Introduction and Ari Whittenu2019s Background

– Welcome back to the global energy healing summit. I'm your host, Jason Prall. And with me today is Ari Whitten. He is the founder of the energy blueprint system, a comprehensive lifestyle and supplement program which has helped more than two million people and counting experience optimal health, better performance and more energy.

He's also the best selling author of the Ultimate Guide to red light therapy and the host of the popular the energy blueprint podcast, which features the world's leading natural health experts.

In 2020 Ari was voted number one health influencer by mind share the largest natural and functional medicine community for more than 25 years. Ari has been dedicated to the study of human health science.

He holds a. M. S. In human nutrition and functional medicine and a B. S. In kinesiology certifications as a corrective exercise specialist and performance enhancement specialist from the National Academy of Sports Medicine and he has completed all of the coursework for clinical psychology PhD you can find his podcast programs and supplement formulas at the energy blueprint dot com.

Alright, welcome. – Thanks so much for having me, my friend, always a pleasure to connect with you. – Well, you're the perfect guy to have in this summit.

What I love about your your education, your programs and your philosophy as a whole is that you're looking at energy from a variety of perspectives, right?

So it's not just energy inside the mitochondria, which I know you're an expert in and we'll definitely get into that. But it's it's also the energy in a variety of other right? We have the nervous system which which plays a role and how do we access all these things beyond just the sort of basic biochemistry, right? You know, you you get into the breath work a lot and how that influences our energy production system.

So that's my intention for this. This discussion is to cover a wide variety of aspects and you dig into the science which I always appreciate. So let me first ask you kind of how you got into this sort of energy space, right? You studied a lot of things um why did why did energy your focus in what you do?

– Well, it wasn't supposed to be my focus. I I've been studying more in the in the realm of fitness and body composition, transformation and athletic performance enhancement since I was 12 years old and that was really my focus for the first decade plus of my life, this is health sciences, something I've been studying since I was a little kid like 12 years old. This is sort of a lifelong passion and obsession for me going on whatever that is 27 years now.

And then in my mid twenties I got very ill with Epstein Barr virus with mononucleosis and it wiped me out, you know, and and I was burning the candle at both ends during that time, I was sleeping very little, I was working extremely hard, working out really hard partying really hard, not taking care of myself, I was extremely fit, doing a lot of exercise, doing a lot of hard manual labor, but not the recovery wasn't there. And then I got exposed, I was sleeping in an old dingy place with filled with mold, sleeping only a few hours of night and all of a sudden I get exposed to Epstein Barr virus and it takes me out for over a month. And then that wasn't really, that was pretty awful, but the worst part was that for about a year after it, I was severely chronically fatigued and that this whole process could be a very long story.

How Chronic Illness Led to an Energy Focus

But the very short version of it is I sought out conventional doctors, I sought out alternative doctors and nobody really had much to offer. And I started becoming very interested in this whole energy story and I became much more interested in it when I saw that within conventional medicine and even within alternative and functional

medicine circles, there wasn't really a good understanding of what causes fatigue and what regulates this whole human energy thing. And so I started to think, well maybe maybe I should take my sort of lifelong obsession with health science and take it away from this realm of body building and athletic performance and and fat loss and muscle building and turn it towards turn my focus towards energy and figuring out this whole scientific story of human energy regulation and that's really what I've been doing for over a decade now.

And I've had my own, you know, it's been a it's been an iterative process for me. I didn't, it's not like 10 years ago I had everything figured out. I basically started by digging into the scientific literature and going well certainly there's a relationship between sleep and energy, we know that if we sleep poorly that affects our energy. But what are the mechanisms behind that, you know? What about nutrition and what about gut health and what about, you know, sun exposure and what about exercise and and you know, I started to dig into these topics, I'd spend months and months on each one of them just digging into hundreds or thousands of studies and I eventually built out this list of like 100 and 50 different physiological mechanisms and pathways that in one way or another influence human energy systems and human energy regulation.

But I didn't really have any sort of coherent synthesis of of all of that. It was just sort of this 150 mechanisms of random pathways and mechanisms. And then it was really the work of Dr. Robert Naviaux runs a lab for mitochondrial medicine at the University of California San Diego who came out with a paper called the cell danger response and that was the thing that allowed me to take all this work I've been doing for years and plug it into some kind of coherent framework and make sense of everything. And it was like aha now I understand how the human body regulates energy production and why it regulates energy production.

