The Genetics Of Mitochondria Health For Life-Long Energy Transcript

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Introduction and guest background

Welcome back to the conversation. I have Dr. Rajka Milanovic Galbraith with me. Hi, Erica. Hi, Laura. How are you doing? Good, good. I'm so happy to have you here.

You're going to be giving us an amazing talk on genetics today. You're known for this, and this is why I'm so excited to bring you onto this discussion.

You're the you are a functional medicine M. D.. You're an international speaker. You're a mentor to practitioners. You're an expert in longevity, anti-aging, nutri genetics.

And you really have helped thousands of high performing executives, entrepreneurs, celebrities. You help people recover that energy and their performance so they can have a bigger impact in their lives.

And you also are known as the go to doctor for other doctors. So everybody listening should know that all doctors have a doctor, a practitioner is a practitioner.

We hire other people to take care of us. And you're one of those people who we hire. But you also work with regular patients who are not doctors as well.

And you have your simply Health Institute outside of Chicago. So welcome, welcome. We're going to have a fun discussion today about genetics. Yeah, thanks for having me on the summit.

Laughs. Pleasure to be here. Yes. Yes. Okay. So there are some things that people need to know about, about. Is there some basic foundational things we need to talk about first before we dove into the top genes that affect detox and mitochondrial health?

So we're going to unpack all that in a way that is super easy for people to understand. But first, can we talk about why detox is important to mitochondrial health?

So that'll set the stage for everything else we're going to talk about. Yeah, that's an excellent question. So as you know, we're all exposed to everyday toxins.

It could be just your car pollution that, you know, in and out of your car all day long. It could be things you put on your skin and or maybe a medicine that you're breaking down.

And our body needs to break those toxins down and eliminate them. And sadly, when it comes to mitochondrial health, our mitochondria are really prone to toxic exposure.

So that could be everyday exposures. And with every passing year you can have a buildup of iron. You need to continue clearing. And why that's important is our mitochondria are particularly prone to being damaged by toxins and the fancy scientific thing is because the DNA of our mitochondria are not protected like the rest of our DNA.

So that's why it's more prone. And for the science people out there, they're protected by histones.

Why detox matters for mitochondrial health

And I always joke and say, all that mitochondrial DNA comes from your mom. So if you're tired, blame your mom. That's so true. It's not fair. I know. Don't we always feel it is responsible for everything?

It's always Mama's fault. Absolutely. Oh, my gosh. Oh, my gosh. Okay, so good. So. So going a little deeper for us

here. What are the types of things that we're needing to detox from in order to support?

And actually, can you talk about why are you so sensitive? What's the deal here? Why are they so prone? How come they're not tougher? Yeah, it really has to do with just that.

The DNA is not protected, that they aren't tougher. And then unfortunately, the second reason is that they decrease in number as we age and they're harder to regenerate.

And the third thing, too, is that, you know, if you are continually deficient in the crucial vitamins and minerals to make energy, then they they don't function as well.

So you've got, you know, kind of that triple whammy of why they're prone to toxins and then let's not even get into the stress piece and what happens to our our nutrients and, you know, the decrease in energy formation.

But yeah, so that that's what makes them particularly prone and not as resilient as the rest of us. And then there's this whole genetic piece where our genes affect our ability to detox and our mitochondrial health.

So why are genes so important here? Yeah. And what I tell everyone when it comes to genetics, you really want to think about that. That is not the only answer.

And just like a brief overview is that we can have we can alter the way our genes function and if we live a healthy lifestyle, so we can turn off defective genes.

Conversely, if we're not living healthy, then we can say, Hey, that defective gene is actually what we like to say expressing. So don't function as well based on what we're seeing on paper.

And we can say and we never just treat the genes where we treat someone's symptoms. What are the lab shows and what are the then the genetics is does it correspond because you can't just predict from the genes whether that gene is actually functioning as its mutated or not, meaning that it's less functional?

Yeah. So that's kind of the overview to lead in to talk about some of the the ones that are more important. Okay. So what are we want to just unpack what the top three genes are and then talk about each of them individually.

Yeah, that would be great. Okay. The first one would be a sodhi and then it's a fancy abbreviation for superoxide dismutase. And we'll go into, you know, what is its role and function.

The second is a gene called catalase, and then the third is glutathione oxidase. So there's three. So the catalase glutathione oxidase. And once we kind of unpack what are the roles of each, people will understand?

