Opening Analogy and Podcast Intro

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And there's a huge blockade. And then that creates stagnant water and that grows things. And then there's our mold intoxication and creating issues within our bodies.

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You're not going to do anything. Welcome to the TBD Fit podcast on Dr. Talks. I'm your host, Daniel Keeley, and I will be guiding you through this wellness journey in terms of optimizing health and longevity where we unpack the science, the do's, the don'ts, and everything in between.

Come join us. Look forward to seeing you inside. Welcome back to the TBD fit podcast. I'm your host, Dr. D and my goal is always simple to find whoever is doing best in their category, have that conversation and bring that back to you guys so you can implement that in terms of your healing journey and optimizing health.

and longevity. Today's guest is Dr. Brad DeBeer. He specializes in functional neurology and sports performance. Obviously, man after my heart in that regard.

Along with his wife, Dr. Wadsworth, they opened Axon Integrative Health back in 2023 with a goal of changing the paradigm of healthcare.

Dr. DeBeeru2019s Background and Practice Origins

We talked offline about everything that he does treat. And it is pretty much everything. So the patient demographic that he sees ranges from concussions, mold, ADHD, neurodivergence, histamine issues.

It spans the gamut of obviously sick individuals to just optimizing human performance in terms of their athletes. Beyond patient care, he teaches seminars and shares his expertise on functional neurology, sports performance and integrated care with other practitioners.

So today's conversation, we're diving deep into the world of neuroplasticity, how we can harness it and practical tools so that we can continue to. build it.

Dr. DeBeer, welcome to the show. Thank you so much for having me. I'm excited to be on and certainly two synergistic individuals. I mean, speaking offline is, I feel like I need to come out to Chicago and see the place and meet you in person, but happy to be here.

I always say my door is open and it's interesting because you have conversations with individuals and sometimes they're virtual and it's difficult sometimes to meet in person, but I love that connection regardless whether virtual or not.

I always say our net worth is determined by your network. More importantly is just the quality of the connection.

And so I love to be able to meet practitioners like yourself who are doing these at a very high level, opening new doors, having these conversations.

And how I love to start the show is so you can provide kind of a pretext for our community is how did you get into this? What was the kind of impetus of starting your own practice and getting into what you do today?

Yeah. So I feel like every chiropractor has that, that story of probably some injury, right? And we chatted and I grew up playing sports, high school, undergrad, countless injuries.

I had a massive squat injury actually, and saw a chiropractor help me out and it's like, Hey, that's something I want to try out. I was going the route of sports performance.

Like a strength condition coordinator went to Florida state. So had that whole history, but got into this as just moving into chiropractic, doing physical medicine.

Halfway through school, realized I could change athletes more with some brain health and some functional neurology type based things. Had some friends show me that stuff and pivoted again.

Got a really great preceptorship out here in Denver at Revive. And we saw a lot of post stroke, concussion, TBI, just these big heavy neurological injury cases, intensive style.

So I got a lot of integration, hands-on learning in that manner.

What Functional Neurology Means

Couple of years later, my wife and I decided to create a practice that encompasses a whole gamut of health from brain, body, and mind, really focusing on functional neurology, functional medicine, acupuncture, and human performance and kind of melding all of this stuff together to bring a great treatment plan and great clinic for patients of all kind of conditions, injuries, and concerns is how we push that or kind of talk about that.

So you said functional neurology, which I was connected to you because I was listening to you speak on a webinar and everything you were sharing was definitely resonating how you're kind of looking at things and able to intervene at a very high level was very impressive.

And so that's why I reached out and I wanted to kind of meet, connect and further discuss How do you define functional neurology? How does that differ from traditional neurology?

And how does that differ in terms of the scope of your treatment? Because too often we come part to mentalized medicine and we try to just send out, refer out to specific organ function to specific specialists.

But root cause medicine, often it goes back and the foundation principles still kind of Hold true. It just, we're treating it as kind of an end stage.

So like Parkinson's in the brain or Alzheimer's, but the problem not only happens years, if not decades before, and it doesn't necessarily start in where neurology looks.

So maybe unpack kind of all of that. Yeah. So functional neurology kind of how the name implies looks at the function of the nervous system, not just an absolute kind of zero or one within normal limits or not, as maybe a traditional neurologist would look for.

One of the best examples is looking at pupils, right? So we can all associate neurologists with shining a light in somebody's eye, right? They're seeing if their pupil constricts or not.

Yes or no. I'm looking at maybe how fast it constricts the magnitude of constriction all the way to if it fatigues out early. That gives me a lot of indication on this area of the brain called the midbrain, the upper portion of your

brainstem and can tell me a lot on metabolic status and inflammation and kind of fueling within the brain and let me know, okay, is this individual even getting enough?

flow, enough blood flow, enough nutrients, enough oxygen up to the brain to do this healing. If it's a concussion, chronic pain, ADHD, even old, like whatever you have.

We look at the function, right? And the person in front of us, not just the diagnosis, not just a yes or no, if you know, pupils respond or not. So a little bit deeper, right?

