Mitochondria and Testing Approaches

All roads lead to the mitochondria. You want to know the very, like, my very favorite? Yes. Zone two training. It's free in the sense that you can check your own pulse, take 180, subtract your age.

That's the upper limit of your zone two. If you're 50 years old, 180 minus 50, you don't want your heart rate going above one. This is why people don' like this.

Right. They feel like they're doing nothing. What if aging isn't about slowing down, but leveling up? I'm Dr. Isaac Jones. Welcome, I'm Dr. Ashley Beckman here with Longevity Leaders Podcast, and I have with me Dr Mark.

How are you doing today? Dr Ashley, it's great to be here. Thank you for having me. I am doing great. Good, so we've been chatting a little bit and we have a lot of fun things to talk about.

So many. One thing that we were talking a bit about is one of our favorite things with mitochondria, right? My number one favorite thing. Okay, explain to me why it is your number favorite.

Because, and this is a phrase that I coined years ago, I truly believe and I believe it's accurate today that all roads lead to the mitochondria. No matter what we're talking about, we can circle it back to these cute little tiny creatures.

What are you doing to test for mitochondrial function? I love that question because it's something that I ask myself almost every day. And what I mean by that is I do test my patience and I don't rely on any one methodology.

I like combining. In fact, this reminds me if I detour for a tiny second of the allegory of blindfolded people. who go out, I don't know why they go on a walk without like assistance, but they all go together and on the path is an elephant.

Do you know this one? No, keep going. Okay. And so they each bump into different parts of the elephant and they're feeling around to figure out what I just walk into.

And one of them's by the trunk of the elephant and jumps back. It's like, it's a snake. Watch out, everybody. Someone else is by one the legs. They're like oh my gosh, this is the base of a tree.

And you can repeat that three more times. Then there's the tail of elephant, and I pity that person. and they're, like I found some rope. Someones by their ear, they think it is a fan.

By the tusk, I think its a spear. The reality is all of then have a kernel of truth. But it's not until you bring it all together that you've got the elephant.

So the same thing with testing, and in this case testing something that I would argue is challenging. To really put your thumb on the pulse of what's going on with these very essential things.

And I use the finger stick one that is based off of the seahorse. And one of lead scientists there, so we talk all the time actually. That's a story for another day.

Then there's the cheek swab. And that gives complexes one through four and gives you percentages. I also like some basic lab testing. When I say basic, I mean your typical LabCorp request.

You can look at things like pyruvate and other markers. Also, some of the organic acid tests like the tyglycine and some other And we could go on.

Building a Biohacking Practice

VO2max gives a very good piece of the elephant, but not the entire thing. None of these give the whole elephant. But we're in the process and it starts, and this is kind of scary, I'm going to say it out loud, January 5th of 2026. We're going do a study testing hyperbaric oxygen therapy to determine How does it truly impact mitochondrial function?

So we need to include all of these tests and more. And since we have captive audience, we're going to test a bunch of other things too. Of course. Yeah.

So is HBOT something that you have in your practice? It is. We have what has been referred to as the Disneyland of biohacking, but here we are in Florida having this conversation.

I'm switching it to the Disney world of biohacking. Yes. Hyperbaric, and I'm talking the medical grade hard shell. Ours are made out of steel. They can go to six atmospheres, not that we would.

Then we also have everything ozone. Over 30 different types of IVs, almost a thousand different type of herbal medicines, both Western and Chinese herbs, and all the things under Chinese medicines umbrella.

We do fasting, so old school things, the contrast with sauna, cold plunge, red light beds, PMF beds. The jacket and the pants for compression. And we've curated what I believe is the best of the, best when you have these things.

And there's more than I'm sure I could rattle off, but that gives you an idea. Yeah. That's the thing that's amazing is in your brick and mortar, you've have a bunch of all the fun tools, But they're also extremely effective.

Right. You've been doing the IV therapy you said over 20 years. since 1992. Oh, longer. Yeah. I didn't think math would be part of this, so I need a calculator if I can borrow one.

But yeah, that's been a while. Been a hot minute. Yes. So you've got over three decades in this field. And again, IVs can be tricky, right? So there are a lot of different things.

There are lot different modalities, but they're very effective. And when done properly, too, they can just really exponentially help clients. If you're a medical doctor, nurse practitioner, chiropractor, or other health expert that's stuck in a broken system, there's a better way.

