Introduction to Light, Hormones, and Mental Health

First thing in the morning when you wake up, this is before you take your shower, before, you get your coffee, whatever your morning routine, maybe do breath work or gratitude, or whatever.

Maybe you'd get up before the sun rises. Okay. So there's some things there, but essentially if the Sun has risen or just after the sunrise. You want to get outside for 15, 20 minutes at a minimum within 10 minutes, of waking up.

Put your shoes on, coat on. Just go for a 15 to 20 minute walk. This will stimulate, from a light perspective, it'll stimulate all the morning programs that we want to turn on." This is Dr.

Talks. Hello, welcome to this episode of Hormones and Mental Health Overcoming Anxiety, Depression, and ADHD. I'm your host, Dr. Cassie Smith. And today we are going to talk about Energy and light and how light energy can affect hormones and can effect not only your hormones but your sleep and then ultimately a lot of brain functions which can somewhat lead to anxiety, depression or worsening ADHD symptoms.

I have Jason Prahl. He's a health educator, practitioner, author and filmmaker. In 2018, his independent research and experience as a practitioner 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's currently working on his next film-series that explores ancient methods of healing mind, body, and soul from Indigenous cultures around the world, And he's also the author of the book, Beyond Longevity, A Proven Plan for Healing Faster, Feeling Better, & Thriving at Any Age.

So thank you for coming on to this summit and taking some time to talk to us about circadian rhythm and hormones and life. My pleasure. This is a, it's a fascinating topic.

Yeah. And you would be a great guest for my podcast too. It's called Back to the Basic. So we talked about all this as well. I'm very interested and we talk about how to be healthy in the modern world.

Because the Modern World, you know, just a good segue. Like, and I talk this all the time. The Modern world is not conducive to wellness.

The Light Spectrum and How It Affects Biology

right? On so many levels, like we're chronically stressed, we don't sleep enough, our food is terrible. We have, you know, these bright lights, blue light, not enough red light like all of these things.

So the modern world has just taken us out of this environment which you're studying with these ancient people of like wellness and put us into this like crazy rat race, right, and that affects so It affects everything.

And we've created a reality that is disconnected from how nature really intends life to thrive. I mean, that's the essence of our problems. There's so many rabbit holes to go down, but we'll kind of stick to this one, I think, for this conversation.

So let's stick to, I want people to really learn from this summit episode about circadian rhythm and hormones. And it's so important. I have this 10 steps to wellness that we do at Modern Endocrine and light is like one of the steps.

and I tell people this all the time, like light therapy is so for so many different reasons, but why don't you start by just explaining maybe Maybe let's talk about for just very basic, like what is the difference between UVA, UVB?

What is difference in the morning and the evening? Is there a difference? Does it matter? That type of thing. Yeah, I mean, you know, when we go outside and we just see daylight, right, our cognitive perception is that it's just one light, but in reality, we know that there's a spectrum, and really what we think about is the visible spectrum.

So the physical being essentially kind of the blue purplish light that we can finally start to see and then the red light. But beyond the color of a rainbow, We have these invisible light that we cannot see with our own eyes, right?

So we have the infrared spectrum, which is a very wide spectrum. So when we say infrared, it's a whole big band of frequencies that our eyes cannot perceive through the standard vision.

And then of course, we've got the UV light, And these are very, very important for biology. And the light even extends beyond that, right? Into X-rays and gamma rays.

These are all forms of light that we just cannot see. Every aspect of this light spectrum is affecting our biology, we are children of the sun. every life form on this planet is here because of sun, but the only reason we're alive is because the Sun.

So it's really important to understand that just from an evolutionary biology lens, light is so primordial to our health, and we cannot forget it. And as we do forget, it and don't pay attention to it, we get sick in so many ways, right?

So the UVA light performs various functions, UVB light, performs different functions. And what's interesting to know, if we just talk about the skin, when light hits our skin the different frequencies have different penetration depths.

