Introduction to Jason Paul and the interview topic

Welcome to another interview. I will see miss an autoimmune summit. Now, let me introduce, Jason Paul, who? A very interesting fellow who is a formal mechanical engineer who's turned to a health educator practitioner, author, and even a filmmaker.

Now, over the last 15 years, he's transitioned from working in the integrative disease care model to a model of lifestyle medicine and health optimization.

In 2018, led him to create the Human Longevity Project, a nine part film series that uncovers the true nature of chronic disease in our modern times. He's currently working on his next film series that explores ancient methods of healing mind, body and soul from, the indigenous cultures all around the world.

He's the author of the book Beyond Longevity A Proven Path for Healing Faster feeling Better, and Thriving at Any Age. And I've known Jason for many, many years.

He's a really a very engaging. We're going to really love, our conversations. Okay. Jason. I'm so glad you're here. Part of our interview sequence. So let's get right to this.

We'll be talking about circadian rhythm. And how that affects our brain and what we do that can mess with that and what we can do to get it right again.

Beautiful. Yeah. This is such an important topic that and it's interesting because when we talk about circadian rhythm. Right. Oftentimes it's it's primarily associated with sleep.

Circadian rhythm basics and why it matters

Which of course it is, very intimately tied to sleep and optimizing sleep and, and how well we're sleeping. But there's some deeper aspects of circadian rhythm that I think are really important for this discussion, in particular when it comes to Ms..

Right. And, a host of, of chronic ailments that that one might experience, and kind of, you know, going back not too far in history, 2017, the Nobel Prize was given to, I believe, three scientists that were looking at the kind of deeper mechanisms of circadian biology.

Right. So this idea that that our whole organism is, is running off of a circadian light cycle, right? This, this, this 24 hour, clock. And we're we're learning more and more.

I think, each year about the inner workings of this clock that goes much deeper than the brain. But we can kind of start there. So this idea that, every cell and tissue in our body has these clock mechanisms built in, but the master regulator is the brain, right.

So when we think about, the death, well, first of all, how does that happen? Right. What is really guiding that, that process. And it's primarily the light cycle. Right.

And there's a few other cues that we use, when it comes to the circadian rhythm. Right. One being exercise, another being food, and even to to a lesser degree perhaps is is temperature.

And so our body is going to dictate its function based off of this, this, this, these external cues, which are the interior or the internal function of, of our brain and our body is guided by these external cues.

And without these external cues or if these external cues are misaligned, then our biology is going to be dysfunctional. Right? And that's really what we see across all chronic diseases, is that when our circadian rhythm is not aligned, to the solar cycle, to the day and night, then we see a whole host of issues arise, you know, and I'm thinking part is that, the all of our processes are, timed, when we make our hormones, when we do our detoxification, when we are, doing the digestive processes, the repairing processes, and if the timing begins to be not synchronized, then we start having more chaotic, problems.

And when we have chaos, what happens biologically? Yeah. And that's just it, right? The body's always seeking this dynamic homeostasis, right. This balance to, to respond to the environment.

Right. So and this is something that, that in Chinese medicine they've mapped out for thousands of years. You know, in our data, they've mapped this out for thousands of years, this idea that certain, functions in the body when we when the body processes and performs different functions, when it expresses, its function is going to vary based off of these external cues.

Morning light and daily timing cues

Again, primarily the light cycle is is the driver. Right. And and just from a, let's say evolutionary biology, we can see this. Right. So many organisms.

This is an ancient process built into us humans. Right. So this is something this is not something new. This is something so ancient. And when something goes that far back in the evolutionary tree, it is conserved for a reason, right?

It's very, very important. So we better pay attention. So if we're not aligned to the solar cycle, to the light cycle properly, then we don't detox as well.

We don't digest as well. We don't make hormones appropriately that that are, that are suitable for our, our daily rhythms. Right. Our sleep suffers, our brain function suffers.

And like here's, here's an example. Right. And I think many people, especially if you're a parent, you recognize this. If you've ever had a had a child in the first.

Let's say, a year or so or perhaps more, you're not sleeping very well. Perhaps. You know, we don't sleep well. Our decision making suffers are choices are willpower.

And and this is fairly recent for me is a few years ago. I remember going through this. And no matter how much knowledge I have about this subject matter, when I wasn't sleeping well, I was eating worse foods, because of this craving that the hormones that the hormones that that drive have a lot of our hunger and our inner satiation and this desire and our ability to, blood glucose.