When even like functional medicine, we tighten the gap of labs, if you will, or even testing in a way, lots of eye movements, vestibular rehab, looking at metabolic fueling and gut health, looking at just how the nervous system, how the body is interacting.

So there's a physical portion of the examination that I can understand. Now, in terms of the internal portion, so fuel delivery to the brain, how are you assessing that?

Are there specific tests to qualify that or what does it look like? Yeah. So again, kind of in a functional capacity, right? Like pupils, how fast they might respond to light or how well they're able to stay constricted tells me that metabolic status on that side of the brain stem.

We can look at distal capillary refill times. How fast is your finger refill with blood? And that distal capillary refill time will tell me maybe how the brain capillary refill time is.

If you have an injury, if you have good flowing blood and you're not trying to push this thick gunk full of inflammation, full of all this stuff up into the brain, nothing necessarily quantitative.

Unfortunately, right unless we got into super specific like F NERS where you're using like near infrared spectroscopy to look at blood flow metabolics.

We utilize Q EEG in the clinic so we can see electrical capacity of things, which might we can maybe distill down to metabolic activity as well but Nothing in that regard that's like a direct one-to-one, but we will look at things like organic acid tests or GI maps or just full blood panels to see the metabolic status.

Assessing Brain Fuel and Imaging

And then, you know, kind of put two and two together if, Hey, this individual is having methylation issues and has a GI infection and their frontal lobe executive function isn't working very well.

They're having brain fog and headaches. Well, then we're going to treat kind of all those systems together. Yeah. I always say you can only heal at the speed of our nervous system.

Unfortunately, or fortunately, that's kind of where you have to start. And it's interesting when you're looking, when you mentioned the finger prick looking at capillary health and how quickly kind of blood might be spilling out or not.

So I always reference that in terms of healing, there's, well, there's many stages, but stage number one to me, obviously the nervous system as you just elegantly connected, but also what I always say is circulation and perfusion.

And that goes exactly to what you were indicating with your kind of step one as some, some analysis to assess kind of how well you're delivering oxygen to the tissue or nutrients to the tissue.

And then second step, obviously the fuel delivery in terms of glucose. So are you doing any additional like a neuroquantum or any sort of neuronal imaging, brain imaging, anything like that?

Is that imperative? Do you feel like, I know you mentioned mold patients, like how much of that is also warranted or

what you're looking at? I think we can see really cool stuff on them.

How much that is clinically relevant. You know, I just, It's hard to say right now, you know, we have so many great tools that aren't that, that help us be definitive in care.

knowing, you know, brain volume mass for neuroquants or taking DTIs and seeing white matter tracks are, they're cool. But, and there's a lot of, I see, I read a lot on, see a lot on mold and seeing regulation changes in neuroquants, TBIs and seizures, things like that.

I mean, even we started looking at like even SPECT scans, like they're, They're all good. But again, the physical, there's a lot of things that you can't see on physical imaging, chronic pain, concussions.

We're not going to see, right. If I'm going to look at your brain volume to determine mold, I can just run a urinalysis and a mycotoxin test. Diagnostics, in my opinion, should be used to rule things out and change the clinical picture or the treatment plan itself, the protocols.

If the results of this test isn't going to change the protocol in any capacity, then what are we doing this test for? If we're not looking to specifically rule something out, what are we doing this test for?

Right. I'm not a fan of this open net of let me just find something, but it's, it's in. Yeah. I don't find them super necessary to be honest with you, but people come to them, come to us with them and they are interesting to look at.

We just don't run them too often. So it's interesting that you say that because we have patients coming in, they've seen quote unquote functional medicine practitioners.

If someone goes to a course or we can conference and now they're practicing functional medicine and they're running every test under the sun. And while there is some clinical relevance, I say this all the time with pain patients, because you adhere to pain and you see these as well.

In terms of MRI, people always want to get more imaging to determine the exact source of the damage or the degree of damage. Well, the treatment plan is actually going to be the same, right?

We're still going to talk at the same way. We know where the damage is happening. The treatment is going to say, do you need testing? It's great. I love seeing testing.

I love data. But is it necessarily often enough, it's superfluous. We have people coming in and there's so many tests. Often you mentioned organic acid test.

Most practitioners don't even know how to interpret that, but they're running these tests. Patients are having to pay more and yet their treatment plan isn't being enhanced, right?

That's, I think, the problem and the disconnect which you're speaking to. I'm curious to unpack mole just for a moment here because that's not only relevant in my life.

We're doing remediation right now. And like a neuroquant, how much your brain can be chewed up. I'm curious, what have you seen in terms of rebuilding neuroplasticity when you get someone kind of healed, if you will, when you're looking at mold and obviously the cognitive impairment that comes with that is absolutely crippling or debilitating.

Where do you start with kind of a chronically ill patient that presents with high microtoxic burden? Great question. Um, everything is super patient specific, right?

And every, you know, every patient's different. So we try to identify where in this journey we're at, right?

Mold, Nervous System Safety, and Detox

Are we on three months of finding out that we've had mold and symptoms have been building over the last couple of years? Has this been years down the journey where you've already done.

