Introduction to Breath and Nervous System Health

my clients are coming in with dysregulated nervous systems. The breath is a window into the nervous system. They say the eyes are window to the soul, but the breath as a windows into nervous.

And as you start becoming trained and you started looking at the way people are breathing or paying attention to way they're breathing, it gives you deep insights into this state that their body is in.

All the modalities that we have in store for them, whether it's supplementation or nutrition or optimizing digestion, don't work as well if they are in that sympathetic dominant state.

So the first thing we need to do is get them parasympathetic. And the bridge between the sympathetic and parasympethetic nervous system is the breath for physical enhancement of performance, mood regulation, sleep optimization, improving nervous-system regulation.

Yeah, it looks amazing because it's something that's free, accessible. Just by making those small shifts, people can, sounds like, really work on that foundational health, which is so key.

Yeah, and the benefits are immediate. Right. So it's not like it takes weeks or months for people to notice a difference. Symptoms are only part of the story.

I'm Dr. Drew Kidder. And I am Dr Emily Hernandez. On the healing terrain, we explore deeper systems influencing clinical outcomes from toxic burden and microbial imbalance to the foundational factors that drive resilience and long-term health.

Hi, I'm Dr. Emily Hernandez, naturopathic doctor and clinical educator for Cellcore. We are here on the Healing Terrain podcast and I have Sachin Patel here with me.

I am so excited to be talking to you about some breathing. It's an honor, it's a pleasure. Thank you for having me! Tell us a little bit about yourself.

Yeah, so I started off as a chiropractor and then became an FDN and over the last six years I became a breathwork facilitator and educator. And it's just been a really fascinating journey.

I also coach and train practitioners on how to run their practices. So I wear many hats and the hat that I where when I'm breathing or teaching breath work for people is the one that excites me the most these days.

Sachin Patelu2019s Background and Why Breath Matters

Amazing. It's nice to be doing something you're passionate about. So tell us a little bit about why do you feel like breathing should be talked about so much?

Why does it seem to connect to root cause health issues like sleep, metabolic issues, stress? Tell us little more about how you got into the breathing realm.

Yeah, you know, breathing is a very fascinating topic. It's something that we all do, and it's also something we can't avoid doing. And you know, we consume 30 pounds of air every day.

So it's the thing that we consumed the most every single day, but very few people talk about it. And when I went down this rabbit hole, my experience was actually a facilitation that I got to go through and it took me back to my first breath.

I go to re-witness my breath, Wow. And see my parents holding me in their arms and looking at me with fascination. I was like, Oh, that was pretty cool.

That I want to be able to offer that to other people as well. So I started doing facilitations, but then I also realized through my experience of being a father, taking my son to the dentist and my wife.

you know, having her, she had dysfunctional breathing and being able to assess that. So the topic became very near and dear to me personally and also professionally because my clients are coming in with dysregulated nervous systems and the breath is a window into the nervous system.

They say the eyes are a windows to the soul, but the breathe is the window to into nervous. And as you start becoming trained and you started looking at the way people are breathing or paying attention to way they're breathing, it gives you deep insights into this state that their body is in.

And when somebody is in a sympathetic dominant state, all the modalities that we have in store for them, whether it's supplementation or nutrition or optimizing digestion, don't work as well if they're in that sympathetic dominance state.

So the first thing we need to do is get them parasympathetic. And the bridge between the sympathetic and parasympathy nervous system is the breath. The breath is also a reflection of our emotional state.

And the diaphragm, which is one of the main respiratory muscles, is a little pharmacy that we have inside of us that allows us to choose how we want to feel.

Breath as a Window Into Nervous System State

So, breath has become just a true fascination for me in so many different ways. For physical enhancement of performance, mood regulation, sleep optimization, improving nervous system regulation And so it's something that we all do and we need to learn how to do, but nobody teaches us how.

Yeah, it looks amazing because it is something free, accessible. Just by making those small shifts, people can, sounds like, really work on that foundational health, which is so key.