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Absolutely. There's a time and a place for these. They're all tools in the toolbox. And what's really cool is also we've created communities. So this is not just someone coming in and getting doing one or more of these modalities, but a group of like-minded and like hearted people coming together and doing this together.

That phrase, I think it comes from somewhere in Africa to, you want to go far, if you wanna go fast, go alone. If you don't go, far go together. But the modern version of that is, If You Want to Go Fast and Far, Go Together.

Community, Stacking Modalities, and Peptides

So going together is community. And we love and drum circle, ecstatic dance where they have a bunch of things going on. Well, and community itself is extremely healing, right?

Some of Gabor Mate's work and things like that, a lot of the community is critical and having that sense of belonging. Yeah. Dan Buettner, Blue Zones, they figured out the five different areas where people live the longest

and the healthiest and that things that they have in common.

And one of those biggies is community. Yeah, so that's, that would be very fun to be at your space because you have all the tools we love and then pretty much everyone that is drawn there would like-minded of some sort.

And that something that we do see as a bit missing within this virtual space, right? That we're always trying to kind of create a community virtually, but it's really nice when we have something in person that you've gathered over all this time.

Both are meaningful as useful as these tools are like Zoom or Google Meet or whatever. There really is no replacing the in-person connection. So the other thing, I think we talked about this before, but a lot of the times if someone's coming to your facility, you are going to stack a few treatments, right?

Because you might be there for more than a 100%. What are some of your favorite things that you like to combine? It depends on the mood that I'm in. There's a science to this too.

Yes, of course. But there's also an intuition. If somebody's doing IVs, some of these IV can go on literally without exaggeration for six or more hours.

So that's a captive audience. Well, they could be putting their feet in an ionic foot bath. They can be breathing in the molecular hydrogen or the nano V.

some meditations, whether it's from Dispenza or whoever else, their own meditations that, yeah, red light can be, in fact, we do that with, with methylene blue IVs and that that's where you get one plus one equals something much bigger than two.

And then there's these brain hacking or neurohacking technologies, whether it's Brain Tap or Sensei or… You have the neurovisor. We have neurovisors as well.

And some of those are only 15 minutes, so they might go through more than one of these. We have, like I said, we do drum circles. We can bring in instruments and they can play an instrument while they're on that.

Oh, that's very cool. It just can't get too crazy because the IV could get yanked out of. Right. Yeah. IV permitting. Yes. So, and then I believe you also mentioned that you use peptides.

Absolutely. The peptide world is, this is my take on it. I think we just graduated preschool and we've now entered kindergarten. Now, that doesn't mean throw the baby out with the bathwater.

We can do a ton and have with peptides, but a new peptide keeps emerging, seems like almost every other week. And I'm a fan of things that have been around longer that had the tried and true and I get concerned sometimes of people being subjects of a study where they haven't been given proper informed consent.

So they're being the test rats, the tested lab animals. And we'll see what happens five, 10 or more years down the road. But in the meantime, there's a lot of peptides like BPC157, thymus and alpha 1, and others that have been around for a long time have had millions and millions of doses and proven themselves for efficacy and safety.

Are you using bioregulators? We do. All roads lead to the mitochondria. I think those are the key bio-regulators. But yes, do you have any in particular that you're thinking of?

Well, I was going to say some of them I pair up with the organ, right? So there are some other companies, again, it's more just like the thyroid one, the cardiac one.

If we're trying to kind of help somebody along or support their process if they're not on a medication and are trying balance things prior to getting to that point.

Yeah. So then it's a big picture thing. Like if we take a 35,000 foot view and like what's really going on and where's the weakest link or plural, where are the weak links?

Yeah, then we need to support the adrenals or the thyroid or whatever. Right. Then what are some of your favorite tools for the mitochondria with everything in your tool belt?

Number one? You want to know my very favorite? Yes. People aren't going to like me for this one, but that's okay. I don't need them to.

Zone 2 Training for Mitochondrial Health

It is free. Yeah. Zone two training. Oh yeah. Okay. Mm-hmm. it's free in the sense that you can check your own pulse if you have already a device that is counting the seconds.

But yeah, if, you need, If you want accuracy, then yes, chest strap, hands down chest straps. but you could use a Garmin watch or Fitbit or Apple watch, or whatever it is.

