Melatonin's Antioxidant Benefits For Longevity And Energy Production Transcript

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Introduction and Jason Prallu2019s Background

Welcome back to the conversation. Jason Prall, you are here with me today. I am so excited to bring you on to this mitochondria summit. Thanks for having me. This is I love this topic.

I know you do. And we're going to talk all about melatonin today. It's going to be so good because when I dig into some of the research that nobody knows about and for people who don't know who you are, you're a health educator, a practitioner, an author, a film maker.

And in 2018, you created this independent project, the Human Longevity Project. And this was a big nine part series. And this, you know, seriously put you on the map as an authority in longevity and, you know, fast forward to today.

You're working on your next film series, explores ancient methods of healing, mind, body and soul from indigenous cultures around the world. I love that.

I love quoting what indigenous cultures did when we have this big debate about carnivore versus vegan versus what indigenous cultures do. So, I mean, we could have a whole nother talk about that, but you recently released your bestselling new book titled Beyond Longevity.

Like, how do you get beyond longevity? Right? Is that longevity what we're going for? I mean, there's a beyond. So yeah, so this is a proven plan for healing faster, feeling better and thriving at any age.

So this is going to be an exciting talk. So everyone take out your pens and paper and, you know, get ready to watch this talk multiple times because we're digging in.

So can you tell us to start off, what's the connection between longevity mitochondria, the role in aging? And then we'll get into this really cool melatonin discussion because it all ties.

Yeah. It turns out with with respect to mitochondria it's the connection is deep with as it pertains to everything regarding life right these are organisms thought to be of bacterial origin that we then usurped into our cells right.

And the story's not quite worked out, but that seems to be how it how it plays out. Either way, these mitochondria have a bacterial level intelligence.

They have their own circular DNA. Right? So so if we think about our our organism, we have circular mitochondria DNA, we have our human DNA and helical form.

We have microbial genes and the DNA that is spread throughout the base. We have these three sort of distinct categories of genomes that are all playing a role.

If we take out any one of those categories, we can't live right? So it's fundamental to life itself. And of course, because mitochondria are in every cell of our body except for red blood cells, they're playing a critical role in not only energy production, but in cell signaling.

Right. So they're communicating to our DNA. This is absolutely essential that the DNA need an information input in order to express the genes. Right. So it's all about reading the environment, right?

So our microbes are reading the environment based off certain inputs.

Mitochondria, Aging, and Cellular Communication

Our mitochondria are reading the environment based on certain inputs. Our DNA is reading the environment based on these inputs. And again, they're all in three way communication.

Our microbiome is talking to our mitochondria, mitochondria is talking to our DNA and all vice versa. Right? So so this is really critical. So this means that every thought we think, every feeling that we feel, the sleep patterns that we're in, if it's light or dark, what the temperature is, what we're eating, what we're not eating, the microbes and heavy metals and chemicals that we're interacting with, everything is playing a role in this stimulus to our microbiota, our mitochondria and our genes.

Right. So this is in other words we can help vault them to this are central role in aging because they are they are communicating with these two other sort of DNA structures.

Now if we start to see damage to mitochondria and we start to see mutations in the mitochondrial DNA, we start to see dysfunction show up at the cellular level.

This is fundamental. Now what's cause? We can rebuild mitochondria, we can repair them, we can recycle them, rebuild new ones, mitochondria, biogenesis.

So the body has mechanisms to replace and renew. But but this is a precious resource. We can't do this ad infinitum, right? We have a limited capacity and we get them from mom. Right?

So that's what's cool is that every single one of us got our mitochondria from Mom. So how mom was able to take care of her mitochondria and her mom and her mom and her mom comes to that female lineage to us, that's going to be sort of dependent on what kind of cards we're working with, right?

What kind of what kind of cards we got dealt. And so from that starting point, as infants, as children taking care of a mitochondria, building, good, strong, robust mitochondria, reducing the load that they're under is is a critical point to this sort of this aging piece.

Absolutely. So we have a lot of people coming on this summit, authorities in the mitochondrial world, you being one of them as well. And we're unpacking a lot of different topics.

And what you just when you just said, like it was a total mike Mike drop moment, how circular all of this is and how related all of this is and how we cannot think about, you know, healing if we're not thinking about our mitochondria, we're not thinking about our gut, we're not thinking about our immune system.

We all we have to we have to think about all these aspects. Now, what I really want to get into today is this topic about melatonin. So you've just set the stage for us and this is going to relate to the melatonin discussion because everything is circular and related.