You know, things like ozone therapy and hyperbarics and all of these things. Are we kind of first in line? Are we last in line? Where are we at in this kind of this journey for you as a patient?

Identifying that is huge. And then your nervous system needs to be in check. That needs to be communicating with blood flow and everything that I talk in, in biotoxin is all about flow, right?

And it's not. It's not the toxin itself as much as it's how your body is responding to it. Right. And that is largely your neuroimmunology and how your brain, how your immune system are handling this new insult or injury.

Right. And I use, I I'm a big analogy guy. I love this like river or creek analogy where cellular flow, metabolics. blood, nutrients, oxygen, whatnot, kind of have to flow like a little river.

If I start damming this river with maybe a lot of stress, poor sleep, poor nutrients, We start slowing the flow down a little bit. And then there's one big injury, like a mold insult or a concussion or something along those lines that might even trigger some other things like gut that further inflammation.

And there's a huge blockade. And then that creates stagnant water and that grows things. And then there's our mold intoxication and creating issues within our bodies.

We got to remove it from our environment. We got to start removing it from our body, but our body needs to be safe. If you will, we can't just hit it hard with ozone right out of the gate and detox and kill protocols that your nervous systems already in panic mode.

Cause it's just going to go more panic mode. You're not going to do anything when it comes to detox pathways. So we got to stabilize nervous system. Breath work is huge.

Exercise, red lights, PEMFs. that realm of things, neurofeedback, umveus nerve stimulation, there's a whole host of things, whoever your clinical provider is should be determining which of those should be the best for you.

Then we look at how your detox pathways are. What's phase three? That's our first, our first topic. Everybody loves starting with kill phases, but If I kill a bunch of bodies, leave them on the street, we get rock.

And that is not good, right? That's almost worse than just dealing with all the bad guys. So we got to make sure our clearance pathways are open. And then we can start working phase two and phase one of detox kind of in a reverse order, but elimination pathways are huge.

How often do we go into the bathroom? How much are you sweating? These things are big before we get even into binders and stuff. I like healing the cell too and things like phosphatidylcholine, ALA, that kind of stuff might be a little better, maybe more gentle to start with than jumping into things like ozone therapy or like herbal antifungals like a biocidin or something like that.

I love that you said ALA helped to recycle glutathione, which is just so kind of chewed up and unfortunately depleted in terms of mold exposure. You said ALA and the second one was?

Phosphatidylcholine. Membrane health. Yeah. So healing is, if you're on a well, you got to heal the cell. Yeah. Yeah. Yeah. And glutathione is huge too.

I didn't even mention that, but there's so much to it. I was curious starting to inject because that's what I was hoping to hear is where you start at the nervous system level because you're right too often we're just like oh we got to get rid of this right the damage number one but if someone is already in that fight or flight it becomes freeze and then

you know you see a drop in cortisol you see a drop in immune function you see a drop in some of these important immune supportive markers and high degree of inflammation when you create more kind of oxidative burden to the system.

So you mentioned obviously that PNF or grounding or breath work, which is free optimizing sleep, red light, free by the sun. Certainly things that people can do free, if you will.

What other? Are there anything else that you've found historically that works really well? Are there any tools or nutraceuticals or anything that you like that can push you into that parasympathetic state so the body can feel safe?

the body into because HRV is compromised, right? So how can you reset the nervous system? Those are great tools. You have anything else in terms of nutraceuticals or anything else?

Yeah. Um, I mean, honestly, some, one of my most favorite breath works is kind of this physiological side with, uh, if you're familiar with yoga practice or yogis and ujjayi exhale, which is kind of, uh, they call it a breath of the ocean, but it's a humming style of an exhale.

Um, not like trying to fog up a window pane or something, but. that vibration that you create in the back of the throat, that flop and CO2 and resulting pH change in the blood can have a really deliberate effect into changes in neuronal activity within cerebellum, brainstem that are usually the source and the host of autonomic balance and kind of balance of the whole nervous system.

So. That physiological sigh, I like three inhales and a hold and then a big sigh as an exhale, another inhale and then that Ujjayi like kind of hum of an exhale.

So good. And then you got that inhale and then the Ujjayi exhale out. I think that that's a huge, just maybe immediate calm down. That's really good. Outside of just having a routine of exercise, having a routine of breath work, having that stabilized environment.

Oftentimes everybody likes to demonize sympathetics. We're in a healthcare system, even in alternative medicine, maybe more so in pop medicine is this demonization culture, unfortunately.

And people tend to demonize fight or flight in this sympathetic response and regulation of the nervous system, balance of the nervous system is not how much you can stay.

It's how fast you can be swung out from a side and be, came back to centered, right? And we need to be able to have a balanced seesaw of in this moment, we're here in this moment, we're there.

And I can cognitively react with that. I can kind of steer the ship a little bit and not just be. reactionary, but very cognizant of how my nervous system handle things, but maybe device wise kind of pull it back a little bit.

Breathwork and Nervous System Regulation

I love, love a little Vegas nerve stimulator and a little kind of stimulation right to the back of the ear. Um, I'm a big fan of the relief. That's a huge company that I support.

