Introduction and Guest Background

Welcome back to another episode of the Restore Your Mitochondrial Matrix Summit. I'm your host, Laura, from Ontario. I'm bringing you experts to help you boost your energy and fix your health so you can build the life you love.

And today, my special guest is a friend of mine, Doctor Deb. Matthew. Hi, Deb. Welcome to the summit. Hey, thanks so much for having me. It's great to be here.

Oh, I'm so excited for you to be here, because we're going to be talking about a really big topic, the topic of adrenal fatigue. And actually, we're going to unpack why thinking and current, you know, current thinking around this concept has shifted and that perhaps the real problem is mitochondrial dysfunction, not adrenal fatigue.

So we're going to dig into that. And you're super qualified to talk about this. You are the happy hormones doctor. You're known as that. You're the bestselling author.

You're a bestselling author, an international speaker, an educator, a wife and a mom of four boys. I can't even imagine what it was like having a busy medical practice.

And being a mom to a big family as well. You're just amazing. But you actually have a personal story where you suffered for years with fatigue and irritability, and you had hormone imbalances.

That was the underlying problem, and you really had this quest to resolve your personal health problems. And that led you to change everything about your practice of medicine.

And since then, you've been featured on podcasts, radio, TV, you're all over the place, NBC, ABC, CBS, Fox. You're really an authority in this space. So I'm grateful that you're coming to share your wisdom today.

Thank you. I'm glad to be here because I've lived the best. So I unfortunately and sadly have firsthand experience with adrenal fatigue, mitochondrial dysfunction, etc..

Yeah. So let's unpack that right away. Is it that your adrenals are broken or is it that your mitochondria can't generate energy? So let's talk about that current thinking and the concept of adrenal fatigue and how that's shifting in the space.

Yeah. You know, I personally I kind of like the name the idea adrenal fatigue because people can understand they're fatigued and there's some kind of a problem with their stress system.

But the reality is it's not your adrenal glands that are broken. The really what we've come to understand is initially the problem is that the signaling between your brain and your adrenal glands is off kilter.

So your brain recognizes when there's stress and it tells your adrenal glands if it's supposed to be making cortisol. And so cortisol levels can change because the system a messaging system, is out of kilter.

But what we've really come to understand even deeper than that, is that our mitochondria are actually intimately involved in this whole stress response.

Adrenal Fatigue vs Mitochondrial Dysfunction

And of course, your mitochondria are like Energizer batteries that are generating energy for you. And so if they are not doing a good job at generating energy, of course you're going to feel fatigued.

And so while I like the concept, it's easy for people to understand the idea. I'm fatigued. Something's wrong with my stress system, my adrenals. In reality, it's not even coming close to explaining what's really happening in your body.

Well, I love how you said your mitochondria are intimately connected. Here it is. I mean, we are the product of what's happening at the cellular level in our body.

And I and I think, you know, you've run probably thousands of adrenal tests on people and, and I've, you know, run thousands of adrenal tests. And what we see oftentimes is that people have a really wiped out and their their cortisol level isn't even low, right.

That that kind of final end stage adrenal fatigue where we've got flatline cortisol levels, people are actually ramping high cortisol levels and they're just wiped out.

So what else about this? What's going on with the mitochondria that that's really creating this problem? When our bodies are under stress, it changes our mitochondria.

It damages our mitochondria. And it it makes them not function properly. And there's actually a difference between if it's an acute stress or a chronic stress.

So under an acute stress you know the house is on fire and you're running outside for your life. Your the, the rise, the, you know, the Russian cortisol level that we get actually can change our mitochondria function.

It can change the shape and size. We call that the morphology of our mitochondria. It can also change how our mitochondria generate antioxidant enzymes that help to protect the, the mitochondria.

And so in the very short term, those changes are meant to help us generate more energy so that we can run for our life. So in the very short term, that's helpful.

That's how we were designed. But if that acute stress or is more if it's a longer, then really within a few hours, our mitochondria can start to become damaged and start to become dysfunctional.

So lots of acute stress is not really good for our system. Within a few hours. Within a few hours, we can start to see changes in the mitochondria and while that short term, you know, rapid change in things is meant to help generate more energy and help us, most of us have chronic stress, right?

