# How To Build Your Mitochondria For Greater Energy Production Transcript

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## Introduction and personal energy story

Everybody. Dr. Tom Moorcroft, back here with you for this episode of The Healing from Lyme Disease Summit. And we're in for a real treat today. We are speaking with Ari Whitten, great friend of mine, and he's one of the people who talk so much about energy out there.

And this is something that for me was really personal, right? Because I, as you know from my story so many times, I had so little energy and I got diagnosed with chronic fatigue and all this other stuff.

But I just knew that the labels weren't really telling me what was going on in my system. And it took me so long to get to that point where I actually could understand what might really be going on.

And then it's like, you know, I wish I had known someone like Ari back when I was first sick because it would have short cut my healing probably by a good six or eight years.

So Ari is the bestselling author of The Ultimate Guide to Red Light Therapy, which maybe we'll even dove in a little bit of that one because a lot of us are talking it's a few little nooks and crannies in Lyme disease where that could be a big deal, but also for energy, how to beat fatigue and supercharge your mitochondria for all day energy.

And as you know, I love talking about mitochondria because that is really a key place to optimize self-healing. So, Ari, thank you so much for being here with us today.

Thanks so much for having me, Tom. It's an absolute pleasure. Nice. So and it's so great for me. This is a real honor personally, because as I mentioned before, we got on like I've been you know, you've interviewed me in the past and I've been dying to have a chance to really pick your brain.

And today we've kind of decided to talk about how to build your mitochondria for greater energy production. And so much of that is what our audience needs.

I guess the biggest question is like, what? Get somebody into studying like mitochondria more than pretty much anybody else on the planet. Like, what got you going down that path?

Well, you know, mitochondria are kind of in vogue now, but when I when I started talking all about mitochondria and saying, you know, I was the first guy to be to be out there saying, hey, mitochondria are really central to this whole fatigue story and everybody's got it wrong.

Everybody's focused on this adrenal fatigue story and actually, it's not about the adrenals. It's it's much more central that the mitochondria are much more central to this whole story of fatigue and the way that that happened was that I personally dealt with my own bout of chronic fatigue as a result of getting Epstein-Barr virus and mononucleosis in my mid-twenties and then getting severely, chronically fatigued for about a year after that.

And then seeing all these conventional doctors, seeing all these alternative and functional medicine doctors where the conventional doctors basically had nothing to offer.

And the alternative and functional medicine doctors were all telling me that it's all adrenal fatigue and here's some adrenal supplements. And, you know, here's here's our adrenal fatigue protocols.

And I was totally on board with that and I didn't think anything of it. I assumed these people know what they're talking about. And and many of my mentors, you know, I've been studying health science since I was 13 years old.

So many of the people that I respected and learned from when I was when I was growing up were people who

talked about adrenal fatigue. And so I had been hearing about that for already a decade prior to sort of being diagnosed with it myself.

And and then it was peculiar to me that within conventional medicine, they shrugged off the whole story of adrenal fatigue as nonsense and pseudo science and kind of ironically, my interest in that was that I was annoyed that conventional medical doctors thought it was pseudoscience, science, and I wanted to prove that it was real science.

And I wanted to go dig into the primary literature and be like, Here's the scientific evidence that supports that adrenal fatigue is a real thing, and I plan to go produce a whole bunch of content and maybe even produce a book on the subject.

And I did a deep dove and I I'm not exaggerating. I spent about two years of my life, two full years. I mean, basically doing a Ph. D. dissertation on the topic of the relationship between adrenal function, HPA axis function, hypothalamic pituitary adrenal axis function and and cortisol levels, that relationship of that basically adrenal function, cortisol with chronic fatigue, stress related exhaustion, burnout, chronic fatigue syndrome and I mean, I can talk to you about just this aspect of things for several hours.

I produced several hours of content on it, and it actually had to be edited down from like 8 hours of content into like 3 hours of content. So but the very short version of the story is this in the process of doing that research again with where my intention was to prove I went, this was actually bad science because I went into it with the intention to prove that adrenal fatigue was a real thing.

I already had a bias going into it, and then I kept discovering research. I kept discovering studies that didn't support it, that that basically the majority of the studies look something like this.

You compare a group of people who have of chronic fatigue or stress related exhaustion or some kind of fatigue syndrome versus a control group that doesn't have those symptoms better matched for age and gender and other demographic features.

Smoking, drinking, exercise habits, etc.. And if the adrenal fatigue story is true, if it's true that chronic stress taxes are adrenal glands and sort of wears them out so they can't produce enough cortisol and that results in these symptoms.

That's basically what adrenal fatigue is.

## Why adrenal fatigue research fell apart

This would be extremely easy. This would be extremely easy to detect in studies designed in this way. You compare people with those symptoms of that condition versus people without those symptoms.

Do you detect any cortisol differences or not? It's science 1 to 1. It's very easy. And as I started to look at those studies, I kept discovering over and over again these studies which found no difference between cortisol levels or HBA axis function in the people with those symptoms, including full blown chronic fatigue syndrome versus normal healthy people without those symptoms.

And some studies maybe showed slight differences, usually barely statistically significant, not big differences at all. And the differences that were shown were oftentimes opposite between the studies.

Some would find slightly lower, some would find slightly higher in the group with fatigue. But let me tell you the specifics of how it actually broke down.

So there was 59 individual studies. This is every study that's been conducted on this topic, on every type of fatigue syndrome ever done from the 1990s through 2020 and again, I searched for two years to find every single study that has ever been done on that topic.

There's 59 of them and of those 59, 15 of them gave evidence for slightly lower cortisol levels in the group with the fatigue syndrome. Compared to the control group, 11 of them gave evidence for the exact opposite, finding slightly higher cortisol in the group with the fatigue compared to the control group and 33 of them.

The vast majority of the studies found no detectable difference whatsoever in access function or adrenal function or cortisol levels between the group with the fatigue syndrome versus normal, healthy people and the bottom line of evidence like that for anybody who is reasonably scientific is to say there is no clear correlation between these symptoms and cortisol abnormalities.

And again, if it were true that those symptoms were primarily caused by adrenal abnormalities or cortisol abnormalities, this would be extremely easy to detect in all of those studies.

And the studies have not the studies have been done. We've had 30 years of studies, and the studies clearly show there is no clear correlation whatsoever between cortisol levels or adrenal function and fatigue symptoms.

You know, to me are that I mean, part of it is that reflects what I see clinically. You know, we give some adrenal support, but typically mostly it's supporting people to relax and take a deep breath.

Right. Not so much that it's actually supporting the adrenals. And when you dove into it, so few people see a difference, which is interesting. And so that's why I really wanted to talk, so we could dove into how we actually get energy because like, you know, I when I regained my energy had zero to do with an adrenal supplement.