Why is it important to know? Are your genes functioning properly? Do you are you limiting how many toxins you're exposed to, which equates to how well your mitochondria function?

And could this be why, you know, these three genes, could they be responsible for why some people do really well on a detox protocol and other people seem to not get the same result or it takes longer or they just don't feel better.

Okay. So this is really critical for people to understand because there isn't a magic wand effect here. Like, we can't I can't predict. But when I'm giving people a protocol exactly how you're going to react to it, depending on your genetics and whether or not you're expressing those genes.

So and that can shift as your lifestyle shifts as well. So first, start off with the first gene, which would be the Saudi gene.

How genetics influence detox pathways

So a Saudi gene which stands for superoxide dismutase, its role is to break down something called a free radical

and for kind of just being well-rounded.

It's the superoxide radical. Why that's important is our ATP. Every to our mitochondria, every time they make energy or ATP, they release a super oxide free radical.

So a small amount is needed because that's what helps us kill off all the infections that we're exposed to. The bacteria, the parasites, etc. But if it's not kept in checks and balances, it can accumulate.

And so that's where sod comes in because it neutralizes that free radical into another compound called hydrogen peroxide, which you also don't want building up.

And so that that's its role is continually shuttling it down the pathway to clear it out of the body. Okay. And when it's not working, when it's not shuttling to clear out the pathway, how might somebody feel?

How might they? Yeah. So I'm going to talk to you about so then another another chemical pathway comes. It can combine with another substance or a body called nitric oxide.

And we're really at that now. So think no. And then that forms a compound called Oh no. Think about Oh. No, your tissues at risk. For being destroyed.

And that's really what happens. Oh, no. Causes tissue breakdown. So for some people, that's joint pain. It could be brain fog. And so that's what you're looking at is that you'll start to see these subtle signs of aging.

So that's not good. So if you're waking up stiff, you might not be clearing the free radicals as quickly. And it should be your tip up, too. Hey, I need to have someone who knows a little bit about detox, like you and like me to say, where are we getting hung up in the cycle.

Okay, so if. This if you have this issue so we're talking still on the Saudi gene here, what do people do about it? Yeah, well, the number one thing is you try to you know, you limit toxin exposure.

So you really want to go and look. And I always tell people, you know, I've tested people who live the cleanest lives. And lo and behold, when you test them, you'll find one toxin that's way out of range that they didn't even know about.

And so then we have to go back and look at where is that exposure coming from. So that's what you're looking. Is there exposure that we can modify? And I've been really shocked because I've had people have recovered and said, well, I'm just here yearly.

SOD gene and superoxide radical clearance

I heard about this test. I thought I'd get it just to make sure. And here, here they have a really high level. So that's first is to avoid. The second is if you are experiencing joint pain and we think this is the cause, you can actually give a D, which is an enzyme.

So superoxide dismutase orally. Typically we don't just give that one alone, but it'll help break it down. And it works as we're trying to kind of get to the root of what drove it.

Was it strictly genetic? Was it a high level of toxic exposure? And and then you can backtrack and hopefully the goal would be not to have to use SD indefinitely, but just as a temporizing to get someone better.

Would you ever give it based on symptoms or would you always run a genetic test first? I love that you asked that. So before I knew the genetics, I was learning from some of the best people on the planet as we all do.

You get that thirst for knowledge. And I heard another genetics person say that he had utilized it for someone's rheumatoid arthritis. So I had a patient come in who had a genetic mutation that can lead to recurrent miscarriages,

and that's the only reason she wanted to see me.

And she was booked because of our schedule 2 to 3 months out. By the time she got in, she had the misfortune of getting the diagnosis of rheumatoid arthritis.

So she was literally new onset, acute flare. And I have a very precise protocol that I put people through and I didn't know any other genes. And I said as we were running her through the toxic piece, so I got mine, the three D protocol, the right steps, the right order.

So you ensure people aren't getting sick while you're doing what you're doing. And I said, Why don't we try this? Because I don't fully understand it, but it works for this lecture.

And lo and behold, when we went back in and looked at her genetics, as I learned it more and more, she was kind of lost. A follow up for 18 months. And I thought, oh, my, what I did didn't help her.

And eight months later she says, Oh, I feel like I never had rheumatoid arthritis in my life. I don't feel like I ever had a diagnosis. And she actually came back in to say, I want to prevent a recurrent miscarriage.

Let's look at my genetics. And by then I had, you know, caught up to speed and she, lo and behold, did have that mutation in. Well, yeah, so you're right, you can use it if so.