Yeah, and the benefits are immediate. Right. So it's not like it takes weeks or months for people to notice a difference. In fact, when I do breathwork facilitations, within 35 to 45 minutes, people are in an altered state.

Wow. Releasing stored emotions, trauma, old wounds that they're holding on to. And they come running up to me afterwards telling me, oh my God, that was the most profound thing I ever did.

As a practitioner, it would take us weeks and months. For people who start feeling better. This gives them an opportunity to start feeling better immediately and then everything else that we prescribe to them works so much better.

Yes, amazing. So how would you suggest that practitioners that are listening, you know, start to incorporate this into their assessment? Yeah, so the first thing is, without even talking about it, just pay attention to how your clients are breathing.

Because once we tell them we're assessing their breathing, they naturally start changing the way they're breathing So I look at the ways somebody's breathing from the moment I start my interaction with them, because I want to know what state that person is in.

And if I need to alter their state, then I know exactly what I By assessing the way somebody's breathing, it gives us a sense of what their default breathing pattern is, and that gives a us sense what the default nervous system state is.

Most people that are coming into our practices are going to be short, shallow breathers, which means they're going steer towards sympathetic dominance.

And that means that all the tools that we're going to offer them won't work as well because we need them in a parasympathetic healing regenerative state in order for that to happen.

What I'm looking for is are they breathing through their mouth or their nose? I am looking are breathing into their belly or are their breathing to their chest?

And also paying attention to the rate at which they're breathing. And the one thing that's a little bit harder to assess is the position of their tongue.

So what often doesn't get discussed is something called tongue posture. The position of our tongue also plays a role in how we feel. Yeah. For example, we have 84 meridian points in the roof of her mouth.

Wow. And so there's these little energy circuits that get closed when her tongue is sitting in her roof or mouth versus sitting at the bottom of the mouth, our tongues also creates the shape of a hard palate, which creates a dental arch which also create the size and volume of your sinuses.

So how do we position our time in our mouths growing up but also as adults can have a profound effect on our, you know, moment to moment state of our nervous system, but also our facial structure.

The way we breathe also plays an important role in our oral microbiome, which we know is super important.

Tongue Posture, Nasal Breathing, and Oral Health

And you know, what people may not realize is that our nose has 35 different functions. So when we breath through our mouth versus breathing through nose, we're actually creating a completely different type of air quality that's coming into our lungs.

When we breed in through a mouth, versus our noses. Wow, so interesting. So I have so many questions to what you just said. I've always been taught, you know, the tongue should be like right behind your front two teeth on the top.

But you were saying something about, like, the top of your mouth versus the bottom of you mouth where your tongue lies. Can you kind of talk a little bit more about that?

Yeah, so imagine you're making the sound of the letter S. No. Okay, no. Right? That's the position your tongues should be at. And so when your tongs in that position, it's naturally going to seal your mouths, which means you are not going be breathing through your mouse.

It's going close those energy circuits and the tongue is going act as a spacer to widen the upper palate or the hard palate. When we widen that hard palette, that's floor of our sinuses.

So you're getting tremendous benefits just by placing your tongue in that position. And the tongue is a postural muscle as well. So when we put our tongue on the roof of our mouth, it actually relaxes our cervical extensor muscles.

Now our neck isn't going to be as tense and tight because when were in pain, we're more likely to breathe in a sympathetic state versus in more relaxed state.

Right. Amazing. And then talking about oral health, we know that, or if you don't know, there's a lot of good bacteria in our mouth. We talked about the oral microbiome recently or you just mentioned it.

Tell us a little bit about those microbes, why it's important with breathing, how they affect different beneficial things

like nitric oxide. I think that's the big topic these days.

Yeah, absolutely. So interestingly enough, the aura microbiomes plays a crucial role. The mouth is the beginning of the digestive system. Absolutely. And we kind of separate those things sometimes.

And the bacteria on our tongue produce something called nitric oxide. Nitric Oxide is a natural antibacterial, antiviral, anti-pathogenic. It dilates our blood vessels, it also naturally lowers our pressure.