We've got stuff day in and day out, and over time, the chronic stress is what really causes the problems. And instead of the increase in energy to help save our lives, our energy production drops.

Those antioxidant enzymes drop. Which means that we don't have as much antioxidants to protect our cells anymore. And so that's when we really start to feel exhausted, overwhelmed, hard to cope, hard to deal with things because our body's energy production mechanisms are just not working properly.

Yeah. And somehow, you know, we kind of lump this into the basket. It's adrenal fatigue, right? Right. And and like I said, I think it's because that's so sound, so simple, but in reality, it's kind of sent us looking in the wrong direction.

And so I think so much about what we do in functional medicine is we want to treat the root cause. And so we have to understand what's the real root cause of why you're not feeling your best.

And we have to address that because otherwise we're not really going to get the full results that we need to get. Yeah. So mitochondria it's so interesting because mitochondria are a target of stress.

So they're damaged. They're the target of stress. But they simultaneously impact and control the stress response. So you can you shed some light on that because that's really fascinating. Yes.

Now this is an area where there's not nearly enough medical research. So this is like ongoing new information. And

it's just unfolding.

How Stress Damages Mitochondria

And it's really changing how we think about things to learn about this stuff. But it turns out that the mitochondria regulate almost all aspects of our stress response.

And when we're under stress, there's all kinds of things that change in our body cortisol production changes and blood flow patterns change. And, lots of different things are going on.

Our heart rate speeds up, etc. but mitochondria are intimately responsible for this. And when we have chronic stress, we can see chronic changes. And a lot of the time we've been talking that up to the effects of cortisol.

And we know that chronic cortisol, release is harmful to our body. And one of the things that can happen is that shrinks our brain, especially our hippocampus, which is one of the regulating centers in our brain.

But it turns out that when we see that, when we see shrinkage in the hippocampus as a result of chronic stress, it's actually indicative of mitochondrial dysfunction.

And so there's this really important connection there. So we also know that there are some people who are born genetically with dysfunctional mitochondria.

They've got different diseases where their mitochondria don't work properly. Yeah. And in those people we see very elevated cortisol levels. In fact their cortisol levels can be double what you know, a typical cortisol level would be which indicates that, if your mitochondria are not functioning properly, then your cortisol is not properly being regulated.

And so that can cause even more problems. That's so interesting because we always think about cortisol being linked with, you know, blood glucose levels and being linked with just the stress itself.

But what you're saying is there's a link with mitochondria as well. There's more to it than we suspect. There's more to it than we suspect. And I think that as the research continues, that we're going to learn all kinds of new things that we really didn't understand.

And I think that's going to be so helpful because that gives us, you know, now that we kind of understand we can do more things to try to help protect your mitochondria, boost your mitochondria, support your mitochondria.

That can really help in a lot of different ways. Okay. So can you go back and you can you just touch it? Now that we've laid that foundation, there's a difference between acute.

The house is burning down stress and chronic. You know, every day you come home, you're in a in a situation of, you know, your relationship isn't where you want it to be.

And this is just underlying stress, stress, stress, stress every day. So both of those types of stress affect your mitochondria function differently. So you started to touch on that.

Go a little deeper there okay. Because you know everyone listening has kind of a different scenario. Some people are in amazing or supportive relationships and they have amazing jobs and but they have these things that hit them, like all of a sudden it's a stress with their teenagers or it's a strong it's a stress with, you know, something something that's short lived.

So what's the difference? Okay. When we have acute stress, something that happens short term, our body compensates. Right? And that's the beauty of the human body in its wisdom.

It changes how it's doing things in order to help us cope with whatever we got to cope with going on. And so, some

things are good about that and some things aren't so healthy, but overall, it's our body is attempting to get us through the stress.

It's attempting to help us to survive. And so generally speaking, what's happening at your mitochondria is they are changing their function, but they are also changing what we call morphology.

The size of the shape. Like if we look at them under the microscope, they look different when they're under acute stress. And what's happening is they are changing in a way that is trying to help us generate more energy.

