Introduction to Interoception

Am I safe? Start seeing the way that this is weaving. Fascinating area that I encourage you to explore. Everything is going to connect of what I've been saying throughout this.

How can you tell if your nervous system is stressed out or not? Let's just ride with it. Hello and welcome to another episode of Root to Rise. I am so excited for today's episode.

It is going to be exploring one of my favorite topics, a topic that I learned about about five years ago and one that truly changed the way that fascia, sensory, emotion, and therefore my patients.

And the way that my patience relates to their body, to the movement and to there recovery. What I'm talking about here is a concept called interoception.

Now interoception is going to be an exploration of the emotional side of our fascia, our myofascial connective tissue web that is surrounding every aspect of packed with sensory nerves and these sensory nerve are seeking information.

Information that we will find out shortly is deeply connected to emotion and to our perception of safety. So as we begin to dive into this concept, really how I got into it as a fitness professional, as clinician is that I started to see this complexity.

complexity in my patients and the way that they were relating to their diagnosis. And what's really interesting is if you take two people with two very unique backgrounds, two unique upbringings, different childhoods, experiences, yet they are presenting with the exact same diagnosis, let's say for the sake here, knee arthritis.

X-ray or an MRI, their imaging would look exactly the same. However, patient A, totally doing fine, no pain, not limiting them in their activities and in the quality of life.

Patient B, as having increased pain. They're very much limited in the things that they do. they feel encompassed and just overwhelmed with this diagnosis of the arthritis.

Yet again, on imaging, they look exactly the same. Really what I'm describing here is the uniqueness of the lens at which we look at the world.

Homeostasis, Safety, and Sensation

All of us have a unique lens, which is shaped by different experiences, experiences that start in the earliest stages of our development and during our childhood, Which is going to link back to this concept of interoception.

Now as a clinician when I'm working with a patient I know that my impact, although that patient is seeing me for a musculoskeletal concern, my impacts as the clinician goes beyond just the external.

that every encounter that I have with that patient, every influence I had on their condition or on the experience of plantar fasciitis or chronic neuritis is going to influence them from a larger, more complex way.

And this is really going into the power of emotion, the Power of the mind. And really that our mind, our mindset, again, this lens at which we look at the world and our emotions is always going to prevail when it comes to the way that we present from a physical perspective.

So what I want to do to set the tone in this episode is to share that our emotions are these internal conversations that we are having, internal conversation that are based off of sensory stimulation happening inside our body.

And what's happening is that we are having this continuous conversation assessment internally based off of self-checks. A self check of balance, internal balance which can be referred to as homeostasis.

Now homeostasis by definition is our body's ability to maintain a stable internal environment. That would be something like body temperature, regulating your hormones, wanting to maintaining a certain blood pressure.

So all of this is homeo stasis balance. Now this is again based off of continuous monitoring of your internal system. Now, this a little bit different than another term called allostasis.

Allostases is the process through which we are able to maintain stability or homeostas. So it is a allo static response to allow us to maintained baseline.

The way that I want you to use this information is that we all have this perception of balance. And right now as we sit here, as I'm sitting here in this chair, I might not be consciously at the forefront aware of it, but in the background, there is this continuous self-check of a little bit of sensation in my stomach?

In my viscera? Am I hungry? Do I not feel safe? Is something alerted? Right? So there's this continuous assessment and check. So this concept of homeostasis can look at a physiological homeo stasis that's going to be temperature and blood pressure, right?

The physiology of your system but we also have an emotional homeostasis and our emotional Homeostases is going to be really based around. Am I safe? Am i safe or not safe and a huge part of how I'm determining subconsciously the perception of safety is through this internal balance and my continuous self-check of that balance.

Let me give you an example of how we use this. So let's say that we are about to speak to a room of a thousand people. Now, you may know that public speaking is one of the number one fears in the general public, is they would rather do anything than speak in public.

So, let's say we have two people, and these two are about to speak on stage to a thousand people. Both of them are starting to feel a little bit of butterflies in their stomach.

Now, the way that it works is we start to FEEL the butterflies. feel the butterflies and the way that our mind works or the, way, that are nervous system works is that we have to put meaning behind that sensation.