And that's what I say is that I reverse engineer and she was the first person that I was able to do that with. And now it's I don't know, I try to combine symptoms in labs if I don't know the genetics. Yeah.

So I know people here are information seekers, right. People who watch summits, they want information. And I know people are thinking they're writing this down the right.

I'm going to try this. So so let me just ask, is there anybody who shouldn't take this? Is there any danger to trying it? Because, you know, we're sharing all this knowledge and then people are going to go off and try this on their own.

It happens all the time. Yeah. So what I would say is that the next two steps, you should probably combine it with the other catalyst, which we're going to go into or glue glutathione on because that hydrogen peroxide that soda is going to produce needs to also be neutralized are number one.

So that's should probably be in combination. And number two is a theoretic risk would be, hey, what if you were constantly depleting all your free radicals?

Remember, we need some to fight infection. So it's a theoretical risk. Are we going to then be more prone to infection? So it may be that you neutralize it and then you go off of it and cycle it.

And so that's why we're constantly reassessing. I'm glad you asked that, because you just don't want to give information and then have someone do something harmful to themselves.

Right? Right. Okay. So is it time to talk about catalase or do you have anything more to say about a study? And no, that's pretty much it. Okay, so let's go into catalase.

So this is the second gene? Yes, catalase. There's two genes that will neutralize hydrogen peroxide. And I do want to point out a fun fact for your listeners about how do we know if someone has excess hydrogen peroxide and it's not being broken down?

And I always say, think about the qualities of hydrogen peroxide and women who dye their hair. What happens? It strips the color.

Catalase and hydrogen peroxide breakdown

So one sign that that catalase enzyme or glutathione, which also neutralizes it isn't working, is that you have premature, graying. And that was one of my issues and and my mother's we were both probably as we're hitting our thirties, you know, had a quite a few more grays than the rest of the people out there.

And so and the second thing you can experience is acid reflux. So if you're seeing those symptoms and you don't have any other causes, so it's just should be your tip up.

And so catalyzed catalase neutralizes that to water and oxygen. So then it's a benign substance and it's not lingering. And then yeah, and so that's what catalyzed us.

So it's one of the two steps. So hydrogen peroxide can be neutralized by catalysts or glutathione. Peroxidase So the catalase is one of the two steps.

Okay. And then supplement wise, you can just give catalase. Actually, usually it's found in combination. So there's usually with the sod. That's how I typically will give it the two combined.

So you make sure that it's being cleared all the way through the pathway. Okay. Okay. Got it. Now is it time to talk about the glue that I own? Okay. And then, yeah.

So glucosamine, peroxidase, catalase turns it into water and oxygen, and those are neutral and glutathione just turns it into water. And so it's neutralizing it.

And so and then the formation of glutathione has so many different genes that govern it. And unlike any other antioxidant it can be, it's not just utilized once and then it's out of our body like vitamin C, it can be recycled, old and utilized kind of like a rechargeable battery.

So once it's done, you just recharge it and it can be utilized over and over again. So you get problems with, you know, the breakdown or the recycling or the making.

And, you know, this is one of my things that took me kind of halfway through my journey to determine this was an issue, my ability to make good a time.

Your own personal. Your own personal. Yes. Yes. And that's why I'm so passionate. And we'll get into like, should everyone take glutathione? There are some caveats there.

So let's talk about that. So anything else? So we've uncovered the three genes that we really need to look at and looking at in terms of being able to detox so that your mitochondria can thrive, right?

So when we're talking about mitochondrial energy, we can I have this conversation without talking about the ability to detox. That's really what we're unpacking here.

Glutathione peroxidase and antioxidant recycling

Okay. So now one more thing. One more thing. Remember we talked about how what if fat free, superoxide that first free radical builds up, it can lead to tissue destruction if you get hydrogen peroxide that builds up symptomatically.

We talked about heartburn or reflux. The other thing that can happen is that hydrogen peroxide, if there's an abundance, can combine and it's not being broken down, can combine with iron and that forms an even more toxic substance in our body called the hydroxyl radical.

So that's why it's so important. So then you're getting you're getting double whammy. So some of it's going through to hydrogen peroxide, but not enough.

You'll get tissue destruction and then say the portion that goes through to form hydrogen peroxide is in broken

down. Then you'll get really, you know, yeah.

Iron can be really toxic and build up in the body. I mean, it's essential to our life and it's also very toxic. In fact, we have a whole discussion on iron toxicity on this.

