Conscious Life presents

Sleep, Circadian Rhythms and Hormones

Guest: Jason Prall

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[00:00:09] Alex Howard

Welcome, everyone, to this interview where I'm super excited to be talking with my friend Jason Prall. We're talking about the relationship between sleep, circadian rhythms and hormones.

Jason Prall is a health educator, practitioner, author, speaker and filmmaker. In 2018, his independent research and experience led him to create *The Human Longevity Project*, a nine-part film series that uncovers the true nature of chronic disease in our modern world. He recently published his first book titled *Beyond Longevity*.

Firstly, Jason, welcome back. Excited to have you back for another conversation.

Jason Prall

Yeah, thanks for having me back. Good to see Alex.

Alex Howard

Why don't we start by making a little bit of this connection between sleep and hormones? I think sometimes the people that hear, think, "Well, my hormones are my hormones. Why is it that sleep's impacting" and people also saying, "Well, I can't sleep because my hormones are out of balance". Let's just make that initial connection.

Jason Prall

This is a fascinating one, because essentially, hormones are really, I would say, the biggest signaling effect that the body has. There's a reason that bodybuilders take hormones, exogenous hormones. For inflammation, for immune system challenges, the doctors are prescribing hormones. Be they synthetic or otherwise, hormones are massively important into how the body is functioning. So we can't fade these, these are really, really important.

The fascinating aspect is that sleep is really the driver. I'll say that with a sort of asterisk, which is that sleep is very, very critical in the sense of getting good sleep and sleeping through the night

and these type of things. But even one step before that is how light is guiding sleep. In other words, how your circadian rhythm is.

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Over the past, I would say, ten years, primarily in the realm of western science, this has been a big area of study, chronobiology. How time and light affect our entire physiological function, our entire biological function, down to the cellular, intracellular. We identified genes that are specifically related to the clock mechanisms of our body.

This is a really, really interesting aspect of study. In fact, it won the 2017 Nobel Prize in Medicine for chronobiology and understanding some of the deeper mechanisms. What's even cooler is that thousands of years ago, in the science of ayurveda, in the science of traditional Chinese medicine and beyond and other, let's say, more indigenous medicine practices, they understood this. They understood the role of circadian biology, and they'd even mapped it out.

In fact, you can go to Google and just type in 'Chinese medicine, circadian clock' or the same thing with ayurveda. And you'll see that there's certain aspects of the day where they've identified whether it's organ functions or aspects of our biology that are increased or decreased. They have their own maps. And so you may not be familiar with the terminology, and what have you, but it's clear as day they've mapped out that there are certain aspects and times of the day where certain functions of the body tend to be optimized, in other words, resources dedicated to these certain functions.

Now, again, here's the caveat. Because our modern world is a little bit different than it was 2000 years ago. We are living inside, most of us spend most of our time indoors. That means that our natural circadian rhythm, in other words, how our body is functioning, we're not getting the signals from the daylight and the darkness. Even at night, most of us have lights on inside. Most of us are looking at some kind of screen. This is actually throwing off our natural circadian biology.

We have something called entrainment. And this idea of entrainment is that the body is using these clues from the environment to stay on track. We're all intimately familiar with this if you've traveled. When you travel, if I were to come see you over in the UK, all of a sudden my time zone shifted 9 hours. My body is used to San Diego time, so my body's entrained to the light cycle in San Diego. Now, not only did I shift latitude, but I shifted longitude.

So now I'm over nine time zones and I'm more north. So the time that the sun is setting and the time the sun is rising is now shifted. So now my body has to understand these cues, and it will, but it's going to take a little bit of time, so it has to get entrained to the UK light cycle. That's the key thing, I think first to outline and recognize that that is the thing that is then governing pretty much every hormone in the body.

Alex Howard

Let's then take a step further back. What's happening in terms of our rhythms, particularly our circadian rhythms, particularly in terms of sleep, is impacting hormones. What are some of the things that may be causing sleep to go out of balance in the first place?

[00:05:44] Jason Prall

This is beautiful, and this is a huge one, especially in our modern world. I mentioned a couple of those. These lights at night, having excess light overhead, looking at screens, these type of things. But it's more than just the light, it's specifically the blue and the green light.

If you think about, if you go camping and you're out in the wilderness, the only light that you'd really see are the moon, the stars and fire. That's the origin of light at night. Now, we've created all these artificial light sources. In those original light sources, the moon, the stars and fire, there's not a lot of blue and green.

