

Paleo Solution - 377

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Robb: Hey, folks, six listeners can't be wrong. It's another edition of the Paleo Solution Podcast. I am super excited for today's guest. And why? Because it's not protein, carbs and fat, thank God.

Today's guest is Dr. Belisa Vranich. Dr. Vranich is a world renowned clinical psychologist. She is the author of multiple books including *Breath: The Simple, Revolutionary 14-Day Program to Improve Your Mental and Physical Health*. She is also the founder of the super interesting website, thebreathingclass.com. We were introduced via a mutual friend, my jiu-jitsu hero, Henry Akins. Dr. Vranich, welcome to the show.

Belisa: Thank you so much. I know both of us thanked Henry in our books so I thought we're meant to be. We were meant to be on the podcast because both you thanked Henry and I thanked him profusely because he's fantastic. What a great jiu-jitsu teacher and just amazing human being.

Robb: He's an amazing human being, yeah. Henry is just a wonderful person and a lifelong learner in multiple areas, just consummately curious and just a great guy and damn good jiu-jitsu too. Can't beat that. But, Doc, that was a super paltry introduction. I am famous for paltry underserved introductions. Can you give folks a bit more background what brings us here today?

Belisa: Robb, I thought you were a pithy, not paltry. I was like, this is nice, pithy, to the point, absolutely. You got it. I'm a clinical psychologist. I trained at NYU. I'm a tar heel before that. After getting my degree, I worked at Bellevue Hospital, worked with a lot of hospitals in New York and different nonprofits and then went over and started doing things that were a little bit more fun like writing a column for the daily news and writing some books and whatnot.

I started the Breathing Class, I called it, because I really couldn't think of anything cute to call it and it's really all it was, is to teach people how to breathe because I saw the connection between their emotional health, their mental wellbeing and their breath. So, although I've written a couple books, not all of which I love, this last one I do really love. It's terrifically practical. And I will tell you everything that's in it if you'd like to know.

Actually, I'll be able to put it together with some of the ways that you think which is why I actually have listened to your podcast before meeting you just

because I found what you do and I love your last book. I just absolutely love it when you talk about evolutionary medicine because I was looking at breathing from an evolutionary standpoint and trying to understand why we're doing it so badly and what's supporting us to continue to do it so badly and what we have to do about it.

Both of us sort of run parallel in our way of thinking and, actually, our bad jokes. Because I have to tell you, in listening to your podcasts, there's moments where your audience kind of chuckles in a painful way and I thought I know exactly how he feels. Because there are moments I do presentations and no one knows my Seinfeld reference or my reference of Ren & Stimpy reference or something else. Louis C.K., I tend to reference a lot, or Fight Club. And not everybody knows all those references. Often I have that same feeling you probably do of, "Damn, that didn't go over so well."

Robb: Yeah, and it's funny because my last batch of presentations -- I like to reference airplane. Actually, we pull from a lot of the same pools including Ren & Stimpy and whatnot. But I was pulling some airplane references and Nicki was like, "This is an old person's film and this crowd isn't old people so it's not actually going to go over well." And that was like -- But I used it anyway.

You are definitely singing my song here on this evolutionary perspective. I try to pull that in as many elements as I can from sleep to food, community, gut microbiome, photo exposure. I have long played with breathing. I was, in my youth, into some eastern meditation and some mystical pursuits and whatnot. I think that breath has always being relegated to that dirty, hippie soft science kind of world.

But it's fascinating whether you look at some of the Wim Hof material or transcendental meditation, there is a very robust and powerful body of literature around breath and its effects on our physiology, on our immunology, on our endocrine system, on our sense of well-being. Can you talk a little bit about that? I would love to hear your thoughts on the evolutionary perspective too. I want to start with that big picture thing and then maybe auger in to some of the mechanistic stuff.

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Belisa: Absolutely. In fact, that's all I can think about. I was laughing the other day that really my bandwidth of knowledge has gotten so narrow in that I know everything about breathing in every type of animal. I spend my days reading out how and why mice sigh and how chimps and dogs actually find yawning contagious as well as us, of course.

All I do right now is study breathing and I'm kind of obsessed with it in a good way. I can talk about that until the cows come home which just makes me either an awesome person to sit next to on the airplane or terrible if you don't really care about breathing. But lately I'm finding that a lot of people really want to talk about it and that they're finding it relevant. I'm happy. As you've probably found, there's moments where the kind of nerdy thing you love is actually becoming something interesting to other people so you get happy about it.

Well, your framework, the framework that you use to talk about fats and proteins and diet is absolutely perfect to talk about breathing. One of the reasons we haven't paid attention to it is that it's either been super medical and almost incomprehensible for your average human or it's been very mystical and magical and still very powerful but a turn off to some people who sort of bristle at the idea of the universe or spirit moving through your chakras or whatnot.

As a psychologist, I was looking at how it connects to your moods. I'll actually go off on a tangent for just a minute. I was looking at -- I don't know if you've ever done this. As you look at the comments of your presentations or Ted Talks to see what people say, and although there's a lot of people that will bash because they can, they're behind their computers, I always look at it like really interesting information of what people might be thinking that I have to come up against and be able to talk about. I'm the eternal optimist in that way.