It is up regulating or increasing the amount of these enzymes that help us to make antioxidants in order to try to help us have more energy so that we can run for our lives and survive.

But sometimes it goes a little overboard. You know, when the when the stress acutely is more than what we can really keep up with and maintain, then up regulating all of these things can sometimes cause harm.

It can go overboard. So, for example, part of what happens here is more cortisol is released. And we know that excessive amounts of cortisol, cortisol is like long acting adrenaline.

And if you've got too much cortisol pumping through your system then it's like too much adrenaline. You can feel anxious and jittery and you don't sleep well and your blood sugar goes up and your blood pressure goes up. So, acute stress is harmful.

But all of those things, including the blood sugar going up in the blood pressure going up, those are all things that are trying to help us survive when it goes on and on.

And we've got the chronic stressors in our life. So the relationship issues, the job issues, we have a family member who's sick, you know, all the things when a pandemic, all the things that are going on.

Then over time things kind of shift down and things change. So now our mitochondria become more dysfunctional. They're not able to generate the energy that we need.

They're not able to create those antioxidant enzymes anymore. We get more and more cell damage. More and more things break down. We can't make enough cortisol anymore.

So even if your body needs more cortisol, you know you just isn't getting the signals to make it. And it's not that your adrenal gland is incapable of producing it.

Why Adrenal Protocols Sometimes Help

It's the signals aren't being sent to make it. And that's when you feel really overwhelmed. Exhausted. It's hard to get out of bed in the morning, and the little things can feel stressful, like things that don't have to be stressful.

Things like just getting your groceries home from the grocery store and getting them all unpacked and getting dinner on the table feels exhausting and overwhelming, because your body's energy production systems are just not able to keep up with your body's demands.

Yeah, so yeah. So I have a question as we're talking about this, because I know you and I have both run adrenal protocols on people where, you know, we're giving Adaptogenic herbs.

We're giving, you know, blood glucose regulating supplements like lipoic acid. We're giving maybe, desiccated adrenal hormone to support people. And some people get a really good benefit from this, and then some people just don't notice much of a difference.

So what do you say? So why do those things seem to help? And is it good to continue giving those type of protocols? And what about the people who don't respond?

I'm assuming it's a deeper mitochondrial issue. So can you talk to you talk about that. Is it worth it to give those protocols still and what else needs to be done or what's missing? Okay.

So I think yes, it is worth it because if somebody comes in the door and they're exhausted and overwhelmed and they've got stress in their lives, and, you know, usually what happens when we're exhausted and overwhelmed is we're not eating, you know, as well as we should, and we're maybe not exercising.

You know, we're not maybe doing all the best things that we can to take care of ourselves because we're just exhausted and overwhelmed. And if we start off with all the things that, you know, can help with adrenal health, so, you know, healthy diet and meditation and, you know, some of the adaptogenic herbs, the things that support our our HPA axis or hypothalamic pituitary adrenal axis, which is that messaging system between your brain and your adrenal glands, I think that's a good place to start.

And a lot of people are going to feel better, but there are going to be the people where it just we don't get the results that we're looking for, and that's where we really need to go deeper and understand what are the underlying factors that are preventing this system from just resetting itself.

And it can be heavy metals. It can be, some kind of inflammatory condition, like a hidden food sensitivity or an autoimmune condition, some kind of low grade chronic infection.

Any of these things that can be damaging to our mitochondria or nutrient deficiencies right there, certain nutrients that your body really needs for your mitochondrial function.

So that's when we need to start digging deeper to understand what are the underlying factors at play. And we need to go after those things. Yeah. So what I'm hearing is if somebody's done a basic adrenal reset protocol, where it's where you got some lifestyle pieces and you've got some supplements and you're not getting the results, you're just not improving, then there's probably something bigger going on.

It's probably something that's damaging at the mitochondrial level. And in order to support that, we really need to get down to root cause and what's causing the problem there.

So so, you know, there's nothing bad in adrenal protocols, but there may be more that you need to do is that what I'm hearing? Absolutely. Okay. Good.

So everybody who's got your adrenal protocols, they're helpful. But you may need to dig a little deeper. So let's talk about the things that make your mitochondria vulnerable and what's harming them.