When we breathe through our mouth, our airway, or mouth gets dried. Yeah. Our saliva production decreases. And so that changes the pH of our mouths and we're more prone to producing, you know, bacteria that's not beneficial for us.

But also because the bacteria in our tongue starts becoming compromised. our production of nitric oxide decreases. Now, our nasal mucosa is lined with nitrous oxide and nitroxide, you know, because it's sterilizing the air as it comes in when we breathe through our nose, which is where our immune system actually starts.

Like if you ask somebody where their immune systems starts, it actually, starts in your nose. Right? You're breathing 30 pounds of air every day. Yeah.

And when we breathe through our nose, it moisture regulates the air, temperature regulating the pressure rises the error increases oxygen delivery by about 20 percent.

It slows down the year and it spiralizes the errors. So we get more airflow to the alveoli. and that slowing down of the air and interaction with the nasal mucosa nitric oxide is what sterilizes it.

Okay. And so we have to be breathing through our nose in order to claim some of those benefits of nitrous oxide. Wow. It's amazing just like how innately intelligent our bodies are, right?

And just kind of getting back to those basics can make such a profound difference.

Simple Breathing Practices for Regulation

Amazing. So what are kind of some of your, for people listening out there, you know, some easy ways to maybe start focusing on their breath or some breathing techniques that you tend to give patients, clients, that's helpful for foundational health?

Yeah, great question. So a few really simple things that people can do. Let's start with how we should be breathing most of the day. Okay. Uh, so tongue gently placed in the roof of mouth, breathing in and out through the nose.

If that is all people did and drew their attention to that throughout the days, their health would improve. Now, when I first learned about breathing and bringing my attention to my breath, I'm like, oh my God, have so many things to remember.

Right. How am I gonna remember this one thing? Right? And so I started following BJ Fogg, who is a behavior change expert. He wrote the book Tiny Habits.

And in that book, he talks about this applies to all habit change. that behavior equals MAP. So motivation, ability, and prompt. Okay. Right? So when we understand the benefits of proper breathing mechanics, we're hopefully motivated to change.

We all have the ability to make that change, the last thing we need is a prompt, so I encourage people to think about the thing they think the most. Maybe for some people it's, hey, every time I pick up my phone, if you drive a lot, maybe it is every traffic light.

If you move through your house, maybe it's every time you walk through a door or a threshold, you're going to draw

your attention next to your breath.

So we just anchor our breath with something that we're already doing, so we don't have to have one more thing to remember. We set an alarm. Right, exactly.

And I will always think about my breath when I'm switching tasks. Okay. Because the way I breathe needs to match the task that I'm doing. Yeah. So if I am sprinting, I need to breathe a certain way.

Right. If I meditate, and I want to breath a different way, if i'm trying to pay attention in class, or you know, at this presentation, want a breath of certain ways.

And so what are those ways to breathe? So the way we regulate our breath is based on a few things. One is the rate at which we inhale and the right at we exhale.

So if we want a balanced nervous system, then we wanna be breathing in for the same count that we breathe out. Now, the rates at when we breath in and out can vary from person to person.

About 4-6 seconds in, 4 to 6 seconds out Balancing that is going to balance or it's going bring us right in the midline. Does it matter how long you hold it for the breath?

You're not really holding it, you're almost creating a circular pattern. And then if we want to be more parasympathetic, then we lengthen the exhale. So we might breathe in for four and out for six, in four four out four six.

That's a really easy way to shift into that parisympathy state. If we want to fall asleep faster, then the way we breathe is called the 4-7-8 pattern.

So breathe in for four, hold for seven, exhale for eight. If you want just to feel more centered and grounded, maybe get into a meditative state, we can do something called box breathing.

In for 4, Hold for Four, Out for For, and then you repeat that. Those are really simple techniques that we could use. One thing that I encourage people to do is something called a bolt test, which is a body oxygen level test.

This is really simple assessment that you can use on yourself. If you're a practitioner, you could assess your patients or your clients with this. And it's basically measuring your tolerance to CO2.