So first person feeling the butterfly's about to go on stage. They have, to, put, meaning, behind the Butterflies. Let's say the lens at which they look at the world is a little bit different than individual A.

And what they're starting to feel is kind of this adrenaline. They actually get fired up. It's like their nervousness makes them more focused. it gets them ready to perform.

That is their unique interpretation to the sensation that they felt in their stomach, in the viscera. Individual B, exact same sensation.

Interoception vs Exteroception

They're about to speak on stage. There's starting to feel the butterflies in their stomach and they're starting have a threat response to this. All alarms are engaging.

Their starting go into a fight or flight response. So what are they starting do? They are creating a mobilization response in there body. The're staring to sweat.

Right, their focus is going a little bit more towards their visual field. They might actually pan the room and see if there is a fire alarm that they can pull.

Maybe they're hoping that something will happen and just everyone's gonna have to leave the stage and they will not have speak. So they are going into a different response.

Very, very important because you have two individuals, exact same sensation, putting a different emotion to the sensation and the emotion that they're putting on that sensation is based off of the lens at which they are looking at the world.

This is important when you interact with other humans. When I work with a patient, I need to understand that their lens at which they look at the world is very unique.

I don't know their full background, but I have to appreciate and allow space for them to essentially filter the interaction that we are having in my office through their lens.

Now again, this all goes back to your sensations, to the emotions, To what is at our core of our nervous system, which is survival. Am I safe? Am i not safe?" Now, survival is based on sensory perception and then it is the interpretation of both your internal and external environments with the purpose of putting emotion behind it and determining your safety and your survival.

So this question of, am I Am I safe? What I hear in that is I am. I, the connection, and the awareness of who you are is at the core of what we are talking about.

Your perception of your body in space. Which is why in my book, Sensory Sapiens, it really was based around The secret and what is at the core of being human is being able to feel, connect, optimize, relate to, and make sure that we are focusing on the quality and quantity of sensory stimulation coming into our body, both internally and externally.

Now when we talk about connection of self, perception of I am, this is as it relates to both the external world and the internal world. The external is going to be sight, sound, touch, joints moving, compression, weight, that is all referred to as exteroception.

It is your body's perception and relationship of yourself to the external world. And then we are using that continuous input of external stimuli to feed the nervous system to then feed.

The question, am I safe? We scan the environment, we're reading faces. We feel the temperature in the room. we feel different shifts in our center of gravity and we use that to feed the nervous system.

Am I safe? Your external perception is deeply connected with and works with your internal perception, which is interoception. Now, interosceptors are sensory nerve endings that are found in your fascia, in you visceral fasci, so in the gut.

Your gut has a very complex fascia web that is running from organ to organ. And if you've never heard the word viscera, visera means like organs, organ, gut fasci is packed with these sensory nerve endings.

If you ever heard of the concept of your gut brain access or that your guts is your second brain, this is all kind of feeding into that same concept. So interoception is going to be defined by your sense slash perception of internal stimuli.

Butterflies in your stomach, your heart beating, flushing, all of these things are interosceptive input. And then the way that it works interoseptively, again, is that you have to put emotion behind the body sensation.

Every body's sensation is going to be linked to an emotion. And then those emotions are going be translated into, am I safe? Am I not safe. Now the way that you find or where you these interoceptors again are going to be within your fascia.

So oftentimes we will refer to our fasci or think of our faccia as a movement connective tissue. In other episodes

I've spoken about, in my books and webinars and podcasts that I have been given, I will speak about our connective tissue web acting like a rubber band, like kangaroo, right?

It's going to load and unload the energy with every step we take. It is our fascia that allows us to jump high and recoil, to dance effortlessly and to move effortless like child.

That is focusing on your fascia from a movement, energetic based perspective.

Fascia, Nerves, and Emotional Connection

However, your fascia, this myofascial connective tissue spiderweb is also deeply connected interoceptively and emotionally to your identity, to you nervous system of, am I safe or not safe?

To support this, I want to go into the nerves that are found within your fascia. There are over 100 million sensory nerves in your facial, 100,000,00 sensory, nerves, in you're myofascial web.

Now of these, of this 100 millions sensory nerve, a majority of them, are going to be what's called free nerves. Now, not to make it too complicated, but you have free nervous and your myelinated nerves, free.