It turns out that those blue and green frequencies are the signals that the eye is picking up. Your eye is very, very sensitive to these different frequencies of light. And those are the signals that tell the body to turn on. It's morning. Those are the cues that the body's using, so that's a big one. And I'll dive a little bit more into that.

There's more in this whole picture than just this circadian aspect. I've worked with so many people that have had trouble sleeping. Sometimes they hate their job so much that they dread getting up in the morning. If you dread getting up in the morning, and if your whole perspective internally, it may not even be totally conscious, it may be subconscious to the point where you're just like, "I really don't want to go to work tomorrow". Well, now you're going to sabotage your evenings.

In other words, you're going to try to drag out your evenings, this is a strategy pretty much all of us do, that when we don't like something coming up, I'm going to try to lengthen the time or the perceived time until that thing. So now you're going to sabotage your whole behavioral habits at night, that then wreck your sleep patterns throughout that night and then into the next day. Now when you do that... Again, going back to the hormone story, all your hormones, all of them, are now dysregulated.

Now, typically, when you get poor sleep and you don't sleep good at night and you're waking up either tired and wired. You make poor choices with food. You're drinking, guzzling the caffeine just to try to get some semblance of activity going on. Now your cortisol rhythm is now jacked up because of the coffee or the caffeine. You're making poor choices with food. Now your neuropeptide, all your hunger hormones are now dysregulated because you're making these food choices. And now your mood is off.

So everything starts to get shifted, all because you sabotaged the night before because you don't like your job. So that's one example of how it all interlinks. Another example is emotional trauma. A lot of times, if we have experienced some severe trauma in our childhood, or throughout our lives, could be in adulthood and PTSD, and these type of things, our nervous system and our brain actually gets shunted or tilted over toward, let's say, hypervigilance.

Now we have this sympathetic overdrive happening at the neurological level. Even when you're calm and you're laying in bed and you're reading your book and you actually think this is calm, your brain and your nervous system may be caught in this sympathetic overdrive and it's stuck there. And it's stuck there for a very good reason.

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Something that's been sort of saving you your entire life, but now it's been impacting your sleep. What's really wild is that it may be so elusive to the point where you sleep 7.5-8 hours and you think, "I'm getting great sleep". But if you were to actually do a sleep study and track your sleeping, well, it turns out that you're not getting into deep sleep. You're not getting into this restorative deep sleep, and that impacts hormonal function the next day could be thyroid hormone, could be estrogen metabolism, anything.

These are the type of things that there's core aspects of who we are and how our body is regulated that can impact sleep. There's other things, too, that I think get a little bit more complicated. But I would say lack of movement is a big one. When we don't move enough throughout the day, we actually don't sleep as well.

When we metabolize ATP, we produce ADP. ADP is actually related to sleep. In fact, that's what caffeine is blocking. Caffeine goes into the receptors where ADP should be, and it blocks those receptors. It actually prevents us from falling asleep and relaxing.

There's a lot of things that can impact sleep, but ultimately, as you start to impact sleep in a negative way, the downstream effects are tremendous.

Alex Howard

And just summarizing something you were saying, really here around sleep is that for some people, the issue is getting the sleep because they're either putting it off or they go to bed and they can't sleep. For other people, it's staying asleep, and for other people, it's getting enough sleep or getting the quality of sleep.

Jason Prall

Yes.

Alex Howard

It strikes me that often we tend to normalize to what becomes familiar to us. There may well be people that are watching or listening to this that think, "I don't have a problem with sleep" because they've normalized to how it is. But actually, if they compare it against the ideal, they're either taking hours to get to sleep or they're waking up super early or the sleep is not really good enough quality.

Jason Prall

That's right. All we have is our own experience to compare it to. So when I say I'm actually relaxed, well, that's relaxed for me. There's a deeper sense of relaxation that I may not even be aware of yet because my normal is here. And then as I, let's say, resolve some trauma, now my normal becomes here. Now I really understand, oh, this is more relaxed than I could ever have been before. Same thing with stress. I might feel stressed, but to somebody else, stress is a totally different thing. We can only compare what is normal to us.

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Another thing that I actually forgot to mention that is actually kind of a big one, it's related to circadian function, which is food. A lot of people eat too late at night, and that's impacting a wide variety of hormones that are related to being able to stay asleep, being able to metabolize fat, and detox. Things that are happening at night are very, very critical for our overall health. If those aren't happening, there's a further degradation of all the systems that I'm talking about.