Right. It's telling you your heart rate. And so the zone, and this is simple math, we can do much more accurate, but take 180, subtract your age. That's the upper limit of your zone two.

If you're 50 years old, 180 minus 50, you don't want your heartbeat going above 130. Now, this why people don' like this. They feel like they're doing nothing.

Right. Is there a targeted amount of time to be in zone 2, right? The dose makes the cure and the dose the poison. Okay. Yeah. If you did zone two, 24 seven, maybe you would harm yourself or you'd want to harm your self.

Be so boring. But yeah, the goal is 45 minutes or longer. And to get at least 180 minutes in a week. So one way to do that is twice a. Week, 90 minutes.

That's probably not as good as if you did three times a week, 60 minutes. And even better, four times week 45 minutes and a little easier to implement maybe.

It depends. Like when I'm going on the treadmill or the, and you can do this with a treadmill, a bike, rowing machine, elliptical, bunch of other ways.

You could do a swimming. you could just be walking, not my dogs, because they stop and sniff and pee all the time. So then I've been zone one. And this doesn't work either.

If you go zone, one and zone three. Right. Back and forth and it averages to zone two. That's no bueno. Okay. It's got to be zone. Yeah Okay, what's number two?

Number two is a three-way tie It gives it's like Dealers choice if you're playing poker So it would be a combination of fasting. Ok sprinting ok and cold water immersion Most of people don't like it.

All three of those, right? But then the dose on those. So how long are you fasting? And if we have to pause a moment and define, what do I mean by the word fast?

Am I doing a media fast or something? Social media. Right, exactly. That could probably help them. It probably would help, actually. And in cold water, is it a shower?

Is it the bath? Well, that's not coldwater, but how many minutes? What temperature? And then sprint for how seconds? How many times? This is where there isn't great data.

There's data, But in my mind, it's, not as clear cut as zone two training. Zone two, training, the reason it is number one, It takes time, but there will be an explosion in the mitochondria in about six months, plus or minus.

And so most of the athletes that have placed at the top in world, whether it's Olympics or whatever, they do zone two training and they have to be disciplined because these are the bad asses of badasses and They don't want to be in zone 2. They're in Zone 2 just when they're thinking about their sport or whatever.

But it not only is the number of mitochondria, but the quality. You get the mitochondrial biogenesis, the improvement in the functionality. So imagine if the Mitochondria were like police officers.

And you, you're the mayor of this, of the city and you like, I need more police officers. Well, if, in six months you can 10 X the police. That would be amazing.

Right. But what if all the officers? became super officers, they worked way better than ever before. They were more efficient, whatever, more accurate.

So with sprinting or with cold water immersion or fasting, you don't get the double whammy like that. I shouldn't say whammie, it's good things. And then we have a myriad of supplements.

Yeah, I was going to say you haven't gotten to the easier stuff yet. Right. Just give me a pill. If you could put sprinting into a capsule or meditation or fasting and bottle it, it would be sold out on the shelves.

Yeah. So if we want to keep this as simple as possible, CoQ10. Okay. Yep. Ubiquinone or ubiquinol would be better than the ubiquino.

Targeted Supplements and Red Light Therapy

But I've tested this in people where I measure their before and after levels, both blood and intracellular levels. And so I haven't found the perfect CoQ10 out there yet.

Maybe we should pause on this podcast and go and design it and make it ourselves. What about dosing on that? It depends. It's specific to the person, the weight, age, mitochondrial health.

Yeah. And here's how to be, instead of a shotgun, a laser. So if we're doing the cheek swab test and it's giving us the percentages where I'm going to give you a real life patient's results, remember the mitochondria have What they do is they generate our energy in the form of adenosine triphosphate, ATP.

And they that through a four-step process called the electron transport chain. Well, those four steps are called, each is called a complex and you can measure.

So this patient had complex one, step one. Complex one was something like 108%. It was actually above 100%. But that's not good. We don't want, It seems like if 100% is good, then 108% even better.

Right. No, it's working harder. Yeah. It's not as efficient. Complex 2 was whatever, 70 something, 78%. Complex 3 was like 9%. And then complex 4 was, whatever.

65% or something, right? Still not great, but if you look at all four of those, there used to be the song when I grew up in Sesame Street, one of these things is not like the other.