But again, I didn't have all the guidance that you're providing. What I love and I want to highlight for people real quickly is. You. You said it yourself, too, which I love, is like you went into it as a bad scientist.

You wanted to prove your own opinion. And a lot of folks in our community, like the Infectious Disease Society of America, people start to go study and they want to prove chronic Lyme doesn't exist.

So they go into it with that assumption where is good science would be, hey, chronic Lyme disease does exist. So I'm going to I'm going to choose the opposite of my own opinion.

So in your case, it'd be like, hey, you know, like there's no relationship. So you were biased and you still couldn't prove that. So that just to me says that the research you're doing and all the papers you highlighted.

Had to. Change. They had to be really significant to change your previous opinion that you were trying to prove. So that's just really great to hear because I just to me just says, hey, this is actually totally legit.

Literature review. So and I think it should give people that's listening, you know, some hope here. So what do we need? So if it's not the adrenals, what the hell is causing all this fatigue and this energy shortage?

That's exactly what I said at the time. Right? That's like. That's what I want to know. Yeah. I mean, when I, when I did that, I was again, I was trying to prove that adrenal fatigue was real.

And that's why it took me so long to do this, because, as you said, what most people would do is they'd go in and they'd ignore the evidence that doesn't fit with what their bias is and what they want to believe and what they want to go present to the world as the story.

They cherry picked the literature and then presented misrepresented picture of the full body of evidence. And instead what I did, as you pointed out, is I realized, oh, my gosh, I'm wrong.

I need to adjust my views because I'm wrong. And so now I need to figure out what the truth is. So as you said, if it's not adrenals, what is it? And I, I basically at that point went, I, I had this realization, this is why I started my, my company, the energy blueprint, because I dealt with my own chronic fatigue.

I went to all these doctors conventional nothing to offer alternative functional medicine obsessed with adrenal

fatigue. Now all of a sudden I discovered adrenal fatigue isn't a real thing.

This is not the story of what regulates human energy levels, and nobody else out there has a coherent conceptual framework of a scientific framework to understand what actually controls human energy levels and what causes fatigue.

So I went, Oh, I'm pretty good at health science. I'm scientifically literate. This has been my passion since I was a little kid. Maybe I should devote my attention to this subject and building out a scientific framework for what what actually controls and regulates human energy levels.

So I started delving into, well, I know nutrition is important to health. How does what are the physiological mechanisms that tie in with energy levels?

How does nutrition relate to energy levels? And there's many, many layers to that story. What about sleep? If you don't sleep well, you're tired. The next day, you don't have good energy.

What are the mechanisms behind that? Oh, and then circadian rhythm ties into this in a big way. And so I spent a year just researching the circadian rhythm story and how that ties into energy levels.

And then that led to a deep interest in light and light, and all these different wavelengths of light interact with human physiology. And there's a whole there's many layers to that story and environmental toxicants and the gut and neurotransmitters in the brain and different areas of the brain that also impact on energy levels.

And and then eventually through largely through the influence of a researcher at the University of California, San Diego, who's an M. D., Ph. D. His name is Dr. Robert.

So he wrote a paper called The Cell Danger Response. And that was the thing that I was like, This is it now it all makes sense because I had spent years going down these pathways the nutrition, the circadian rhythm story, the sleep story, environmental toxicants, the gut, like all these different layers of, of, of the puzzle.

And I had a list of 150 different mechanisms of how these things tie in to energy in one way or another. But what I wanted to know is what actually regulates what's the most upstream thing that's deciding whether we're fatigued or energetic and when I read Dr.

Robert Navias work, it all made sense because he synthesized decades of research into mitochondrial health and how mitochondria function. And basically the gist of that story is that mitochondria are way more than what we're taught in biology and physiology classes growing up and in graduate school.

In medical school, we're taught about them as just sort of, hey, they're this organelle in the cell. They're the powerhouse of the cell. That's what everybody's taught to remember for their multiple choice tests.

And the gist of what they do is they take in carbs and fats and they pump out cellular energy. And that's pretty much all you need to know about mitochondria.

There are sort of these mindless cellular energy generators. They take in food, they pump out energy to bring about them. Wouldn't it be great if it was just that simple?

If it was as simple to solve the fatigue epidemic, just say to people, Hey, take in more carbs and fats so your mitochondria pump out more energy. And it's funny cause I'm chuckling because this is exactly what they told us in medical school.

It's like, literally they're moving on to the next chapter. That's all they wrote. That's all that's all that you need to know about mitochondria. But it turns out that in the last 20 years, we have uncovered all this, this these layers of research that show us that mitochondria are really central to human health and that dysfunction in at the mitochondrial level greatly increases our risk of tons of different diseases.

Of course, damages are cellular energy production. They are producing they're responsible for producing virtually all of the energy for virtually all of the cells in your body.

So if your cellular engine is suffering, of course, you will not have very much energy. Surprise, surprise. Right, right. And rather than this sort of very convoluted explanation of yeah, the, you know, the adrenals produced this stress hormone called cortisol, and this impacts on your blood sugar levels.

And when you have chronic stress, it wears it out and then lowers your levels of cortisol and then blood sugar can be regulated. And that's what causes chronic fatigue.

It's like chronic fatigue is a symptom of a deficit in cellular energy production. It's because your mitochondria are not producing enough energy at the level.

So the key is why now? So there's also research showing that mitochondria, mitochondrial dysfunction and poor mitochondrial health actually affects the rate of aging itself.

It's a major player in in actually how fast are our bodies age at the cellular level so mitochondria are really important and what Dr. Navin showed in his work is that in addition to this role as energy generator, these mitochondria have this second role and it's just as important as their role as energy generators.

And it is that they are environmental sensors. They are exquisitely sensitive environmental sensors.

## Mitochondria as the real energy regulators

They're basically like the canaries in the coal mine of our body that are constantly taking samples of what's going on in the body and the environment and asking the question, is it safe for us to produce energy?

So and this is the big key. So I told you I had this list of 150 biochemical mechanisms of things that in one way or another, directly or indirectly impact upon energy production in the human body.

But this was the key piece of the story that actually controls what regulates energy production. So if you think of a car as an analogy, you could look at a car and point to 100 different parts on that car that are important for that car to go down the street and say the spark plugs are really important and the the pistons are really important and the crankshaft is really important and the engine block is really important.

The car doesn't work without an engine block. And what if the car doesn't have wheels or tires doesn't work without those either? Right. And the steering wheel is important because it's going to crash if you don't steer it right.

And every part is important. And the same is true with the body. We have hundreds and hundreds of mechanisms and parts in our body that are important to us being healthy and functioning.