So melatonin is actually the most powerful antioxidant that we know of, and there's a lot of misinformation. In fact, I get a lot of questions from my clients in my programs like what's the safe upper limit of melatonin?

Am I going to hurt myself? Because there's these and I use air quotes. There's studies saying that you can hurt yourself with melatonin. You and I have opinions about why those studies even exist in the first place, and maybe we'll go down that path today.

But so tell us a little bit about melatonin being this huge antioxidant and why we want this in our body. And then we'll talk about, you know, what's the backlash against it and why?

Why there's so many why is there so much misinformation about it? I think what I always like to do at some point in my thinking is to look at things from an evolutionary biology perspective, right.

Mitochondria, super ancient. You can trace it through the phylogenetic tree. Mitochondria go back and are spread throughout the kingdom. Right. Same thing with with melatonin.

Melatonin is an ancient hormone, right? It's fundamentally tied to the light and dark cycle, which means it's fundamentally tied to the to us rotating around the sun.

Right. So this is this is spread throughout all of life plants. Right? All organisms have this aspect of reading the light and dark cycle. So this is ancient, which means that should give us an insight as to how fundamental, how critical, how important this is to life itself.

Right. And it turns out that melatonin is not just this important hormone for sleep and present in the in the pineal gland, in the brain. You know, melatonin is present in just about all of the bodily fluids, including cerebral spinal, fluid, saliva, bile, synovial fluid, amniotic fluid.

It's found in breast milk. Right. So melatonin is circulating throughout our body. Right. So this is. This is crazy because sorry to interrupt, but most people just think about melatonin is something we need to sleep and that it ramps up at night.

And then when the daylight hits us, it burns off. And but what you're suggesting is something completely different that has even been taught in medical schools or even in functional medicine.

I would say this is this is even a next level of of natural healing that you're teaching us right now. And it's so fundamental that, again, if we find it in all these tissues and all these fluids throughout the body, the question we we want to ask is, well, why?

Why is it there? What's going on here? And it turns out that that melatonin has receptor sites and plays a direct role in many, many different cell lines, including leukocytes. Right.

So the sort of female germ cells that eventually become eggs, they actually synthesize large amounts of melatonin during maturation. And that will actually help them increase mitochondrial DNA.

It will help them produce more energy, reduce oxidative stress, and protect against DNA mutation from that oxidative stress. Right. So it's playing us a central role in protection and the ability to generate energy at the most fundamental level.

Right. So your ability to make new healthy mitochondria is actually regulated by melatonin. So this is kind of it's. Mind blowing, right? Mind blowing.

It's massive. So sleep. Yes, critical for for for mitochondria, for good health, all those things.

Melatonin as a Master Antioxidant

And independently, melatonin is important as well. So this is where we we can start to separate sleep and melatonin to some degree and look at the effects as independent sort of sources.

Right. So it promotes mitophagy and melatonin promotes mitophagy, which is the recycling and clearing of old damaged mitochondria. Right. So it's it's really, really critical to all cell types.

And it turns out that mitochondria seem to sequester melatonin and store melatonin use melatonin. And research is suggesting and I don't know if it's definitive yet, but it seems as though mitochondria inherently will make melatonin so means all of your mitochondria have the potential to make melatonin.

So that's because of its effects on on oxidative stress. Right? So there's three primary mechanisms of of inflammation or of of oxidative stress, right?

One is to scavenge free radicals directly, right? So some compound can go and just basically quench those free radicals. Right. Due to its electrical or structural composition and any free radicals that can just neutralize them. Right.

So that's one aspect. Another aspect of reducing oxidative stress is to stimulate antioxidant enzymes that act as defense against free radicals. Right. So this might be superoxide dismutase, right?

So if you have a compound that can synthesize, that can make those those antioxidant enzymes, that's a mechanism. The third mechanism is to directly inhibit free radical enzymes from expressing.

Right. So, so we have kind of like the the I see the military general, right. Who would send specific soldiers to or battalions to the front line that would be like stimulating these enzymes. Right.

And then we have like that the soldier who steals the weapons of the enemy. Right. That's that's another mechanism that's by inhibiting free radicals enzymes from expressing well, melatonin does all three of these things.

Right. So it can signal the production of superoxide dismutase catalase included down all three. Right. It can directly quench any free radicals. It has no capacity to be a pro oxidant.

So in in no situation can it become a pro oxidant, which is actually kind of unique. So in other words, it has no capacity to do damage on that level, right?