So anyway that's kind of my personal story of how I got into this. But I'll leave it there and I'll let you direct the conversation from where we go from here.

– Yeah. Well it's what I find is really interesting in our modern Western cultures is that you know, I find that we're sitting more, we're inside more right? Even I mean me I'm at a desk working at a computer probably more than I'd actually like. And you know when I do any kind of travel, whether it's through some of the projects I do with work or just in a leisurely.

I noticed that a lot of these other cultures people are working harder there. There there's a lot more manual labor, a lot more physicality in their day to day and yet we seem to be more fatigued. So it's it's a really interesting paradox that we don't seem to be working as hard and yet we're more fatigued.

Why is it that you think that that that seems to be the case that there's I mean I was in I was in the Himalayas doing some filming for one of my projects and we were at 26,000 ft and there was some of these kind of more natives that were barefoot walking climbing up these, these mountains up and down these mountains. I mean we're talking three and four day climbs and hikes. I've been there, I've done it and I got boots on, I got all my gear and I'm of course I'm not conditioned for it.

And so eventually I would become conditioned, but that's kind of my point. How is it that they're able to execute such high levels of energy production whereas I'm struggling and I'm younger and perhaps I'm fit, but not really in that context. So kind of what's going on here in this, in this more modern picture, there's a really big long and important answer to that question and it gets into actually some of my favorite areas to talk about.

I would love to get into it, but I'm hesitant to go down that path because I think you want a simpler answer than the one I want to give, but give me the high level version.

– Okay, let me answer it tangentially first. For a long time, it was it was thought that we've had this paradigm presented to us that free radicals or oxidants are bad for us and antioxidants are good.

And so we have this kind of this idea that if we want to avoid harm, we've got to take lots of antioxidants to neutralize this, this bad guy of these free radicals and that idea was around for actually many decades.

and in fact it's actually been tested quite thoroughly in the scientific literature and remarkably, there's been a

number of very counter intuitive findings.

One is that taking antioxidants doesn't necessarily prevent the diseases or that we thought it would or extend lifespan. And the other counterintuitive finding is that many things that actually spike free radicals extend lifespan, do extend lifespan. So like the things that increase what we thought were the bad guys actually lead to beneficial responses that prevent disease and extend longevity. So in a way, the question, the question that you're asking is kind of similarly counterintuitive, it's like wouldn't the people who are expending lots of energy be more fatigued compared to people who are conserving lots of energy?

And the answer is no. The answer is actually that in order to the answer is that the human body is a very dynamic and actively responsive adaptive system in response to the environmental and lifestyle stimuli that it's receiving.

And so what kind of system are you cultivating in your body is the real question. So one could similarly say, well, I want to make my bicep as healthy as possible.

Why Modern Life Creates Fatigue

And so the way to make my bicep as healthy as possible is to avoid stress and to avoid damaging it damaging all those tissues. So I want to put it in a cast and immobilize it so that it's never stressed. And I don't I don't use it and damage those tissues and cause lots of inflammation and oxidative damage and mechanical tissue damage and all these bad things. Right?

I can talk through that lens, right? It's just permanent rest, right? Like keep it a permanent rest and therefore we can serve all this energy. Right? – Exactly.

And so what happens if I do that? What happens if I mobilize that that muscle to protect it? Right? Quote unquote to protect it? Well, it actually atrophies and it becomes extremely unhealthy as a result of disuse as a result of not being stressed and not being challenged. Right?

So there's this counterintuitive thing to some extent we especially in the West have to get over are we have to rethink the way we relate to this term stress because the human body and the human system needs active regular, consistent exposure to stressors in order to create adaptations that actually confer resilience resistance to disease and extend our lifespan.

So anyway, I'm answering your question in a in a broad way. But the basic answer to it is the the way that we become healthy is not through avoidance of challenge, avoidance of movement and hard work and discomfort. It's through creating the inputs that lead to a more robust, stronger, more resilient internal system.

So this is perfect. You're leading me into a topic I know you talk a lot about that you really think is extremely important. And I think we all have some familiarity with it which is Hormel thick stress or hornets.

So for those who aren't familiar with the term, maybe you can just give us some examples of what is and kind of elaborate on what you're talking about here and why it's so impactful at our in our sort of cellular energetic systems.