Because there's a whole bucket of things that harm mitochondria. So in your experience in your practice what's going on here. Yeah. Well some of the things that make your if we sort of specifically talk about stress here for just a minute.

So when somebody is under stress that damages their mitochondria. And when we say stress we mean, like you said, busy marital problems, you know, worried about things like the emotional stressors that you know about.

But there are lots of other stresses that impact you. So dietary factors, if you're not getting the right nutrients, the hidden infections, you know, other kinds of things, those are all actually stresses on your body, but specifically things that make your mitochondria more vulnerable are behavior things.

What Harms Mitochondria and Increases Vulnerability

So if you're not exercising, if you're not sleeping, if you're stressed out all the time, you know, if you're not doing all the things that are really important to help you look after yourself, those actually set your mitochondria up so that, when more stress happens, you know, that's sort of the tipping point and things get worse.

Another thing is nutrition. If you're feeding your body all of the nutrients that your mitochondria need in order to

function, well, then when more stress happens, less likely that they're going to, you know, tip over and go into the problem zone.

And then another really interesting thing is that genetically, some people are more just genetically predisposed to having vulnerable mitochondria. And this is an area that, you know, again, we we know a little bit, but we don't really know enough to be able to go off and measure your genes and tell you exactly if you're that person.

One of the things that we see is that when people have had a lot of stress and trauma as a child, we call that adverse childhood events, that those adverse childhood events actually seem to change the DNA in our mitochondria.

So our mitochondria are really interesting because they have their own DNA. Yeah. And adverse childhood events can actually change the DNA in your mitochondria.

So that going forward through your life you are more at risk for having mitochondrial dysfunction. And we should say mitochondrial dysfunction from stress from anything causes more inflammation.

And of course, inflammation causes, you know, is the root cause for most of the chronic diseases that none of us really want to get. And we know that having a traumatic childhood, having a lot of stress in childhood increases the chances that you're going to have problems.

When you're older, it increases the chances of heart disease and diabetes and all kinds of, of, of conditions. But there's a mitochondrial link because the stress in childhood affects your mitochondria.

And that's part of the piece that sets you up for the inflammation, which doesn't mean that you're destined for this. It doesn't mean that if you had a difficult childhood, that you know all hope is lost.

It just means that if that's you, first of all, we want to help you deal with the trauma. But also if we use nutrition, lifestyle changes and things, those are things that that we can help to make your mitochondria less vulnerable to the impacts of stress.

And that can make things a lot better. Yeah. So, so many factors hurting our mitochondria. Now mitochondria are responsible, as you've so laid out so beautifully for regulating all aspects of our stress response.

So can you unpack what happens in your brain and your HPA axis when the dysfunction is occurring. Yeah. So when so the mitochondria are important for our messaging systems.

They help to regulate our endocrine system which is our hormones. They help to regulate our nervous system and they help to regulate our immune system.

And like I said, we're still working on exactly all the fine tuned details. But we didn't have any idea of this when I went to medical school. The mitochondria just generated ATP, which is energy that's really all that we knew that they did.

So this is really kind of mind blowing that they really do so much more, but they are intimately involved in regulating all of those different aspects.

And your endocrine system means all the hormones that go through your body, and your hormones are the chemical messengers that tell your cells what to do.

So they are actively, like cortisol, for example, is a hormone. It's one of your chemical messengers that tell your cells that they need to adapt to stress by changing your blood sugar, etc.

and so the mitochondria are actually regulating how your body is releasing cortisol, as well as your mitochondria are being impacted by cortisol. So it's a two way street.

And it's really interesting that, when your mitochondria are not doing a good job, all of those systems, your nervous system, your hormone system, your immune system aren't going to be functioning as they should, which just leaves you not feeling your best.

And, you know, interestingly, when we look at people who have depression, PTSD, sort of chronic mood disorders, when we look at their mitochondria, we see that there might have secondary function is not great.

And so I think there's a little bit of a chicken and the egg here. How much of it is that mood symptoms depress mitochondrial function and how much of it is mitochondrial problems cause mood problems.