I have no affiliation with them, but they're fantastic as a company and as a product, but. Between that or any red light panel, any time in the sun, nutraceuticals, everybody kind of responds to these things differently, but L-theanine, ashwagandha, those are big markers.

I'm big fans of amino acids. I mean, I just think that certain amino blends and just making sure we have those can contribute to precursors to neurotransmitters, to blood flow and vessel dilation or constriction modulators, all the things and just Way more than just what might somebody think is an amino acid for muscle building, but, um, that's where I would start.

Omega's are great. Any other blood flow regulators, herbs, teas, green teas, we can even go on to like Ginkgo and yeah, just, there's a lot of supplements that can be beneficial, but movement, sweat, those are big time ones.

I absolutely love that you started with breath. A thing that is free that we can control that probably did the biggest outcome. Why do I say that is because we now know that VO2 max is probably one of the greatest predictors of longevity.

If you look at the animals in the animal kingdom, those that breed the slowest, like a snapping turtle, often live the longest. The longer we live, the bigger our engine.

And the better that we absorb actually oxygen at the level of the mitochondria, it's estimated that we breathe about or inhale about 10,000 liters of oxygen per day.

That equates to about 30 pounds of oxygen. Can you imagine? That's more than how much you can eat in a week. So breath is so critical yet so overlooked.

It's the fastest way to change our physiological state. It, it very much is. And, um, I tell patients all the time, like whoever, whoever created us did so in a way that breath is the only system that you can consciously and unconsciously control.

I don't know why, I don't know why whoever did this, did that, but we shouldn't ignore that. You know, that's a huge, powerful tool, right? Um, I was like, I can't, I can't stop my digestion, digestion or speed it up.

I can't make my blood flow any differently. But I can pause my breath or I can consciously take deeper ones and I can slow that or speed it up consciously.

There's a reason for that. I don't know what it is, but we should use it. intelligent by design. No, you're absolutely right. Some of our biggest lymph nodes are behind our diaphragm, which is dictated by breath.

We've been stuck in this vertical breath fashion where it's our cortisol barrel, our barrel cortisol receptors in our upper chest here is every time we breathe up, we're kind of initiating that fight or flight.

And I think you elegantly stated that it's not about kind of one or the other was how quickly you can kind of get back into homeostasis. If you look at our lungs as an example, it's our primary source to regulate pH and every enzymatic function of body is dictated by pH.

70% of detox in fact is through our lungs, often again overlooked. So the impact of breath is absolutely paramount. So I appreciate you going down that route, even like the impact of obviously the sinuses and the nose and perhaps too much to unpack today.

But in terms of concussions now and oxygen and going back to the brain, I want to kind of segue into what you've seen works really well because going back to this athletic population or even just someone from like a car accident, right?

An injury to the brain. It's extremely fragile. I mean, our skulls are super thin in some respects and our brains are so vulnerable, not only to toxicity, but to external damage.

How can we protect the brain? How are you looking at that? How are you bringing someone back from a TBI in terms of your athletes or just general population in general?

What are you doing? What's often overlooked? Where do you start? Yeah. Honestly, what I see often overlooked is GI health, honestly, huge through and through.

What's that? You're making me blush. Yeah. Yeah. Yeah. I know. Big GI guy over here. It's your, your brain and your gut are so intimately connected. They might as well be the same thing.

When you have an injury to one, you have a resulting injury to the other. And that's both ways. If we have SIBO, if we have a dysbiosis, if we have anything like that, we have studies that show it affects social interactions and emotional regulation.

That's such a bilateral system. That vagus nerve works both ways, both directions, right? That's a lot of the seed of neurodegeneration, but your gut.

is usually damaged post-concussion, right? And a lot of things, a lot of people, you know, it's this physical injury to the brain, right? It's also a metabolic injury to the brain.

We have such a swing and we've had multiple studies now on the neuro metabolic cascade after a concussion.

Concussion Recovery and Gut Health

And there's a huge shift of calcium and magnesium. Glucose down regulates, but energy demands skyrocket. So we have this big flux of decreased supply, but increased demand and your electrolyte balance is all over the place.

Your neurotransmitter balance is all over the place. We have a huge swing of what's called glutamate, which is a very excitable neurotransmitter in our brain.

After a long time of having that, we developed what's called excitotoxicity where a lot of that brain fog, anxiety, stress, anxiousness, heart palpitations, dysautonomia, all of that comes in post-concussion from higher levels of this glutamate without it being able to be processed.

I'd say number like on top of the GI health and nutrition, right? We got to be eating well after a concussion, even beforehand, right? There's really not much that in literature that supports preventing concussions, we have top three things that are like, we can reduce the risk, which is peripheral vision, reaction speed, and neck strength.

Those are the three things we've identified to reduce concussion risk. And especially in athletes, it makes sense, right? If I can see a hit incoming and I can react to it and brace for it, I can lessen my risk of actual head injury.

But. I also think that nutritional status and baseline inflammatory status plays a huge role in how you might respond to a concussion or are you in that population that's going to be developed into post concussion status or post concussion syndrome.