– Yeah, so hore medic stress is transient metabolic stress. It's very much related to everything that I was just saying and its transient metabolic stress.

Again, we need to get over this negative association we have with the word stress, it's transient negative transient metabolic stress that stimulates our body to make adaptations that confer resistance to a broad range of stressors and increased resistance to disease and increased lifespan.

It creates beneficial adaptations in our system. So just like the simple version is as to use one type of formatting stressor, lifting weights. If we want a stronger bicep we lift a heavy weight, we challenge that system and then we allow we give rest and nourishment to that, to the body, to that bicep and it grows stronger and then it becomes more able to lift that heavier weight.

So the whole that whole thing is actually going on throughout our body and it's going on at the cellular level. It's going on at the mitochondria level.

It's also going on in reverse all the time because again, our body is a living dynamic system that is constantly responding to the inputs or the lack of inputs and importantly our by our body, our biology is designed to require regular exposure to harmonic stress in order to express normal cellular and mitochondrial health. Normal health. Okay.

Meaning the absence of hermetic stressors in our life creates abnormal cell function and mitochondrial function. Here's what I mean, specifically this relates very much to the idea of immobilizing a muscle and the muscle atrophy that you see if you were cast. We know we have a number of lines of research showing that as people age with each decade of life, they lose about 10% of their mitochondrial capacity.

And I'm assuming, sorry, I'm assuming some level of sophistication in the audience. They know what Mitochondria are Mitochondria are our cellular energy generators.

And they're there. The very short version is they produce most of the energy for virtually all of the cells of our body, from our brain to our heart to our liver, our muscles, pretty much everything relies almost exclusively on energy produced from mitochondria, the cellular energy generation.

So for everything in your body to function, it relies on these mitochondria, they're extremely important. They're the center of our metabolic health and they relate to lots of other things like our resilience, our energy levels are longevity.

So Every decade of life we lose about 10% of our mitochondrial capacity. That might not seem like that much. But actually it turns out that if you think of it this way, the average 70 year old person has lost about 75% of their mitochondrial capacity. Okay, so this is like so imagine we you've got, let's say on average, 10,000 Mitochondria Purcell.

This is like going in your youth from 10,000 Mitochondria Purcell to 2500 when you're 70 years old, this is like going from a Ferrari engine in your cells to a motorcycle engine in your cells. Okay. And it's a really big difference and it obviously massively influences our cellular function or resilience or energy levels.

Okay, Now, what's important about this is we also know that when we look at healthy 70 year olds who are regularly engaged in hermetic stress, particularly exercise, they have the same mitochondrial capacity as as a young person as a young adult.

What that means is that this loss, this massive loss of our cellular engine of our mitochondria capacity is not just a normal byproduct of the aging process.

This is not a natural normal part of aging. This is actually the result of dysfunctional modern lifestyles that are lacking in hermetic stress that are literally causing the atrophy of our cellular engine throughout all of the trillions of cells in our body and that atrophy has widespread consequences. Again, energy resilience rate of aging many other areas. Now, hore medic stress is what keeps that system robust, it is the challenge on the mitochondria that tells them we need you to be big and strong in order to survive this environment because the body only cares about survival. And at the end of the day, it's merciless, it's ruthless about getting rid of any tissue, especially energetically costly stuff, tissue that isn't needed for survival. And it literally happens within weeks, you break a bone, you break your arm, your leg, you get a cast on it eight weeks later, you get that cast off, you look down at your at your leg and you're like, oh my God, it's half the size as my other one. That's how how fast your body gets rid of tissue that isn't needed for survival. So, imagine now what happens at the mitochondria level over not just eight weeks, but eight years or decades of not adequately adequately being challenged and stimulated that system atrophies.

Hormetic Stress and Mitochondrial Adaptation

And we have huge consequences as a result of that. – Yeah, and I'm thinking about some of my friends that have gone in sort of the bodybuilder um route in that lifestyle. And they get big.

I mean, these are big, big guys, right? And granted there's a lot of them are using synthetic hormones and steroid use and that kind of thing to get that because that's part of the sport, nevertheless, when they retire or they stop challenging their bodies and and and creating that adaptive stress to create these massive muscle groups.