But what actually controls whether that car is driving down the road at 60 miles per hour or five miles per hour? Well, it's the person sitting in the car deciding whether to push the brake or the accelerator pedal and how hard they're pushing the accelerator pedal.

Right. And so in the same way, what is controlling and deciding how much energy to produce in our body? It's primarily the mitochondria that are making that decision.

And the way that this works is as they have these dual roles energy generators, environmental sensors, and they essentially are deciding all the time whether they're going to operate in peace time, metabolism, piece time mode, where they say, hey, everything's good, we're safe, we're in a safe environment, let's produce abundant energy.

Or if they're going to operate in wartime mode, where they're saying, hey, we've got lots of threats and dangers present, let's shift resources away from energy production.

Let's turn the dial down on energy production and shift resources towards cellular defense. So as an analogy, just consider you're in your kitchen preparing dinner, chopping vegetables, and somebody walks into your kitchen, puts a gun to your head and says, Give me all your money.

Give me all your jewels, all your valuables. You know, you're not going to just sit there and keep chopping vegetables and putting them in the pot and you can take carrying on, preparing your dinner.

You got to deal with that threat. And that's exactly what mitochondria are doing to the to the extent this is fundamentally what is controlling our energy levels and deciding how fatigued or energetic we are.

To the extent your mitochondria are perceiving threats that they have to deal with, they are turning down the dial on energy mode and shifting resources towards cellular defense.

That is fundamentally what is controlling and regulating human energy levels. I think this is so critical, right, because we talk so much, we will be talking so much in this summit about, you know, safety.

And you know, that the fight flight mechanism and the freeze mechanism and the poly vagal theory. But it goes even further back. If we step further out and we just look at, like you said, like with the cell dangerous spots, so many people I've talked to bring it up.

But I don't think I've ever heard anyone dial it down and just say the mitochondria are creating energy or, you know, they're an environmental sensor that's in defense mode.

And I think that one of the questions that I have, because I think this is a critical one and this is probably why so many of us who think this way are, I don't say better, but maybe more efficient that helping people heal quicker is how do we get our mitochondria to actually feel safe, you know, like because I mean, I think to me this is the crux of chronic Lyme is like so many people are arguing like they're going out to prove it exists or doesn't exist. I'm like, hold on.

We just forgot about the human being that this is a small portion of who they are. And you just kind of zoomed us back out and said, Oh, now let's look at the human as I mean, the mitochondria are one of the core pieces that are allowing us to decide whether we can live a healthy, vibrant life or whether we we have a gun to our head and we need to step back.

I mean, what what are some of the things that you've seen that really do help us understand that it is safe to produce energy and it's peacetime, not wartime.

Okay. So first, I want to present to you what most practitioners are doing. So I said mitochondria earlier in this discussion. I said mitochondria are very in vogue now and the functional medicine for.

Real, right. What most practitioners are doing though, even if they're talking about mitochondria, is essentially saying, hey, you've got mitochondrial dysfunction and maybe they run a test or two.

There actually aren't very good tests for measuring mitochondrial function, by the way. It's actually probably just as accurate of a marker to just ask somebody, Hey, how energetic or fatigued are you?

If you're very fatigued, you can assume poor mitochondrial function and you don't need a organic acids test or some other test that isn't even a very good or accurate test to verify that, even though it seems, it appears to most people, practitioners and public alike to be a more scientific and sophisticated approach.

It's actually not not. And once they too once they determine that you have mitochondrial dysfunction, the typical approach is up. Here's some B vitamins.

Here are some msi2, l-carnitine, and here's some alpha lipoic acid, here's some PKU, here's some coke. You can take these mitochondrial supplements then then we've solved your mitochondrial dysfunction problem.

Right. And unfortunately, it doesn't work like that. So as far as the reasons why someone has poor mitochondrial function go, you can think of nutrient deficiencies, which those supplements would correct as being maybe 10% of the overall picture of why mitochondria have problems and are not producing enough energy.

Very small portion of it will actually be solved by just giving mitochondrial supplements. So the bigger layers to the story, and this is what most practitioners don't get number one mitochondria as they detect threats turn off energy production that is that is distinct from being deficient in certain nutrients.

Okay. So if if there is a presence of environmental toxicants, if someone has poor nutrition, someone has poor gut health, if someone has poor sleep and circadian rhythm or stuff going on, it's a psychological level.

And by the way, there's something called there's a whole field of research called mitochondrial psychobiology, which is about the connection between the mind and the mitochondria.

Mm hmm. If there are stressors present at those levels, mitochondria will turn down the dial on energy production, not due to any deficiency in in nutrient.

That's a cofactor for energy production, but due to the presence of stress. And you don't you don't correct that by giving cofactors for for energy production.

It doesn't fix the problem that there are still danger signals present that the mitochondria are trying to intelligently respond to by turning down energy production, shifting resources towards cellular defense.

So the first big layer to this story is you have to identify what are the triggers for why mitochondria are shutting down. It is it's an intelligent response.

It's not a mistake. It's an intelligent response for them to shut down energy production in response to that chronic stress that's overwhelming the system.

Then. So this differs depending on the individual as far as what this is, but it could be any number of different types of of triggers, of stressors of the types that I just mentioned.

And it turns out that mitochondria can detect basically everything from the presence of heavy metals or other environmental toxicants, mycotoxins or pesticides and things like that.

Alcohol in indoor air pollutants to poor nutrition to infectious diseases, pathogens to physical over exertion, to psychological and emotional stress.

Again, mitochondrial psychobiology to poor gut health and leaky gut to any other type of stressor that you can think of. They can detect it all, not because they have a receptor for each type of pesticides and each type of heavy metal and each type of psychological stress.

But because all of those different mechanisms ultimately converge upon oxidative stress or reductive stress or inflammation in inflammatory cytokines or just actual cellular damage, and the the those create signaling molecules that mitochondria detect.

And when those go above a certain threshold, mitochondria go up. We're under attack. Let's go into defense mode, turn down energy production. So to the extent that there is a presence of one or a combination of of chronic stressors at those levels or even acute stressors that are beyond your body's capacity to deal with that, which I call the resilience threshold, the mitochondria will say, we've got to shift out of energy mode into defense mode, and you will feel the symptom of fatigue in response.

So number one is you have to, of course, alleviate the burden of those stressors. You've got to figure out what's going on for you. Do you have a problem with your circadian rhythm and sleep?

That's a huge factor that will shut down your mitochondria. Are you eating a garbage diet? That's a huge factor. Are are you exposed to environmental toxins?

Do you have a chronic pathogen infection or an acute pathogen? Of course, we have fatigue acutely as a symptom to getting a cold or a flu or COVID or other types of infections.