So the UVB, which is the shortest wavelength we'll talk here, it's only going to penetrate our skins just barely, just a few layers thick. The UVA, which is a little bit longer of a wavelength, will go deeper into the skin, right?

And as we get into blue light, that goes deeper, green goes even deeper yellow, et cetera, until we got out to the far infrared, Which penetrates fairly deep into skin.

So this isn't just hitting our surface and bouncing off. It was actually penetrating our dermal layers. And within the scan itself, we have these, a ton of different receptors that actually can accept this photonic energy.

and trap it, convert it and make use of it in a variety of ways. We commonly think of melanin as a structure, a protein structure that can absorb light, but we have urokinic acid, we hemoglobin, and we've got water.

These all have different spectral densities and they absorb different frequencies of light. and make use of it in a variety of ways, right? Unless we forget light is a fundamental energy source.

Circadian Rhythm, the SCN, and Daily Timing Cues

So we are, we're capturing this energy, so we, are we our solar batteries capturing, this Energy sort and making use, use it, in, a lot of, ways. We commonly think of vitamin D, but there's so many other ways that we use light.

And particularly as it relates to this talk here, We convert hormones, and we actually use them. we have something called aromatic amino acids, Right?

And these aromatic amino acids have this little hexagonal shape if we look at it sort of through the chemistry lens, but that is a photon trap. So it literally accepts certain frequencies of light and then converts that energy into hormones, neurotransmitters, everything that makes our body function, a really, really important topic.

And I think rightly so, UV and infrared have become quite popular these days in the health circles because it's the two main frequencies that we're not getting when we are inside.

In fact, back in day, when I'm a child of the 80s, we actually used to have incandescent light bulbs, halogen

lightbulbs. If you're listening to this and you are a little bit older than me, then you remember this.

We outlawed those in many states because they wasted energy. Well, that wasted energies actually heat. That's the infrared spectrum. We just got rid of that.

So if you look at the modern spectrum, light spectrum of a light bulb today, you're going to see these weird spikes of blue and spikes and green and spikes of orange, but we're totally devoid of the UV light and we are totally divided of infrared light.

It's like if light were a diet. We're severely malnourished when it comes to these two frequency spectrums, which is why the infrared sonnets have become so popular, just why they're red and infrared lights have becomes so.

Which is, why getting outside is so important. Even in the sort of like, depending on where you're at on the globe, right in this spring, in fall, and even in summer, getting some of that UV light can change your world.

And I've seen it many times with my clients. Yeah, and so is there a difference between the UV light that you see in the morning versus when the sun comes up versus the when sun come down?

A lot of people talk about like blue light versus red light. Is there difference? Yeah, so the way to think about the sun as it pertains to our day, right?

And again, this depends on the season and where you're located at on a planet, but generally speaking, I think for many of us in temperate regions, in the morning, let's say in winter, the Sun is going to be so low in sky that the UV and even some of the blue, most of UV will bounce back off of that atmosphere and back out into space.

So in morning we don't really have much available UVA or UVB. Same thing in evening. which is why when you see a sunset, when the sun goes down, right above the horizon, you can look right into it, because there's not a lot of that very powerful UV light, or even blue light.

And so what you're seeing when sun hits the sky, is you'll see the blue and the purples and greens bouncing off the clouds because they're actually bouncing out of the atmosphere and going back into space.

Unless there's clouds, in which case you get these beautiful sunsets, right? Without the clouds. All you're going to see is red, orange and yellow. Right?

So our eyes and our brain have throughout the millennia adapted to this reality that in the morning and in evening, we only get the red oranges and the yellows and.

In the middle of the day, the light spectrum changes as well as light intensity. So our eyes are very, very acute at picking up these light changes throughout the days.

As the sun starts to rise, we're getting more of those UVs and the intensity that light goes through our eyes, hits something called the optic chiasm, the super chiasmatic nucleus in the middle of our head.

That light gets converted into an electrical signal that talks to our pituitary, talks our hypothalamus, and talks through out pineal gland. And that hypothalmus pitutary connection is really, really important because that drives so many of the hormones in our bodies.