And intentionally, sometimes they want to whittle down, they want to get smaller and that's exactly what happens right? They get, so they get smaller so fast and it's remarkable to see the adaptive capacity of the body in that in that context. And so what I'm thinking about as you mentioned hermetic stress, and we think of another hermetic stress being sunlight, right? There's this like perfect balancing act that is dynamic. In other words, you you you stress your body um to such a degree, but you're not over doing it, you're finding some and it's kind of a magical sweet spot that you are trying to find, right?

And you'll never hit it perfectly because it's kind of impossible. But you challenge it and then you give it the magical amount of rest, just the right amount of rest, right? To where it's not only recovers, but it creates the adaptation.

Now when we come back and stress it again, we actually want to stress it a little bit more than we did last time, right? Because we actually have more capacity, right? So this is kind of the adaptive ladder, so to speak. But what I'm pointing to is the dynamic nature of what you're, what you're getting at and the need for optimal rest to recover and what I find with this this cool thing of harmonic stresses that we can get in into this new mindset of stress. Now we're living life, let's say at the extremes a little bit more, right, Which, which I think is kind of what I see in some of these other cultures kind of circling back to what I mentioned before is they're like working hard, but then they're resting hard. And whereas we in our modern culture and I very much put myself in the same box is we're kind of living in this sort of half work sort of half rest, but were never fully dropping into rest because our minds are still going and we're all stressed out, you know, like emotionally mentally and then we don't really work kind of hard. Maybe we do for an hour a day for, you know, so we're in this kind of no man's land.

And what I hear you pointing to is to kind of get back out into the extremes a little more push yourself rest. Really good. – Yes, that's exactly. And you literally use some of the same wording that I use, I was literally about to jump in and say no man's land is where most people are.

And you described it perfectly because we are in this state of sort of, it's like a chronic low level stress that's not, we're not actually spiking into the territory of war medic stress where we're stimulating beneficial adaptations.

And we're also not dipping deep into the really regenerative rest. Were sleeping poorly. We're not taking adequate time to, you know, veg out sunbathe, listen to music, lounge around, read a book, you know, and do massage and and things like that.

And just hang out with our friends like a lot of in a lot of developing countries like I'm down here in Costa Rica and in much of the world, siestas are a very big thing.

They know how to relax much more than we do in the West. And they take they move a lot slower. Everything is the the whole the whole pace of time is different because how much work they're trying to accomplish in a day.

It's very leisurely. There's lots of rest built into the day. Whereas in the west it's, and I would say particularly in north America there is this, I would say toxic um Go, go, go, gotta grind, gotta crush the day.

I'll sleep when I'm dead sort of mentality. And I'm like okay well you will sleep when you're dead, you'll be dead a lot sooner too. If you keep that mentality up, we have to build in two things.

As as you implied, we have to build in the spikes into hore medic stress because we're lacking in all these different hermetic stressors were living a modern lifestyle that's devoid of these hermetic stressors that ancestral, we have always been present for humans exposure to heat and cold, lots of movement and exercise.

Periods of fast Zeno hermetic stress from exposure to plant phytochemicals, all these these sources of stressors and the list goes on sun exposure of course breath holding practices as well. All these sources of stressors were built into our our lifestyles ancestral e and now the modern world is devoid of them and we suffer huge consequences as a result at the same time that we're lacking in those profound sources of metabolic stress. For medic stressors were also lacking in the deep regenerative resting aspect of distressing. And so as you said, we're in this no man's land chronically in the middle where we're just sort of running the system constantly at a low level. We're not getting the rest and sleep we need and we're not getting the spikes into hermetic stress that we need.

– You know, it's funny because I I noticed the same thing in sort of the emotional trauma processing world as well with some of the work that I do is oftentimes we're holding a lot of, let's say, unprocessed stuff right? Emotionally. And so again, we're in no man's land. And what I find is that the sort of cure for that sort of speak is to actually go in with various techniques and and methods to get into that the emotional starkness, the energies that are stuck on the that level, right? And we actually got to process those and then what happens as we process now the system whether we call the nervous system, the emotional body, the mental body, they can actually find a new level of rest.

This is what's wild, right? So what you're, what I'm pointing to is the things that you're teaching can be applied on so many levels. In other words, you know, it's a deep truth when it can be applied on so many levels like that, right? Because what I find is in my own system and for myself, as well as the people I work with, we think we know what rest is and we try, we try to get into a restful state and generally speaking, there's things blocking us from reaching a truly deep level of arrest at the nervous system in the body. And, and so we kind of have to get into these processing and then what I find is people find a new level of what calm feels like of what rest feels like. And that's wild because that's what that's what you're looking for. And sometimes we gotta go get into some of these emotional, you know, methods so that we can actually, a certain nervous system can actually find that rest.