Do you do you have any number are you in relationship stress and or job stress or something like that? Right. All of these will ultimately converge in a big way on shutting down mitochondrial function in turn and not again, not as a deficiency of nutrients or cofactors, but as an intelligent response to being overwhelmed by too much stress that more than the body can handle.

So you have to do that inventory. This is not super sexy, but you have to do that inventory and alleviate the burden. Now, the second big layer to the story that very few people understand is this. The the mitochondria do more than just turn on and off in response to how much stress they're under.

There is another big layer to this story, which is that if you don't have the right kinds of lifestyle habits, your mitochondria, your your cellular engine will shrink and we know from many lines of research that mitochondrial capacity declines by about 10% with each decade of life, such that the average 70 year old has lost 75% of their mitochondrial capacity.

Wow. So just think about that for a moment. And now let me let me give you an analogy to understand what this really means. Mitochondria are your cellular engine.

Imagine going from a Ferrari engine when you're 20 to a moped engine in your cells when you're 70. Do you think that that might impact upon how energetic you feel?

Okay, of course.

## Removing stressors and rebuilding mitochondrial capacity

Now, now also understand that taking mitochondrial supplements, coq10, PCU, alpha lipoic acid acetyl l-carnitine ribose, yada, yada, yada doesn't grow your cellular engine back.

Okay? You still, even if you provide those cofactors, you're providing cofactors to a moped engine, not a Ferrari engine. Right. And even the first thing that I told you is really important.

Alleviating stressors, chronic stressors that are triggering defense mode, whether it's poor sleep or poor nutrition or environmental toxicants. The removal of those things, let's say, you got mycotoxins exposure.

You go on a somebody is some practitioners micro toxin cleanse protocol you remove the mycotoxins you can you can get rid of the mycotoxins. You still got a moped engine in your cells. Yep.

So the good news is, you know, while people might be thinking, well, jeez, that really sucks that we lose so much of our cellular engine as we age. The, the good news is that this is not actually just a normal byproduct of the aging process itself.

It is actually the product of modern lifestyles. And it is specifically the lack of hermetic stress that is driving that process. Yup. So what and the reason we know this is because when we look at 70 year olds who are lifelong exercisers, they have the same mitochondrial capacity as young adults do.

They do not lose 75% of their mitochondrial capacity. So what's really going on here is analogous to if you've ever broken a bone, you get a cast on your leg, and then eight weeks later you go to the doctor they saw off your cast.

You look down at your leg and it's half the size of your other leg, half the size of the leg that you had eight weeks ago. What happened was your body decided because it only cares about survival, doesn't care about anything

else, it doesn't care about esthetics or maintaining tissue for the sake of maintaining tissue.

It only cares about survival. And as soon as you immobilize that tissue within the span of just two months, two months, that leg shrank to half the size because your body went.

I guess we don't need all that muscle tissue anymore for survival. Let's get rid of it. It's just a survival liability. It's energetically costly tissue that isn't helping us in any way.

Let's get rid of it. That's. That's how ruthless your body is about getting rid of stuff that isn't necessary for survival. And guess what? Without going too deep in this, all species, all animal species, have different amounts of mitochondria genetically that are programed into their cells because you need enough to provide energy to do stuff in the world to facilitate survival.

But if you have too much, too many mitochondria like hummingbirds, for example, have way more mitochondria than humans, but they have to spend over every waking moment sucking down nectar to survive.

Right? And this is why. Flapping their wings super hard, going from flower to flower to flower, getting that nectar, getting that sugar water. Tough to feed that system.

Humans are somewhere in the middle as far as species go. We have enough to be energetic and move around and hunt and do the things we need to do, but not so much that we need to feed ourselves constantly.

We can go days without eating food. And so that's kind of the balance that human beings as a species struck. But when you when you don't have or medic stress in your life, you are not challenging that mitochondrial system.

And what happens is exactly the same thing that happened to your leg when it was in a cast. The body says, I guess we don't need all these mitochondria.

Let's get rid of them. So they shrink, they shrivel and they die off. And the the cellular engine shrinks to a moped engine. And and that is that is a result of the signals it's receiving based on your lifestyle habits and to what degree you are challenging your mitochondria.

So if we can. Step back just 1/2, just for everybody listening, because this is music to my ears. But could you just define what we're about stresses just for a minute.

We're medic stress ah is for medic stressors are transient metabolic stressors that tax the body that create an increased demand on the body temporarily and by doing so they cause your intelligent body, which is an intelligent living, dynamic system, to respond to that signal by adapting so it can better handle the exposure to that same stressor the next time it's exposed.

And because and it makes adaptations, fortunately for us, that not only protected against or make it better able to handle future exposures to that stressor, but actually create adaptations that make it better able to handle a broad range of many different types of stressors.

So the famous expression from Nietzsche is What doesn't kill you makes you stronger. And that's exactly what's happening in our body. And that the distinction between our body and the machine is very important, because if you take a machine like a car, for example, and you drive it over a bumpy dirt road with potholes and take it off jumps, and you beat the crap out of that the suspension system in the tires and the wheels.

A machine composed of metal and plastic will just be beat up. It will accumulate stress and damage and wear and tear. As a result of that, our bodies are, as I said, an intelligent, living, dynamic system.

And the amazing thing about it that's different from that machine is that when we're exposed to stress, we don't just get broken down by it. The body responds by becoming stronger.

So conversely, when you have an absence of those stressors in your life and absence of physical exercise and absence of thermal stress like cold and heat and absence of phytochemicals and absence of fasting and absence of breath holding, when when these an absence of sunlight exposure when these stressors are missing from your life, the body, the mitochondria, atrophy, they're not being adequately stimulated.

So they atrophy the same as a muscle does when it's being immobilized in a cast. And that that is one of the main drivers of the fatigue epidemic. And the other layer to this story is that our ability to be resilient, to be physiologically resilient, to handle stress, is also dependent on how robust our cellular engine is, because type of stress we're exposed to, whether it's a physical stressor like toxins or a physical stressor, like physical exercise or exertion or a psychological and emotional stressor or any type of stressor you can imagine.

Sleep deprivation, toxins, whatever it is, is an increased, energetic demand on that system. And the smaller your cellular engine is, the weaker your mitochondria are, the more fragile you are, the less resilient you are, the more sensitive you will be to any little exposure to any any type of stress.

The more that your body, the more that those stressors will exceed your body's resilience threshold, your body's ability to handle that stress with ease and maintain health and homeostasis and high energy levels.

And the more the mitochondria will shut down and go into defense mode. So the two pieces of the story that I've outlined actually tied together, because the bigger and stronger your health and your cellular engine is, the bigger your capacity is to handle exposures to stress, and the less likely it is for your mitochondria to shut down into defense mode, the more able you are to maintain energy mode.