So that life energy and the very acute perception of a retina in your eyes will let us know what time of day it is. So that master clock called the suprachiasmatic nucleus in our brain sets the clock for our entire body.

That clock is really, really important and when that clock gets messed up because we don't get that morning light, that midday light. That our body, our brain doesn't fully know what time it is.

It's going to have to solely rely on other cues. And there's four main cues when it comes to circadian rhythm.

Circadian Rhythm is this idea that our entire biology is writing the rhythm of the sun, right?

So our biology changes as the Sun rises and it changes at night. We know this, and we actually know it if you've ever traveled across time zones. What we call jet lag is idea, that if I leave San Diego, and fly to London, then when I get to london in 12 hours or whatever it might be, my body still thinks, it's still on San Diego time, right?

Been entrained for weeks, months, years on that time zone. And it, It's going to take a few days to a, few weeks for my, to reassert itself in the new timezone.

That's the circadian shift that's happening. We call it jet lag. Right? So that timing is really, really critical. And we don't get enough light in our eyes from, from the sun itself, or from.

The daylight doesn't even have to be sunny. It can be cloudy in the winter. As long as it's midday, your eyes will pick that up. That lets the body know, the brain know it, it is a certain time and without it.

We have. To rely on the other cues, which include food. In other words, when we're eating that cues are circadian rhythm. Right? The temperature to some degree cues our circadian rhythm, right?

So as the temperature starts to shift, our body can kind of tell what time of day it is. And the other one is exercise. So based off of our movements and our activity levels, Our body, can kinda assert itself with regard to timing, but the primary cue for circadian rhythm which again, governs our entire biology, is the light source.

It's why so many people have so much issues with regards to gut health, Energy, mood, digestion, detoxification, right?

Blue Light, Red Light, and Nighttime Exposure

Everything that the body's trying to do. And of course, hormone production, because it doesn't really know what time it is and the light has not been given in the proper dose such that, the, body can operate optimally.

So you're saying in the middle of the day, you actually, there's more blue light that we see in. It's stronger blue, right? So, so the, middle-of-the-day is when we'll get the most intensity, but we don't get any of that UV light in morning.

So I try to go out and get a sun tan at 8 AM. She's not going to work. Even for somebody light skin like me, we got to, wait for that intensity. And to some degree, even the actual UV rays penetrating the earth's atmosphere to get to us.

And the same thing in the winter, right? So in morning when the sun is rising, when it's setting, you have the reds, the orange, yellows but not a lot of blue or purple or green.

Pretty quick, so it doesn't take long. Once it gets above the horizon at a certain angle, now those blues start to penetrate pretty easily. But is it the blue light only that makes your supraosmotic chiasm stimulated and work or does red light do that as well?

Every spectrum of light is going to have a different effect, right? So your eye and your suprachiasmatic nucleus, your SCN, is gonna perceive the very subtle and progressive shifts in the daylight, so it's a certain balance in morning and then as the sun rises, it starts to shift.

And so, its the green lights too, the yellow lights. It's all that subtle shift that the brain is picking up all the nuance as sun is rising. And it's also why, you know, your eyelids are very thin, right?

So if you were to shine red light on your eyelid, it penetrates easily through that eyelid. Right? The red lights perceive very easily to the eyelid same thing with the orange, same with yellow, the same things with green, blue.

But once you get into the purple, It's not going to penetrate the eye very well. It doesn't go that deep. So that's why I was talking about the skin. The different depths of penetration actually become important.

As the sun starts to rise, if ever, think about camping. The sun starts to rise and there's no walls to block out the light. Then you start to wake up because that light is penetrating through the eyelid, hitting your eye and your suprachiasmatic nucleus, waking you up.

Along with the temperature, temperature starts rise, queuing the body. It's time to make up so imagine camping for three weeks. These subtle cues are maybe even not so subtle.