So, gut health is overlooked. We got to be paying attention to nutrition and we got to be exercising. Repairing the cerebral blood flow after concussion is imperative and that is by exercise, sub-symptom threshold exercise.

Those are the top three things I think, in my opinion, GI health, nutrition and exercise, blood flow regulation. way before we get into the fancy smanche, even nutraceuticals or transcranial lasers and hyperbarics and eye movements and vestibular rehab and tongue stimulation for autonomic recovery or vagus nerves, whatever it might be, we got to like.

We got to start with the basics. We can't major in the minors and there's nothing you're going to do that outwork your own driven cerebral blood flow or the poor nutrition that you're putting in your body or the damaged intestinal linings.

It's not even absorbing those nutrients. So where we start, and then we get into some, some higher level stuff, but I like to use IVs and injections quite a bit following concussion, just because that gut barrier is damaged, just to be able to get some nutrients into that system.

In that meantime, I love Quicksilver products because their liposomal nanoparticle technology also don't get any kind of reimbursement from them. So not affiliated with them in any capacity, but they are fantastic.

for post-concussion and like neurological injuries. But yeah, I would say that that's, those are the top things. When

you said IVs, what specific IVs are you?

It kind of depends. Glutathione is usually up there, magnesium, calcium, because of that, those swings in electrolyte balances post-concussion, glutathione for inflammation, use a lot of NAC, amino acids, and B vitamins.

So those are typically it and kind of that. That combination, that formula of things tends to be really good. We usually get pretty specific with each person, what they might need based on their symptomatology and maybe what of the subtypes of concussions we're dealing with.

And then we can go that route and kind of tailor and curate each bag per patient. So with a huge grain of salt here and mineral status, bed rest is not best.

No, no, no. We need some level of movement and we need cognitive movement and we need physical movement. So this era or this age of rest and relax is out the window.

That is almost 10 years old now. So it is quite old. No, we need sub-symptom threshold stimulation. That was a beautiful way actually to put it actually in terms of rehab.

I see this all the time. Patients come in, ortho says, you know, you need to be in bed or you need to rest. No movement, no rehab for two, four, six weeks.

And I expressed, whoa, I will heal you in that amount of time with tools. So movement is medicine, but now you mentioned Quicksilver products. We use them as well.

We like them. No affiliation either. But in terms of healing the gut, that's where you have to start. I was surprised you said that. Given that's been my focus for the last decade, leaky gut, leaky brain and vice versa.

So you have to restore the very integrity. Some of their products that we can highlight are peptides, right? BPC. Yeah. Yeah, so it sounds like you're doing exactly the same thing just at the level of the gut to heal at the level of the brain.

Yeah, yeah. I mean, it's fun. We'll get some supplements or an IV and then we'll put them in some PEMF coils on the gut and some red light to the brain simultaneously.

That way we get some energy. We get that pulse electromagnetic frequency healing that cellular line, how healing the cellular membrane. And that's directed directly to the gut.

So we, we usually do things in synergy to kind of get this top down, bottom up approach that meets in the middle. Yeah, gut is key. It's like, it's everything.

Where does omegas fit? And you mentioned PC, phosphatidylcholine. So again, acting on the biophospholipid membrane of the cell, any sort of introduction of omegas early on as a staple too?

Big time. Oh yeah. Um, that is. Omega's are going to help with that inflammatory response right out of the gate. I've been kind of playing around a little bit with SPMs or specialized pro mediators, which are just higher specialized.

Omega's essentially, um, fancy ones that don't need certain levels of breakdown, but it. The idea is to help get fat and, and help to improve neuronal signaling.

And that's, that's the biggest aspect, right? And plus 2-choline as good as it is for cell membrane status, it's also fantastic for a set of choline balances, which we see with other forms of that, like set of choline or alpha GPC.

We see big shifts in the CO choline balance, which is memory and learning and attention. So that's huge for post-concussion as well. I don't, you know, most people that have had a concussion, if you're not dizzy, you're having brain fog, emotional issues, or you're, you're not cognitively fully there and you feel that, um, acetylcholine is huge

for all of that.

Omegas, PC, B vitamins. Magnesium calcium list goes on, but, um, omegas are highly beneficial. And I usually like that as like a staple for athletes that are in impact sports, kind of having a really solid mineral balance and electrolyte balance.

Good omega is always present. Um, and, and really good B vitamins always present. And that, that usually is a good pre-hit stack, if you will. Are you, how are you determining when someone's ready to return to sport?

Yeah, I've built this return to play protocol. I update it every year, but I probably built that a few years back, all based on heart rate modulation.

IV Support, Omegas, and Return-to-Play

There's some neural rehab kind of sprinkled into each step, but it's, if you can reach your max heart rate without any symptoms, you're cleared to play.

And you know, part of our intake for concussion on top of. Ocular motor screening, balance screening, we do cognitive evals, we do neck proprioception evals.

We also run a Buffalo treadmill test to test for exercise tolerance and blood flow stability. And we measure if you increase a point of your symptom on that exercise tolerance test or that Buffalo treadmill.