Nerves are. Going to. Be a very specific type of nerve of those free, nerves again, 90% of the 100 million are free Of those 90%, 80% of those, 90% or a vast majority of the nerves in your myofascial connective tissue web are interoceptive, which what that means is that a VAST GROSS majority.

Of the NURBS in you're connected tissue. Web are emotion based. are linked to your connection to self and safety. This is very powerful once we understand it because every movement that we make ultimately influences this myofascial web.

So that is why oftentimes we will say motion is emotion. Right? Every movement affects the way that you feel your emotional state. This is why going to the gym, working out, doing something physical or movement is so important for mental health and wellbeing.

Because every shift of your body influences your fascia, which influences, your emotion. Very, very, powerful. Some people will actually refer to your fascia as the organ of consciousness, that it is how we connect to self and safety.

Now to dive into this a little bit more on how we can use this understanding of interception, safety, emotion, visceral fascia, all of this is we need to understand a part of our nervous system called the autonomic nervous.

Now, your autonomic nervous system is actually part of your peripheral nervous systems. You have your central nervous, system your, peripheral, nervous.

Your central, Nervous system, is your brain and your spinal cord. your Peripheral nervous System, Is your somatosensory movement nervous? System. That's the touch of, Your hands and Your feet.

And then the other part, of Your peripheral Nerve system. Is, Your autonomic nervous system oftentimes thought of this subconscious or unconscious side of your nervous System is going to be regulated without conscious control.

This is like the dilation of blood vessels. this is things like digestion. Your Autonomic Nervous System dances back and forth between two main sides, which is parasympathetic and sympathetic.

or so we think it is. We'll explore how it's a little bit more complicated than that, but high level, most people when they are first introduced to the autonomic nervous system, they're thinking about it as sympathetic, fight or flight, parasympathetic, rest and digest, right?

So we go between fight of flight rest, digest. And then we back and forth between those throughout our day,

depending on stimuli and situations in which we were at or we are going through.

So this sympathetic parisympathy. Again, not so easy, but the initial introduction to the autonomic nervous system, let's just ride with it. Okay, so when we think about our sympathetic nervous, sympathetic is going to be your fight or flight response.

I want you to think of this as an acceleration. It is the gas pedal to your autonomic nervous system. You start to feel a little bit threatened. Maybe you hear a noise.

If you're walking down a dark alley, you'll hear some noise, right? You're getting alerted. So you are getting shifted into a sympathetic nervous response.

Your eyes are going to dilate, and you start having a bit of changes in the muscles of your ear. drums you can hear different frequencies right so we're starting to notice things that is your acceleration gas pedal sympathetic fight or flight now this is as opposed to the parasympathetic which is the rest and digest the restoration you could think of it as socialization right?

So when we are in a calm cool state parasympathy You can think of this as a slowing down of your autonomic nervous system. This is like a break. The break to the system to slow you down, get you into a nice, calm socialization state.

and then we go back and forth between those, right? Again, initially, this is how we're thinking about it, okay? Now, when it comes to your parasympathetic, which is going to be your restoration, you are the cool cucumber in this state, what's important to note is that 80% of your parasympethetic system, so we majority of you're parasymbiotic system is what is referred to as Vegas.

Autonomic Nervous System Basics

Your vagus nerve. Vagus nerve is cranial nerve 10. It's the longest nerve in the body. it's a wandering nerve and it is deeply correlated to your emotional state.

Your emotional regulation. Vegas nerve, we'll be diving into this more, but your vagis nerve okay. Now 70%, I know I'm giving a lot of percentages here, but 70% of your vagus nerve is interoceptive.

So interoceptively, your internal environment of safety, the perception of balance internally is linked to the vagus nerve, which is link to parasympathetic.

Okay, we'll dive into that more, but I just want you to start seeing the way that this is weaving. Now oftentimes when I give workshops, trainings, et cetera, I love to ask people, Between these two systems, you've got sympathetic fight or flight, parasympathetic rest digest.

Which do you think is in control? Who's driving here? Is it the sympathetic or the parisympethetic? To help you understand this, I want you to imagine a car going down a hill.

Now, when a card is going downhill, Are you pushing on the gas pedal? No, not really. You're not accelerating through the pedal when you are going down a hill.