I'm actually reading the comments to a Ted Talk I did last year in Manhattan Beach in California. There were some nice comments and there was some kind of your usual pervy comments, and then there were some comments that were funny and interesting to me. One of them was, "Yeah, right. A psychologist teaching us to breath." And I thought, well, that kind of makes perfect sense to me. Why wouldn't that make sense to someone else?

I started thinking about it and I realized that people think about breathing as just being natural. All you do is just breath. It's something that you may not be able to do anything else but at least you know how to breathe. And we have this sense, this myth that it just happens naturally and it's done well. And the fact is that, no, we've taken something where anatomically we're perfect to be able to take deep breath that calms our nervous systems and nourishes our muscles and our organs and our brain. We've taken that and we've actually made it anatomically incongruous and completely maladaptive.

You do need someone who thinks about motivation and myth and personalities and things that have to do with your personality and how you balance information in order to figure out how did we get here and how do we get out? That's sort of my role as a psychologist, how I came into this. I found that when you talk about breathing not only looking at the mechanical side and getting

people to understand the mechanics of it, but you have to bring in psychology. Because we've taken something that we usually do so well and we now do it really, really badly and it's rippling into our physical health and our emotional health in a way that it's really sad and kind of terrifying.

Robb: I completely agree. I don't want to -- What do they say? If you give the milk away for free, nobody will buy the cows? I don't want to--

Belisa: I don't believe that.

Robb: Something like that, yeah.

Belisa: Give the milk away.

Robb: Maybe a little milk here and there. What is our current state of affairs with regards to breathing and how does it impact our life currently?

Belisa: Well, what we're doing is what I said before, is that we're breathing in a way that's anatomically incongruous. I always like how you -- You brought up in other podcasts of yours, have you ever seen a portly animal? Like in nature, not our pets because our pets are definitely portly and there's a reason. They're our pets so they're fat. That's what happens. But in nature, you don't see obese or overweight animals because they're in nature.

With us, our breathing, when it's uninterrupted and we don't pick up bad breathing habits and myths, tends to be perfect. What that means is that we breathe using our diaphragm. We breathe expanding the part of our body that has the densest amount of lung tissue and most oxygen exchange in it which happens to be pretty much the space on your body between your nipples and your belly button.

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Now, here's the problem and here's where psychology comes in, is most people do not want to take a breath there and that happens for several reasons. They don't want to take this middle of the body, what I call a horizontal breath, because it makes them look fat, no one else is breathing in that way, their parents aren't breathing in that way, all the commercials that we see be it for air fresheners or feminine hygiene, no one is taking a deep breath using the middle part of their body.

There's this discordance between the way we think we should be breathing and the way we're forcing ourselves to breathe and the way our bodies were set up anatomically to breathe. Most people are breathing up and down and it's the

silliest thing because find me an animal on the planet that breathes with its shoulders. There is not one in the planet that breathes with its shoulders. We are the only, and I don't want to say dumb animals because I don't want to blame us for it but it is sort of our fault that we're using our shoulders, our neck and our shoulder muscles which is supposed to be auxiliary muscles to breathing sometimes. We're using them as primary breathing muscles which is completely, completely insane.

Robb: Doc, maybe we could look at a really extreme example of that in the COPD patient and what happens with that person?

Belisa: COPD has to do more with the elasticity of your alveoli. It's not really mechanical. But seeing the rate of COPD -- And it doesn't have to be because you've smoked. It can also be because of toxins in your environment and all sorts of other things. But COPD is really the very narrow scope of what your alveoli are doing. When you talk about COPD you also talk about emphysema and asthma and that has to do more with the loss of elasticity at the alveoli level of things.

What's interesting is that -- This is again parenthetical because I do go off on tangents although it is within the same topic. So, forgive me. I was looking at a website and it was a nonprofit. I don't want to call them, I don't want to bash them but it was a nonprofit that was teaching exercises to folks with COPD. And I'm watching the videos that they have and they're showing people breathing and they're talking about pace of breathing but all the people who were breathing on this website are lifting their shoulders as they breathe which is an extremely ineffective way to breathe. You don't get a lot of air in and you definitely don't get a lot of air out. And how strong your exhale is is critical for living with COPD or emphysema or asthma.

When I look at someone who has a breathing disorder of that type, we really have to go and I can't fix their alveoli although some lung tissue does heal. When an alveoli has lost its elasticity and you can't exhale well, there isn't a lot you can do to fix it, but there's a lot you can do for the rest of your lungs that aren't damaged to make sure that you're breathing with muscles that are strong in a way that's efficient. The way we breathe now, up and down, is absolutely not that at all.

Robb: Got you. And some of what I was thinking, I was an EMT in the ancient past. When interacting with the folks that had COPD, they tended to have barrel chest because literally the intercostals started to grow these auxiliary respiratory muscles and they would frequently end up in what we would call kind of a tripod position where they would lean over so that there was actually a little bit of gravity assist in pulling their chest forward interestingly. So, this was some of the common stuff that we saw.