So it downregulate expression of pro-inflammatory enzymes known as inducible nitrite nitric oxide synthase in us. So it has this unbelievable capacity to to quench excess free radicals.

Right now, free radicals aren't necessarily bad. We need a certain amount of them in any form of mitochondrial function will generate free radicals, reactive oxygen species, and they act as signaling molecules.

These are critical things. But for many of us, especially at the cellular level, in tissues that are damaged, that are that are that have a lot of mitochondrial DNA damage, this is what we see is we have an excess of free radicals and mitochondria can go in there and mop some of that up.

And it tends to be that. And if you supplement with higher doses in particular, then wherever it's needed it will be used. So it will neutralize the places that are there specifically need it.

I have a quick question. I don't know if you know the answer to this, but it's coming to mind when we're talking about how powerful melatonin is and able to to really influence these three different mechanisms of action to reduce oxidative stress.

Is there any other any other antioxidant type substance or in the body that can do this? Or is this totally unique to melatonin? No, it's unique. Well, it's the it's the king or queen, however you want to phrase it.

It is it is the master regulator of this. Again, superoxide dismutase is super important glutathione. Right. And good line peroxide. Really, really important enzymes that we want functioning. Right.

These are really, really good. You know, look, a lot of people take glutathione and it's really important, but melatonin is even more powerful because it can make glutathione help your body, make glutathione. Right.

So and. We always we always think that iron is the master antioxidant, but comparing is maybe melatonin. Not necessarily melatonin. And look, melatonin again, because it's fundamentally tied to the light and dark cycle.

It's spread throughout life itself. I mean, it is so fundamental that it shouldn't be all that surprising. Right. The cool thing is, is that while there I'd say to some degree there's a lot of research on melatonin compared to other substances, there's hardly any.

And the reason is because we can't patent it. There haven't been in way, a way for any company to make a ton of money off of it. So it's hard to look.

This is a straight capitalist venture who's going to invest millions and millions of dollars in a really high quality study on something like melatonin.

But you can't make any money off of. Right. Like that's going to be some kind of other funding, whether it's public funding or, you know, some kind of crowdsourced funding.

Whenever we can find a way to do science in a different way, we might be able to study this more effectively. Hey, it takes an eccentric person with a lot of money with a curiosity who wants to throw a lot of money at something.

Honestly, what you need to do is go heal a billionaire with melatonin and then they'll find you. Honestly, that's not. Totally. And look, we have 400 times more melatonin in the gut than we do in the brain.

So that's why I want to talk about next. So keep listening, everyone, because by the end of this talk, we are going to go over the dosing for melatonin and the high dosing and how far you can actually go, which is I know everybody wants to know, like how much of this can I take and how can you get and we'll talk about the different routes because you might be surprised to know that going up the back end is a really good way to get your melatonin.

We don't always have to swallow it. So but first, before we do that, can we talk a little bit about sleep and circadian rhythm because you keep talking about this light, dark cycle, right?

So we're talking about circadian rhythm and its impact on melatonin, gut and cellular health because like you already prefaced, it's all circular, it's all related.

We need to talk about that. Yeah. So circadian rhythm is the light and dark cycle that that is related to our biology, right? So our biology is fundamentally tied to the light and the dark that that are that our organism perceives.

So if we're on a regular rhythm with the sun outside, in other words, I wake up in the morning, I get good light in my in my eyes and on my skin. And throughout the day my being is exposed to light.

Then my biology is going to regulate itself based off of that light cycle, and it knows how to follow that light cycle. And then of course, at night, if I am in darkness and relatively and I don't have a lot of blue, green spectrum in particular in my eyes or on my skin and my biology knows it's bedtime.

So it's going to start to trigger all kinds of different programs, right? So this is ideally what we want. We want to be following in that light and dark cycle.

Now, that may be different if we're in Norway or if we're in Panama, right? Ones near the equator, once they're going to have very different life cycles depending on the seasons.

Right. So regardless of that, it is important to follow the natural light cycle of the place that you're in. The melatonin production will be related to this light and dark cycle, primarily as it relates to the pineal gland production.

Right. And so ideally what we want to see and we see this in, in youthful people, we see nice high melatonin spikes, right? If, if we're getting good light exposure here in the day and not a lot of excess light from screens and what have you not, we see a good strong peak melatonin at night and then it starts to decline.

And by the morning we've cleared that melatonin and cortisol. Right. And that's that's ideally what we want to see as we age, because we see a reduction in partially in the the thymus, which has a very strong relationship to the pineal gland.