It's kind of a flywheel effect. It's like once something starts in motion, then it can be difficult because it's tagging all these systems downstream. If you're eating late at night, let's say 7, 8, 9 PM, some people, they're like, "Well, that's not very late", well it is, because most people should be getting to bed probably around 10-10:30 PM, based on when the sun is going down.

That may be different depending on which longitude you're at. The UK is going to be different than Jamaica, in terms of seasonality. The reality is that if we are yoking our experience to the natural light cycle, then there's a natural bedtime.

Now, here's what's also kind of interesting, for most of us, for everyone, we have our own genetic aspect to us. There are certain sleep doctors that have written about this at great length, but essentially, some of us actually are night owls. In other words, our natural sleep rhythm is a little bit shifted a little bit later than some others. Some are early birds, in other words, our natural sleep rhythms tend to favor going to bed a little bit earlier and somewhere in between.

I've met a lot of people that think they're night owls, but the reality is that their behavior is creating this night owl type of effect. But the truth is that their genetics are actually more like early birds or somewhere in the middle.

You don't even really know what you are, genetically, until you get this sort of light rhythm down. The light is the primary signal that is going to set your circadian rhythm, but the other one is food and exercise.

In other words, I think it's reasonable for me to say that we shouldn't be exercising at 11 PM. That makes sense to everyone. Nobody's going to sit here and go, "Well, that's a great time to..." No. It's obvious, right? It's obvious that it's not a good time to exercise. Why is it obvious? Because naturally, we have an instinctive quality to calm down. That means to reduce stimulation.

Well, in our modern world, stimulation is everywhere. People are reading things on the Internet. They're getting their system all jacked up in a very different type of way. May not be running on a treadmill, but it may be getting their heart rate going, their emotions all chaotic, looking at a screen, reading about something political, for example.

We can be hyperstimulated in the wrong ways at the wrong time of day. So when you're eating late at night, when you're activating your system, we're going against the natural biology. And the biology should be operating on this rhythm where your digestion is the strongest at the middle part of the day. When the sun is the highest in the sky, if we are yoked to the sun, if we are entrained to the natural daily cycle, then our digestive capacity is the highest, is the greatest at that time of day.

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So that tells us, right there, simple. We are wired to operate with the sun. Which makes sense, we're either diurnal or we're nocturnal, right? Creatures are operating in this fashion, and it applies to everything. So we have cortisol rising in the morning. It should.

What's interesting is that light, when it hits your skin, actually releases not only endorphins but ACTH, adrenocorticotropin-releasing hormone, the hormone that is related to cortisol production. We actually produce that in the skin. We used to think it was just only in parts of the brain. We actually produce it in the skin.

Your whole biology is geared to respond to the environment, to the light cycle, to the temperature, to the food, and to the exercise, to the movement. Your eyelids are very, very thin. Certain frequencies of light can penetrate through your eyelids, hit the optic chiasm, and send signals to the brain, to the pituitary, to hypothalamus.

Those two organs in the brain, the hypothalamus and the pituitary, are the key drivers of a lot of these hormones that you're probably talking about on this summit. And of course, we're talking about sex hormones like estrogen, and progesterone, and testosterone, and pregnenolone.

Those are obviously very important. But there's also other things, right? There's follicle stimulating hormone, there's luteinizing hormone, there's various growth hormones. We have aldosterone, we've got antidiuretic hormone. There's all kinds of these hormones that are playing a role. And then we have energy metabolism hormones, thyroid hormone being a big one.

If we're getting all these signals wrong, the light signal, the food signal, the movement signal, and potentially the temperature signal, but if we're getting those wrong, then all of the signals that are going into our brain talking to the hypothalamus and the pituitary are not going to be synchronized with the natural rhythms of the body.

When the body wants to detox at night, it's not getting the proper signals. We're getting a dysregulation of, let's say, insulin, for example. The body's trying to do one thing because of the natural cycles, but we're giving it the wrong signals, and so it's going to respond to those signals as well. Just like if I were to come see you, Alex, and fly to the UK, my body's going to give me the wrong signals for a while until this quote, unquote, 'jet lag' starts to resolve.

In that jet lag timeframe, my body's giving me the wrong signals based on the time of day. Which is why if I was going to come see you, I'd probably wake up at 2 in the morning and be ready to start my day, and I'd start getting tired at 1PM, thinking it's basically night-time. The signals are now the opposite for what my body is trying to do, or let's say the momentum of my body has been doing. So it's going to take some re-entrainment.