It's just so incredible because to me it sounds like you're saying that we need to have be a little uncomfortable around and while push it a little bit, get a little stressed and to be resilient, you know, because like a lot of people don't like holding their breath a little bit or fasting because they might get hungry or it might be a little uncomfortable.

But it sounds like in order to one have to grow back that or maintain that cellular engine, we need to have those hermetic stressors. And I guess the other question, which I think in my own personal journey, I accidentally stumbled upon that, you know, you have to do enough, but not too much.

When we're looking at kind of regrowing that cellular engine and we're exposing ourselves to these hermetic stressors, which I think by the second you dove into some of the specific ones that you were talking about.

But let's let's say I have maybe Lyme disease and I've got mold toxins and I'm doing a treatment protocol. Is there a point where, you know, kind of I don't want to dove back into everything you've heard about the administering of fatigue, but can you overdo your or, you know, your attempts to regrow your cellular engine if you're also experiencing these other sort of external sort of environmental toxicants?

I mean, can you go too far? Yeah, you can. Tom, can you say I wanted to say something on the first part of what you said a minute ago, that you said something at the beginning of this.

Oh, that we. Well, I think we're talking about, you know, it's like we we had a little bit of stress is a good thing. And being a little uncomfortable can actually it's getting stronger.

Yeah. So I just very briefly, I wanted to make the point that a lot of people this idea that and a lot of practitioners, natural wellness and functional medicine practitioners have this paradigm teach from the frame of we need to remove all the stressors we need to to get rid of all the stress in your life.

And once we alleviate that burden of stress, then then you're going to be healthy. But alleviating the burden of stress actually won't rebuild the cellular engine.

So the person's still stuck with a moped engine in their cells. And I just want to make the point for everybody listening that human biology was designed.

Evolution took place over millions of years where. We were exposed to these stressors as a given in our life and our biology designed not just so that these things are option.

It's like a bonus, hey, you can do these or medic stressors and get so and so benefits. Our biology actually evolved to require exposure to these automatic stressors, not just to express optimal health, but to function normally, meaning you cannot.

Your cells cannot function normally. In the absence of automatic stress, you will have dysfunction and abnormal cell function. If you do not do these these automatic stressors if they're not part of your life.

So that's just an important frame that I want people to understand. The question that you had on dosing is extremely important and everybody is going to have an optimal Goldilocks zone.

There's and this is sort of a universal principle across the board with everything, water becomes toxic if you do too much of it. If you drink two gallons of water in the next 15 minutes, you can cause permanent brain damage and put yourself in a coma.

Food becomes top toxic if you eat too much of it and even healthy food. If you eat too much of it, you will get a literal toxicity of too much nutrients, too much energy coming into your body more than your body can process it.

If there's an energetic imbalance between the energy coming in and the energy going out, that the energy excess in your body, especially if it's chronic, is literally toxic to your cells and mitochondria.

Sun is an amazing, helpful thing due to much of it cause DNA damage if you go beyond what your body can handle, hermetic stressors are the exact same principle, and if you do too little of them, then you don't get any benefit.

If you do too much of them, you can cause damage and get and create, not harm. People who are extreme endurance athletes who are running, you know, hundred mile races and things like that.

Oftentimes these people have calcification in their arteries and end up dying of heart attacks in their thirties or forties or something like that. It's it's too much, right?

You're doing something that's too extreme. And now you turn something that's potentially healthful into something that's harmful. So there is a Goldilocks zone for what is the appropriate dose.

These things operate on what's called a use curve or a biphasic dose response. Again, you if you don't do enough, you don't get benefits. You've got to do some moderate dose to get in the range of now you're you're creating a dose that your body can handle, but it's just beyond what your body can handle.

So now it's forced to adapt and grow stronger. And those adaptations are actually what confer the benefits. But if you exceed that massively, then you're just way exceeding what your body can handle and adapt to and you're just causing damage.

So the important distinction there is number one, every type of stress, including stressors that we would normally think of as quote unquote, bad stress like psychological or emotional stress, also very beneficial for us and and can make us stronger and more resilient.

Nobody becomes grows into their fullest capacities and most resilient, wise selves by sitting on a beach, sipping margaritas all day, totally isolated from the stress and adversity of real life.

You grow through the adversity and challenges of real life through what is at the time when you're going through it feels pretty stressful. Sometimes that's how you grow into your fully self.

The same is true physiologically, you know, not not just psychologically, but physiologically. We grow through

challenge and you you have to challenge that system to make it stronger.

And the dose that's appropriate where someone can be challenged by it and will stimulate an adaptation is number one. The first layer to to understand is that each type of stress has its own unique fingerprint of a potential for benefit and a potential for harm.

Mm hmm. There is animal research on even things that we would normally think of as super toxic, like radiation, radioactive materials, or heavy metals like arsenic or mercury and things like that, showing health benefits when the dose is precisely controlled, very small doses.

But the potential for harm is so great that I would never recommend anybody go and experiment with this right? Like you have to get the dose so precise that it's not worth messing around with that stuff.

Something like exercise or sun exposure or breath holding practices or sauna or cold. These are the classic or medic stressors because they have an amazing easing profile of an enormous potential for health benefits and a pretty broad dosing range where you really have to push it in order to create net harm to the system.

But that also changes with the individual. That's the other piece of it. So each type of stress has a unique fingerprint, potential for benefit, potential for harm.

What are the unique, specific adaptations that it creates? Each one, you know, different types of exercise create different adaptations which are different from cold, which are different from heat, which are different from breath holding.

They all have their unique fingerprint of different adaptations. They're stimulating in the system.

## Hormetic stress and finding the Goldilocks dose

At the same time, the individual presents a big challenge or a big area of variability in that that that whole picture, because there's a big difference between a 20 year old who's a super fit athlete, who's in perfect health and eats a great diet, versus a 70 year old who's struggling with complex, chronic illness for 30 years and has been totally bedridden for decades.

Yeah. And is dealing with some kind of chronic infection or chronic mycotoxins exposure or something like that. Their resilience, they're there, their mitochondrial engine and their internal oxygen.

Antioxidant systems and detoxification systems are so burdened that their capacity to handle any exposure to another stressor is very, very small. So that the that doesn't mean and this is a mistake a lot of people make, that doesn't mean you must avoid those stressors.

In fact, by avoiding them, which is what most people do, you will actually only become more and more fragile. You have to start doing some exposure to hermetic stress to rebuild that system, to rebuild physiological resilience and robustness.

But the dosing range, the Goldilocks zone, is very tight in those kinds of people. So you have to experiment with maybe that means a young fit person can go into a 220 degree Fahrenheit sauna for 40 minutes, and for you, you are going in 100 degrees for 2 minutes.