The temperature increase, the lights starting to become brighter. hitting the eye, these are all starting to signal it's time to wake up. Now the body clock starts its function, right?

And it relies on these entrainment cues, meaning that it is not just one day that's going to fix you. And then they've taken people that have unbelievable sleep disorders out into the woods in this very example, in the sort of setting, and everything starts to resolve.

They start sleeping normally because they're getting their cues properly. They're, getting the light hitting their eyes. First thing in the morning, starting to wake them up and you do this day after day.

And the body starts to remember, okay, yesterday we got up at such and such time because the light was starting to increase. The temperature started increase, the bodies started to move.

Body started taking food and you do that same rhythm every day. Then the. What to predict tomorrow, right? That's the idea of jet lag. If I fly to London, my body's still trying to.

based off of San Diego information. Now the information starts to change. The body's going to have to reset its clock and it's gonna take time to do that.

So this is why correcting some sleep issues, mood dysregulations can take two, three weeks trying to optimize your circadian rhythm. But as you get on that rhythm, then the body starts to predict the functions.

And this is really what we're looking for, right? Circadian rhythm is all about the, body being able to, predict what it needs to do next. So ready to digest food, ready, to turn on hormones, get ready for exercise, all the things that we do throughout the day.

So, I mean, a lot of the questions people are going to ask is then, so I'm a little confused because they say blue light is bad. We get all this bluelight from our phone, right?

All this bluelight from TV and our phones, but you're saying that the blue is what we need in the middle of day to actually make hormones? Blue light is very important.

It's a part of the sun. So the issue with blue light, is that we are overexposed to it. If I'm looking at a computer screen, a TV screen an iPhone, an iPad, these are all backlit with the blue lights.

We're getting an abundance of blue, too much blue. The lights overhead. tend to spike in the blues and the greens. We're just getting too much of it with respect to the other spectrum.

So blue light can be used therapeutically, absolutely, in so many different ways. Blue light is not the enemy here. When we are looking at screens and inundated with blue lights, at the time of the day where blue lighting should not exist, That becomes the problem, right?

So blue light helps us wake up. It helps get rid of seasonal defective disorder. Like the blue line is actually really, really profound and important in the right context.

But, but going back to the sunset analogy or the camping analogy, if I'm camping, you know, and the sun has set, it's dark outside. What colors would I naturally see in my environment?

Red and orange and yellow from the fire, orange, yellow, from, the stars and moon. That's kind of it. There is no blue. There's no UV. So after the sun sets, ideally in a perfect world, we would never be exposed to those frequencies of light.

And without the blues, the greens and the purples, and UVs, then all we're seeing is red, orange and yellow. The body interprets that signal as nighttime.

Okay, now I need to turn on these hormones. Now I'm going to need turn detoxification. Upregulate melatonin. All of the things that happen at night, start to get initiated because the body knows this natural spectrum change throughout the day.

Red and UV Light for Hormones and Energy

But what we've done is we found a wrench in our biological clockwork. We're now looking at blues and greens. That is throwing a wrench in this biological clockwork.

So our timing is all screwed up throughout our brain and our body because we're giving it the wrong signals. At night blues and even greens are very harmful to your health because they're providing a signal that is counter to what the body wants to do naturally based off of the solar cycle.

So when people are using red light therapy in clinics, like we use a lot of red-light therapy. In our clinic, we have a very powerful redlight bed. It is actually just giving you back some of that red lights spectrum that you should see during the day because you get a lotta blue, especially if you're not outside.

This also penetrating your skin to help with things like inflammation and stuff like that. Okay. Then does that also help your body make hormones? Like, is that going to stimulate your hypothalamus to actually create hormones and regulate that?

Is that the red light that we need? Yeah. I mean, truth be told, if I'm using my intuitive sense here, it's all the light that is impacting us in different ways.

What we've primarily focused on with regard to research is what UV light does with hormones, what red light doesn't hormones. Red light's interesting, right?