Testing Mitochondrial Function

And you know, there's there's a lot more to for us to learn. Yeah. There there is. So real quick how do you like to identify mitochondrial problems in your in your patients.

What are you doing to identify testing or what are you doing. Yeah. So sometimes we go by symptoms because it's always important. We always want to look at the person and not just focus on the number on a lab test.

But we do organic acid testing in order to look at, function and biochemical processes in the body. That can help us to understand if there are problems with mitochondrial function.

So that's my go to super simple urine test. I love that test. To give us a real quick idea of how your mitochondria hypo metabolic are. They just like laying flat doing nothing, or are they just a little bit under functioning?

And from there you can build protocols for people. It's so zactly. Yeah. Okay. So what are some practical tips, that you can share with our audience on how to cope?

I mean, so stress you spent a lot of time talking about stress. How can we cope with this? I mean, it's one thing to tell people, you just need to de-stress.

You need to reduce stress and I know that people listening right now are like, if one more person tells me to de-stress, I'm going to kill somebody. So what do you do?

Yeah, I like to give some practical, stress reducing tips and then move past that. But some of the things that I think are really practical is gratitude.

Because when we're in the state of gratitude, we can't also simultaneously be in the state of bitterness, anger, anxiety, etc.. And so, a gratitude journal.

I have a gratitude journal. Every day I write down three things that I'm grateful for. I feel like that really helps me a lot, puts you in, you know, puts things into perspective.

So that's one the other. There's breathing exercises, there's meditation. There's all those things that we can do, walking. Those are important. But another really important thing I think, is to recognize that what goes on in your brain impacts your physical body, including your mitochondria.

So if you are constantly thinking negative thoughts, worrying about things, you know, ruminating over that same conversation over and over again, like, I can't believe she said that to me, you are actually taking that stressful situation and making it worse.

Whereas if you are able to catch yourself thinking those negative thoughts and make yourself stop and turn to something positive, that literally changes the chemistry in your body, and sometimes you have to say, stop outloud, you put your hand up, stop.

And that will break the thought patterns. But what you think about really, really matters and changing what you're

thinking is powerful medicine.

Practical Ways to Reduce Stress and Support Energy

The trick is you just have to catch yourself doing it and find a good trick to turn on. So yeah, but having some healthy means of coping with stress is important for all of us, because we're always going to have stress in our lives.

It's not, you know, nobody is going to be completely stress free. But it's really not so much how much stress you have, and it's much more about how you allow the stress to affect you.

So healthy ways of coping with stress. So if there's one thing that's really important, another thing that I would say specifically here is exercise, because we know that exercise actually helps to boost mitochondria.

And so, exercising can help boost the mitochondria. So if you've got stress, you know, pushing down your mitochondrial function then exercise can kind of counterbalance that.

So that's another really important tip. Do you want to feed your body a healthy diet? Your mitochondria, just like the rest of you, needs vitamins, nutrients, healthy fats, needs the right.

Cool. So you want to fuel your mitochondria with healthy food and avoid the damaging nutrients like, sugar, the, refined seed oils. We want to use the healthy fats olive oil, avocado oil, that kind of thing.

So a healthy diet is another really important tip. And then there are certain nutritional supplements that can be really healthy. So adaptogenic herbs there's one interesting one because interestingly, the way that these adaptogenic herbs, which is just a category of herbs that help us to cope with the stress response, and these herbs have been used for thousands of years all over the world, and all sorts of different cultures, because people have learned that they help us cope with stress.

But interestingly, the reason that they help us cope with stress is because at the cellular level and some of them are actually acting like cortisol. So they help in that way, and some of them are acting by protecting ourselves from cellular damage on the inside.

And these are the same damaging pathways that are harming our mitochondria. So adaptogenic herbs actually are helpful. Other things that can be really helpful are CoQ10, and carnitine, because these are really important nutrients for mitochondria.

Some of the B vitamins are really important. But typically what I like to do is do the testing to really understand what's going on for you personally, which nutrients seem like they're going to be the best fit.

And really kind of targeting recommendations. Yeah. It's such, such good stuff. All right. We still have a few minutes. So I would love if you're open to dig into a little bit about gut health and mitochondria and, because I think this is super foundational.