Right. And you literally start there and then two days later, you go 100 degrees for 3 minutes and then two days later you go, okay, now I'll try 105 or 110 degrees for 2 minutes.

Right. And every week you take one little bump up in terms of either in this case in the example of sauna, but the principles apply to all hermetic stressors.

You're either bumping up the duration or the intensity as far as the temperature in a systematic way, in a slow and

progressive way, taking baby steps to make sure you're not overdoing it and you find that threshold of what you can tolerate.

And you take very small and systematic steps to increase it over time, and that that's the way to do it. And I think what you're pointing out needs to be just like to highlight something two important parts. One is you just said you might change the intensity or the duration, but you don't necessarily change it both at the same time.

And I find, like so many people are doing nothing to doing everything. I'm like, that's not really it. And the other part is that individuality of it.

So there's, there's a need for people to work with folks like yourself or myself. Join one of your programs because when you need guidance, a lot of times because like one of my mentors always says, you can't see the picture from within the frame. Right?

It's really hard for us to be objective with ourselves. So that's why we have some of the brightest names in functional medicine. You would think who you know, they have their own health coach.

There's a reason it's not because they don't know the information. It's they need a guide to be objective. But the other part that you'll hear me talking about throughout the summit and all is just like everybody I talked to is stop comparing yourself to other people, their healing journeys, theirs, and you can learn from it like everything Ari is just saying.

You can learn from what he said, but then you need to very individually apply that. And that's the part that's so beautiful. You don't you can get better.

Ari just outlines so much of how you can get better, but also you don't have to compare yourself to how others got better because you're not them. So this frees you to be an individual, go on your own journey.

So I just mean that just resonate. Everything you're saying resonates with me so much. Both my professional studies and my personal experience and my my professional experience with patients.

So it's just when I hear stuff like this, it just makes my heart sing because I when you hear truth and you know that you're giving people information about how to really heal the other one of the things I would love to touch on, because we could talk about this forever and you know, obviously and I mean, clearly, you could do a dissertation on adrenal fatigue for five days and then talk about mitochondria for five months. But you mentioned a couple of times about Breathwork, and one of the reasons I love it so much is I know you have an amazing, amazing breath program, actually, one of and you're working with Patrick McEwan is also on our summit.

We're so honored to have you both here. But the other thing is, in my personal healing journey, it started through yoga, but it dove into ultimately breathwork.

And they actually tricked me. My the person I studied yoga with was like, yoga is breath on is movement on breath, not contortion. I'm not trying to get in a position, not even moving your muscles, but if you're not breathing in a particular way, you're not doing it right.

And that ultimately led me this really healing path. So and so breathwork is something that literally saved my life and brought my energy back and helped me get the sleep that I wasn't getting.

So I was hoping that you might be able to give us kind of a little code of background on on breathwork and hermetic stress because like I said, it changed my life and I know it's going to change.

So many people listening to this life. So I think I want to touch on that. 100%. I'm glad you asked, because I was I was actually afraid that you were going to wrap up the interview there. And I no, no, no.

I want us to talk about Breathwork so breathwork and particularly something called intermittent hypoxic training,

which is essentially it's a specific practice of breath holding.

And these practices are a type of hermetic stress. And I found that among people with chronic illness and chronic fatigue, this is the single best type of hermetic stress to recover energy levels.

This is the single fastest and most powerful way I've found to get people who are chronically fatigued to get their energy back rapidly. And just as I was describing a minute ago with, you know, how different traumatic stressors have this potential profile of potential benefits of of what they can do for you and what adaptations they can stimulate and for harm.

The the the benefit to risk profile of intermittent hypoxic training is, in my opinion, the single best thing for people with chronic fatigue and chronic illness.

Because you create this very intense stimulus on the mitochondrial networks, and especially with emphasis on the respiratory and cardiovascular systems of the body.

And depending on how you do it, you can also pair that with the muscular systems of the body. But unlike exercise, you don't actually create a huge energetic demand on that system where you're using and expending tons of energy like you do with exercise.

And the problem with with people, with exercise, which is amazing, which I'm a huge fan of, I do tons of exercise, I do too much exercise, to be honest with you, because I'm like a little kid.

I can't help myself. I just you and me. But I want to play. Our energy back. Don't you love it? You're like, Oh my God, I can do. I have more energy now than I've ever had in my whole life.

So when I'm like you, I mean, I'm when I hear you talking like, yeah, that's how I live. I mean, I exercise like mad, but I love it and I do it in a dose that's appropriate for me as an individual for, you know.

I sometimes exceed the dose because I guilty. I have I have do many fun activities. You know, I, I surf two or 3 hours, a lot of mornings. I play tennis sometimes for two or two and a half hours.

I wait train, I rock climb, I do capoeira, I do jujitsu. And sometimes I end up doing four or 5 hours of exercise in a day. And then, you know, and then I'm fallen asleep at eight, 830 or something because that's that's when I know I just did did too much.

But of course, my mitochondria are extremely robust and I can handle that well. I think that you've gotten to that result like you talk about the resilience threshold.

I mean, neither one of us are just jumping out and doing like hours and hours of exercise without kind of working our way up to it. I mean, exactly. If there's there's, you know, whenever I'm talking to people, I'm like, who practices what they preach?

Yeah. And for all the time that we've run into each other at different conferences and talked about different things, I know that you're a person who practices what you preach, which is one of the reasons I want to have you on here.

Not only do you have the message, but you're leading by example. And I think it's great to say, hey, these are two guys that you're talking to today or listening to today who both had severe chronic fatigue for for a different trigger.

But we still had to find a similar path to healing. And now we're we're boiling down and synthesizing all the work that Ari's done so that you guys don't have to spend all the years he did it to get better.

And now listen, I mean, how do you want to be doing four or 5 hours? Oh, I overdid it. So I went to bed a little early and I woke up the next day and I could overdo it again for a week and then I have to recover.

It's like, this is what we want for all of you. That's why we're here talking with Ari. Yeah. So so, you know, what I was saying is exercise for people in that state is often just too much.

And it's very easy to overdo, and it's easy to experience negative symptoms from it and just just feel like it created more harm than good breath holding practices are really great because they create such a strong stimulus at the mitochondrial level and some of these other levels, they're doing amazing things.

There's incredible research out of out of the former USSR, where they've outlined, like the specific mechanisms of anti-aging mechanism. It's it's rebuilding that they're anti internal antioxidant system inside of our cells.

It's stimulating mitochondrial biogenesis, growing our mitochondria bigger and stronger so we can go from a moped engine back into a Ferrari engine or hopefully all the way to it or something approximating it.