You can use it at night and I've had lots of people report that it helps them sleep if they use red-light therapy devices. If, and I've heard, I have had about maybe 30 to 40% of the people also say it actually prevents me from sleeping well.

This gives me all this energy, right? So red light is a really interesting sort of frequency, because we know that red lights impacts mitochondrial function and water in a very interesting way to help the body make energy.

So it's very, very important with regard to cellular respiration, mitochondria function. It can stimulate people sometimes, but for other people, it can actually help calm their system and go to sleep.

So it has varying effects when used at night. Red light is an important frequency to convert cholesterol. so red and infrared can convert. Cholesterol into the sex hormones.

Right. takes cholesterol, red light interacts with it, make things like testosterone, progesterone, estrogens, corticosteroids like cortisol, aldosterone.

So red is an important frequency when it comes to hormones. Same thing with UV light, right? So UV, light of course we know makes you vitamin D, but we also have these other hormones that play a role too, so things I

mentioned, aromatic amino acids, these would be things, like phenylalanine, tryptophan, histidine.

So when you take phenylalanine. that gets converted to tyrosine, right, which is a precursor to things like thyroid hormones, T3, T4, dopamine, melanin, adrenaline, noradrenaline and then tryptophan gets convert into serotonin and melatonin.

Right. And then histidine gets to urokinic acid and histamine and these types of things. So these UVs and the reds are both really important to make sex hormones and neurohormones that affect our mood as well.

I'm a huge fan of red lights. I've got two of them in my house and there's absolutely never a replacement for the sun. The sun is the ultimate, right?

not only is it more powerful, but it's setting the natural biological rhythms. It's also seasonal, right? So there's an argument here for getting outside seasonally, even in the winter.

And then as the spring starts to come, the light becomes stronger, more UV light comes in, your body naturally slowly adjusts. If you're getting out that every day, you skin, eyes, hormones, it all is going to change seasonly.

We may not be able to perceive this, But our body, our eyes, and our skin absolutely can. So huge fan of red lights, huge of using UV light. UV has a ton of amazing applications for skin itself, for things, inflammatory skin conditions, a lot of things.

We can use, I think, as the science progresses over the next 20, 30 years, i would be willing to bet that we're going to use targeted frequencies. Right now, even for UV, we use 411, 412 nanometers.

is specifically used for certain applications regarding skin inflammation and other things. So we're going to start using these targeted frequencies, is my prediction.

I think we already are, so it's not really that much of a prediction, but it is going continue and we are going start to recognize scientifically, oh this frequency of light does this, this specific frequency, and were doing this with the red light, right?

We know certain frequencies of red lights have different effects on the body. I think we're going to continue to do that throughout. And we are going continue learning more because we understand that light is the ultimate supplement in my opinion.

So how much time every day does somebody need to spend outside then in the light, like looking at the lights? Are we talking like 15 minutes in morning, 15 at night?

And this is just for like overall wellness and hormone regulation. Yeah, it's a good question. And, you know, what I learned through working with a wide variety of clients is that my darker skin, darker hair, and darker-eyed clients essentially needed more light, right?

So they have a more protective function with the dark hair and dark eyes, dark skin. that requires actually more light to convert hormones, to do the things that they need to, because they come from a background where the sun was more prevalent, right?

Lighter skinned people don't need as much. The downside is, is that the lighter skin people aren't as protected, so we're more affected by various frequencies of light.

And so, we can be damaged by the light in a variety of ways. So, it depends on your ethnic background. But generally speaking, a good rule of thumb is that first thing in the morning, when you wake up, and this is before you take your shower, before, you get your coffee, whatever your morning routine, maybe do breath work or gratitude, or whatever.

Maybe you got up before the sun rises. Okay. So there's some things there, but essentially if the Sun has risen or just after the sunrise. You want to get outside for 15, 20 minutes at a minimum.

And the best way to do this is just go for a walk. So within 10 minutes, 20 minutes of waking up, put your shoes on, coat on.