It's super important. If we don't address gut health, then you're probably not going to have long term results or success. I'm sure you'd be agreeing to that.

So dig into that a little bit. What are you experiencing in your practice? When it comes to, you know, rebalancing people's health and fixing their bodies, how much attention are you paying to gut health?

Yeah. You know, so for me personally, my my special area of interest is hormones. So most people come to me because they feel like they have a hormone problem.

And a lot of times, you know, they think it's adrenal fatigue and, you know, so we have to dig to get to the root. But we always want to address hormones and gut health and toxins in the environment and lifestyle habits, because all

of those things go together.

And it is so, so, so common that when someone comes in, especially women, comes in with any kind of a hormone problem, whether it is this, you know, adrenal, issue, whether it is, menopause, thyroid issue, whatever it is, it is so common for us to find underlying issues.

Either they've got IBS or, constipation or heartburn or they just always had a sensitive stomach. So, so common for there to be an underlying gut issue.

And this is true because our gut is so integral to our overall health. And if you don't have a healthy gut, you're not going to have a healthy immune system.

You're not going to have a healthy brain, you're not going to have healthy hormones. They're all linked together, and your gut lining is so delicate. It's only one cell layer thick.

And that lining of your intestinal tract is what decides what things are going to get absorbed into your bloodstream, like healthy nutrients, and what things are going to go straight on through, like bacterial particles.

Gut Health, Hormones, and Root Cause Healing

But when we are under stress, when our mitochondria are just functioning, when we have too much inflammation, there's many, many reasons for our digestive tract lining to become inflamed.

And then it's not absorbing nutrients properly. The wrong things are getting in your body that's triggering inflammation and immune system response. And it promotes autoimmune conditions, mitochondrial dysfunction, any kind of mental health symptoms, any kind of brain symptoms, fatigue, poor memory, bad sleep, anxiety, depression, bad focus, you know, all sorts of things.

So I feel like, as a general statement when we're starting with somebody who has a whole bunch of, you know, symptoms, they're not feeling good really focusing, or at least including a discussion about gut health is a really, really, important part of it.

If you can't if you can't absorb the nutrients your mitochondria need, then you're not going to be able to feel your mitochondria. Yeah. I mean, we're doing these organic acid tests and we're seeing deficiency.

So what's causing the deficiency? Toxicity causes deficiency. You know, not being able to digest your food causes deficiency. Not being able to absorb your food, your nutrition causes deficiency.

So thank you for shedding light on that because I think that's so critical. You are amazing. There's so much incredible information in this talk for everyone listening.

I, I know people are going to rewind and go back and take notes and listen some more because it's just kind of mind exploding that, wait, what do you mean?

It's not just all about my adrenals? What do you mean? There's something else going on there. So thank you for explaining that. So, so perfectly and really appreciate it.

Thank you. This is I think this is really important. And I think it's important to say that as practitioners we're learning to and we have to I think this is really important for any practitioners that are listening.

Listening is we have to be willing to take new information and, and roll with it and learn from it and not be so stuck in our ways that just because this is what we used to think, that we're not able to change our thinking and adapt.

Absolutely. I've always said practicing medicine is is the art of really trying to figure out what we think we know and shifting it. And you know, it's constantly ever changing.

Science is constantly evolving and our understanding of the human body. So, Deb, where can people get Ahold of you? Where can where can we find you? I'm sure you're all over the place.

Yeah, well, my website is Signature wellness.org. And, I also have, a website called is it Your hormones.com. And you can find more information there as well.

Perfect. And you work with people virtually. Do people come to see you in clinic practice? How do people I have an in-person practice in North Carolina and, I am licensed in North Carolina.

So, I mean, if you really want to come and see me, you'd have to come to North Carolina. And then you have virtual options for people as well. People can get a hold of you online.

Yes, but but we can only really take on patients if they come to North Carolina because, well, you're with people across the country. Well, you're worth it.

We do have people come from all over. Yeah, I love it, I love it. Thank you so much. Davis has been wonderful. I appreciate you so much. Thank you all right. You take good care now.