But we start to see we made a little diversion here, but the same I miss gland. And the peak function is about 13 years old adolescent. So the aging of organs is dependent, is interdependent.

So we actually see peak function at 13 and it starts to age by the time we're 40, we see like something like 70% of the decline of the basic function and the thymus talks, the pineal gland.

So there's there's an intimate relationship. And Dr. Walter Pierre Pauli did a lot of research on the relationship. They actually took old pineal glands out out of the old mice.

And implanted it into young mice with young thymic glands. And they saw that the the the the pineal gland got younger and vice versa. Wow. And then you took an old Dimock gland in a young pineal gland.

And so there's an interaction there. So anyway, it's really interesting.

Circadian Rhythm, Sleep, and Hormonal Timing

The point is, is that there's an interaction between all these organ systems and as we age that the peak melatonin actually declines. And what's interesting is and this is thought to there's an actual another relation to luteinizing hormone, follicle stimulating hormone as it relates to menopause.

So we see there's a really strong relationship between melatonin, luteinizing, hormone, folate, stimulating hormone menopause, adolescence. So before before we get into adolescence, what happens is we have nice high melatonin.

We see a dip, a strong, strong dip in melatonin at adolescence and a really sharp rise in follicle stimulating hormone and luteinizing hormone. And that's the onset of puberty.

Now, if we give someone pre puberty dose and with high dose melatonin, we can actually delay puberty because what we see is the melatonin stays high and it acts as a brake on follicle stimulating hormone and luteinizing hormone, delaying the onset of puberty.

I think that's what we'd want to do, but that is showing the relationship. So I'll give you an example. You might wonder like, when would you want to delay puberty?

And I'll give you a really good example before the. So sometimes if people have a problem like scoliosis that's severe and needs to be corrected by surgery, you want to do this before the growth plates seal.

And so my sister is a good example. So she had a major massive back surgery at age 15. And fortunately in my family, women start menstruating late. So we all start around 16.

My sister, myself, my mom, all of us. If she hadn't been a late bloomer, they would not have been able to do the surgery. So that would be a because they didn't catch it or discover it or know that she needed the surgery until she was 15 years old.

And because she was able to have that surgery, she's tall and straight and perfect, you know, as an adult where she would have been crippled and hunched over.

That would be a reason to delay puberty, something like that. Yeah. And I think what most people listening might be interested in, especially for women, is that we can actually use higher dose melatonin over the course of years on a fairly regular basis to to again act as a brake on luteinizing hormone and follicle stimulating hormone, which would actually delay the onset of of menopause.

And actually, there's a ton of research and evidence that you can actually pull women out back out of menopause or out of perimenopause. And so they have a cycle again, if that's what you want.

I mean, I don't want that. But I can do this for a second. So, I mean, it's no secret I'm 50 years old and I'm that person who says I would love to have my period or ever so that I have I know that I have high levels of estrogen and I can keep that benefit of estrogen for my heart, for my bones.

I mean, yeah, we all want to stay looking. And you and you're in you're bleeding. Which which is a form of detox, too, right? Yes, it is. It is functional.

I have no problem. And people are saying, like, I welcome menopause because I don't want to deal with that period anymore. And I get it. Some women have horrific periods, but I'll tell you, there's an underlying cause for that that can be corrected. You can have easy.

I've got a girlfriend who calls it Barbie periods, like when they're super simple and quick and easy, that's a Barbie period. So everybody can have a Barbie period.

It doesn't have to be this horrible, painful, awful thing. But I'm one of those people who would be like, Heck, yeah, delay that forever. Give me the high dose melatonin and prevent my menopause because I'm in that I'm in the thick of it right now.

So. Well, and for cycling women, this is what's interesting is that you can actually take a smaller dose, let's say five milligrams of melatonin, which for some that may sound like a lot, but it's not a lot at all.

You can take like five milligrams melatonin after I think it's your fifth day of your cycle and and that will actually improve the formation of eggs. It will reduce oxidative stress.

If you're actually looking to get pregnant, you actually have healthier eggs and a higher likelihood of pregnancy. And when you take a little bit of melatonin in that period of of your of your nap time frame of your period.

Now, what's interesting is if you jack up the dose and you go up to there's been research around 75 milligrams of melatonin and you couple it with either progesterone or a synthetic form of progestin, you can actually use that as a contraception.

So you can prevent pregnancies with higher dose melatonin coupled with progestin and get done in the right way with almost no side effects. So this is what the research shows.