That's the heart rate that we use as your baseline now. So now you train in that heart rate until we don't have symptoms. And then we increase to the next 10 step of heart rate until you're at a max heart rate and you can exercise there without an increase of symptoms.

Then we get you back into sports specific training. If you're a football player, that's running practice. Um, no non-contact practice. If that's, or like running drills, if that's your hockey player, then that's like stick work and dry land practice.

If that's, and we start getting into that. And if you can run practices good, no symptoms the next day we can advance. I've stepped this out in just seven series and starting really low with, you know, reading and doing breath work and going for simple walks to, okay, now we're lifting weights and running.

Okay. Now we're back into sports specific training. Now we're back into practice and now you're released. So it's a graded re-exposure, but it is the best that I found and heart rate tends to be the best predictor for that.

Yeah, you said heart rate. You hit it on the head. And it sounds like what you're doing is extremely thorough, which I can appreciate. But heart rate is very indicative of a lot of what's going on internally where you're even resting pulse rate.

As an example, when we're looking at patients who are coming in with certain risk factors, if your resting pulse rate is anywhere above a 62, I mean, you're in a danger zone for what I like it to be obviously a lot less still.

But needless to say, when we see kind of our aging population and then you couple that with any sort of trauma, we're still obviously a TBI concussion.

brain-related injury, a more fixed scenario for chronic disease to kind of creep in over time. And so if you're not fixing the gut, if you're not fixing the integrity of a our internal barriers, you're setting yourself up for failure.

So I appreciate kind of all the inputs that you're looking at. When you mentioned tongue, what, how are you looking at the tongue? So not necessarily like how they would in traditional Chinese medicine and kind of using that as an evaluation.

If you're familiar with that, that's more my wife's kind of background. I look at the tongue as. A large input to your nervous system, right? We have 12 cranial nerves and these cranial nerves come right out of the brainstem.

They have large inputs into autonomic nervous system, reticular activating system, which is like proprioception and muscle activation side to side for locomotion.

We have, you know, RVMs and these periaqueductal gray matters for pain regulation. This is all in brainstem area. So. Your tongue has four of those cranial nerves.

There's only 12. So we get a third of those cranial nerves that are in your tongue. Right. And if we can evaluate. I might look at like bumps on the tongue or impressions or scalloping for nutrient deficiencies, or if it sticks out straight or whatnot for some of that, maybe motor evaluation of that brainstem, but we stimulate the tongue directly with electrical stimulation.

And it is an impulse of those four, those four cranial nerves into the brainstem. that I like to think is helping ignite neuroplasticity. We've seen studies that it benefits concentration, focus, acetylcholine balance, physical balance of your body and proprioception enhances cerebellar activation, helps enhance SMR regulation or sensory motor rhythm, kind of this beta frequency in the brain that helps with movement, locomotion, pre-motor planning.

We love using TLNS or translingual neural stimulation along with eye movements or breath work or anything along those lines to help regulate nervous system almost at the source.

So yeah, I look at tongue a lot. There's there right now, even in military, they have these little echo location devices on soldiers tongues, like these special forces guys that.

They can ping through rooms, through walls with echolocation that map out the room on their tongue that their brain can see. There's so much activity on your tongue, it's nuts.

I stimulate that for a lot of neurological patients. How are you stimulating it? A little handheld nerve stimulator, um, through, uh, like an SSCP device.

I, I also run neuro diagnostics. So like, um, EMGs and needle, needle EMGs and NCVs. If you're familiar with that. If I've ever had a nerve study for like carpal tunnel or something like that, there's a little device that sends electrical impulses and it's just through two little prongs and we can place that over a nerve and send an impulse through.

I just clean it off between patients and have them hold it on their tongue. We use a lot of electrical stimulation, but I suppose these are going to be much smaller.

Yeah, these aren't pads. These aren't stickies. These are like small little like metal electrode balls that are on the end of, you know, a handheld wired to an amplifier on a computer.

But it's, yeah, it's pretty fun. I'll use that to stimulate trigeminal nerve for. More brainstem activation or facial pain or even ptosis kind of inputs into stellate ganglion and shifts and autonomic balance that way too.

So, um, yeah, we, we get, we stimulate a lot of nerves that way. Do you have videos on that? If, if our, uh, anyone listening wanted to tune in to see how they can kind of do it, where they can purchase a unit or how they can do this themselves to wake some stuff up.

Yeah. Um, I could probably get a YouTube created or something. Um, the device we use probably isn't something that, um, patients would access. I mean, that's like a high tech medical equipment kind of deal.

Not necessarily something you'd get for at home, but they do have like little handheld units and things like that, that we can get, you know, kind of point towards patients and things like that.

But yeah, I can make a little video and I can send you guys that stuff or put it on YouTube. The tongue is so

interesting, even the placement of the tongue.

I mean, 80% of the tongue should be in the roof of the mouth. It builds our discharges and we now see like modern face structures being more elongated as people are breathing through their mouth instead of their nose and improper tongue placement and tongue ties.

Tongue Stimulation and Neuroplasticity Tools

An example, we corrected one patient's tongue tie and since it's corrected to the home Ohio muscle. that through the shoulder, we improve shoulder pain overnight with a tongue tie.