And also doing things like facilitating the release of STEM cells to help our own internal supply of stem cells to help regenerate damaged tissues. So there's all these amazing adaptations that are increasing our resilience, increasing our energy production capacity, anti-aging effects, regenerating damaged cells.

It's really incredible what this can do for you. And and it as an added bonus, it creates an immediate energizing effect. You know, you're you're you're getting this energy moving, stimulating neurotransmitter systems in the brain.

And as an additional added bonus, one of the other things very little known, I probably won't have time to go into all the physiology here. I'm sure we don't.

But people people don't realize actually to what extent carbon dioxide is really important in human physiology and impacts on oxygen delivery to our cells in a huge way, energy production and impacts on how our brains regulate the autonomic nervous system and how prone to anxiety we are in particular.

So actually, one of the things that happens is people become overly sensitive to carbon dioxide. They develop a very low carbon dioxide threshold or tolerance at the level of the brain, and that actually alters their breathing habits, such that most people, most modern humans, about nine out of ten are breathing way too much, way more than they should be.

And that whole system becomes dysregulated in a way that that makes them prone to chronic anxiety. And so one of the most this is kind of a secret very few people really know about this whole aspect of the story of how carbon dioxide ties into autonomic nervous system regulation.

Our breathing ties into this story. But basically the very short version of it is that by increasing your CO2 tolerance in the brain, you allow your nervous system to relax and you take your brain out of chronic anxiety mode.

And it's one of one of the most powerful aspects of mood and anxiety regulation is actually using Breathwork to retrain your carbon dioxide tolerance.

So you really get just this amazing list of anti-aging effects, energy production effects, relaxation and anti-anxiety effects all from this this one practice of using this type of automatic stress of breath holding practices and the gist of how to do it.

## Breathwork, CO2 tolerance, and nervous system regulation

There's many variations on the theme, but the basic idea is you hyperventilate in one way or another. There's different ways of doing this hyperventilation practice in and out through the mouth or in and out through the nose, or usually emphasizing full, deep inhales and kind of halfway exhales or in pranayama yogic traditions, something called fire breathing, where you go probably and have some some boogers come out of my nose here, but you go really fast, pulsing the belly in and out as you're doing that and you're doing this hyperventilation practice to blow off CO2, which allows you to enter the breath, hold and hold your breath for much longer than you would otherwise if you didn't do the hyperventilation.

And because, contrary to what most people think, they think they hold their breath. And what's happening is when they feel the urge to breathe, it's because they're running out of oxygen.

In fact, it's not what's happening. You have plenty of oxygen in your system unless you're a trained free diver, in which case you've trained yourself into a state where you're actually actually running out of oxygen.

But for most people, there's plenty of oxygen and you will feel the urge to breathe. And what's actually happening is just a reflection of your CO2 tolerance.

It's your brain sensing. CO2 levels are rising. We need to breathe more to blow off CO2, not to bring in more oxygen. And that when when you train that you facilitate all of these amazing adaptations, you increase the amount of red blood cells in circulation.

So you increase your oxygen carrying capacity. You alter the way your body regulates oxygen and carbon dioxide in the blood so you can get oxygen into the cells more efficiently.

You make your mitochondria bigger and stronger on and on and on. You get all these amazing adaptations and ultimately, this is one of the most powerful ways I've found to rapidly increase people's energy levels and probably the single best or medic stressor to spur people to start working on to grow their mitochondria.

It is it is so spot on with my experience in all my research too I love it because the other thing and for our community like not only are you finding out a way to, you know, kind of rebuild that engine and get more mitochondria, get more energy really quickly, but also, like you're saying, calm down the nervous system and everybody is trying to find the quickest way to go there while CO2 is going to get you there really fast.

And and it's fun because it's not just the breathing. It's not just you have to like, breathe yourself to parasympathetic. It's using the hermetic stress in that natural adaptation to actually get you back on track to what would be natural.

That's what we're really trying to get back to, at least in my world. The other thing is, one of the things that also comes along with, you know, increased tolerance of carbon dioxide, which every time I always want to geek out on this because I just remember like if people have COPD, chronic obstructive pulmonary disease or something like that in the hospital.

Yeah, they've been a smoker, they have emphysema or whatever. They literally do not. They burn out their carbon dioxide receptor. And so actually we have to make their oh two levels lower than most other people or they won't breathe.

And I've actually gone in, I've seen people I got called as a as a medical student. And there is a person who just been admitted with COPD and the nurse calls and they go, they're a pundit.

So basically they're like in bed and they're literally like, their heart rate's normal. Their oxygen is pretty is like 99%, but they're not breathing.

And so they're thinking they're going to have a cardiac arrest. And I was just like, well, why is their oxygen 100%, 99, 100%? And I go, I had the bag valve mask on with all the oxygen flowing, I'm like, leave the bag on their face, turn off the oxygen.

And so basically what we did is I knew they had COPD. They need to have they breathe on low oxygen, not like a healthy person, but low oxygen. So we had them rebreather, CO2, and ultimately not giving them oxygen so that they could go the place where they would breathe.

That does not apply to almost anybody listening to you. If you want to live a long, healthy life, not just get your energy now, but later on, you want to have great CO2 tolerance.

Don't worry about the oxygen. There's plenty of that, at least at the moment. But the other two things I want to just highlight, Ari, that I love is a lot of my people have Raynaud's type of symptoms, their fingers and toes.

They don't have good circulation. Well, one of the best ways to get better circulation is to do breath retention, where you're bumping up your tolerance of CO2.

CO2 goes up, nitric oxide goes up, you have better circulation. And for all of you with congested noses or who have mycotoxins in your sinuses and you want to get all the stuff in there to bring it out.

Well, the first thing is to open up the nasal passages and the drainage route. And, oh, by the way, this breathing technique does exactly that. And if you want to have the number one brain detoxification supplement in the whole world, if you go to sleep, which is basically bring down your anxiety so you can sleep and then have your nose open.

So 30% of the drainage of your brain comes out of your nose. You can do all of that just with the simple breathing that Ari teaches. This is powerful stuff, man.

Super. And actually, there's one more layer to this story that I want to add on. On top of all the things we just talked about, there's still more. If everything we said is not enough.

If we talk about mental toughness and resilience from a psychological perspective, how how does that develop? Well, it develops in the same way that you develop strength in a muscle.

Right. You challenge a muscle by lifting something heavy, challenging it, and it adapts to grow stronger. That's the basic principle of automatic stress.

It also applies psychologically and emotionally. People become mentally tougher and more resilient as a result of experiences in life that are challenging where you have to go through adversity.