What is controlling the speed of the vehicle going downhill is the break, which means what is controlling your state right now and throughout the day is your parasympathetic state.

The parasympathythetic muscle, oftentimes I will call it, is what's controlling you state, your emotional state So the driver or the dictator of your emotional state or your accelerated state, your speed is the break.

Parasympathetic, which means the answer to a healthy, regulated, balanced, autonomic nervous system, and therefore emotionally regulated state is to focus on the parasymbiotic system.

which I had said is vagus nerve, which is interoception. Vagus nerve, this is where you might hear vagal tone. Have you ever heard that term, right? Someone who needs to focus and build, increase vagial tone, or when people have very high anxiety or they have depression, you can actually get vagus nerve stimulators.

You can stimulate the vagous nerve in different ways. And what you're doing is you are trying to tap into, wake up the parasympathetic side of your autonomic nervous system.

Now there's different ways on how you can support the vagus nerve, that you increase vagal tone. And this correlates with understanding, another big term that are at you, is heart rate variability.

So what I want you to understand is when someone has good emotional regulation, That means they have a strong parasympathetic muscle. They have high vagal tone.

they Have high HRV or heart rate variability. All of these things mean the exact same thing. The way that that presents in an individual is going to be someone who has high perception of self.

That's very important. You have to have high. Perception of your internal environment. So as you start to feel these sensations in your body, I'm starting to.

Feel irritation. Let's say I I don't know. Example I always give is I am waiting for my Starbucks. and my Starbucks is taking way too long and I'm late for a meeting, let's say, right?

And you're just like, for goodness sake, where's my Starbuck's? Okay, clearly I need the Starbucks because that's why I am getting agitated. But you are starting to feel, you starting feel the irritation, the impatience is rising in your body.

You should be able to that sensation as it rises in you body that is an interoceptive, stimuli sensation that you were feeling. And as you feel that irritation, impatience start to rise sensorally, you with your high vagal tone and high HRV are going to slow it down.

Vagus Nerve, HRV, and Regulation

You're gonna come in with you neocortex and you're going Take a deep breath, slow down your response. Maybe you actually take a deeper breath. maybe you tell yourself, it's okay, I'm going to start my call even without my coffee.

I'll start call on my phone versus on computer, right? So you are trying to essentially keep control of the situation so you stay in a regulated state.

Now the most important part of this process for it to work is that you have to feel interoceptively the sensations as they are coming before they already hit a 10 out of 10. When people are interoceptively less aware, interoseptively disconnected, they do not feel the sensation rising in their body until they are already screaming at the person at Starbucks, right?

They're already in the amygdala. So this is where we want to start to think about internal sensory, how do we use that? Right? How do you use this understanding of interoception, parasympathetic, vagus nerve, vegal tone, right?

So let's say you want to be more emotionally regulated. Of course, I think everyone would wanna be emotionally more regulated, there's a few things that you can do that supports vagal tone and therefore interoceptive awareness.

Couple of them, cold showers. One of the best ways to increase the vagus tone is through cold shower or whole body cryo. Another could be through anything that stimulates your vocal cords.

Maybe it's chanting, singing, a gag reflex, gargling. All of these are actually going to stimulate your vagus nerve.

Could be diaphragmatic breathing exercises.

Your vagous nerve innovates, your diaphragm. So that's where doing breath work. It could Buddha breathing. There's many different styles of breathwork.

I personally like to do sensory-based breathing, So as you do your diaphragmatic breath work, you are barefoot, your hands are stimulated, You're touching textures or vibrations, neboso, and you're just trying to bring in sensory stimulation as You connect to your breath.

Another great one is probiotics. You are trying get into your gut access. Now there are what are called psychobiotics. So a psychobiotic is actually taking very specific probiotic supplements that contain strains of bacteria that are known to release serotonin and will actually help calm mental health presentations.

Psychobiotics, and again very specific bacterial strains, will release serotonin. A lot of antidepressants are SSRIs, so they are seratonin reuptake inhibitors.

So they're trying to keep higher concentrations of serotonin in the brain. Here, this is a way to increase serotonin through the microbiome in your gut.