People don't realize how we are, we are completely connected head to toe. Obviously our fat intertwines us from head to toe, but every biological system in the body has a connection elsewhere.

When you, when you mentioned scalloping the tongue, that's something often we see. What do you attribute that to specific nutrient deficiencies or any sort of organ dysfunction?

More nutrient deficiencies, B vitamins is usually where I first look, but yeah, it could be fluid balance. It could be more like, you know, hormones for fluid balance and kidney control even.

So just more of an indication that there is an insufficiency in some regard, either metabolically or nutritionally. In terms of, so I guess if someone wanted to improve their neuroplasticity, improve their functional neurology, really at the bottom line is if they wanted to shift their state, if they wanted to rebalance their nervous system to kind of reset and then just improve function systemically, what are kind of the first three steps or where do you suggest someone start?

Yeah, so I guess I would have to preach like I always do my five BLGs or the Axon BLGs are called basic lifestyle guidelines. And we got exercise, sleep, nutrition, breath work, and community.

Those are the best. The top five things that I think are key for proper brain, body, mind health. If we can establish good practices in those categories, We're on a pretty great start and I really emphasize practices cause you'll never be perfect at any of them.

Nobody ever will be just. every day trying to make some improvement in some level of those categories for yourself, whether that's taking the time to establish sleep hygiene protocols in the morning and in the evening, or if it's regulating proper nutrition or cultivating a good healthy relationship with food, or that's doing some breath work or spending time with friends and family in your community, or getting outside and getting a sweat on, or pushing your body physically to capacities.

I think those top five things can be the source of a lot for patients and just people as a whole. And I would even caveat learning something new as always.

I mean, neuroplasticity is love's novelty, right? So pick something up new. a new book, a new hobby, a new activity, a new sport, whatever it is, challenge yourself with something brand new.

And yeah, your brain's going to really like you for that and help to regulate even other aspects of your life. And sometimes ones that you wouldn't even expect.

So it's pretty cool. I know all along I had mentioned that, you know, I was just coming back from the pediatric conference and getting a lot more referrals with kids.

In terms of neurodivergence or ADD, ADHD, and I mentioned PANS, PANDAS, a lot of this is just becoming so ubiquitous, unfortunately, in our children, which really hurts me at the core, having children myself.

How are you, when someone comes in kind of with these presentations, where are you starting? What have you

seen work best in terms of improving patient outcomes in this population?

Yeah. Um, I really liked looking at brain like neural networking. I love looking at frontal lobe engagement and what's called primitive reflexes. Um, and then we also look into immunology and kind of the, how the immune system's functioning and how the GI tract is, is operating as well.

So everything from. know, maybe a brain map and seeing how all the lobes of the brain are functioning, how, how they're connected, how they're communicating.

If we're having missed calls or zones that are maybe too active or underactive, and then we look at those primitive reflexes and essentially how is that, that limbic system and that, that central integrated state communicating with maybe the cortex or are we spending extra energy on these reflexes that aren't needed?

Looking at dysbiosis or leaky gut or. nutrient absorption rates, all of that. I mean, we look at that whole spectrum of things. Some of those individuals need more work in others.

We do a lot of brain rehab, a lot of sensory motor integration or eye movement retraining, interactive metronome and neural rhythm timing, balance control.

We do a lot of fun games. So, you know, we'd be tossing balls back and forth or playing with like lights and colors or, you know, things that swing from the ceiling or laser pointers or, you know, that kind of stuff.

big touchscreen TVs that you can react and play games with. So, I mean, we use that with a lot of patients in higher level. Once we get concussions stabilized, we use that with neurodegeneration.

We use that with ADHD, kiddos or adults, pants, pandas, autism. It's kind of depends on functionality. And again, where those individuals are in their treatment or what they need at that moment for their goals that they have at hand.

How are you doing the brain mapping? QEG brain map, like a cap on 24 channel and running through QEG Pro and we see the whole strand of deltas to high betas and all of the brain waves in between.

See Hertz bins, see all that stuff. So we have neurofeedback, our leads and our technicians and specialists all working in that department. So yeah, when I identify maybe a patient that could benefit from the map or neurofeedback training.

We might look into that route or that direction alongside some other things. Yeah, neurofeedback can be certainly profound. This has been an absolute pleasure.

Core Lifestyle Pillars for Brain Health

When you were going into your foundation five, I kind of, my foundation five is almost identical. So we both have a foundation five. There's a BLG. Is that what you said?

Yeah. Axon BLGs are basic lifestyle guidelines. So yeah, I just called my foundation five, but what one pillar was interesting when you mentioned community.

If you look at the centenarians, what was unique about all is community, right? People are looking for, oh, what is the nutrient? What is the nutrition?

What is, what are they doing? What is the movement or the. the exercise routine, right? But what was across all board was community. And unfortunately, in our modern age, what I always preface is we don't live in congruent with our evolution anymore.

We live in these kind of silos with the American dream of a white picket house with a nice car and a big house and

kids and kind of just in our own little world, right?