I've always thought about the COPD person is kind of the penultimate manifestation of bad breathing because they're dealing with a super difficult situation but they tended to fall to these really small auxiliary respiratory muscles which seems to create this feed forward problem. If nothing else, it doesn't really address the underlying issues.

Also, this was kind of a commonly recognized element to this. These people had horrible sleep problems. They tended to be stressed out and irritated and anxious. And there's some really legit physiology, neurophysiology behind that type of breathing and those psychological or physiological states. Could you talk a little bit about that?

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Belisa: Sure. But I just want to go back. What you mentioned is really fascinating in that your classic COPD stems and body type is that barrel chest. It's very much like Popeye, great forearms, terrible thoracic cavity mobility. And that once you take a deep breath -- And you'll see sort of older men often with this barrel chest and they look strong because it fits what we think of as strong with his barrel chest but the problem is that the encasing of the lungs, the cage that's holding the lungs is so rigid that there's no movement, there's no expansion and there's no contraction at all.

Usually with them, their exhale is so absolutely terrible that they really can't inhale. The amount of carbon dioxide in their body and the residual air they have in their body is so high that taking that little breath over and over again isn't getting them anywhere. Whenever you see someone with a barrel chest or with a lot of the older adults I work with who are not very flexible -- And I have to tell you, with a lot of the older adults, sort of your new generation older adults, they're very flexible.

But when you work with someone, say it's your mom, not my mom because she's super flexible, but your grandparent or an older adult, the most important thing you can do with them is get them to exhale effectively. Get their thoracic cavity to be stretchy. Get their intercostals to move because that barrel chest is going to do terrible things to your breathing.

And then as you mentioned, the ripple into the rest of your health is just terrific as far as what it's going to do to your acidity in your body, the inflammation. Those people are often, you didn't mention this but they're often mouth breathers and they often snore. So, there's a whole bunch of different repercussions that can happen within your body when you're not breathing well.

You mentioned a few others are anything that hurts is going to hurt more. So, if you have a back pain, there's a lot of studies that look at back pain and breathing. If you're shallow apical which is a vertical breather and you have back pain, that's always going to feel worse. There's a loop that you go around and around in a circle when you have back pain.

GI problems, absolutely. They're definitely going to be affected by your breathing in a dysfunctional way. And it's simple anatomy. It's just because you're not getting the support of your diaphragm for peristalsis. Hip pain, a lot of lower back that's related to pelvic floor, incontinence and any kind of pelvic floor pain is also related to your breathing. Kind of funny. Then you have things like brain fog, not being able to sleep and maybe even trying to meditate, not being able to meditate. They're all connected to the way you breathe.

Robb: Got you. Doc, it's interesting. I've encountered quite a number of approaches with regards to performance breathing. Ages ago, there was a -- I'm totally blanking on the name of it.

Belisa: Breaths that are performed better.

Robb: It might be. Did it have like an orange cover with a peacock standing on one leg?

Belisa: It did not, but that sounds like a great book.

Robb: Kind of these diaphragmatic releases, like they would poke around below the rib cage and there was this thought that there were some diaphragm adhesions and whatnot. What these folks recommended was a diaphragmatic breathing but really -- And this was kind of oriented towards athletes, in particular cyclists and runners, but focusing on that diaphragmatic inhale but a really frisky exhale.

I can't remember if they really emphasized in through the nose out through the mouth or if that depended on the work output and that kind of change. I've also encountered some people that just insist that you need to breathe through your nose for as long as you possibly can and you only grudgingly give over to using any type of mouth breathing as part of physical activity. Any thoughts on that? Where are you on that story?

Belisa: Okay. Again, you have to remember, I came into this as a psychologist and specifically as a child psychologist. I came from a place of how do people learn and how do I stack information in a way that they're able to integrate it and it makes sense to them? For me, if you're doing manipulations on someone's diaphragm, which I know how to do and I do sometimes, or if you're talking about nose and mouth and all these other things, they're really good things to know but they're not as important as where are you breathing from.

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So, whenever I teach or whenever I look at a patient, I will look to see what sport they do and help them breathe for that sport and I will address the fact that, yes, you need to breathe through your nose as often as possible but I look first and foremost at where are you breathing from? And that only started to be something that we're discussing just this year.

I know that there's an article that came out in Scientific American about six months ago called When Breathing Goes Awry. It brought up the idea, and it's so new it's really an idea, that maybe where we breathe from is much more important than we've ever thought before. And we don't know a lot about it but we should discuss this more. It was interesting because I remember reading the article and going, "Yes, we do know a lot about it. I know tons about it."

But it's really nice to start seeing academic articles and maybe articles more pop culture articles talking about where you breathe from is very important and it's really, if you want the biohack, it's the biohack. It's the one thing that you need to do if you're going to make a lot of changes. Now, when it comes to manipulating your diaphragm and doing active release techniques on it, super important.

When it comes to breathing through your nose, you do have to breathe through your nose. Paul Chek does a great YouTube video, and I love him, on why you should breathe- ...

Robb: I lost you for a second. Are you back?