These are really critical factors. And the science is so abundant with regard to circadian rhythm and how hormones are being produced.

[00:18:23] Alex Howard

It's interesting, as you're talking, Jason, I was thinking for anyone that's questioning how powerful this is. You used jet lag a few times, it's like when jet lag really bites, there's no amount of override that's going to be affecting necessarily in dealing with that.

Jason Prall

Actually, to your point, yes. So I have an anti-aging doctor friend and he gave me, because he has access to all these things, he gave me thyroid hormone and, what's the cortisol derivative? Cortisone. Basically, he gave me these hormones and boom, I was good.

That's the point, your whole rhythm is off. And just like a bodybuilder who wants to get super big takes all these exogenous hormones because they work, because that's how powerful these signals are.

Diabetics, right? It's huge, if you're taking insulin, which is a peptide hormone, it can completely change your reality. These hormones, when you take exogenous, you're insane.

Alex Howard

Yeah. What people fail to realize is that Type 1 Diabetes used to be a death sentence.

Jason Prall

Yeah.

Alex Howard

It's only since we've been able to use insulin as a way to manage it.

It's funny, as you were speaking, I was thinking I started using bioidentical hormones around ten years ago. Since then, I don't really get jet lag. I mean like a little bit, but it's like I wake up and I take the things that I take, which are carefully measured and so on, it's like systems...

To track back to the point you're making here, this is how powerful these pieces are. And often the habits and the behaviors that we have in place have accidentally just been created as life has unfolded. And they may well not be setting us up for regulation and for balance and so on.

What are some of the steps that we can take? So let's start with light, because that's one you've spoken about a number of times. I think it's a really important one. Maybe talk about how we can use light both in the morning to help produce cortisol, but also at night-time to help producing melatonin and make sure we're not producing excess cortisol.

Jason Prall

Yeah. I want to start this by relaying a few stories that I have while working with clients in this realm. Because I had people coming in with all kinds of different situations, whether it's

autoimmune conditions and cancers and basically syndromes that didn't have a name. They saw multiple people and they couldn't get answers.

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They would come and they would actually show me their tests, they ran an organic acids test, they ran a gut test, they ran a hormone test, they ran all these tests. And I'm like, "Okay, this is great. Good information. Cool, this is great." And then I would ask them about their lifestyle, and it was very clear that there were ways to improve their situation without doing anything.

I didn't have to run tests, I didn't have to give supplements. I just looked at their lifestyle and I said, "We got a lot of places we can go just right here". This was your average person, these weren't unhealthy, quote unquote 'unhealthy people'. They were mindful of a lot of different things, but they just didn't have the understanding of how powerful some of this stuff is.

The first one is a Canadian Special Forces client that I was working with. Fit guy, he's 29 years old. He had two main complaints. One was he had a tiny little bit of belly fat. I mean, we're talking about a special forces guy, so this guy's probably used to like six-pack stuff, and he had this tiny little thing. He was just like, "I can't get rid of it no matter what I do. I'm working out and this won't go away".

And then the other thing is they measure his testosterone regularly. And his testosterone was hitting a wall. He couldn't get it up and it wasn't very high compared to his peers. And he thought, am I just getting older or whatever? And so I talked to him and realized, "Oh, well, we can fix your sleep. This will make a huge difference for you."

So I just gave him a circadian rhythm protocol, which I'll go over in a little bit. But basically what happened was the belly fat came off immediately. He started getting tired early, like 9-9:30 PM, and he was concerned. He's like, "I'm getting tired super early. Is this normal?" I'm like, "Yeah, go to bed". He went to bed, then he'd email me a few days later like, "My dreams are really, really vivid. Is this okay?" "Yes, perfect. Keep going."

It wasn't very long, maybe three weeks, four weeks. His testosterone shot through the roof. The little tiny belly fat that he had been trying to get rid of, gone. Everything started to improve. For him, when his testosterone goes to the roof, what does that mean for his lifting, for his running, for his ability to carry some rucksack 100 km, whatever the case they're doing. He's now able to perform the functions. That's the critical thing.

And for all of us, whatever our life story is, we're trying to do certain things, and it's these limitations that we're running up against.

Another gal I was working with, she came in with a lot of different things, mostly immune related stuff. Again, I recognized a major opportunity here with circadian rhythm. And she wanted to run tests, she hadn't run any tests yet. She had money. She just wanted to run tests and get to the bottom of this thing.