Fascinating area that I encourage you to explore. And then one last way that you can increase vagal tone is through movement, through barefoot stimulation, reflexology.

All of this as a great way, to then stimulate and get into that vagus nerve. Now, one thing that wanna touch base on this real quick, has to do with What if we look at the autonomic nervous system a little bit different?

And for this, I just want to touch briefly about the work of Stephen Porges. Stephen porges is really the founder of the polyvagal theory. And if you've not listened to any of his work, please.

turn this off, go listen to that. It is powerful, powerful work. Steven Porges and the Polyvagal Theory. it is this fascinating look that says we actually do not have one vagus nerve.

Again, vagous nerve is parasympathetic and what how we refer to it earlier, but we have two vaguous nerves. We have an old vagis and we of a new vagas.

Or we've kind of like a reptilian vagos and then we And the way that he breaks this down through polyvagal theory is that, he actually refers to the old vagus, the reptilian response, old's vagas, as a dorsal vagis.

So you have dorsell vagous, sympathetic stays the same, and then your mammalian vagos, or the parasympathetic, is going to be ventral vags. so that's going be a restoration.

So if you were to think about this as different states that we could progress through. So as stimuli and threat to our safety increases, we go through different phases of our vagus nerve or your autonomic nervous system.

When we are cool and calm, which we've referred to as parasympathetic according to Dr. Porges, that's going to be ventral vagus. Ventral Vagus equals parisympathy equals restoration socialization.

Very important state. We need to be in that state to learn. Children need be to in the state, to thrive in academic settings, right? To connect, grow, inspire, we need in this ventral Vegas restoration state.

as we feel sensations in our body, internally, externally, we hear sights and, or we here sounds and see things, right? We maybe feel different shifts than our center of mass, whatever it is, is going to start to go into, am I safe?

Am I not safe. If anything is triggered subconsciously that you're not save, you are going start shift into a sympathetic fight or flight state. Sympathetic Fighter of Flight, you're starting to mobilize a little bit.

Do I need to actually fight? Do we need run? Right, so you are starting shift. Now, based on that threat, when you look at the Polyvagal Theory, and the way that Dr.

Porges explores this, is that if that thread persists, you will then climb higher into your threat response.

Polyvagal Theory and Stress States

And as you climb a higher, into that threat, response, you are actually entering into a reptilian dorsal vagus response which is a freeze response this is an immobilization response Initially, with threat, it triggered a mobilization response.

Now, as threat increases, is going to trigger an immobilization, response or a freeze response now that is dictated by every single one of us, unique perception and lens at which we look at the world.

Now as that threat goes down, you then start to go back down. Let's say that you had a threat. Threat started to increase. You got into a dorsal vagal state.

Your then nervous system is supposed to all the way back into the ventral vagus state the faster that you can go from a dorsal vagus to a ventral vagis is called vagal tone.

Oh my gosh! Everything is full circle and everything is going to connect of what I've been saying throughout this 30 minutes. Okay? So this vagal tone, by definition, is how quickly, when your nervous system is elevated, can you bring it back down into that restoration state.

The faster that you can down-regulate to a restoration, state is correlated with higher HRV, higher vagus tone. high emotional regulation. So that is really the goal of a healthy autonomic nervous system muscle, you could say, is your ability to down regulate.

This Balancing of ventral Vegas, sympathetic dorsal Vegas back down to ventril Vegas is really a sensory response. You are trying to slow the process down.

you are Trying to feel the sensations faster so that you can have that conversation within your nervous system to say it is okay. Take a deep breath, slow things down, count to 10. Right.

And you have this conversation because it's something that as mammals, homo sapiens, we have the capacity to do with our unique neocortex, consciousness, the way that our brain has developed, We have to capacity slow things down, to have a conversation with ourselves, To be able to understand why we had the sensation and then just shift the narrative behind that.

So now one thing that is really important as you look at the polyvagal theory and your state and you're emotional regulation, how you approach vagus nerve and vagal tone has to do with your ability to understand, are you stressed out or not?

Are you stress out? So most people have a very altered perception of stress. If you ask most people, are you stressed? Most would probably say, no, I'm not stressed.

But if you actually looked at their physiological metrics, if look at there HRV, you would actually see that they are physiologically stressed out. Even though they don't perceive it, this is important.