So also. Yeah, so thank you for bringing that up. Is there any connection, by the way, just I don't know the hemochromatosis issue in this. Are they connected at all or completely separate?

I wonder, too, it would probably that axis of iron would act to serve, to just be contributing, to feed that pathway of making it more then so indirectly, I guess connected if maybe.

Yeah. So much to. No. No. Okay. So do you want to talk about next would it make sense to talk about should everybody take root with iron or not? Because I know gluten they own is written into many, many detox protocols.

You'll hear it a lot if you're detoxing from mold, any good with iron, if you're detoxing from anything. So, you know, including iron comes in many forms and then there's the raw ingredients that your body uses to make its own glutathione.

So what I think this is a great thing to talk about. What limitation should we take? Who should take it? We should not take it. Is there a safe way to do this if you don't know your genetics?

Yeah. So preferred form that I like is anything that's liposomal. So and that means it's encapsulated in fat or surrounded by fat, so it's not broken down.

And I have a couple of different liquid forms I like and I have a personal capsule form that has just really good for me, especially if you're traveling and you don't want to carry around liquid.

And so that's as far as it as far as the formulation is what people should know. Some people there are other forms, but that is my preferred form. I think it works the the best and should everyone use it always proceed with caution of course.

Because if you're super if you're in that demographic that you're super, super sick, some people don't tolerate it. And even a small dose can throw them under the bus and then they feel worse.

And I've always said that if you're in that demographic, you should be working with a practitioner to begin with and not just gleaning knowledge off of a stomach if your kind of have been disabled from work or so-so sick, but for the general population who says, hey, you know, should I be using it all the time?

I really want to know the genetics because you want to know should you?

Using glutathione and NAC safely

And what I do is if I know the genetics and they're detoxing, say, from mold, then we're on the money post-op or tively. I'm using it to help people clear.

The anesthesia seems to work well. And my personal journey was I was when I was traveling, all that radiation exposure, I started to recover less well so so that by the age of forties in my early forties it would take me first one week, then two weeks and three weeks, then almost a month to recover from jet lag.

And we're talking long haul flights. And the minute I started implementing go to fly on it, dropped it down to three or four days. Which is just there's a lot of theory about what jet lag is.

I mean, this is not a time zone change. This is a massive exposure to toxins from the radiation and to the chemicals that are in the flame retardants that are in the airplane seats in the fabric.

And you mean you are just being exposed to a high level of toxins when you fly. And so jet lag is not necessarily timezone change, right? Exactly. Exactly.

So that's why I say, you know, in those instances, you know, someone who's not super sick might be wise to kind of take a dose or discuss it with the practitioner of like, how would I dose this postoperatively?

How would I dose it's a fly up and then but I'm going, you know, here's my thing. And even the way I do it, if I have something like a flight, I'm going to go to twice a day dosing.

If I don't have something like a flight, just because I know I'm actually missing too good a thousand genes, I have zero copies. So it's kind of a rare bird in that they're within the list.

All the good a thousand genes there's two that you can have zero one or two copies, meaning you inherited zero from your parents likely one of them, you know, they were missing them.

I probably they're missing them as well. And so in that instance, like so I'm on a low dose every day and you know, I can miss, but I find that when I'm not on it for a period of time, even that low dose, that energy level will start to sink down a little lower.

So it's an innuendo. So I wouldn't and then people say the precursor. So again, it depends because you can have there I look at all the genes for some of my patients.

I look at the overview of genes for other patients. It just really depends on what presents. You have trouble taking that cysteine and glycine to make the glutathione.

So in those people may not work because some people say, why not just give NASA, it'll sustain. And then I found an interesting and that's NAC. Some people know it is NAC as a supplement I found an interesting article that said you know buildup of NAC can be a problem so so many innuendos but I do like and a sustain in general for detox probably a little safer than just throwing good found at everyone you know you're going to have a huge exposure and you're not someone who is really super sick.

Then hey, not a bad idea to think about. Incorporate it orally. Totally. Okay, so we have a few minutes left and I want to tap into you on your top tips to really help people with this because not everybody is has run a genetic test.

Not everybody has the funds to run genetic testing. So give us some pearls here on how to support detox. Yeah. Yeah. So you always want to you know, the first and foremost, I mean, if you weren't just down to the basics, you'd you'd avoid everything you can.

And I'll give pearls within that is an air filter is a must for a bedroom. I mean, were there 8 hours or more? Hopefully, you know, hours a night and a high quality one.