And as a result of that, you come out the other side. When you either come out traumatized, if the the difficulty you went through was intense or extreme enough that it was way in excess of what you were able to cope with.

But if it's sort. Of in that Goldilocks zone that I was describing, then you can come out of that stronger again. What doesn't kill you makes you stronger.

And the same is true psychologically and emotionally. This is again how become mentally tough people. We live a life with life experiences that are challenging.

We go through the adversity that makes us tougher. The problem is, if we rely on life to do that, for us, it's very haphazard, it's very unpredictable.

And you may not encounter much stress. You may not encounter stress at the appropriate dose. You may encounter stuff that's just traumatizing and harmful and way in excess of what you can cope with.

It's very unpredictable. The amazing thing about where medics stress is and particular are things like cold plunge and sauna and breath holding practices especially.

Is that those moments of discomfort while you're doing it, you can bring a certain level of intent, hence finality to the practice, and you can actually systematically train mental toughness and resilience and what's special about this is and let me just make the point like there's a difference between getting into a cold plunge of 40 degree water and going, Oh, my God, oh, my God, it's so cold.

Who is it going to get out of here? And then and then getting out or freaking out the whole time? You're in it for a minute or two versus going into the cold plunge and going and still feeling all the same sensations, but being able to self-regulate and calm yourself down and that what you're doing in those moments is you are creating a

physiological stress response.

You've got adrenaline nor epinephrine surging, cortisol surging. You've got this intense activation of your sympathetic nervous system that you are you self generated by engaging in this romantic stress.

And because of that intentionality and because you're self-generating, it you're controlling it yourself. You can use those moments to bring a certain level of intentionality using top down neurological processes, using your prefrontal cortex, this higher order thinking to engage with those physiological reactions to the discomfort where you got your amygdala and you know that these more primitive areas of the brain reflexively going, Oh my gosh, it's so comfortable.

Oh my gosh, it's so painful. I've got to get out. I've got to stop this. I've got to breathe. Right. You're creating a physiological stress response and pairing it with calmness and serenity, and that is distinct from just doing calming breathwork or just doing meditation or something that is very relaxing, mindfulness practice, anything like that where you're just relaxing the system.

It's Not to say those things don't have benefits, of course they do have benefits, but this is a different thing. What you're doing here, what you're doing is not relaxing the system you're creating a stress, a state of stress physiology and pairing it with mental calmness and relaxation.

So you're training yourself. You're training your brain. How to dissociate the physiological stress response from panic, anxiety, mental stress response.

You're training yourself to be calm in the face of stress. And it it's that aspect of what we're doing with automatic stress is is equally powerful and beneficial to the all the amazing physiological benefits that we get from it.

Men and women, just like, like I think I've said this three times already, but it's like music to my ears, because what we're doing, like, as you're saying, that I'm like, we're training ourselves to be healthy.

We are literally doing exactly what our bodies were designed to do and pairing it with that mental intention of being equanimity is in the face of the stresses, because for me, like, I even just remember, like when I do my breath work and it's sometimes like when you're holding your breath, it can be a little weird, you know, when you're not used to it, a little uncomfortable.

I use the real word. I mean, sometimes it's uncomfortable, but it's just a little bit and you work into it, but then you feel your physiology change. And one of the things that I think that chronic illness gives with is many of the people, at least in my tribe, my community, are like, hey, I'm more sensitive now.

I'm really sensitive to everything. I'm like, That is a gift. Now let's train it so we can turn the wrist that down or up as we need to. But when you can really feel what's going on in your body, when you're doing something a breathwork practice like this and that intention, I'll say throughout the whole summit, like our goal is for you to be aware of what's going on and create a ritual, a healing about it and that intention.

## Where to learn more and closing remarks

And so when you purpose softly drink a glass of water, you purposely do a cold plunge, you purposefully hold your breath. You are I mean, be grateful to yourself and honor yourself doing this healing practice, because this is what's cleaning up your body and making it inhospitable for these infections.

And it's really, what, supercharging your healing. So I mean, are you really kind of I mean, what a great chat. And this has been my experience with breath retention and the intermittent hypoxic training.

And I mean, I just think everyone, everyone I don't know if everyone will be, but everyone should be wanting to go learn about this stuff. So where can they reach out, learn more about this?

Because between realizing what the true factors for mitochondrial function are like the number one indicator like our energy and understanding what truly leads to energy and then how to recover with these hermetic stressors, especially breathwork which everyone in our community can access, I'm sure everyone's going to be reaching out.

So where can they find you online? Yes Thank you for asking. The my my main website is the energy blueprint dot com and I'm currently doing live webinars pretty much every week on breathing for energy.

And I take you deep into the science that we just scratched the surface of here and I show you tons of research and how this all works physiologically and you a bunch of practical tools as far as breathwork to start implementing, to start dramatically increasing your energy and rebuilding your mitochondrial engine.

So that's the breathing for energy webinar. And you can, you can Google search that breathing for energy webinar and you can come up with that. And I also have the whole program, the Breathing for Energy program, and it's developed, as you said, with Patrick McEwen, and it's got three tracks, it's got chronic fatigue track, it's got a track for people with sleep struggles, a track for people with anxiety struggles.

And then aside from those three specialty tracks, it's got the main central program which really centers around systematic, intermittent hypoxic training.

Taking you from 15 or 22nd breath holds all the way up to up to 4 minutes and beyond which is like sort of Navy SEAL level. And I'll tell you, I just have testimonial after testimonial from people who have gone from 30 or 45/2 breath holds up to 2 minutes and beyond, who have just skyrocketed their energy levels and their mood and their brain function.

And this stuff really works. It's really powerful it really works. So definitely check it out. Cool. Well, thanks so much. Ari went from the energy blueprint.

And as always, guys, we have the Summit Resource page where you can head on over and we'll directly link you over to Ari to get you there. One Click Access because we really want to make sure you can get right over at it, not having the search or whatever.

We need to get your right to his website and get started with this stuff and check out later in the week when we talk with Patrick McEwan, too, because you'll see his counterpart in this.

And, you know, I've got I've seen the program and worked through a lot of it. You know, I've followed Patrick before, you know, God for almost a decade, I think, now.

And you guys coming together, I can think of No. Two people better to put together an energy, you know, engine rebuilding and breath work program. So, I mean, just amazing, amazing work.

So congratulations on that. And everyone just send a lot of love to Ari. I mean, thank you so much for being here. I'm so humbled that you would take the time out to share this with our community.

And I also want to thank all of you guys for showing up, taking time out of your day to hang out with us for the healing from Lyme Disease Summit. I hope you got a ton out of today's lecture and just interview chat, whatever you want to call it, and just make sure you watch it over and over and then go head over to the energy blueprint dot com so you can dove into all Ari's work.