How Much Sunlight to Get Each Day

Just go a 15 to 20 minute walk, this will stimulate from a light perspective. It'll stimulate all the morning programs that we want to turn on right? Walking unbelievably healthy to get circulation going, blood circulation, as well as lymphatic circulation improves mood, get good oxygenation, right.

This isn't a really difficult thing, but I've seen a morning 20-minute walk done over let's say a month period change so many people's lives. They lose weight, their hormones improve, they're mood improves, there digestion improves.

All of that gets stimulated by getting that light consistently and just moving the body a little bit. So that's a huge, huge cue for the to say it's morning.

And that morning light actually helps stimulate production of melatonin at night. So a lot of times right now we're focused on, okay, get rid of the blue light.

That's going to help melatonin production. Yes, it will. But melatonic production starts in the morning. It's not like it just flips a switch once the sun goes down and your body goes, Okay, time to produce all this melotonic.

There's a process throughout the day. So that morning light is that kickstart that can help that nice high melotonin spike that we want in evening. I can reset the circadian rhythm, reset.

What's the word I'm looking for? the rhythm of melatonin as well as cortisol and many other hormones. That morning light is the, I would say the pinnacle of what we're looking for.

Now in the daytime, getting as much daylight in your eyes and on your skin as you can without burning, without causing damage is a very effective way to produce hormones, to improve digestion, for the body to understand what's happening during the day.

So my whole thing is get outside and you can you, can wear a hat, right? If it's in the middle of the summer, and it and then it is noon, middle summer.

I don't do well outside for more than maybe half an hour an, hour and I'm in San Diego, so you could wear clothes. You could be under cover. that light that's reflecting off of the environment all around us, your eyes are picking that up.

So it's not like we're having to look at the sun, right? I mean, that would be ridiculous. Just being outside on a cloudy day, you're eyes, Your brain will pick up that signal and use that to perform all of its functions.

15 minutes just in the morning, That's enough? That is the bare minimum. But think about how many people are not doing that. But ideally you're doing like 15 minutes in the morning, 15 at lunch, at the end of the day, or like what is ideal?

Whatever you can muster, right? I mean, we live in a very bizarre world. I've been all around the world, you know, studying and kind of, interviewing, just talking to people from indigenous cultures, from, the blue zones.

And their reality is very different than ours. They get up either at, at dawn, right, red at sunrise or just before, and they're, you know, doing something with their animals that they have on their little home set or their farm.

There are working in their garden. they are doing work outside all day long. So all day, this is how humans naturally have existed for most of our history.

It is only recently since the Industrial Revolution that we have come inside 90% of the time. This is a totally bizarre way to live. Yes, we have always had shelters, but all of our work existed.

Think about how strange it is that we can perform most of work or all our strictly from inside. And it's all because of the advent of computer and modern technology.

So I just want to paint that picture to show you how far we've strayed from all ancestors throughout history and from most the world today. We are living in a very bizarre reality.

enclosed inside boxes with artificial lighting. So the more that we can get outside, the better. Now, what do those cultures do? They're not outside naked.

Not most of them. They've got clothes on. Even in the hot weather, they're protected, so they are not overexposing themselves to the sun and getting completely obliterated by it.

but they're outside and so they are getting exposed and again the primary window is through the eyes. And so this light exposure and this circadian rhythm obviously which will produce melatonin and help us sleep that you're saying the light pituitary gland actually make hormones, which is obviously going to make you feel better, assuming you haven't gone through menopause and then your hormones may need to be replaced, but will also help you make melatonin, and which will help with sleep.

How do these things impact your mood? So talk to me about that. You said that, you know, tryptophan makes serotonin which was obviously a big mood stimulator, How does light therapy affect your mood as far as anxiety, depression, and then like ADHD type symptoms?

Obviously, the more light you have, less depressed you are, but give us like a brief synopsis of that. So, I mean, there's a lot of ways, okay. So let me back it up to the hypothalamus and the pituitary, right?

So the hypothalamis and pitutary are two regions of the brain, all right. The pituatory is responsible for a large portion of our hormone production, things like oxytocin, thyroid hormone, prolactin.