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I'm like, "Okay, cool, let's start here". So I gave her a circadian rhythm protocol. She lost like 5-7 pounds without doing anything, it just fell off. Her hormones corrected. Thyroid was a big one for her, her thyroid hormone completely shifted. Her eyesight improved. She was actually able to see her phone from arm's distance for the first time since cell phones were basically invented.

Her body and her whole reality was starting to shift just by doing this circadian rhythm protocol. The reason I mentioned that is because there's a lot of people that want to go to the tests, and there's some great tests. The DUTCH test is a fantastic one by Precision Analytical.

It looks at your sex hormones, it looks at your ability to methylate, looks at a lot of different things. Your circadian aspect of your cortisol, of your cortisone, of your melatonin. This is all fantastic. I love this test. And if I run that on somebody that isn't dialed in with the circadian rhythm, of course it's going to be off. Everything's going to be off, so we're getting a faulty baseline.

That was my whole thing with most of my clients. I'm down to run tests, but we don't need to run a test because I know what we can do right away. Let's do this thing first. Then after we're dialed in here and we have a new baseline that makes sense that is more conducive to health, then we'll run a test, we'll see what areas are still off, and then we can make improvements based on that. But I don't want to start supplementing and throwing stuff at you when I know that we can correct it over here. So that's the reality.

And by the way, the research, one of my favorite studies that I came across was around thyroid. Because, especially with women, there's so many women that have thyroid related issues, and they think it's... There's a lot of reasons. Could be gut, could be liver, could be stress. There's all kinds of different things. Could be food related. There's lots of stuff that's related to thyroid. But when it comes to circadian function, it's like 500 gene transcripts, that are related to thyroid hormone, turn on or activate at 9 AM and 600 turn off.

What I'm pointing to here is gene transcripts are essentially what control gene function, so related to the actual functional aspect of the thyroid itself. Well, at noon and 5 PM those numbers were, like 40. In other words, there's a ton of gene transcripts turning on at this specific time of day. Now, it's not like your thyroid has a watch and says, "Oh, it's 9 AM, let's turn on". No, that's light related, that's circadian related.

If your circadian rhythm is off, if you're a night nurse and you're working a shift where you should be sleeping, your thyroid function is going to suffer. Every hormone is going to suffer. And we know that all diseases are increased for those who are working these swing shifts, night shifts, so all-cause mortality goes up, but it's particularly related to, I would say, immune function and hormones. This is massive.

What can we do? Number one...

Alex Howard

Just before you come to that, I want to just make a point as well, which is that I think sometimes people come to clinicians presenting the kind of issues that we're talking about here, and it's

almost like they don't want to do the fundamentals or the basics because it's like, "Oh, that's not going to be powerful enough". I need drugs, I need synthetic, bioidentical, whatever.

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I just want to amplify the point that you're making here before we come to the actual steps, which is that sometimes these pieces alone can be enough. And if these things are not in place. We can start more invasive approaches, but their chances of success are diminished because we're actually fighting against something which is out of balance. I just wanted to amplify that, the point you're making there.

Jason Prall

Beautifully said. Beautifully said. Yes. I'm going to further amplify it, too, because your point is very good, and I'm glad you brought it up, which is that sometimes for some people, we can implement what I'm going to talk about, these circadian strategies, and that's literally going to solve the problem for them. For most people, that's not the case. For most people, there's actually other things too.

It may be an emotional trauma piece. There may be some other dysfunctions that we need to address. Maybe mold in the house. There may be heavy metals that have built up in the system. There may be all kinds of infections. There's all kinds of stuff that happens. But the odds of addressing those with a circadian dysfunction is very, very low. And whenever you get this right, it literally makes everything else simpler, quicker, faster, easier. And at the end of the day, I don't know how you remain healthy if this remains off.

In other words, when I was in college, I could do everything wrong. I could stay up late, until 4 AM, I could drink alcohol. By the way, alcohol is another huge one that disrupts sleep. But I could drink alcohol till 2 AM. I could have a late night pizza. I could do the dumbest things. And because of the youth that I had, the vitality, I kind of got away with it.

Now, if I was to do it all over again, I would definitely do things differently. But as we get older, the point is that oftentimes I see people and they say, "Well, everybody I know doesn't do this", or "Everybody I know is staying up late". And it's like, yes, okay. It's going to hit them in different ways, and it may hit them at different times. Some of us are more sensitive. So some of us may actually need to do all these things just to try to remain above water, where some people can just do whatever they want and they're kind of okay, but eventually it will catch up.