So so birth control, if that's what you're looking for, you know, can be can be tough on women's hormones. Right. And tough on your process. This is a much better way.

And it's been done in Europe for a number of years. So. Well, what I'm pointing to here is that there's something fundamental that's interactive with our hormones, with receptor sites throughout the body.

Right. And so it's powerful and yet it's super safe at the same time. That's what that's the crazy thing about melatonin is people are so afraid of this thing.

When you supplement with it, you will not affect the the pineal production of melatonin. In other words, if you were to take testosterone or estrogen, you take these hormones, your body is going to react and stop producing these things and the receptors are going to shut down.

And there's all kinds of effects with most of these hormones. Melatonin is not like that. There is no downside risk. You take high dose the melatonin, then you stop.

Your body is going to still make melatonin because it's guided by the light cycle. That's where the pineal production melatonin is. So that's what's cool is we're super safe with this.

Now, look, some people may feel groggy with even small doses and then they jacked up their dosage into that into the hundreds of milligrams. And they don't they're not groggy.

So there's all kinds of different things going on. So this is this is one of those hormones is a neural hormone that you kind of have to throw out all reference points with regard to every other type of hormone because it's totally different.

It's your own unique animal, small dose may act differently than big dose and vice versa. It can counter it can be totally counter intuitive to how you would think it would act and you may not even notice it in the way that you think.

Rather, you just notice that your skin is softer, or rather that you notice that your information or whatever in whatever way it's showing up is is reduced, right?

Your bowel movements may improve. There's so many different things that can happen because it's fundamentally acting in a different way at the cellular level and providing these protective effects.

Okay. So can we talk a little bit about high dosing now and roots of dosing? Because I promise we're going to talk about the different ways you get melatonin into your body.

And can you point to some of the studies and research on the high dosing and how high we can go? And can you talk about some of the negative information that's out there about high dosing like it's going to cause osteoporosis or and if and if you feel inclined, why you think that that information is out there?

Sure. Yeah. And actually, first, I just want to I do want to mention this, too, because it's really important with when it comes to something like fasting.

Right. Which is we've shown it's very, very critical for good mitochondria function. Fasting is one of the best things that we can do, whether it's in intermittent style or, you know, a couple of days every now and again. Right.

And what happens when you fast your gut microbiota diversity increases, your melatonin increases. Right. So these are two things that happen when you fast consequently when you so so and this has to do with melatonin in the gut.

So the gut aspect of melatonin will increase when you fast and then melatonin in the gut, you have these microbes that are they're highly responsive to that.

So things like I commend to me synesthesia. Tara back there are genies. What else? How about for killing bacteria pregnancy.

High-Dose Melatonin, Safety, and Dosing Strategies

These are have been shown to increase so we actually see a lot of things happen at that level of the gut itself that is actually very similar to fasting.

So fasting effects and melatonin effects have a very, very similar result. So what I'm hearing is that this could be a very important part of a gut rebuilding protocol.

If you have done a gut test and your commensal bacteria is low, then this can help support regrowth and, you know, repopulating that gut bacteria. Just absolutely layman's terms. Okay.

And it will regrow the thymus known as I mentioned earlier. So it actually help regrow the thymus gland, which which again, is started to decline in all of us. Read about puberty.

And then we know. In in follicle stimulating hormone and luteinizing hormone. And then we know if your thymus gland is improving, your pineal gland is going to improve because of those.

Because of those mice. Yeah. Those mouse studies that showed it. Yeah, exactly. So and then your T cells are going improve your regulatory function. This is autoimmune disease.

There's so much that that has to do with with your thymus so doses there has been so the research is is thin on some of melatonin. In other words, people ask a lot of good questions about melatonin.

And unfortunately, this is not the research. Again, because there's not funding to do all this stuff, but what is out there, there's some really interesting stuff.

So there's been a couple of studies that have shown one when used 6600 milligrams. So that's 6.6 grams of melatonin daily for I think over the course of 30 days.

And there was no noted side effects, none. So that's a lot. You know, most people are dabbling with one milligram, one. Maybe five. Tops, and you might even notice effects at half a milligram where you know, some of these smaller doses.

So, again, that's what I'm saying, that if you notice an effect, you've taken one milligram, you're like, well, it made me really drowsy. It may actually not make you drowsy or the same level of drowsy if you were to take 300 milligrams.

So that's what's really interesting about this. So the fear around it is super high, which is really bizarre. Again, it only seems like it's a propaganda campaign.