Belisa: Yeah. I thought I paused right before that. I'm sorry, yes, that thing happened.

Robb: So, you mentioned Paul Chek and you really love his work.

Belisa: Yeah. He's got a four-part YouTube series. You only have to listen to the first one. Well, you should listen to all of them. They're all good. It's Paul Chek. But the first one really talks about nose breathing and why it's so important. When I go back to the psychology, is that all these little tips about nose and mouth and your diaphragm, at getting adjustments to your diaphragm are good but humans beings have to understand how they got to where they got to with their breathing, why they started breathing in this weird way that's a terrifically bad habit, what around them is supporting them to continue to breathe that way, what myths they have, what lies they've been told that support their continuing to breathe up and down with the top part of their chest in order to change.

I think that's what I'm bringing into the conversation, is this is new, please let's start talking about it and doing studies about it. I've just started this conversation and I appreciate all the discussion, whether it agrees with me or not, about it because, I think, it's a really important thing that we talk about as far as our health. But the most important is why are we breathing in a way that actually makes no sense to our bodies? And folks need to understand personally what was their misunderstanding of breathing, how did they start breathing wrong, and what do they need to do and what are the repercussions in their health to get better?

I'll give you a very specific example of that. Most people don't have a clue what their diaphragm looks like. So, how are we supposed to change breathing and how are we supposed to care about nose versus mouth, diaphragm adjustments, so on and so forth, if we don't really, really understand what the diaphragm looks like or what it does? That's actually one of the places where I start.

Robb: Nice. Let's dig into that. I am fairly well acquainted with the anatomy of the diaphragm. Yeah, let's dig into that.

Belisa: I've been using a visual now because, again, I'm used to working, ages and million years ago, I'm used to working with kids and kids that have learning disabilities or kids who learn differently. When I get someone who comes into my office or the way I develop this method is thinking how do I show this information in a way that's going to resonate with people?

And usually, by the end of the session or the end of the book, people say, "This is so simple. How did I not know this?" And that to me is pure success. That's what makes me giddy happy because I've taken a concept that is really sort of twisted, a behavior that's really maladaptive and I've explained it to the point and in a way that people go, "Wow, this is so simple. How was I breathing with my shoulders before?"

It's really satisfying as a job if you ever think that you might want to -- If you get sick of talking about fat and protein, by the way. But with the diaphragm, I talk about it being like a skirt steak or a flank steak.

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Immediately you've got the visual of your skirt steak or your flanks steak with or without French fries or chimichurri sauce or whatever you have on it. Take that and make it the size of a Frisbee or a pizza, a small pizza. Obviously, I'm hungry because all my analogies right now have to do with food. But there you go. You have this small personal pizza Frisbee sized steak and it's right in the middle of your body.

This is the muscle. I used to be the sports psychologist for all the Gold's Gyms and I used to be the editor at Men's Fitness Magazine. I came at this looking at muscles because I like them. They're important to me. I workout. And I look at muscles and breathing and realize we don't work them out and when they don't work well we're confused. So, this is kind of crazy. We have this enormous muscle in the very middle of our body and no one really knows what it looks like.

There's a lot of beautiful 3D medical apps out there right now that are helping us. But in general, before, what we had for our visual of the diaphragm was a little red line. It's just this little red line. It crosses the body. If you went into your pediatrician's or your doctor's office there was a headless, armless, legless torso and there was just this little red line there.

Well, the diaphragm is really the king of muscles. Yes, I agree the heart is important but the diaphragm is so incredibly important. It's really the Starship Enterprise, the King Kong of muscles. It's in the middle of your body, very middle of your body, right below your heart, right below the densest part of your lungs, right above your digestive system. This thing is huge and it's really in a very important part of your body. But we're not using it.

So, understanding where it's attached. I have people put their hands on their ribs, the bottom rib, and walk them all the way around their body and I say, "Hey, guess what? Your diaphragm is attached right where you put your fingers all the way around your body. That's where it's attached. Did you know that? Did you know you have lungs and diaphragm four inches above your waistline on your back?" And no one really thinks about that. Lungs in my back? Really? Lungs in my side? I thought they were all up above my collar bones, around my collar bones.

So, just helping folks understand their own anatomy makes things move much more quickly and has them get very involved in their own health and in their own breathing.

Robb: It seems incredibly powerful, yeah. So, I think it's a little odd for most people to think about when the diaphragm contracts. And if we're doing this, and correct me if I'm wrong, in the proper way, this is where the belly actually expands forward and then the relaxation we get this kind of potentially passive exhalation from the connective tissue and whatnot pulling things back in. But it's a little bit of a -- It's very different than flexing your bicep or something like that. The diaphragm is just kind of floating out there in space in a way.

Belisa: And, Robb, I love you for bringing it up that way because that's exactly why we have so much confusion. Because you're talking about -- Usually, we talk about --

In medical school, they talk about the diaphragm as a plunger. So, you're already thinking about this plunger in the middle of your body which is not a -- You just don't really want to think about a plunger in your body but whatever. It's there. And the motion your thinking is up and down, right?