So that's the point here. Especially for women that are approaching perimenopause, that are going through perimenopause or in menopause, that transition becomes a heck of a lot smoother and easier. Even cycling women, if your circadian rhythms off your cycle will be much smoother, much easier.

So everything is related to this. This is fundamental. Every organism on the planet has a circadian function, none of us are escaping this. The deepest creatures in the ocean, in the deepest parts of the ocean, everything is related to light. It's so fundamental in the biology, in the development of biology itself. It's extremely important.

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On that note, melatonin, by the way, which I haven't even talked about, is one of the most amazing hormones that we can make endogenously. And also a supplement with, even at really high doses, really high doses, they haven't been able to kill anybody with melatonin, they can't kill a mouse.

Alex Howard

Although that's not meant as a challenge to any of our audience!

Jason Prall

There literally is no limit. They've tried and they can't find the dose at which it's fatal to a mouse. This is an extremely safe hormone. It's something that we make not only in the pineal gland, but we make in other cells of the body, our mitochondria sequester it and gobble it up. It is one of the only things that squelches inflammation and reactive oxygen species, in multiple different ways.

It's a tremendous hormone, it's a tremendous hormone. Not only should we be making it endogenously, again further arguing for my point of circadian rhythm and good sleep, but it's something we can actually take endogenously. It's so powerful that it can actually pull women out of perimenopause back into a cycle. If you are entering menopause early, melatonin is one of those things that actually can help correct that. So just something, I'll leave that there.

That's a whole other presentation, but it's something to research. Melatonin is extremely safe. I've taken upwards of 400 milligrams each day for many, many consecutive days. The research is abundantly clear on massive doses not causing any issues.

The only precaution, I would say, is teens entering puberty. It can actually delay puberty because there's such an intimate relationship with sex hormones. So that'd be my only caution. But it's used in the ICU for infants that are on their last leg. It's unbelievable what its capacity is. It's used in cases of autism and spectrum disorders, so it's a wide range of uses. But melatonin, unbelievably powerful, unbelievably safe, really good for mitochondria.

Now, there's a really simple... Yeah, go ahead.

Alex Howard

I was just going to say, obviously anyone self-medicating, needs to be under medical supervision. But I also want to remind you we were starting to go down the practical things that we can do as well.

Jason Prall

So now the simple way to address all of any hormonal challenge is to start synchronizing with the natural rhythms. So that means waking up with the sun. Again, it depends on where you're at. If you're in Finland and it's the winter, then it's a different story. Or it's the summer, it's a different story. This is loose, because you have to do what you can in a normal environment.

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For most of us, it's waking up with the sun. Or if you wake up before the sun, once the sun has risen, you want to get 15-20 minutes at least of that light in your eyes. For most of us, what that looks like, in most seasons, is that you wake up and immediately, once you wake up, you go outside. The best thing you could do is go for a walk, 15-20 minutes, go for a walk or a run, if that's your thing, but just get outside and move your body.

What we're doing here is where that light is entering the eye, going through the optic chiasm, speaking to the hypothalamus and the pituitary, telling your body it's morning. "Hey, we know what time of day it is. Turn on this, that, and this and that and this and that". It's turning on all these hormones. So you're now setting your clock. So you're setting your clock. Your body now says, "Okay, I understand what time it is", and that light is so critical in doing so.

Now, the movement is very, very simple. You're getting the blood flowing, you're getting your metabolism, you're waking up the breath, you're waking up every aspect of your body just through movement. Again, another signal saying, "Hey, it's morning". Your endorphins will be on. I don't care if it's raining, I don't care if it's snowing, I don't care if it's cloudy. If the sun has risen above the horizon, then your body, your eyes, will pick up this signal and recognize it is morning.

So that's the first thing, is just to get outside for 15-20 minutes. Now, it may mean that you go outside with your tea and just sit there. That's okay too, as long as you're getting that signal, and you don't have to be looking at the sun, you just have to be outside in the daylight.

For most people, I would say, be mindful of caffeine. Caffeine is not necessarily bad, but the idea is that if you're using it in the morning right away, you can be artificially spiking cortisol in a way that's not that productive.

What we're looking for is a natural cortisol waking response in the morning due to the light cycle. Now, you can have some caffeine, I would say, a couple of hours after waking up. It's probably the best time to have it if you're going to have it, and then not too much after that. If you're having it after noon, not a good idea, you're going to start disrupting sleep. Some of us metabolize caffeine very slowly, too, so that can impact sleep. We don't realize that necessarily until we've looked at genetics or we have a good internal compass around that.