The only thing I can compare it to, because there's no data to support this level of fear. Even among the doctor community, the open doctors and the functional medicine integrative people, they're still a little wary of it because they haven't dug into the research.

And there's always this, this, this, I don't know. It's a story about what melatonin is. And what it what it isn't. And so me personally, I've taken 300 or 400 milligrams fairly regularly.

And what I noticed, skin improved, bowel movements improved, little joint pains or muscle aches and that kind of thing, if I'm doing a lot of exercise, are working out improved it didn't it didn't mess with my sleep at all I typically sleep pretty good and it didn't mess with it didn't make it better, didn't make it worse.

So you can take again, I mentioned 75 milligrams was what was in the studies for as a contraception. Let's see you said there was a study about high dose helping bone, not hurting bone because there's this there's somewhere there's some research or something that suggests that malet I can't quote the exact research or the exact source or even if it's a research study or just a paper on this, I don't even know.

But there's something out there saying that it'll cause bone loss. But you said you found that. You found the exact opposite. I found the opposite. Yeah.

So, you know, because it reduces excess oxidative stress. Right. And reduces DNA, mitochondrial DNA damage. I think it's fundamentally improving the health of cells.

It improves the health of endometrial tissue itself. It helps to balance women women's hormone profiles, especially if they have PCOS or menstrual irregularities.

So you can take like three, three milligrams to five milligrams for for a cycling woman. And that tends to be a nice, nice dose for that type of thing.

You can take a couple hundred milligrams to help reset modulate the hormonal network itself. There was a study that lasted four months with no side effects.

It's been used in for all kinds of immune related issues. So multiple sclerosis, lupus, you know, these type of things, those are actually very tied to the light cycle itself anyway.

So so I just want to share, I mean, I can't prove this. I can't tell you the source, but any time well, many times in the functional world, there's these remarkable, incredible, natural things that we can do.

And honestly, with everything melatonin can do at all these high doses, it would be a direct competitor to the

pharmaceutical industry. And I think and this is just my theory that oftentimes misinformation or propaganda ends up out there in the world to scare us away from using these natural products because it doesn't sell drugs.

And I'm just going to go out there and say that I cannot prove it. I cannot tell you this source. This is my instinct. This is what I've seen over and over again with many different natural I mean, even during COVID, there's things like and acetyl cysteine.

All of a sudden it was like, oh, you can't buy that on Google any are on on Amazon anymore. This is seems to be the way it works. And what's crazy is that melatonin is a very very cheap thing to and.

Actually it's good for you when you have COVID. Yeah. Yeah. So, so so the dosing is tough, right? So it all depends. It depends on your condition, right?

So for children with autism, ADHD, ADHD, kind of on that spectrum, ten milligrams seems to be a really good dose to help improve sleep irregularity. And that's a common one for those that are on the spectrum children that they don't sleep well.

So tell me, ten milligrams seems to be a nice, sweet spot, but we can. The cool thing is because this is so safe, we get to play with these ranges without too much side effects.

So what I always tell people that if they're if they're interested in dabbling in this arena, I tell them, okay, start with ten milligrams. See how that does for you if you can.

And there's different ways and we can talk about how to get this. But if you're if you're if you're kind of a cautious type, I'm not the conscious type. Just it's just.

You use your body as a lab. You're. A. Laboratory head. But I've gotten to know my body, too. So generally no where I can start off. Right? So I can definitely start off at a higher levels.

But if you're if you're if you're cautious, you can start off low, then you can take take that low, like take ten, ten milligrams for a week, see what happens.

If you don't notice anything, take it to 20, take it for a week. If you don't notice anything, double it to 40, take it for a week. And you can keep doing that until you notice something which you may notice is that you actually get up to 300 or 400 or even more milligrams daily or every other day, let's say, without noticing any down side effects.

But eventually you probably will notice something beneficial happening. And so again, even if you don't notice something happening from a symptom perspective, it will help rebuild your thymus gland.

It'll help restore t cell function, regulatory t cell function, which is related to our immunity. It will help improve all of your mitochondria. Right?

So, so it's doing things it's just a matter of is it worth it? Are you going to notice it? There's let's see if there is a downside. Let's say it is that taken.

I think I think there's likely a time of day that is optimal. In other words, I think it's more optimal to take higher doses at night. Again, there's not research out there to prove this, as far as I can tell.