And then you're told that it contracts but when it contracts your belly goes out. Well, right there, that sentence, again as a psychologist, is so confusing. Your diaphragm goes up and down but it's actually contracting on the down where your stomach goes out? Like you've lost me already. And that's exactly why I changed all the vocabulary, simplified it to just make more sense for your average human who's just trying to understand how they inhale and exhale.

I never really say that the diaphragm contracts. And if you're a trainee, I'm doing teacher training right now, I'd say you are prohibited from saying the diaphragm contracts to your beginner students. I also don't want to hear, "Your belly goes in or out." Because people get confused between belly in and out and air in and out of their mouths. You're going to say the diaphragm flattens out and expands your ribs. That's all you need to know.

I usually have people, you can do this right now, is lock your fingers together in the front of your body as if you're -- I don't know what you're doing. You're interlocking your fingers. You're making a little tent with your fingers in the front of your body and you're looking at it. On the inhale, flatten out your hands and spread your pinkies and your thumbs. That's what your diaphragm is doing on the inhale. It's flattening out and it's trying to push your ribs open.

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Because right there where it's trying to push your ribs open is where the biggest part of your lungs is. Makes perfect sense. We're actually really beautifully designed if we would just breathe the way we were designed. Now, on the exhale, you pull your fingers together and you dome your hands again and what happens on the outside of the body is that it narrows. That's all you really have to know, is that when you inhale your body should be expanding because your diaphragm is lowering and it's trying to push your ribs open. And on the exhale, your body narrows.

Your diaphragm doesn't narrow your body. It really doesn't have much to do with the exhale but that's what's happening on the outside of the body, which is what people need to know. Because you can't see your lungs, you can't see air and because of the way it's positioned in the way it is, you can't feel your diaphragm burning when you're working it out. So, you have to concentrate on the outside of the body.

Robb: Got you. I've been working with my kids a bit mainly if they get very upset over something whether it's crashing their bike or they're just tired and they're kind of out of sorts, I've been having them just put their hands on their belly and then try to inhale through their nose such that their hands kind of lift a little bit and have them pause and then actually have them exhale through their mouth, nice and slow, try to do the exhale longer than the inhale.

Funny enough, the youngest who is three is quite good at this. My older one has kind of the tendency for shoulder breathing and it looks like she's being held under water while this thing is happening. She's gotten better over time as we've played with this. But it's been really powerful where these kids will go from inconsolable, really, really upset and I'll say, "Hey, let's do our breathing. Let's just do three breaths." And within three breaths, they're pretty buttoned up. What am I doing right there and what do I need to improve?

Belisa: You are doing so much right there. Let me ask you first. Your daughter, how old is she?

Robb: Five years old and three years old.

Belisa: Okay. She's probably, given that she's your child, she's probably five going on 15, I'm going to imagine, right?

Robb: Right. Yeah.

Belisa: So, here's what happens, and it's interesting because when I first started doing reading and studying breathing, folks would always go back to babies. And babies have no choice but to breathe with their diaphragms, middle part of the body. They don't have the muscle strength. They don't have the developing anatomy to breathe any other way. So, it's a bad example. But you do want to look at children.

Children will breathe perfectly. Your three-year old is breathing perfectly, belly breath, you inhale and exhale, the balloon narrows a little bit. Your daughter is already acting like an adult and already going through the transition but you're going to stop her so don't worry. When kids start going through a transition after age five, that's the number that I found, is that at five to ten, something happens in those five years where the breath changes from a beautiful perfect anatomical one to one that's very culturally correct but actually not very good for us.

So, what's probably happening with her is that what happens with most children is that they look at adult's breathing -- And especially if she's a girl. Girls just tend to be a little bit more precautionous. Is that she's looking at how other people breathe, adults around her breathe. Nobody's breathing with a belly breath. Why

would she do that? So, most people are breathing and if you look at commercials or you look at your parents, they'll take a deep breath and shoulders will go up and down. It's a cultural thing.

She's looking around and seeing other people breathing that way so her breath is starting to change to that maladaptive vertical one where you inhale and exhale and the top of your body moves. So, with her, pretty much what you have to do is get her to continue to take that belly breath. Now, what you're going to be up against, given that she's a girl, is that no child, now it is children, wants to look fat. All that needs to happen to throw them into a really bad breathing pattern is something that happens to us as kids or we're the kids that are watching some other child get taunted where someone pokes them in the belly and calls them fatty.

You have that happen to or you watch that happen to another child and immediately, even at five, at six, definitely at ten and at 15, you start sucking in your gut. This culture of ours of sucking in our gut is throwing our breath from a horizontal lower body breath to an upper body clavicular vertical breath. And that's one of the cultural reasons that I really had to look into. That's what's going on over there.

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Robb: It definitely makes sense. Not to throw my wife under the bus too much but I've played around with her breathing a little bit and she's a bit of a clavicular upper chest breather. If she really works at it a bit she can get back down into her diaphragm and do that better diaphragmatic breathing. It's a little bit of a struggle for her whereas I'm generally a slob and don't really care what anybody thinks.