Right. This is a big one for all chronic disease. If we can't manage blood glucose levels, that's a big, big problem. And so all of these things start to become chaotic and our choices then suffer.

So we I couldn't exercise as well. I didn't want to exercise all these things I knew I was supposed to be doing for health. I just wasn't doing as well because I was getting really poor sleep.

So let's let's talk about, then we'll start with light. So if light is a big part of these cues, what are the things that our listeners could do that could help get the circadian rhythm?

A little better alignment. Yeah. And this is really important. And maybe I'll just kind of quickly kind of, explain the mechanism. So when our eyes in particular.

But to some degree our skin as well perceives light, this is a signal. And our biology, our, our body and brain know what to do with this information.

It converts that light information, right. Something through the the super charismatic nucleus. Then in the brain to the hypothalamus, to the pituitary.

Right. That's kind of the main. And then and of course we've got some other mechanisms in there. I'm oversimplifying it, but this is the general process.

And and that timing that that master clock in the brain then communicates to all parts of the body. So this is a really important factor. We must consider the light as part of this equation.

So the main thing we want to do I always say that we have to start in the morning. Right. So the first thing we do when we wake up ideally and I'm going to point to perfection here, this may not be possible for, for some of us or maybe many of us, but ideally what we want to do is when we wake up in the morning, we go outside and we get light in our eyes.

So 15, 20 minutes, that light information, even if it's cloudy, even if it's the winter that sunlight contains, photonic information that our body and brain knows what to do with.

And that information is going to cue the brain as to what time of day it is. In other words, it's like setting our internal clock, and it's telling our brain it's morning.

So turn on all the morning mechanisms that have been built in through, you know, our human history, turn on all these things. Right? And this is, this is partially tied to the cortisol waking response, right?

The cortisol spike we get in the morning. It's also tied to melatonin. Right. So how much melatonin we produce at night is actually in large part dictated by how much sunlight, how much daylight we're getting in our eyes and on our skin in the morning and throughout the day.

So we do. We want to wake up. My best suggestion is to go for a 20 minute walk in the morning. And you want to do this consistently. So you wake up and this is before you, let's say take a shower before you get your coffee, before you do all of the busy work that we're doing as humans, as soon as you can, you know, reasonably speaking, go outside and take a 20 minute walk.

This will jumpstart your metabolism. It will tell your brain what time of day it is. It will start to move the lymphatic system, ignite the immune to everything starts to become in alignment when we get this timing cue that it's morning.

And of course this is something we want to do day in and day out. Right? So, you know, if you've got a my wife just got back from Bali. She was, you know, which is a 17 hour time difference.

Then here in San Diego. Now when she came back, she's jet lagged. And anybody who's experienced jet lag understands what this feels like. You're just you're dysfunctional on so many levels, right?

Nothing's working quite well despite from, you know, speaking about the sleep side, you're just not operating at your best. And it's going to take time.

So it's going to take her days and days of re regulating every queuing this cycle. But over time, as she, her brain and rise and brain start to pick up this light information in the meal timing, eating at the right time of day and moving and exercising at the right time of day, then the body's going to anticipate this function.

So it's all about anticipation. The body's anticipating function based off of what you did yesterday and the day before and the day prior and the day prior to that.

Right. So for a few weeks in a row, ideally, we're going to get up in the morning and go for a walk. Right. And then throughout the day, as much as we can, even in the winter, get light in your eyes.

So just experiencing enough daylight, is really, really crucial. In fact, I was recently looking at a, a map of multiple sclerosis and the incidence of multiple sclerosis throughout the world.

And what you notice is that there's much higher incidence of multiple sclerosis in the, in the, in the polar regions away from the equator as well as in industrial nations, because they're spending so much time inside and we're not exposing ourself to the sun.

And there's two reasons. Obviously vitamin D is critical for immune function.

Adapting light habits for limited mobility and indoor work

So we want enough vitamin D production from sunlight. That's playing a big role no question. But I think was not really talked about enough is this is is setting the circadian rhythm and this idea that if we have enough exposure to sunlight and it doesn't take a lot, it just takes consistent exposure and on the eye it to the eyes and some somewhat on the skin that the body recognizes.

It's daytime right. It's daytime. So so this is a big part. And then at night going to bed at the same time winding down. Right. Eating in the middle of the day really important.

Right. Instead of eating food at 11 p.m. midnight watching TV. Right. We don't want to be activating the system. These are all cues to the brain and body that that it's supposed to be daytime.