Any hormone from the ovaries, from kidneys, from the bones, right, FSH, luteinizing hormone, growth hormones. So that's all being released from that pituitary, so if we don't have, I mean, oxytocin is the feel-good hormone.

This relaxes us, this makes us totally chill. If you've ever been on a beach, that's part of the reason why we feel so good outside. It's just because we're getting that light and the oxytocin that is produced from that line.

But again, dopamine, these are converted from light interacting with these aromatic amino acids in part. So it's responsible for directly some of neurotransmitter production.

It's responsible for things like cortisol, right? Cortisol is a really important hormone, we tend to demonize it, but you know, ACTH, the corticotropin-releasing hormone.

Light Exposure, Mood, and Sleep Regulation

We've seen that sunlight on the skin improves corticitropine- releasing hormone and ACT. So these hormones that are responsible, for us being able to handle stress, really, important when it comes to how we function throughout the day.

Right. And then, and probably the most, the best example I can give is that when your circadian rhythm is not very good and your sleep is, not good. How do you feel the next day?

Our body isn't able to reset. It's not able too, to find homeostasis because we didn't get nice. I mean, healing happens during sleep, like 90% probably or more happen.

So, if we're not sleeping good, none of that regenerative processes, of the neurotransmitter balancing, all the things that we need to stay healthy, that's happening very well.

And if you've ever been a parent and you had a baby that didn't sleep very, which I had for about a year and a half, pretty erratic sleeper, my sleep suffered dramatically.

I mean, dramatically, so what happened? Even though I know all this stuff about functional medicine and how the body works, I made worse choices with food because my willpower and my hormones were off.

My digestive hormones, my hunger hormones. All the hormones that are related to me choosing foods were all off and out of whack. So I make worse choice with the food while making worse of the choice of food.

affects your mood affects, your energy affects everything else. Right? I was tired. I just didn't have the physical energy that I normally do to go exercise and do that.

The standard things that do, to keep my body up. So I'm not exercising as much. That's going to affect my mood in a negative direction. And then just waking up, I, was dysregulated.

I didn't feel like myself. I was quicker to anger. Didn't have as good emotional regulation because my neurotransmitters were all out of whack. My gut was out whack, right?

So the gut itself, just being out a whack can affect a lot of our neurotranmitter function and our mood. So it's such a complex web that light is affecting everything in our body.

If your light diet is not very good and your sleep is very not good, there's not a single system in the body that is affected. Right? And when you have low energy, you, have neurotransmitters that are, that You're not getting good sleep, you're making poor choices with food, You are not exercising and moving your body like you should, then you are going to feel like crap.

You, are you going feel depressed, anxious, unmotivated, more easily on edge. All of this because primary is the life. So when, when my child finally started sleeping well, and I started to sleep well again, everything shifted.

Everything shifted. The mood is directly impacted. Exercising again, that impacts mood in a positive way. I'm making better choices with food. That impacts mode in positive ways.

So, it's so all-encompassing that it is almost hard to find the one thing that is really responsible, right? Because there are so many systems that are affecting one another.

And so, I've seen again with so much clients that when I get their circadian rhythm on point, everything starts to shift. They detox better, they digest better.

Their mood improves, their energy improves their sleep improves. And when you start improving all of these things simultaneously, bit by bit, then your entire reality starts Yeah, I think that's a good point.

So for people listening, like an easy thing to take away from this is, you know, light therapy, which can be as easy as 15 minutes in the morning, but ideally, as much as you can do throughout the day is going to impact your overall health in multiple ways.

specifically your mental health. And it does that through what you've talked about through how your hormones change through gut, through lots of different things.

So light therapy is very important. We have brought ourselves, like you said, into these boxes that are not

conducive to how we used to live. Just being mindful of things like opening window shades if you can or going outside for five minutes when you can, like anything you do to move things to outside, making your kids play outside so you're out there with them.