I think, again, playing around with some of this eastern meditation, doing the martial arts stuff, I've always been a little more -- I put more stock in my performance than I do my appearance which is completely obvious when you look at me and how disheveled I generally am. But it's been interesting there. So, I even wonder what the effects are there. I've been working with the girls, we'll do some gymnastics out in the garage and they're learning how to brace for certain activities like doing hallow rocks and even pull ups and stuff like that.

It's interesting, if I'm generally giving them moving and then we just kind of sneak in some breath work as part of the movement, it's pretty easy. Like even with the older daughter, she just belly breathes just fine and there's not that kind of weird self-conscious thing. When we get into a more -- It's tough because I'm trying to also teach them this breathing as a means of just kind of self-calming and it seems to be really effective even though we're maybe only getting

halfway some of the stuff right. And I really wish that I knew that stuff as a kid. Anything else that I should be doing with that or we're doing pretty good and just chip away?

Belisa: You're bringing up something that's really important which is that the sport you embrace is going to -- The sport, your career, your personality, all those things impact on how you breathe. I remember having a patient who was an airline stewardess in about 30, 40 years ago, and she said that the pressure to be narrow not only because of her uniform but because of the narrowness of the aisles in the plane actually was a major factor in her dysfunctional breathing.

But your sport and your personality are also very big deal. I was actually talking to, of all people, Bas Rutten, yesterday about this, in that if you are a heavyweight and you grapple or you do jiu-jitsu or something where you're rolling is that your breath is almost always going to be better than other sports because you're on the ground because you have to think about weight distribution and you're more likely to take a better lower body breath, if you're heavier and if you grapple.

However, your lightweight fighters just like your gymnasts are actually going to be narrower, their body frames are going to be narrower and they're going to tend to brace their middles more just because of gravity, being able to, wanting to keep their center of gravity and wanting to brace their bodies. With gymnastics, and gymnastics was actually something that put me for a while when I was little into a bad breathing pattern, my bad breathing pattern had to do with -- I did ballet when I was very little. I did gymnastics and then I went to yoga.

Everything has this sucking in of the belly. And then there's this myth that we have that sucking in your belly and sort of having this isometric tension in your middle is actually good for it. Couldn't be farther from the truth. If you actually inhale, expand your belly, and exhale and contract, you're going to be much stronger than if you're just tensing your middle all the time.

When I started looking at my own posture and looking at everybody who would stand still around me for me to look at their posture and their breathing, mine was one that sort of -- Leon Chaitow was somebody I love very much who has written a fantastic book about breathing, talked about it as being scissors open. It's also called, I think, cracked egg open, where your chest is sort of puffed out. It's a kind of bravado type pose. But it's also a pose that you see gymnasts in as well. Your ribs in the front are sort of coming up away from your body.

Now, the problem with that is that you feel like you're taking a good breath and you look like it by our cultural norms but you're really squeezing the hell out of

your back where you have a lot of lung power and a lot of real estate when it comes to your lungs.

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So, looking at your posture, at your sport and at your personality is really important in starting to dismantle your bad breathing patterns and starting to try to get to a lower body breath that's 360 degrees around using your diaphragm.

Robb: And correct me if I'm wrong but that's called circumferential breathing, is that right?

Belisa: That sounds great. I'm coming about new terms all the time. But what it is is exactly that. It circles your entire body. And it's really -- If you cycle, for instance, you can't breathe forward. You're just going to be gasping for air if you're breathing forwards. You have to learn how to breathe what's called in the military or law enforcement behind the shield.

If you're a fighter, you're also not going to want to take an upper body breath because you're telegraphing to the other person what you're going to do. You need to always have the breath be a lower body breath where the biggest part of your lungs are and also where the breath is cuing your parasympathetic to kick in and keep you calm. It has to be lower part of the body. But, for instance, if you're rolling and you're in a stacked position or knee on, you can't breathe in the one way. You have to be able to breathe through your side. You have to be able to create air pockets.

It gets pretty complex but that's why each person has to look at themselves and see where the myths kicked in for them, why they're breathing the way they are and really understand what the benefits are to breathing right.

Robb: Got you. One thing that I do and my good friend Jim Laird, really brilliant strength and conditioning coach in Kentucky, he suggested that when I fly or when I'm driving, fortunately I don't have to drive a lot but I will try to, as I inhale, feel my back push into the chair behind me in addition to my ribs in the front and whatnot going out.

I always found that additional cue really, really helpful because you tend to not realize, maybe it's the first time in your life that you realize if you're doing that good diaphragm, correct diaphragm movement, I don't want to use the wrong things by saying contracting and whatnot, if you're doing that correctly, the totality of the rib cage expands and then it collapses back down. And some of the collapse is just the elasticity of the connective tissue so you get a little bit of a free ride on the exhale and whatnot. Yeah.

Belisa: Yeah, exactly. I think that that's something I teach in a more advanced way because I've found that if you go from a really deeply engrained vertical breath, apical breath to talk to people about back or lateral breathing, it's too close in proximity to your body. You default to your bad habit again. Actually, when I start teaching people, I start teaching them a belly breath but I always say, "Don't worry. We don't have to do this forever."