So our urge to breathe doesn't come from needing more oxygen. In fact, with every breath we take, we only absorb about 20% of the oxygen, 80% we breathe back out.

The urge breathe comes from an intolerance to C02. Okay. the slower we can breathe, the more parasympathetic we get. So a body oxygen level test, or it used to be called the blood oxygen test.

This comes from Konstantin Buteko, who invented the Boteko breathing method. He was a Russian scientist that studied this for decades. And so the way you do this is you just take a couple of normal breaths.

And then after a relaxed exhale, so you're not pushing the air out, you are just letting the arrow fall out naturally.

CO2 Tolerance, Breath Testing, and Mouth Taping

You then plug your nose. Okay. Start a timer and you'll see how long it takes you to have your first urge to breathe. We want to get up to at least 40 seconds.

Konstantin Buteca would say that no disease can exist in a body that has a blood oxygen or body oxygen level test of 60 or more. So if you can control that, do that control pause and hold that exhale for about 60 seconds, that's a great place to be.

you'll find most people can't hold it for even 20 seconds. In fact, people with chronic stress, chronic anxiety, who are prone to panic attacks, they might not even be able to hold their breath for 10 seconds, right?

So if the score comes back low, we know what the problem is. They're actually breathing too much. So the majority of people over breathe. And so they have a hard time breathing slower because that CO2 tolerance is not built up.

Right. The way we build up CO 2 tolerance, really simple. One is a prolonged exhale. So you just take a nice deep breath in and you slowly exhale the air for as long as you possibly can.

Now I can get up to about 95 seconds. Some people might take, you know, it didn't start that way. And most people, If you're pretty healthy, you might be able to do, 30, 40, 60 seconds and then you build up your tolerance to CO2.

So you just practice that, maybe get to a traffic light, take a deep breath in and slowly exhale for as long as you can. The other way you could build your CO 2 tolerance is by When you're walking, do a few breaths in and out as you normally would.

Relax, exhale, plug your nose and take as many steps as possible. And you want to get up to about a hundred steps. Okay. So if you can do a 100 steps while doing that, uh, control, like walk steps or upstairs or just regular walking steps and then, you know, that's your goal.

You might not, You may not start there, but you wanna build up that and that builds up at CO2 tolerance. What's what we know is that the less you breathe, the longer you live.

Yeah. The less you breathe, the less oxidation there is. So in a society where we overthink, we overeat, right? Yeah, yeah. We're overwhelmed. Yep. And it's one of those things that we actually have control over, you know, take 23,000 breaths a day.

about 8 to 10,000 of them are while we're sleeping. So another tool that I offer my clients and encourage practitioners to share with their clients is something as simple as mouth taping.

Yeah. 3M micropore tape just placed vertically like this. You don't have to seal your mouth. It's going to ensure your nasal breathing while you sleep.

And I have so many case studies of people seeing all kinds of practitioners, taking all kind of supplements, Yeah. Uh, you know, and then they mouth tape and within two days, like the brain fog disappears or waking up or fresh, they're dreaming again.

They're not waking to go to the bathroom. You know. Mouth breathing is a diuretic. So people who wake up frequently to use the restroom at night, it's because of the way they are breathing.

Yeah, And when we're breathing through our mouth. We're also increasing the risk of cavities. In fact, mouth breathing is the number one cause of cavity because it takes away that protective mechanism of saliva.

Wow. This is so interesting. I love hearing all about this. My husband started mouth taping. He says it's awesome. Here's a quick litmus test for people.

If you wake up with a dry mouth, you're probably mouth-breathing. If your lips are constantly dry, chances are your mouth breathing. If you're mouth feels dry and you are thirsty and it's, you know, an unquenchable thirst, it is probably because that person is mouth-breathing.

Bad breath is caused by mouth breath. Chronic cavities, I mean there are other things that can contribute to it, but the number one cause is, is the mouth breathe.

Yeah, amazing. Well, thank you so much for sharing all your insights. So interesting and just kind of nice to have

these tools that we can really easily adjust and make such profound changes for our health.

Thank you.