So there's huge gaps in the research. So I don't I don't know if this is more effective, but I assume that it would be more effective because that's generally when we'd see a higher dose, a higher spike, a peak in melatonin is at night, not melatonin can suppress testosterone because of its effects on luteinizing hormone and follicle stimulating hormone.

So it can put a damper on testosterone. For some people, that may be a good thing depending on what's going on in your body until they get that corrected.

But so so I don't want to say that just loosely doing this forever is is nothing but good. But it does seem to be a major helpful tool with regard to a lot of inflammatory conditions, especially as it relates to mitochondria.

When we're in the context of doing all these other things. You've got amazing speakers on here talking about mitochondrial biogenesis, right? And how do we make new mitochondria?

How do we repair the mitochondria that we have, the antioxidant defense system, all these things. Right. And so if we're doing all those things and we can incorporate things like higher dose melatonin, 30 milligrams, 50 milligrams, a hundred milligrams, 200 milligrams, 400 milligrams, you know, daily or every other day.

And working that into the equation, it can be a huge game changer when it comes to inflammatory conditions of all kinds, especially as they're related to the immune system, especially if they're related to the gut.

This is a key intervention with, as far as I can tell, no downside risks. I don't know anybody that has had a downside risk. I'm sure they may exist, but I've dug into the research and I can't find any actual evidence to suggest this is bad.

Only people reporting don't do it where there's risks and there just isn't any. And in terms of testosterone, have you checked your testosterone with your high dose melatonin?

Is this something that you're watching? I have and I've noticed it has affected it. It will dip. But again, it's not it's not like it's a permanent suppressor of testosterone.

So if I if I reduce my my melatonin and take testosterone, bounce right back up again because I'm doing the normal things right. I'm sleeping like I should.

I'm exercising right and that kind of thing. So I don't have any risk of low testosterone in that way. So it's not too much of an impact. But I think for many people, the upside of melatonin and the benefits it can provide far outweigh the slight impact it's going to have on you as.

Well, especially people watching this, which who are information seekers and many, many people here are suffering from some kind of symptoms of low energy or I mean, you're not watching the mitochondria Energy Summit.

Chances are if you're in perfect, absolute perfect health, most of us are reactive and we go seeking information when we don't feel great. For those of you watching who say, I'm the epitome of health, amazing, you're worried of the rest of the rest of the culture because most of us are reactive.

So we and real quick to like for something like fasting I at one point to that again because when we fast especially fast for like let's say three or four or five days, what we see is cortisol rises, testosterone decreases.

And so there's interesting when we get into these sort of periods where there's healing, when there's good things happening, it's not like everything's in this vacuum.

And we always want testosterone high. We always want cortisol low, we always know there's there's there's different functions based on on how this works, right?

So again, it's sort of like this push pull and bringing everything into balance. And I love fasting because it actually gives us a window into some of these other mechanisms and to their role when they are good.

Is cortisol elevating good? Not, not, not chronically. But when you're fasting is what happens, right? So so there's all these kind of counteracting effects that the body is making whenever we're doing.

Any area of cortisol gets a bad rap, but it actually has a lot of important good functions. And so it sounds like your testosterone, it's it's not permanent.

It sounds like it's a temporary thing. It's up and down. Okay.

Routes of Administration and Practical Use

So some routes of administration so we can take it orally, we can take it rectally, you can do melatonin lotions, you could take it through the skin. How do you like to get it? Yeah.

So especially if we're talking more the higher doses, right? So typically if you take normal melatonin, they might have some kind of timed release kind of marketing on them, some kind of tablet.

Those are pretty much not. We're taking you're getting a fraction of whatever the doses. So if you're taking a three milligram capsule, a traditional capsule, you might only be getting a 10th of mg.

Depends on because it gets it gets metabolized before it actually gets utilized. So the general or oral routes of administration are not very good. Now you can take liposomal, one of the brands that I used to use pretty frequently for that was Quicksilver.

Quicksilver Scientific has a practitioner dose which is like ten milligrams, a little higher dose, and then they have that traditional consumer dose, which is I think three milligrams.

That's 4.4. Yeah. So it's something around there. So that's great. So then you can, you know, you can actually do this quasi high dose with, with that because it's labors almost you took and you could dose it, right.

So let's say you want 15 milligrams, you put a few squirts in your mouth, you leave it and it goes through the mucosal lining of your of your mouth and it's in your bloodstream.

So now that's, that's good. You're getting a high dose in that sort of short window. So it's pretty it's pretty decent. It's a good way to climb the ladder, so to speak.