So if we're if I'm doing a workout at 11 p.m. but my light cycles in alignment, we've got to we got mismatched cues, right. The light is telling me it's day and yet I'm exercising at night.

And the the body's like, well, hold on, wait a minute. I thought it was the. I thought it was nighttime. We're trying to wind down here. We're trying to detoxify. I'm trying to metabolize.

Trying to clean up. And you're having me do all this exercise, or you're having me digest this big, huge pizza or whatever the case may be. So we want to eat in the middle window of the day, right?

Maybe let's say 8 a.m. to 6 p.m.. Right. And that's a very wide margin. Pretty normal for our grandparents, right. To do this. We want to exercise in that time.

And we want to be, waking up and getting outside as much as we can in the morning to set that cue and then winding down at night, like, this is like just a general, pattern that we should be following.

But in our modern world, there's so many reasons that we might not follow that rhythm. You know, I'm thinking of, you know, some of our listeners may be feeling like, you know, I'm, for a variety of reasons.

I can't get that walk in because I have to get off to work. Or maybe I'm scooter dependent. Walker dependent. What do want to say to those folks? Beautiful. Yeah.

How how could they help with their, morning light? Absolutely. Yeah. So one thing you can do, too, if you, if you especially if you if your movement is restricted to just going out on your back porch, for example, and just sitting out there with your tea or whatever it is for you.

Right. Just making sure that we're getting if we can get outside and get that. And it's not like we're we're staring at the sun. Right. I live I used to live in Seattle and lord knows, this time of year, there is no sun, right?

It's gray and it's miserable and it's dark, but yet, as long as the sun is above the horizon, even if it's coming through dark gray clouds, that's still daylight.

That's enough for our eyes to understand. So we just need to get outside. Ten, 15 minutes. Sit on your back porch. You know, whatever the case is, that's perfect.

Right. And and so, if you can't, like, for whatever reason, if your day is just so packed, totally understandable. This is the reality that we live in.

Many of us are have a lot of other responsibilities that that we've got to, you know, adhere to as much as you can during the day. Maybe you have a lunch break, go outside for your lunch break, take a walk for your lunch break, or just sit outside.

So the key here is do whatever you can to to expose your eyes to the daylight without sunglasses.

Seasonal light, UV exposure, and health benefits

By the way. Sunglasses. And but I like to, tell my, tribe to do is look at the clouds. Totally. I can put my hand out. So I'm not looking directly at the sun, but I'm looking at so that bright sky around the sun because I've obscured the sun with my hand.

Absolutely. And even just, you know, just just being out there, right? Like there's so much light we don't really, I think, perceive the level of light, like there's a lot of light when it's even when it's cloudy. Right.

So just being outside and if it's super bright, wear a hat. That's okay. But even just that, that reflective light of refractive light, in the environment is enough.

Our eyes are so super sensitive, and our brain understands the signals so well that that all we have to do is just really be outside. And now if you can't be outside, let's say you work in an office.

Even just getting some exposure through windows is good, right? So opening the drapes, opening the curtains just as much as you can, exposing your eyes to that daylight will help this process know.

Is there any role, and, I'm aware we have these seasonal affective lights, full spectrum lighting. Is that, a helpful, adjunct or, not really, because it's.

Yeah, it's a it's a good question. I'm not sure of, like the actual research, as a as it pertains to, you know, immune regulation and some of these things, but I suspect that that it does have some beneficial effect.

Right? If it's if it's affecting our, our mood, then then we know that it's at least doing something right. So for sure that is better than nothing. Absolutely.

And again, I just want to remind folks here too, that what we're really talking about is the reason the circadian rhythm is important is because there's downstream mechanisms.

Every cell in your body has clock genes, period genes, BMR. There's all these little transcription factors and genes that we've identified. And these act like gatekeepers.

In other words, until it receives the signal, it's not going to turn on or off functions. So we see this even in cancer research. So, that was one I think long term tumorigenesis.

So this is lung tumors. Right. Lung cancer is affected by circadian rhythm. Right. Two things that don't even seem like they would be remotely tied together.

And yet through the mechanisms of the brain, the master clock talking to the cellular clocks throughout the body, it's going to regulate better function.

So we see better immune regulation in cancer is primarily, at least a huge part of it is immune issues. Right. Immune dysregulation. So we need to get the immune system back online regulated.

We need that immune tolerance. Right. And this this idea of mutations is huge for things like autoimmune

conditions Ms. etc.. Okay. So like super important morning light.