– That's exactly right. And this whole mechanism of harmonic stress, part of how it works is by disrupting the equilibrium so that it resets as an at a new level. So your baseline that whatever is being regulated as the baseline state of normal changes as a result.

So, as an example if if we wanna, if I want to teach somebody to calm down, there's this counterintuitive thing where in order to teach them how to be calmer in their baseline state, I actually want them to practice being agitated.

I want them to practice going into a stressed state. And then when they're voluntarily exposing themselves to physiological stress, especially using these hermetic stressors, using the mind to dissociate to calm down during the state of physiological stress so that you learn to disassociate the actual what's going on metabolically physiologically in terms of adrenaline pumping cortisol and this whole biochemical milieu of the stress response from actually subjectively feeling stressed and anxious and fearful and whatever the feeling of being stressed.

So we're dissociating, disconnecting those two. And if you practice that by inducing stress and practicing calming yourself down in a stress state. Now your baseline when you're at rest changes, you've altered that state so you can be calmer in your normal state of rest.

– This is interesting, a lot of things came up as you were mentioning, that one is you know, I did a 10 day vipassana retreat, right? And one of the, one of the sort of techniques in sort of that Buddhist style of meditation, vipassana is to just view things as they are, right? So if you're sitting in meditation and something comes up mentally emotionally or physically.

Let's say I've got knee pain that's arising, it's actually learning, as you say, to look at it for what it is, oh it's sharp, it's hot, it's whatever the case is and you're just actually objectively looking at it and that helps you regulate what's happening without getting into this sort of, oh my God, I gotta move my leg because it's super hot and you know, all these things. Right?

So you kind of disassociate that and you separate the two such that you don't go into this fight or flight response, right? And and I could, another example that came up was was cold, Right?

I'm thinking of Wim Hof. Right? And for many people who go into an ice bath for the first time, the whole system starts to just get really jacked up and the mind then comes in and goes, oh my God, this is insanely cold. I have to get out of this.

Mind, Stress, and Nervous System Regulation

And then there's a training process to to one use your breath, which I want to get into a discussion with you and also to learn how to train the mind not to dip into that sort of fight or flight response. Right?

So it's really interesting that and again, navy seals also came up, Right, so this sort of military training and in this idea of, of learning how to become resilient calm in a quote, unquote stressful situation, how to be in that eye of the storm with the hurricane spinning around you and you're just watching it. All right?

So there's there's definitely methods so that we don't just naturally tip into this sort of fight or flight stressed out response that is then happening on the physiological level.

– Right? And there's this interplay also between what's going on in the mind and the physiological response. So we are either amplifying it or not amplifying it or tampering it down. Right?

So there is a true physiological reaction to going in sitting in an in an ice tub, like irrespective of what your mind's doing. Your body is going to do certain things when you submerge in that in that ice cold water there's going to be a spike of adrenaline.

You're going to have sympathetic nervous system arousal. Like all of that stuff is going to happen. But you can either have a mental response to it. Oh my God.

Oh my God it's so cold! I gotta get out. Oh my God. Like just freaking out. Which is of course what most people do especially the first time and of course what I did the first time I did it to I think what we all do maybe except for some rare people but those people probably have some prior exposure to similar.

Yeah. Right. So you can either have that response or you can go in a meditative state and just go and just go into that same water and the person watching wouldn't even know you're going into ice cold water.

That is stimulating all the because you're perfectly calm. Your perfectly centered. You don't move an inch mentally. Not your facial expressions, not sounds you're making is just perfect calmness and tranquility. The breathing doesn't change.

You just get in that water still serene. And if you can do that, that's what I mean by dissociating the physiological stress from the mental stress. That's what it looks like when you've done that successfully. And if when when you have the first situation where the person is kind of freaking out, that's actually amplifying the physiological stress and in the second case it's a person that is using their mind to calm the physiological stress. So what we what we want to do is we want to allow our physiology to engage with the world in a way where whatever is happening in terms of our sympathetic nervous system, arousal, our stress response and stress hormones.