Now, the other thing is food. Eating meals in, let's say, a compressed window in a window of time that makes sense. It might be 12 hours, so it might be between 7 AM and 7 PM. Ideally, it's probably between, like 9-10 hours. That's the ideal window for most people when it comes to this circadian aspect of things. I'm not talking about necessarily intermittent fasting. I'm not talking about anything other than operating in a way that is conducive to circadian rhythm.

If you're having your first meal at 8 AM, your last meal at 6 PM, that's the great window. And ideally, your largest or most difficult meal would be during the middle of the day. That doesn't work for most people just because of the office environment and working and that kind of thing, but it's understanding the concepts that having a huge, massive, difficult to digest meal at 7-8 PM your natural digestive function is waning.

[00:37:15]

Your ability to produce hydrochloric acid, digestive enzymes, gastric motility, the liver function, all that stuff is starting to shift its operations into clean-up mode instead of doing a bunch of work. So now we're starting to get out of rhythm if we're having our huge meal toward the end of the day.

It's more about understanding these concepts so that you understand the consequences. If we're having more of our meals kind of in the middle part of the day, between 11 AM and 1 PM, that's ideal if you can do it and then just making sure that you're not overeating at night, too late at night.

That's the big part when it comes to food. Not eating too late at night. It really does disrupt hormones like leptin and a variety of other food/hunger related hormones that then impact all aspects of biology, particularly related to metabolism at night.

Exercise, this is another huge one. Exercise is really about how much are we moving throughout the day. Some people can't go to the gym or don't do yoga, whatever the case might be. They're not doing a set exercise thing, and that's okay. How often can you move? So keeping movement throughout your day is ideal.

So whatever that looks like for you, and it may look like a 30 minute session of yoga, or going to the gym, or cycling, or what have you, if that's all you can do, then that's great, too. There's something about this physical activity, the amount of it that you can do. Can you regularly move throughout the day and/or can you move hard? Can you do this strenuous, and it doesn't have to be very long. It can be 15, 10, even 7 minutes of just really pushing your body.

There's some magical capacity that the body has, that when it is exerted in that way, turns on all these functions that are related to the production of various hormones, immune regulators. One of the most powerful things that you can do, from a functional standpoint, is to regularly move and then occasionally move hard and move your body as strenuously as you can.

When you're doing that, not doing that at 7 PM, after work, it's not ideal. You can do it in the morning. If we've got a good cortisol waking response, the body's ready to move. So you can do that at 7, 8, 9 AM. Again, more toward the middle of the day, is kind of ideal for most people, 2 or 3 PM, 4 PM is a nice window. Some people have a nice window for an afternoon nap, that 1 or 2 PM is a good timeframe for a nap.

These are the natural rhythms, but part of it is understanding that once you start to entrain the body in these rhythms, they will present themselves to you. In other words, I shouldn't have to tell somebody what time they should be going to bed. Their body should be telling them when it's time to sleep.

Part of this is entraining this, understanding these rhythms. And then over 2, 3, 4 weeks, usually it's about 21 days, I've noticed for most people, that they have to force this rhythm. They have to create this rhythm of going to bed and winding down at 7, 8, 9 PM, lowering the lights, quieting things down, reading a book, like an actual book, taking a bath, using candles. You can even do a little bit of light breathwork, meditation, all kinds of different things that you can do to calm the system down.

[00:40:45]

But it's starting to play in the energies that your body wants to play in. At night, your body wants to play in relaxation and low lighting and less stimulus. As it starts to get that signal, it will start to then entrain to that signal. So then you start getting tired at 9:30, 10:00 PM. Then you go to sleep at 10 PM. Then you wake up.

Some people will be waking up, depending on as we get older, we actually tend to sleep less, you might be getting up at 4 AM, that's a great time to meditate. It's before the sun's waking up, so you meditate. Or you do your practice, your more spiritual practice, or emotional practice, could be journaling, could be gratitude practice. Whatever the case, it's a great time for creativity.

And then the sun comes up and then you go out for your morning walk, as soon as the sun comes up and you're getting that light in your eyes. It's understanding these rhythms. Once you start doing that, then you start naturally feeling when the best time is for this meal, when the best time is for this exercise. It's a very natural thing that, it's only in this modern world that we had to think about this if we were living like many other people in the rest of the world, this is not an area of conversation, it's just this is how you operate.

