms of this whole important area, which I think is at the heart of aging and longevity because how your nervous system functions really is so important to inflammation, system functioning.

– Now, one final comment on that is that in a sense, aging is a disruption of our fluidity of recovering into homeostasis. So the issue is with aging, there's actually a less of a flexibility of the system, but as we age, we have to be appreciative of that. And then what that realizes that we may need more time to recover. – Right. Right. Well, Stephen again, thank you so much for joining me, joining us on our summit.

I really appreciate it and thank you for the, the article that you will provide in any other materials which will certainly be helpful in this process for our audience.

Thank you. – Well, thank you, Steve. It's nice to see you again. It's been a long time and I hope to see you face to face again. – Right. Right. Take care.

Bye.