And while we are the center of a universe, it's important really to find community. Now, so I appreciate you underscoring that. My foundation five is you got to eat right, sleep right, move right, talk right, poop right.

You're going to feel right. And it was funny because when I was on a call right before you this morning with a patient, I was really underscoring breath.

And again, the importance of breath and how you can change your physiological state instantaneously. So there's definitely, I might have to do it like the foundation six now, I don't know, but.

No, that's so funny because that's the exact I mean, I frame that exactly the same way. You look at the centennials and people living over a hundred across the world, it's not the food, it's not the movement, it's that they all do things together.

They eat together, they exercise together, and it's all community-based. Even in light of the pandemic and masks and isolation and all of that, there's a huge population of kids that didn't get that as developmental milestones and they don't have that community standard and even teens that are now young adults don't have that either.

I do see us unfortunately moving into a more of an isolated kind of population and culture here in America, unfortunately, but hopefully we can change that and have it centered around common themes or neighborhoods or whatnot, not necessarily always on the common themes that we have right now where it's money, politics and religion.

Which are great. I mean, those are great things too, but you should have other communities that blend with other views than your own. I think that's important and imperative for brain health as well.

Not just a community of like-minded individuals, but a community of people that challenge you and your own thoughts. People that understand and listen and hear you for who you are.

Maybe not who you think you want them to think you are. So there's a whole lot of things that I think could use some improvement, but Yeah, community is just so important and being yourself around people that you hope are being themselves in front of you is something that's super powerful.

Social network is critical as especially now depression and mental health and mental anxiety and issues circling around that is continuously on the rise.

We are in a more global society yet more disconnected. So the quality of our relationships unfortunately have somehow only deteriorated in lieu of societal kind of norms and paradigms of who, as you said, who we should be instead of who we truly are.

And we don't realize often enough that our environment conditions us, whether it's our parents or our peers or school, sports. And so finding your voice is key, but also finding people that are very supportive in your nature that generally want to help and if I have not taken anything away from this conversation, what I wish is I were your neighbor, Brad.

Yeah, same Dan.

Kids, Neurodivergence, and Brain Mapping

We'll have to get some visits back and forth. Chicago's been on the list for a while so I'll have to make a timeout. Two last questions here because I know we're approaching on time.

Are you familiar with the aiming clinic? Yeah, very much so. Yeah, Dr. Amon and his practices and teachings and yeah, very familiar. They do great work.

No, because it sounds like within your focus, there's a lot of overlap there. And I wasn't sure if any of your, the people who were coming to see you had scans there or not.

I mean, I've had patients go and do scans. I haven't personally yet, but I was curious kind of if you had any experience with them or not. Yeah, you know, we've had a lot of patients in kind of post-concussion, long-term post-concussion, FND, non-epileptic seizures kind of have been there and have had brain scans.

And then once we kind of evaluate and we recommend things and it might be like, Hey, like, You know, let's do some trans cranial red light. Let's focus on these nutritional or nutraceuticals and these lifestyle changes and maybe some TMS.

And then it's like, Hey, look at this amen protocol. And it's like, yeah, that's pretty spot on. That's pretty cool. I didn't even look at this and it, it tends to be pretty in line.

So it's really neat that, um, you know, that we have that kind of in the realm as well. Cause I think that that's helping to open a lot of people's eyes to, Hey, there are alternatives.

There are things that. We can move into maybe more effective care for specific curated people, but I know them pretty well. Last question. I wrap up every conversation.

I asked all my guests, if you could have any superpower, what would it be? I'd be a shapeshifter, like animals, like being different animals. I think that that would be so fricking cool.

Cause then you have the, I mean, I feel like you have the power to be like, you can fly. You can be super strong. You can climb trees. You could swim underwater.

You could, yeah. You'd be fly on the wall is nearly invisible. Right. I feel like there's, if you could be different animals, that'd be super cool. What about you?

You know, that was so profound because most guests, including myself, I've always had this kind of interest to fly and just soar and the serene of being the majestic nature of being up in the air and kind of overseeing traveling as fast as you can.

Community, Aiming Clinic, and Closing

But the shapeshifter, you just kind of one up me. So I've thought about this a lot. Yeah, that was awesome. Super cool. Well, where can people find you if they want to reach out?

Yeah. Um, you can go to our website, axonintegrativehealth.com. You can follow us on Instagram at Axon Integrative Health, or you can give us a, you shoot me an email at info at Axon Integrative Health.

Any of those avenues would be fantastic. And we'd be able to connect and see how we can help and at least guide in whatever direction. Yeah, just here to help and as many people as we can and really like.

You had stated in the beginning, really change the paradigm of healthcare and treat each person for the person that they are, not necessarily the condition, the injury or the concern, and help everybody's brain, body, mind really be the most optimized they can be and live life to their fullest.

You said it best. Brad, this has been a genuine pleasure. Appreciate your time. Everyone tuning in, feel free to rate and review. Follow Dr. Brad DeBeer, his clinic, what he's up to.

We'll have everything included in the show notes. Until next time, stay healthy, stay wealthy, my friends, and we'll see you guys here again soon. Bye for now.

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