All of these things can ultimately benefit your anxiety, your depression, just your overall mood, how you feel, everybody's ability to make hormones, and how do you sleep.

And all these, things like you said, play this big impactful, you know, they're in this web, all work together. they all intricately move together like this big symphony.

And so just bringing to light and letting people know that that light is very important and understanding that and, you know, mitigating blue light as much as you can at night because that's not what was normal, right?

Like what's normal is red light. I think just some of those are some like the takeaways that I got from what you said. Do you feel like there's anything in particular somebody can take away that was really important besides those things?

No, I'll just maybe leave you with a quick anecdote here. I had a client that was like 29 years old. He was a Canadian military and his testosterone just wasn't where it should be.

Eats well, exercises regularly, and he couldn't get his testosterone up, you know, because they measure them regularly in the outfit that he was in. And he had this little, just this tiny belly fat that you couldn t get rid of.

It wasn t a fat, he wasn a fit guy, but it was just a little pudge right in middle and just he's frustrated because no matter what he did, couldn' t So I dug into his health history and found out that his circadian rhythm was off.

He wasn't sleeping as well.

Practical Takeaways and Client Success Story

So, I had him do. This is a military 29 year old, like great shape guy. All he did was go for this 20 minute walk in the morning. I had him restrict blue light.

I got him and get some orange light bulbs for some lamps, light some candles, use salt lamps like this one behind me. Whatever you can do to infuse orange and red light at night in your home.

That's all he did. And after 30 days, his testosterone shot up through the roof. He got rid of his belly fat and that was that. And they started sleeping better, right?

So when you sleep better you produce hormones better. When you fix your circadian rhythm, you produced hormones more balanced and you start sleeping right.

So I just can't stress how important this is. And no matter which client I have seen over the years, cancer, autoimmune conditions, unknown syndromes and symptoms, You name it.

The first thing I did was made sure the circadian rhythm was fixed because every other test, whether it was an organic acids test whether, it is hormone test.

Whether it's a gut test that would all be suboptimal if circadian rhythm, was not very good. In other words, we're swimming up against the stream because the entire biology is off.

So I mentioned the supercatasomatic nucleus in the brain is the master clock. Every cell in our body has clock genes. period genes, BMOL genes. There's a host of genes that are inside the cell that our genes regulating the function based off of time.

So we have clocks in each of our cell and our brain clock and are cellular clocks must be synchronized or else we get diabetes. That's the cells in the pancreas that don't have the correct timing.

We've seen this through the research. The 2017 Nobel Prize was given to three scientists studying the molecular biological clocks. So this idea of chronobiology, time-based biology is sort of new, but it's also been studied by, you know, it is known in ancient Ayurveda wisdom and Chinese medicine.

They've known about this for thousands of years. We're just now finding out the sort scientific basis in the West and that research continues to compound.

And we're giving cancer drugs at specific times of day because they're more effective based off of our biological clocks. Right? So this is, uh, it's sort of an emerging kind of science, but, um, It's so fundamental that I just, I w I, just want to stress this, that whatever you're doing with your health, if your circadian rhythm is off, then you, you know, not going to be functioning as well.

The acupuncture that you doing is not gonna work as, well, unless you are circading rhythms on the gut healing protocols. All the stuff is going start shifting as your circuit and rhythm really gets on point and you start sleeping well Yeah, I couldn't agree more.

So this is why, you know, for our patients and for my friends that listen to this, this why I go to bed at nine o'clock every night. You don't eat dinner late.

I have a sleep schedule and I stick to it no matter where I am. And so I completely agree with that. There's so many millions of Americans who struggle with sleep and insomnia and it's a huge problem.

Thank you for coming on and telling everyone about light therapy and giving everyone some good ways that they can, you know, fix this and work on this.

We appreciate it. And of course, your stuff will be linked. If you guys are watching this Hormone Summit, Jason has his own summit as well that is about ageless energy summits.

He talks about a lot of this, and so you can find this on Doctor Talks as Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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