You do a belly breath and you do it with the tip of your hips because you're wanting to, again, dismantle the idea of your shoulders moving when you breathe. And if you do the hip tilt, it almost always pushes you or helps encourage an inhale and then exhale as well as being really good for your back and your pelvic floor.

Robb: Awesome. Hey, what about at the -- And again, within this jiu-jitsu world, let's say I'm just doing some slow rolling, I'm trying to be a bit mindful of my breath mainly pulling from the diaphragm and breathing mainly through my nose, but what about when we hit that outer edge of human performance, cross fit, fighting, what have you? I have played with forced expiration. So, instead of even focusing so much on the inhale, I'm really using my, or at least I think I might, my diaphragm, my abs, what have you, to force the air out and then I'm getting some passive re-inflation due to relative negative air space.

Again, this is from a book that I read, I think, back in the late '80s, early '90s. Any thoughts on that? And again, this would be for reaching that outer edge of human performance, our VO2 max is probably long in the rearview mirror. We're probably anaerobic or lactate metabolizing at this point. Any thoughts on that forced expiration type breathing for that high end performance?

Belisa: Yes. But I'm actually going to answer, or actually I'm going to give you an answer or an opinion about something before I go there which is that my thought is that what you're thinking as the outer edge of that human performance is that you're not there yet.

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If you work out your breathing muscles you could actually push that really much farther than it is. I think that's terrifically important to understand especially for athletes. You're working out everything. You have trainers. You're working before work, after work, you're stretching, you're taking vitamins, you're doing all these different things. Whether you're a weekend warrior or you're training for a Spartan or you're a pro or an amateur athlete, you're doing all these things.

However, you're not working out your breathing muscles. So, your peak in performance, the peak of your cardio and what you can do is really so much further out than you think it is but you're not -- Sorry about that. Listen. They're coming to get me.

Robb: You're in Manhattan so it's to be expected.

Belisa: I'm in Manhattan. It's surprising it hasn't happened ten more times. But my theory and one that I'm working on right now as I work with athletes is that the height of your performance is really so much further up than you think and it will change exponentially if you actually add breathing exercises to your regimen. And it's almost insane that we're doing so many things for our performance but we're not doing breathing exercises.

So, what's funny is I'll take something who is a stellar athlete whose cardio is just absolutely fantastic, they're talented, they're just amazing at what they do, measure their breathing -- And I do say measure. I use spirometry. I use vital lung capacity. I look at oxygenation. I have a whole battery of tests that I do and I say, "Okay, well, you're an A plus in everything else and everything else that you're doing. Not only that, you have amazing trainers and huge amount of heart and motivation. But, hey, you're breathing, all the different facets of your breathing are not an A."

How will that change your performance if we get your breathing up to par with everything else? That's where my mind starts to just -- I start to get giddy and it's really mid blowing for me because I'm taking someone who has part of, has something that they haven't work out. So, how do I take this amazing fighter? I'm actually working with guy named Smealinho Rama right now, an amazing athlete, lots of heart, super motivating, training with Renzo Gracie, and I'm working on his breathing.

It's just amazing to see how his breathing is changing so he can recover, so he doesn't gasp, so he can center himself. Now, those are all things because of his talent, his training and his youth that he does well. But he does it so much better now and it's really interesting to see how someone won't gasp as easily as they would before because their breathing muscles are strong.

Usually, when I say what is -- And when I'm talking to a group of people and I say, "What is an athlete's biggest enemy?" And folks will say lack of motivation or lack of heart seems to be one, making little heart sign with your hands. People answer that. Or fear or things like that. And I say no. It's actually perceived fatigue. And perceived fatigue is this weird feeling that you get when you're rolling or you're fighting or you're doing an interval, doing anything that you where you're like, I wonder why I feel like I should be able to do more. I'm tired

but it's very vague kind of tired. What's going on? Why am I plateau-ing as far as my workouts or my training?

And what it is is that your breath -- It's not that you don't want it enough. It's that you actually are not working out your breathing muscles. They're tiring. But since they don't burn like other muscles when you work them out you don't know that it's your breathing muscles. And I'll take folks and we'll do breathing muscle exercises and it's wild to see them hit numbers that are so low and so weak for someone who is so incredibly strong and great at whatever their game is. For me, that outer edge can be pushed way farther if you work out your breathing muscles.

Now, back to your original question. Forced expiration. Awesome. Most people who roll will do that hicks and three breaths, and that's something that they actually do in Systema as well. It refocuses you. It gets all the air. We tend to be very lazy exhalers. So, anything that focuses on an exhale I'm all over it because you just get residual stale air out of your body and then you're able to take a deep breath in.

Those little spurts of air, also there's a physiological basis to them. We've seen -- I think there was, of course, a mouse study that looked at when the sniffing reflex is taken out of a mouse it actually calms down and is sort of able to relax and groom itself. That's kind of interesting with the sniffing reflex.

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And we also know that kapalbhati in yoga, which is actually an exhale, not an inhale, can purge you from irritability as per yoga philosophy. So, using the breath whether it's to calm you down or wake you up to get you to focus, to get you to continue to fight or to roll is going to be effective, not only because it's a little habit that you do to get yourself restarted but because anything with a breath is going to help you refocus and start again.