So there's like I think I spend more time in this office than just, okay, you better put it in your workplace, too. Yes, yes, absolutely. I love that you brought that up in a portable one.

So if you go to port, we have one that's portable and we can move it from room to room. And if you get tired of that, then by two or, you know, if you have the funds and buy a whole house one.

Practical detox support tips and testing

And you know, the other thing that's cropped up and I said this to someone like what's ahead in toxin I didn't toxins in your water if you're not filtering it and I've even had people filter their water and one of the chemical byproducts of gasoline called MTBE comes back high.

Where that comes from, as there are gasoline tankers at gas stations will leak gasoline into the ground and get into it. And then it gets into our groundwater and it's really high in the suburb that we live in.

And, you know, we switched water sources and it didn't make it any better. So we are continuing to explore. And I was really it was in that point of we were looking for filters and what do we get?

We want whole house. How long we staying? We're getting under the sink. And we finally came up with a solution. And that's what I've found in some of these people who Oh no, we've got water filters.

Air filters, we eat organic and this and that. And you'll even find the pesticides will creep up, even though that you're eating all organic because it's coming from the water.

I like to even make a distinction between a filtration and purification, because for me, when I think of filters, I think of like Britta countertop and refrigerator filter, which are not enough and when I think of the next layer, I try to separate it.

So purification is where you want to go. So in my mind, and I don't even know if this is the correct way to say it, but I say, you know, your purification is going to be your reverse osmosis.

You're distilling your something, something bigger. Yeah, yeah. We found one unit that is reporting so we're demoing at the reportedly has an under the sink version has a pitcher has a little thing for your fridge that we're demoing that is reporting 99 plus percent removal of MTBE and almost all the other things.

So that's good. That's good. All right. Clearly, you know, fix your air, fix your water, stop pouring toxins in. And we see a lot of MTBE. We can see that on organic acids test, too.

That's one of the common things that's tested for. And and we see it all the time as well. Where is this coming from? You're doing all this detox work.

I'm putting people through detox protocols and it's still there, right? It's more common than we think. Yeah. So I say that and then I would say, if you've got the funds, you know, the environmental toxin test is, you know, a low hanging fruit.

It's not hundreds and hundreds of dollars. So test because you never you never know. And you'll be shocked at what you find because then you can't avoid all these exposures, even if you think you're doing everything right.

And so those are B top two. And then A three, three would be, hey, when you are going to be exposed to flying or some of these events that are have give you higher exposures to consider either so d catalase or a glutathione supplement, you know, within one of your practitioner.

Yeah. Yeah. Okay. Such good, good support. So any final words as we wrap up? And then I'd like to also know where our audience can find you, where they can learn more from you.

Because I know some people are super excited right now to get some genetic testing and dove in with a practitioner who specializes in this. No, I think that keeps it simple.

You know, I named my clinic simply Health Institute because I like health to be simple. And they think that, you know, you can only absorb so much in anything.

But I think that really was a nice little summary for what can be a complex thing. And so my clinic is outside of Chicago Simply Health Institute, and then I'm at Dr.

Rancocas am, I'm also on Facebook and Instagram and I'm finally getting out there with the rails. They've been super fun to make. Maybe not as creative as yours yet, but some of them have been.

And yeah, it's just kind of brings out that side of you that we forgot was there because we're so scientific right. Where you are. I will tell you, everyone, for those of us who are practitioners to get out on social media and do silly things, it is out of our scope of genius.

Where to find Dr. Galbraith and closing remarks

For most of us, there is a few of our practitioner friends who are really promoter energy and they really love to be silly. Most of us are just content to have our nose in a book and study 12 hours a day like that is really my happy place.

My happy place is not by on social media. So when you see us doing that, it's a really a strategy for us to do that. And to. But doesn't it remind you like to how to pare down and make it simple then you know, you can only the reals are, what, 30 to 60 seconds and someone just.

Well, how do they ask the question? I introduced the topic, but I didn't give the solution and said, Oh, that's because I said, that's an A next real test.

Your attention span is short. So. All right. We have attention spans of goldfish, apparently not people watching this because they just listened for 30 minutes.

If you listen to this, you have a good attendance band and you're a healthy speaker. So thank you so much, Dr. Rika. It's been great and thank you for being here and sharing your knowledge and making it so simple.

Genetics are so daunting to people and you just make it so easy. Yeah. Thanks for having me. Take care. Bye now.