Well, Complex 3 sucked. She was in trouble. That was a red alert issue. The report, the piece of paper should have been having a little light and sound coming off of it.

So, CoQ10 wouldn't help her. Right. So we've got to zero in on what modalities or what approaches would really help that specific complex work better.

And it begs the question, why? Why is it so low? Was she riddled with lead and mercury or cadmium, some kind of heavy metal? Mm-hmm. Was eating fried food all the time?

What was the problem here? So, um, in that case, red light. Oh yeah. Red light blue. What's that? With the methylene blue? Yes. Cause then you get this energy.

Yeah. Um, but even if, if they're for whatever reason, they are not doing methylenine blue, Red Light anyway. Right. Now this brings up. the important topic of every one of these modalities or supplements.

It just, it needs to be done correctly. Otherwise we're spending our, we'll wasting our time and wasting money. So as I understand it. The bulb has to be correct.

The wattage has be to correct the microchip that's controlling it has t be. Correct. If there's a layer in between the bulb and you like acrylic, that has o be, correct, because that could scatter the light.

And then this is something that I don't think most people get and most companies don' get, but the distance between your skin and the light has to be close enough.

People are like standing inches or even feet away and I get it so they can get their whole body done quickly, But they're missing out on the vast majority of the benefit.

So less than an inch. And that's, you like the light path? Light stem. Oh, sorry, light stem? Yeah. Yeah, because I got to tour the facility in Orange County in Irvine, California.

It's not too far. Definitely. Say hi to Steve. I have the handheld, but that is very different than being able to lay on the bed. And to get your whole body could take quite some time.

With that, is there anything else and then we'll kind of wrap up, With the mitochondria, on a day-to-day basis, beyond the fasting and cold exposure and red light, is there any other thing that helps the most?

Is there a food that help or meditation? Yeah, it's a great question, and I think anybody listening to this, which might just be my mother, would be asking the same question.

Yeah. Something easy to implement that they have access to. This is the easiest thing that will have the greatest impact with these things that used to be called sarcosomes in 1857. Then they were called bioblasts.

in the late 1800s. And then almost right around the turn of that century, they finally became mitochondrith. What's interesting is mito means thread. That came from mitos in Greek and then chondros, which also Greek origin, it means granule.

Gratitude, Connection, and Clinic Outro

So, the key there for me is the word thread, and how this idea that's so beautiful, when I think about it, it brings tears to my eyes, comes from the Navajo.

And I might be mispronouncing this, but the greeting that they would say when they, like let's say you're walking this way and I'm walking that, we're walking towards each other and then our eyes connect and we are going to greet one another.

The greeting is, and it's almost like a whisper, Yatahe, which means roughly, I am another you. So that thread that connects all of us, we are all connected.

And I believe in my heart of hearts that we're all through one another's mitochondria. So the top thing that you can do that's free, that is easy and effective, because the research has shown this, is gratitude.

And the key on gratitude is that it's not from here, my head, but it from hear my heart. Cause right now I could rattle off 10, 20, 50, a hundred things that I'm grateful for.

And I didn't feel any one of those things. But if you spend and it doesn't take much, this is what the studies are showing about five, maybe better yet 10 minutes of spending time, truly feeling grateful.

your mitochondria will improve. And the key for me, and I recommend it for anyone else, for to be able to feel that and not think it, is to put my hand on my heart and close my eyes.

Yeah. It directs that energy into the heart from the head because we often need that physical. That cue, that anchor. Well, this has been very enlightening and I think again, too, really important, right?

Most of us or a lot of our clients and patients, the energy is a big, big piece and we're all about healing on the cellular level and you can't do that without supporting the mitochondria.

even if you wanted to, but you shouldn't want to. So thank you so much. And tell us what city you're in to visit this wonderful biohacking. Yeah, come on.

Come on by and say hello. Let our mitochondria talk to one another. We are in Denver, Colorado. And for those who are on the know, it's around I-25 in Hampton.

Yeah, we'd love to give you a tour of our world-class facility and get your longevity hacked in community. Yes. What's the name of your clinic? We're Powerhouse One.

Love it. Perfect. Well, again, it was such a pleasure and I will look forward to going to Powerhouse One. Pleasure was all mine and we'll give you a red carpet treatment, a Red Light treatment.

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