Very helpful. You know, I noticed throughout the year I'm reading this really wonderful book right now, it's an immense world, and they have these great chapters on how the various animals, see light in many of our, our animal friends, insects, reptiles, snakes, amphibians, fish, birds all see ultraviolet light really well.

So they have much a much richer visual world with which they interact than we. How cool would that be? To see UV light? I always like, imagine. It's like we can't even imagine. That's so. Wow.

We have three cones, that we can see for the colors. All these other animals that I just specified have four cones, so they get to see, you know, a much, much richer world of color and light.

So. Yeah, absolutely. And what's cool, too, is that on the sort of the other side of that coin is that even though we can't see or perceive UV light, through our experience, our eyes still experience it and our brain knows what to do.

Right? So this is really, really cool. It's still interacting with our, cellular biology totally in a big way. Right. And this is this is part of the thing where, you know, we recognize UV light is impactful for the skin making vitamin D, right.

But it actually is important for the eye health as well. So there's, there's there's tons of science that goes quite deep, probably a little bit deeper.

We want to go here, but even just getting enough UV light into the eyes is very helpful for ocular health. And for a variety of mechanisms that that translate to the brain.

You know, I think a way, again, for the listeners to think about that is we know that being bedridden, is really damaging to our muscles and our bones because our muscles and bones have to do the work of resisting gravity to maintain their health.

Our, ears have to do the work of hearing to maintain your health. And our eyes do have to do the work of vision, and seeing to maintain, retinal health.

That's right. Yeah. So. And it's a horse medic stressor, right? Yes. We know that with these little tiny stressors in the proper doses are extremely beneficial for health.

And look, at the end of the day, too, I always go back to pre-industrial humans. What did we do? What? Our entire existence. We've been in the daylight. In the sun.

Yeah, sure. We wore hats and we had shelters and we had. But we didn't have sunglasses, right?

Evening light, screens, and sleep disruption

We didn't have these four walls boxing us and staring at computer screens all day long. They were much more in tune with the outside world. Right? And for us light skinned people, right.

They come from more northern regions. There wasn't as much sun. So we're actually able to process some of this light a little bit differently than than dark skin, dark eyes.

So there's a lot of variation in all of this, right. And I would say when I've seen my clients that have darker skin, darker eyes, they actually need more of this light.

In order to gain some of these benefits. Like it's really, really important that they get a lot of this, beneficial sunlight. So it's, it's a it's a big problem in our Western industrialized world of just not getting enough light.

And it goes very deep into a variety of chronic ailments. Now, again, for everyone who's listening, we're stressing that light's good for us. We're not asking you to look at the sunlight, right?

Or not go blind. Not look at the sun. You know, obscure the sun. We're not asking you to get sunburns, so make it quick. So, yeah, to increase the risk for skin cancers.

Interestingly enough, we know that if there's a gradual increase of your sun exposure, that does not increase the risk of, skin cancers. So this gradual increase, and eating lots and lots of green leafy vegetables, are really, really good for your retina and your, visual apparatus, your eyeballs, and your skin, too.

And your skin. Right. So it's interesting that it all kind of marries up, that if we were pre-industrial and we're in the winter, there's not a lot of sun.

The UV light is bouncing back out into space. It doesn't come through the atmosphere because the sun is low in the sky. And as we get into spring, we're starting to get a little bit more UV light.

It's predominantly UV light that we're getting more of, which starts to tan our skin and gives us these protective mechanisms. Right. And then as we get into summer now we're getting more of that, UVB light, which, which can cause radiation damage to the skin, but is also still a beneficial aspect.

So if we were living that way outside more of the time and we're gradually getting more sunlight exposure through the seasons, we're eating the proper foods, right?

The whole foods, lots of plants, lots of greens, right. These type of things, this is all part of the protective dynamic homeostatic balance that is going to facilitate health.

Right. So a lot of what we're talking about here is really going back in time and and doing our best to mimic how our ancestors used to live and how lots of people still live in, in the less industrialized parts of the world.

Know if we think so. We've talked about Morning Light. Do you have thoughts about evening light? I mean, evening lights. Great. You know, I find it interesting that we all love to look at sunsets, right?

Art and art can be very subjective, right? I don't like that. It's ugly that people. But sunlight. I've never met anybody. Grows a sunlight, you know, or a sunset, rather.