So how can you tell if your nervous system is stressed or not? How can you tell if your nervous system is in a ventral vagus, cool restoration state, or is it elevated?

I'm going to give you two ways to do this. First one is that if you measure your pulse, so your radial pulse which is on the side of your thumb and you measured your poles and as you're holding there, feeling your polls, if take a deep inhale, As you take a deep inhale, if your ventral vagus restoration state is online and you're in a healthy

restoration stage, your heart rate will actually accelerate.

So again, ventral vagus regulates the acceleration of your heart rate on a deep inhalation. If you do not feel an acceleration in your pulse as you take a Deep Inhalation, that may indicate you are in a sympathetic or a dorsal vagal state.

Another way that you can do this, a second way, is that if you look at a mirror, you're going to open your mouth and you'll look all the way back at the uvula that's hanging down in the back of your throat.

And you are going say ah, ah ah. You're gonna keep repeating that. Every time you say Ah, your uveula and your soft palate should lift. The lifting of you soft palette and uvela is a function of ventral vagus.

If your ventral Vegas is not online, as you sit there looking in the mirror, it's not going to lift, or your uvula might actually tip towards one side, either to the right or to left.

Okay? Now, if you are noticing that you do not get an acceleration of the heart rate, maybe you're actually feeling anxious, you don't even have to do these things, and you know you in a stressed out state or you uva isn't lifting, one of best ways that you can reset your nervous system into a ventral vagus state is going to be through, I'll show you now.

So this is where you're moving your eyes and you want to hold this position until you yawn or swallow.

Resetting the Nervous System

I'm seated in a chair and if you are listening, you aren't going be able to see me, but you either lying on your back or you seated on the chair, your head does not move, just your eyeballs are gonna look all the way to the right.

And you're going to keep your eyes looking all the way to the right with your jaw relaxed, your teeth are not touching, total body relaxed. Eyes stay fixated to right, again no teeth touching and you are going hold that gaze until you yawn or swallow.

As soon as you yawn or swallow, you'll look to the left, same thing, head does not move, just your eyeballs, jaws relaxed, teeth not touching. Keep looking to left until you yarn or swallow.

From here, I take patients immediately into deep diaphragmatic breathing. I like it in a sensorally stimulated environment, but you are doing nice deep inhalation, exhalation.

And I liked those through the nose, and I'd like the focus to be on the ex-hal-ation So my preference is doing what is called end range expiration. So you are lengthening and extending that exhale.

You will inhale through your nose for five seconds. and then exhale for 10 seconds, lengthening that exhale every time. Inhale through the nose five seconds.

Exhale for ten seconds so we are again to calibrate to reset to touch base with that vagus nerve in a ventral vagous state. We are resetting the nervous system through the eyes fixated in one direction till you yawn or swallow.

Look both ways and then do, I would do 10 cycles of inhale for five, exhale for 10, nice relax, eyes are shut. And then you can go into any of the ventral or any other vagus nerve stimuli that we went into, cold showers, chanting, humming, fasting, probiotics, gargling, gag reflex, any of those I would incorporate into your day to then further support the vagus nerve.

Now, as we kind of think about how do we wrap this all together, how we bring this concept of interoception to our lifestyle into a movement longevity program, is that the way that we connect to the environment interosceptively is deeply connected to how to connect our environment exteroceptivly.

It is all sensory based. I can use my awareness and my connection exteroceptively to ground and anchor me interoceptively.

Integrating Sensory Awareness

So as I feel my feet, as a feel, my body, if I have a weighted blanket on me, that is exteroception feedback, can I try to anchor that to the calmness that I fell of my heart beating, of the diaphragmatic breath work that i'm doing?

And we are trying to appreciate And bring in the power of the interoceptive system into how we connect to self, the way that we connected to safety, The way we are going to support movements and longevity.

And really to appreciate that our sensory story is not just about how to relate to the external world. It is how you connect with ourselves and all of your movement always begins with I AM.

And as we wrap up today, I want to share another footnote, which is one of my favorite quotes in relation to the concept of interoception. Intero-ception is your body's inner voice, the subtle language of sensation guiding you towards balance, safety, and self-awareness.

Thank you so much and I'll see you on another episode.