These things are needed in certain situations they are appropriate healthful responses. In certain context, exercise, cold exposure, heat exposure there, there's lots of context where these things are healthful and important to respond to that input, we want to engage in a way where the physiology the physiology is responding in the most appropriate way. But without our minds amplifying it and making it way worse. And if anything, using our minds actively to calm things down to to maintain a level of calmness, to make sure the system doesn't go too reactive to responding to aggressively to that stressor.

– So what I'm hearing from you so far is that we we through these sort of for medic stressors that we can put ourselves in, right? The challenging of the body using heat and cold using things like exercise and and sleep and meditation and these sort of depressed that's actually on a body level, we're making impact. We're actually creating better resilience at the at the body level. And then we've got the mind component where it can either amplify what's

going on in the body or it can help calm and and and I guess reduce the impacts of that sympathetic response, Right? And then there's another component here that I know you teach you have a whole webinar on this of how to use the breath and that's kind of a different thing, right? Because it's sort of the body, it's sort of the mind, but it's kind of neither and yet it's a master regulator of both body and mind, right? So it's kind of in this weird territory that that can control all things like that's what I love about the breath.

I think it's why breathwork is such is becoming such a thing. And once people start dipping into a little bit, they they think we've all we all get that point where we do breath work at some point, we're like, oh my God, this is insanely powerful, right? But before that we just like, oh yeah, it's just breath work. There's a really interesting tip over point.

I find that most people realize how powerful the breath is. So talk to me about that and how you are teaching the breath to help energy production to help regulate the mind, the body and all these systems.

– Yeah, great question. So the brain and the autonomic nervous system regulates a lot of different processes in our body. Like um what's going on in our gut? Parasol tick movement in our gut are our heart rate, you know how fast your heart is pounding is being regulated by by the autonomic nervous system, by your brain.

But if I tell you, hey, speed up the parasol tick muscle contractions in your gut or if I tell you to speed up your heart rate and now slow down your heart rate right?

You can't do that, it's all regulated. Non consciously breathing is also regulated non consciously. You don't have to think about your breathing at all and it's just happening all the time.

But what's interesting about it is that we also have conscious control over. And so it's this thing that is directly tied into the autonomic nervous system, the parasympathetic and sympathetic nervous system directly interface with it.

That not only is the product of what's going on in the autonomic nervous system but also has inputs in the other direction and we can control it consciously as well as non consciously. So that's special about this poll breathing system. That's what's unique about it and it directly interfaces with this system in a moment by moment basis.

So for example every breath you take on the inhale it increases sympathetic tone. Every exhale it decreases sympathetic tone increases parasympathetic tone that's happening literally second by second as you take an inhale. And as you take an exhale on every single one if you measure your heart rate you will find that it actually speeds up slightly on every inhale and slows down slightly on every exhale.

So literally the inputs from the brain to the heart are being modulated second by second by the breath. Now when you take conscious control over your breathing you are now inter faced directly into that autonomic nervous system where you have some degree of control or influence impact on how that autonomic nervous system is functioning. So you can breathe in a way that within seconds creates increased sympathetic tone and you can stimulate a stress response through your breath breathing hyperventilating, emphasizing the inhale massively increases sympathetic tone speeds up your heart rate, increases stress hormones.

You can do that in seconds by how you breathe. You can also go you know super long, smooth really exaggerated exhales. And by doing that we can increase parasympathetic tone. We can calm the heart rate.

We can calm the sympathetic nervous system. So we have this easy way to modulate what's going on in the in the sympathetic nervous system and this this gives us a lot of tools to do a lot of different things.

It turns out this is not a well known thing but one of the most common causes of anxiety is relates to our breathing and basically is the result of a low C. 02 threshold.

The brain has set our our carbon dioxide threshold for how much carbon dioxide it wants in the system in the bloodstream at a fairly low level. And when that carbon dioxide threshold is low it makes the brain very sensitive to increases in high in carbon dioxide. And so we're when that happens it provokes a stress response and it provokes anxiety.

So this is a very very common contributor to chronic anxiety problems is the person has dis regulated breathing and as a result of this low C.

Breathwork as a Tool for Energy and Calm

02 level um low CO two threshold in the brain, any slight increase in C. 02 is now triggering sympathetic arousal, triggering a stress and anxiety response in the brain. And so we can we can do a couple things.