You know, nobody looks at it. Simpson goes gross. That's ugly. We all gravitate toward the sunset. So there's something interesting there that is beneficial for our psychology, for our mood, for our nervous system.

And of course, we have, you know, the Ricci's and some of these, Vedic traditions that actually do this sun gazing when the sun is right at the, the horizon level.

And they literally just stare at this as a sunset and they purport to be benefits. So I find that while I can't explain a Western scientific explanation for how good this is for our health, I suspect, and my, my own experience tells me that it's very beneficial for our mood, for our nervous system, and probably for the eyes because we're getting so much of that infrared.

Yeah. The infrared, is very, very helpful. And then, you know, as the sun is going down, we really don't have much UV. This is infrared. And so, yes, I think looking at the sun when it's that beautiful orange glow, that red gold and red settling down, you know, I think that's fine.

Now, what what I've noticed is that when we have artificial light, we have, more artificial light, less sleeping time, and many of us are looking at our phone, scrolling, like the phrase doomscrolling, and not engaging with our family.

Or maybe sometimes even our children, because we're, in the phone, you will have a comment about the effect of the artificial light, in our phones and devices.

Yeah. I mean, there's actually a really interesting map. Like, if you look at, the United States from space. Right. And you can everybody's probably seen some version of this where it's a, it's a, it's a photo from at night.

Satellite photo at night, over the US. And you see all these city centers where there's like just bright lights, Philadelphia and New York and, and then there's the mid part of the country where it's pretty dark.

Well, if you take that map and you overlay it with the amount of sleep that people are getting in each of these places, what you'll notice is that the the percentage of people that are sleeping more than seven hours, like, almost perfectly correlates with the amount of, of, this artificial light at night in these city centers.

So now why is this important? Sleep in and of itself if, if, if nothing else, if you get your circadian rhythm in line and you sleep better, that'll improve immune function.

You know, improve detoxification, you know, improve mood, digestion, everything. When you sleep well, everything improves. Every disease improves. Just from that.

The process of good sleep in and of itself. But again, more than that, it's the it's the circadian timing of all of our organs and systems as well. So we know that, you know, this this artificial light which is primarily blue and green light.

When we look at screens, right, computer screens, cell phones, TVs, laptops, iPads, all the things, all the devices and even our interior lights, they contain a lot of blue and green.

Now, as we talked about, when the sun sets, when we see a sunset, it's always orange and red. We might see some blues and purples if they bounce off of clouds.

What's happening there is that the sun as it's setting in the horizon, the blue, the UV, and the green is all bouncing off of the atmosphere because it's shorter wavelength and it's bouncing up into space so it doesn't come through the atmosphere.

So we just get the longer wavelength of red, orange and some yellow. That's why we see the sunset. So if we were camping in a in a normal setting, what would we experience?

We'd experience the stars, which are kind of a yellow, the moon which just changes, but usually yellow fire, which is red, orange and yellow candles. Maybe if we have those.

But that's the natural world. At night we're only seeing red, orange and yellow. So these blue and green frequencies, they don't marry up with good sleep.

So again, it goes back to that, that light information, that photonic information, that that radiation that our eyes pick up and convert into a signal.

Well, it turns out the blue and the green signal wake, wake up wake time. Right. And even when we when you when we're if we're camping and the sun starts to rise, the blues in the green start to to appear on our atmosphere.

Our eyelids are very thin. So we can actually start to perceive this light increases. That turns on signals to the brain. It's morning. Right? Temperature rises, light increases.

These are all signals for the body to recognize that it start that morning is coming. Right. So again this is this is why the food, the food timing, the exercise, the light and the temperature, those are all cues.

So as the temperature starts to drop at night, the light starts to change. We're not eating. We're not exercising. The body is now picking up these external cues and and starting to modulate its expression based off of those cues.

Now it doesn't happen in a single day, right. Going back to the jet lag example, it takes a few days, perhaps even weeks if you're really dysregulated to get this timing back online because the body is anticipating function.

If I fly to Bali on a 15 hour flight or whatever it is, my body is still going to be on San Diego time because it's

anticipating San Diego timing. But now I'm in a totally different place.

My timing is all messed up and my body's going, okay, wait. Hold on. Yesterday we were doing this at this time. Now you want me to do something else? Okay, let me try to regulate my function.

Right. So it's this. It's anticipating based off of the past. So this. If we can remove these artificial signals of blue and green coming from our screens that are backlit, that'll help signal our biology that it's actually nighttime.