But once it's on track, everything starts to improve. Cancer, immune function, digestion, fat burning, detoxification, mood, everything, everything starts to shift. When I have people coming in me, they're coming in with all these issues. Mood dysregulation, can't lose weight, detoxification is poor, aren't sleeping well.

We can attack those individually, or we can go to the root of a lot of this stuff, which is generally trauma, circadian rhythm issues, a build-up of toxins in the system, and parasites and infections. Those are the main things. You get to those, and all these peripheral things that we're complaining about start to resolve themselves.

Alex Howard

What's really on my mind as you're talking, Jason, is that it's really this relationship between us and our body, and where initially, maybe we have to be a little bit more directive. But as you're saying, there's a point where it should start to feel better, not that we're fighting against something.

It's almost like the really bad habits that we get, often we slip more and more and more and more. We feel worse and worse, but then we get more and more normalized to that being the way that it is. So I'm curious, we're pretty much out of time, but I'm just curious as to how do people navigate that? How do they know when their body's saying "No" or when their body's saying, "this is unfamiliar"?

Jason Prall

Well, I have a four-year-old, and a lot of this science I've been aware of for a while. When my son was born, in those first two years of life, we got terrible sleep as parents. So, mind you, I understand all this stuff. And yet, because I got bad sleep because I had a child, I was powerless against my body. In other words, all the knowledge in the world wasn't saving me from making worse food choices than I would typically make. Exercising less. Mood dysregulation, and relational dynamics started to shift.

[00:44:05]

When sleep and circadian rhythm is off, your entire life can get derailed. And then as it starts to correct, everything can start to come back into place. To get to your main question, it's really starting to just do these things, and as you do them, your body starts to respond favorably.

We're kind of powerless to the somatic experience of our bodies in so many ways. I say that loosely, but my point is that the body sends unbelievably powerful signals. And when those signals are off, or they're not in alignment with what you're wanting, then you've got to change something so that the body starts to send these signals correctly.

Again, you can use breathwork. Breathwork is another fantastic thing to use. The 4-7-8 breath is a very common one to start to increase the parasympathetic tone. But the point being is that if we get dysregulated, if I get jet lagged, man, I'm at the mercy. I'm at the mercy. I can do all that I can and I can will through it. No question that's a thing. But it is exhausting.

If you're finding yourself just constantly grinding with your health, then this is an area where I'd say it's really important to shift your focus instead of trying to resolve the gut dysfunction or the hormone imbalance that just won't shift. Focus your efforts here, fix this, get this dialed in first. And then you don't have to exert so much will around the other aspects of your health.

Because there's a fight that happens, I see it in my clients, I've experienced it myself. There's this battle that we get in with our digestion, our hormones, whatever the case might be, and we can't win if the body is receiving the wrong information.

And I say wrong because it's out of alignment, the body's just going to respond to the environment that it's in. If it's in an environment that is in the background full of trauma, that is in an environment where it's light cycle is totally dysregulated, the food timing is off, then the body's going to respond accordingly to try to find some semblance of balance.

If I fly over to see you, Alex, my body's going to try to do what it can, but it's based on the environment. It's going to take some time. So there's this lagging effect too, that happens. I want to maybe anchor with that. When you're doing this sort of circadian rhythm stuff, when you're trying to make these changes, remember that it takes your body a while to catch up.

It's not going to be 4 days. "I've been doing this thing for a week and I haven't noticed anything". Yeah, because you have to do it for 3 weeks, 4 weeks, maybe. You got to give your body a shot at normalizing to what you're doing. So it does take time, but once you start to get this again, you don't have to have so much fight in the rest of your health. This really does make things a lot easier.

Alex Howard

Awesome. Jason, for people that want to find out more about you and your work, where's the best place to go, and what's some of what they can find?

[00:47:18] Jason Prall

They can go to www.AwakenedHealthAcademy.com. It's where I have a lot of my content that I've produced in the past, documentary film series, and various courses and summits and events and that kind of thing. It's really a place to dive into the educational aspect of health. So it's a great place there.

They can go to HumanLongevityFilm.com, as well and find more about *The Human Longevity Project* there. Those are probably the two best places.

Alex Howard

Awesome. Jason, I really appreciate the interview, but also particularly just breaking this down as some fundamentals. I really want to encourage people to check out your work, but also to get these pieces in place to help unlock many of the other things that they can explore as well.

Jason Prall

Thanks, Alex.