There's an acute thing we can do with our breath which is we can do these we can modulate our breathing where we do these long exhales or we do what Andrew Huberman calls the physiological sigh which is a double inhale through the nose and a long exhale.

And basically what it does is it inflates the sacks of air in our lungs. The alveoli and allows us to blow off a large amount of C. 02. So it rapidly lowers within seconds the amount of CO. Two in our body.

And by doing that we decrease perceived stress and anxiety and sympathetic arousal in our nervous system. – Yeah this is interesting because you said it's a double inhale through the nose and exhale through the mouth.

– So it's like almost a full inhale through the nose. And then you try and get like a little extra at the end forcefully so almost full here and then like forcing that last little bit open and that that's what pops open all the alveoli in the in the lungs because they're normally they're kind of in a half open or somewhat contracted state. Not not all of them are open.

And so we in order to open them all fully we force as much air into the lungs as possible. And that last little forceful spike of air. And then and then after that double inhale through the nose. Long exhale.

And that blows off lots of C. 02. – This is really interesting because my little one at one and two years old would do this when he was super super upset.

You know he's crying. He's wailing. He's just losing it and and he's in the recovery mode right so he's trying to recover from this hysteria that's what he would do. And I wouldn't say it's exactly like that but it's very very similar.

– That's exactly right. That's the observation. So this is another thing that actually this this process is something we can do consciously and happens non consciously. It's programmed into human biology in exactly the way you just observed. – Wow, that's crazy.

So, this is fantastic. All right. As we wrap up, I would love for you to because you work with a lot of people and we really focus your a lot of your trainings and things for those who have fatigue and chronic fatigue or stuck in sort of this this fatigue cycle adrenal dysfunctions, like all these names for this sort of syndrome that that you end up working with.

What's the way out, kind of in a sort of summary perspective. And I know we've covered a lot here today, but what's the way out? What what's what are those people missing? How do they get from that sort of chronic fatigue state um to this point of what they might consider normal function without this sort of fatigue weighing them down? What are the what are the things that they need to think about and engage with? And how do they get out of that sort of spiral?

– Yeah, it's a big question. So let me present a little bit of context and this ties into everything that I've been talking about so far context. The context that's important here is to understand fully what mitochondria do, as I said earlier, they produce virtually all the energy to power.

Virtually all the trillions of cells in our body from our brain, our heart, our muscles are hormone producing glands, virtually everything relies on this energy from mitochondria to function Well. If you don't have lots of energy from mitochondria, those none of those cells in all those tissues and all those glands and all those organs will work well, period.

Now there's another key aspect to what mitochondria are doing. That's really important and that is that they are environmental sensors. They are like the canaries in the coal mine of our body.

And they are not only these sort of, they're not these mindless energy generators that just take in carbs and fats and pump out energy. They are sensing what's going on in the environment. And asking the question, is it safe for us to produce energy and in response to detecting threats?

And they can detect virtually every type of stress or threat or danger signal imaginable from psychological stress, to poor nutrition, to poor gut health, to poor sleep, to environmental toxins, to um circadian rhythm, disruption to you name it basically every to respiratory infections, to physical trauma and over exercising every type of stressor you can imagine they can detect and when they detect that there is too much stress or danger in the body, they shut down or they turn down the dial on energy production.

Okay, so part of a big part of our energy levels is simply a reflection of the degree to which our mitochondria are detecting lots of threats present.

So that's sort of the first key thing to understand. Your energy is a reflection of the stress your body is under. And literally at the mitochondrial level they're deciding how much energy they are going to produce depending on whether your body is under lots of stress or very little.

So strategy number one to increase your energy is you've got to identify those triggers of what's shutting down your energy production at the mitochondrial level and remove or minimize those sources as much as possible.

The second big thing is to understand what I talked about a lot earlier in this talk which is we we also have to understand what is the status of our cellular engine.

Do we have a Ferrari engine in ourselves or do we have a moped engine in ourselves? If you've got a moped engine in yourselves it doesn't matter how many supplements you take you. I mean you can take thousands of dollars of supplements every day. You can do all these fancy cutting edge therapies. You can do I vi vitamin infusions and ozone therapy and N. A. D. Plus infusions and who knows what else.