Robb: Awesome. So, I'm supposed to go on vacation tomorrow and now I'm going to have to shift gears and go to Manhattan instead and have you work on me. If one does not have that as an option, how do we jump in and start doing this stuff?

Belisa: The book, I got to tell you, I love the book. I put my heart and soul into it. It's an audio as well. Again, I've talked on this podcast and on others that I do. I do give away -- I shouldn't say that. I don't give away the milk for free. That just sounded terrible but I have no problems helping people. The main idea is that you breathe and you expand and you exhale and you narrow your body.

In the book, I go obviously into a lot more detail about how to do that, how to measure that and so on and so forth. But again, I answer questions on my Facebook page, I answer questions on my Instagram, on Twitter all the time. And I just really enjoy what I do so that I do go around the United States wherever I'm asked to come speak and work with groups whether they be groups of people that want to know how to address their asthma symptoms more or folks that are anxious and want to be able to learn how to speak better in public and control their breath or just endurance. I want to be able to run faster, lift harder, so on and so forth. I'm available.

If you can't do any of those things, pick up the book. Go to the library. You don't even have to buy it. I've no problem saying that. Go to your public library, pick up a book. If they don't have one, let me know. I will send them one. I'm a big supporter of public libraries. Please let me know if there isn't one there.

Robb: I feel exactly the same thing. Just to remind people, the name of the book is Breathe: The Simple Revolutionary 14-Day Program to Improve Your Mental and Physical Health. That's by Saint Martin's Press. Doc, where else on the interwebs can folks track you down? You mentioned Instagram and YouTube and whatnot. Where can they actually find you? We'll get all that in the show notes.

Belisa: Yeah. Instagram and Twitter is @drbelisa. My website is The Breathing Class. You can also get there by drbelisa.com. I'm doing a teacher training in January in Los Angeles. That's the next big thing coming up in addition to teaching here and there, different dojos and places like that. The teacher training is the next big event in January that I'm really looking forward to.

Robb: Is that near Santa Monica by chance?

Belisa: That is going to be in Santa Monica. Who does not want to be in the beautiful LA weather in January, in Los Angeles? Which is exactly why I picked Los Angeles because I'm from New York but I go back and forth to LA because I don't want to be in New York in January. I'd rather be in Santa Monica.

Robb: Right. I absolutely agree on the weather but my main thought is that that's where Henry is. Now, I've got dual impetus for getting out there.

Belisa: You really need to come. Henry will be there if he's not traveling. And Henry is hitting jiu-jitsu if you're looking for Henry since we're promoting Henry as well as we should because he's amazing. Yeah, he's over in Malibu. He just got a new little situation going on in Malibu which is really awesome. Yes, you need to come see me and come see Henry in January, Los Angeles.

Robb: I'm there. It's a done deal. I'm absolutely 100% serious about that. When Henry reached out to me, he's like, "Dude, this is -- Dr. Vranich is the real deal." I was like, "Okay, done." I'm going to make that happen. Doc, anywhere else that folks should look around for you? You've mentioned a couple of YouTubes? Is there anything specific that you want folks to check out or mainly check out the book, check out the social media and go from there?

Belisa: Yeah, mainly check out the book, the Facebook page. I answer questions. I actually love getting questions. I answer them not today but I probably will within the next couple of days. I just encourage folks, if you're interested in this, read up on it, come up with your own theories, open this up for discussion. There are plenty of people that are teaching really different types of breathing. I'm not the only one. I'm the only one that teaches sort of in this practical way but there's a lot of other different types of breathing that are fantastic and a lot of people that have been teaching breathing way in the '60s and before.

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So, look into them. I always give recommended reading and make a lot of referrals of other folks that I quote and that I've learned from. It's really important that we do that. Yeah, that's about it. And I just really want to thank you. It's been really an honor and a privilege to be on the podcast of someone that I've followed in the past whose book I have. So, just thank you so much for having me here today.

Robb: Thank you. It's been a ton of fun. I feel like I have so much to learn here. I'm really, really excited. Jiu-jitsu is one of my life's passions and I've also, even in my very caveman approach to breathing, I've seen it benefit my family already. It's an exciting area and it's something that we all will do until we don't do it anymore. Getting that breathing right seems like a worthy investment. And just before we go, your main website is www.thebreathingclass.com.

Belisa: That's it. Pure and simple.

Robb: Perfect. Well, Doc, thank you so much for coming on the show. Looking forward to seeing you in January. Are you going to be anywhere else prior to that?

Belisa: I may have a workshop in New York. I'm not sure about that. I'm teaching in Florida. I'm going up to work with hockey players and a couple of fire departments in Ontario. So, I'm kind of all over the place. You'll probably see me in an airport somewhere trying to avoid the cinnabuns.

Robb: Awesome. Okay. Well, those are hard to avoid but just eat well ahead of time and you're pretty good.

Belisa: I will. Thank you.

Robb: Thank you. We'll talk to you soon.

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