And when we don't, when we're staring at our phone this close to our face with bright blue and green that looks backlit screens, it's signaling to our biology that it's not really night yet.

So this is preventing really good melatonin. Increases all the hormones that are related to hunger, to everything.

Practical tools for better nighttime light and closing remarks

Right? Every everything is now changed because the signals are not matching up with the proper timing of what we're trying to do, which is to go to sleep.

So I think what you're, you're suggesting to our listeners is put your phone down, and, how how much time should there be between my last doom scroll and when I try to go to sleep?

I'm going to I'm going to give you ideal. Okay. So this is ideal. This is not practical for many people. So I completely understand that you don't have to do this.

But ideally as the wherever you are in the planet as the sun is setting, so should your environment be setting. Right? So if you see behind me, I've got this this, salt lamp behind me that emits orange light.

Now, we can incorporate some of these into our into our home. We can bring in candles, these orange lights, like, Himalayan sea salt lamps or Himalayan salt lamps.

We can bring in, orange light bulbs. They make up orange light bulbs. You can put those into your lamps, your table lamps. We can, you know, because I'm not going to change my my ceiling.

Lights. Right. Those are. That's pretty tough, but I can change. I can add some orange lights and so at nighttime, theoretically, as a sunset, I can start to switch off all my regular lighting and turn on all these orange lights around me.

Now, what's that going to do? And I've had many clients go through this. They think I'm really weird when I make this suggestion and they can't imagine themselves doing this, but I really encourage them to do it.

And the ones that do what they notice is their whole system starts to calm down. So as night is coming, as sun is setting and when, why do I say sunset?

Because sunset is going to change depending on the season, right? In the summer it may be 9:00, you know, before the sun setting. So you can actually play with this a little bit seasonally too, right?

Like that's kind of the cool part. Now in the winter you might have a longer nighttime cycle, but as that doesn't happen, you just start to we want to marry ourselves to the cycles, and if we can do that, then we are rewarded with health.

Like that's really the benefit. So the closer you can get to doing that now, you may want to be looking at screens. You may be watching a movie with your family.

You may need to do work late at night sometimes. That's me. I got to do some work on a computer, but we can we can use some modern technology to kind of help us, you know, make these, these mistakes a little less,

detrimental.

So we can wear blue blocking glasses. You might see these orange glasses that people wear. You can get pretty decent brands on Amazon for 30 bucks. There's more expensive ones that are, you know, closer to 200.

But if you can get that orange tint to prevent all of that artificial light hitting your eyes, then that's beneficial. All right. There's there's programs that you can download on your computers.

You know, one is F.lux or flux. You can download these little apps for free to help turn your screen orange as the sun is setting in your location. So we can take very simple measures to help convert our environment to be a little bit more friendly, right?

And still do the modern human stuff that, you know you and I need to do. Doctor Wells. Right? Like we just we live in this world, you know, again, many of the listeners, when we get up at night because we have to get up to go to the bathroom, we need to turn the light on.

So I have a red light lamp above the head of my bed. So if I have to go through the night, I turn on. That's a red light. So it doesn't. It's much more calming, that way it's so much more soothing.

And one thing to about about needing to go to the bathroom at night. Of course, this tends to happen when we get older. That's just a natural part of it.

But a lot of people are, you know, in midlife experiencing this where they're they're waking up to pee at midnight or 1 or 2. And part of that, actually, is it can be related to a dysregulated circadian rhythm.

We have a hormone, right, antidiuretic hormone and which is governed by the hypothalamus pituitary. So when that is dysregulated, if the hypothalamus and the pituitary don't know what time it is, then then we're not going to be turning off that signal to go pee.

So this antidiuretic hormone can get thrown out of whack. Now when we correct our circadian rhythm that need to pee for some people can actually go away.

Which again, now you're improving your sleep because you're not getting up to pee, and now you're you're further compounding all the benefits that you're getting.

So all this stuff can start to change. There's reasons that other there's other reasons that people might need to get up and pee, but that's one of them that I've seen change in.

A lot of people. Well, Jason, this has been, really, really marvelous. We've given, the listeners some really very helpful, concrete, small next steps that you can take.

Can you tell our listeners where they could find you? Yeah, absolutely. So I've got, you can go to Awakened Health academy.com. That's where I have a lot of my work.

A lot of amazing interviews with people like yourself and others. And some of the documentaries I've made and other programs. That's probably the best place one more time.

Awakened Health academy.com. Great. Thank you so much, Jason. Thanks. Was.