But you still got a moped engine in yourselves and the only way to fix that is through your medic stress through systematic, consistent exposure to Hormel fixed to build up your mitochondria in the same way that lifting weight builds a muscle, you have to have this regular, consistent exposure to Hormel thick stressors in your life to build to rebuild your mitochondrial system. So it's big and strong and healthy.

Like it was when you were young. – So there's an analogy that some people give about a stress bucket, right?

Recovering from Chronic Fatigue and Building Resilience

Like you have some stress bucket and with too much stress, it overflows the bucket and we dip into sort of this chronic fatigue, this danger response signaling that you're mentioning and what I'm hearing, what you do is you actually help people figure out how to lower that stress that's entering the stress bucket and also how to make the stress bucket bigger.

– Yes, exactly. Almost everybody out there is what they're only focused on is lowering the amount of water in the bucket. And what is actually a more important piece of this story is switching out the little bucket for a much bigger bucket because the bigger and stronger your mitochondria are and the more of them that you have, the more resilient the whole body becomes, this is literally like, let's say you and I were physically in the same room right now and there was a building next to us that was on fire.

Is it easier for you and I to go try to put that fire out ourselves or if we have 10 other guys and girls to help us right Way easier if we've got 10 more people.

And the same is true at the cellular level with Mitochondria, Mitochondria are tasked with handling the demands of

distress. Were exposed to whether it's psychological stress or environmental toxicants or sleep deprivation or respiratory infections or whatever else.

They're tasked with responding to that and in order to respond to it in a way that doesn't exceed their capacity, which would shut them down and cause them to go and cell danger response and you feel the symptom of fatigue, but in order for them to in order for it to be within their capacity to handle that stressor while maintaining health and homeostasis and high energy levels, then you have to build a bigger bucket.

You have to build a bigger cellular engine, literally more mitochondria physically more mitochondria and bigger and stronger mitochondria. And that is actually the cellular basis for resilience.

We talk a lot about when most people use the word resilience, they're talking about something psychological, something that's in the realm of human psychology, what makes somebody more resilient or less resilient.

But this is actually physiological resilience at the cellular level. And it revolves around how big and strong your mitochondrial network is. – Yeah, and this is I think the difference between what you do and what I see everybody else doing again is just just one element of this more important piece.

Right. And I think we didn't get enough. we don't have enough time to go into it too deeply. But mitochondria, they're known as the energy powerhouse.

That is a big part of what they do. And as you and I both know they do so many other things, right? Like they make hormones, they clean up the body right? Like and we need them to do all these things, let alone provide the danger signals to that's important too.

And they need to be able to fight threats. So when we have a more robust mitochondrial system, not only are at the organ level are we are more functional, but the whole system as a whole can clean itself up, can regenerate, right? And this is this works into the more longevity peace and why what you're teaching goes so far beyond just chronic fatigue and and energy issues. But rather using, you know, sort of the energy blueprint system to go beyond the chronic fatigue, go beyond just the normal function.

How do I how do I increase my performance at that sort of cellular level and system level longer term. Right. That's where it really starts to make a difference is not just in escaping chronic fatigue, but becoming a high performer at that senator level. And again, because you focus on the science, it really makes it palatable and brings it down to real life, right? Some of these more esoteric aspects like breathwork. You know, I think we can fundamentally feel it.

We might have a more spiritual bent to our personalities and we like that and you get into the science of why that's working, why it's important for the mitochondria and the secular engine to be effective at that level. So Ari this has been fantastic.

I know you've got a lot more that you can teach as well. I think you've got a couple of webinars that you maybe can point people to go into have some visual aids and get into deeper aspects of what we talked about today.

Where can people find more of your work? – Yeah, theenergyblueprint.com. And I've got a breathing webinar where I go deep in the breathing science way deeper than we were able to to go here.

And also I've got a great webinar on supplements supplements that we can use to build mitochondrial function. So and my next book is all about a hermetic stress. So I'm super excited about this one that's going to be coming out probably about a year from now.

But this is something I'm kind of pouring my heart and soul into. I've been wanting to write a book on hermetic stress for many, many years and now I finally have the publishing deal in place to make it happen.

So it's going to be going into all the good stuff we talked about here. Probably 300 pages worth of material on that.

So yeah, Jason, thank you so much for having me. It's always a pleasure to connect with you, my friend and you bring so much knowledge to the table.

It's always fun to have these conversations with you. – Likewise, again, thanks for coming on, appreciate it Ari. – Yeah.