Really good for children who have, again, autism spectrum and they may benefit or who have followed pills. Exactly. So really, really good out there. Now, if you're an adult, the best route in my mind is is rectally.

So you can do these suppositories and that's where you can get these higher doses. Now, the benefit of that is you can, you know, in just like a pretty small suppository, you can get 200 or 400 milligrams of melatonin.

The cool thing in in there is that when you have these high doses, so there's there's two aspects to melatonin, there's the peak rate. So this is the peak peak blood plasma of melatonin.

That's good. But what you want is you want a sustained peak. So you want you want that to be that peak to be there so that your mitochondria, when needed, can sort of bathe themselves in melatonin and gobble this stuff up.

Right? So if it's only there for a short period and then it goes back down to normal levels, you're kind of missing out on some of that that that longer frame window.

So I like to do it. Suppository form 200 milligrams is a great dosage every other day, every third day, whatever the case may be. And if you're doing a lot of inflammatory conditions, perhaps even once a day and when you do that, your cells will be bathed in in this higher dose melatonin, your peak will last a long period of time.

That's the best way to go. And you can do through the skin as well. Again, that's not as bad. I'm not sure how what the effects are in terms of absorption and utilization compared to compared to the suppository.

But the suppositories easy they used. I do it before I go to bed. I don't even think about it. And it maintains a high level of melatonin throughout the night.

So good. So good. This has been so informative. I mean, we have a lot of topics. We could go down a lot of

different avenues here, but we need to wrap this one up.

So what would be your final words to our audience in terms of supporting their health beyond longevity? Right. So you're the beyond longevity guy. So what would be your final words of wisdom?

And please also let our audience know where they can find your work, how they can get your books, how they can watch your documentaries, all of it. Yeah, I appreciate it.

Well, I think the final words are do not fear melatonin. There's a lot of this propagandist campaign that it's something that I think it just comes down to being misunderstood.

And we don't know enough yet. Admittedly, we don't know because we're not researching it enough. We have plenty of anecdotal, anecdotal stories. We have plenty of people taking it around the world and super high doses.

And it has been research to just to a decent degree, to be honest, especially at high doses. And one thing I didn't mention was that there's no l. D 50 on melatonin, l. D 50 is the lethal dose.

In other words, how much of this stuff is going to kill 50% of a studied population? We found lethal doses for table salt. Right. So we can figure out how much table salt is going to kill 50% of a rat population.

Final Takeaways and Where to Find Jason Prall

Right. We can figure out how much sugar is going to do that. We cannot figure out how much melatonin is going to do that, that we can't figure out how much melatonin is going to kill these amounts.

So we can't even come up with legal. So it's super, super safe. So I'd say just if you can just explore if you're a research person, go dig up the research.

But there's really not a lot to be afraid of. It is a potential game changer, depending on what condition you have. This can really move the needle because it's restoring function at the mitochondrial level itself.

So that would be my advice is to just open your mind to something like this. I don't think it's a cure all. I don't perceive it to be that at all. But I do think it's one of the safest things that we can use.

I mean, we can lump it in the kind of like vitamin C, you know, it's like it's not going to cure everything, but it's a pretty critical vitamin, right?

Vitamin A, right. There's some fundamental things and this is even more fundamental. So I think if you can bring that into your repertoire, it can be very, very effective, especially for those kids that are struggling with ADHD, insomnia, etc..

So if you want to find more of my work, you can find beyond longevity. The book at Beyond Longevity Book Dcoms on Amazon, it's in Barnes and Noble anywhere where books are sold around the world.

And then a lot of my other work is at a weakened health academy dot com and that's where I have a lot of a lot of interviews, a lot of docu series, a lot of great content helping people figure out a little bit more of the deeper concepts with regard to health. So Laura, thanks for having me on.

I think this summit is amazing. I'm excited to see some of the other topics and dig into some of the the core research that you guys are bringing to the table.

Oh, it's so good. I am so thankful that we got to meet and funny live like down the road for me. So it was doing maybe we didn't know that when we met it was like, oh, you're from San Diego means you from right.

Oh my gosh. So I just want to really thank you for the work that you have done. You are literally on a mission to tell

the truth, to open people's eyes, to share, to share, you know, wellness strategies that work, that are tried and true and old age.

Right. I mean, you're not reinventing the wheel here. You're bringing back what we've known for generations that have lost you forgotten. So thank you so much for that.

And you are just so much fun and so full of wisdom and knowledge. So thanks for sharing it today. Thanks a lot. I appreciate it. Thank you. Take care now. Bye.