Introduction to Light, Hormones, and Mental Health

Hello! Welcome to this episode of Hormones and Mental Health Overcoming anxiety, depression and ADHD. I'm your host, summit doctor, Cassie Smith. I'm a functional medicine endocrinologist and today we are going to talk about energy and light and how light and energy can affect hormones and can affect, you know, your 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 Prall. 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.

His. 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, and 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 light.

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 basics. So we talked about all this as well.

I'm very interested. And we talk about how to be healthy in the modern world. So because the modern world, you know, just a good segue, like in I talk about this all the time, the modern world is not conducive to wellness, right?

And 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 many things.

Understanding the Light Spectrum and Skin Penetration

It affects everything. Yeah. And that's and that's we've created a reality that is, that is disconnected from how nature really intends life to thrive.

I mean, that's that's the essence of our problems. And there's so many rabbit holes to go down, but we'll we'll kind of stick to this one, I think for this conversation.

Yeah. 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 ten steps to wellness that we do at modern Endocrine.

And light is like one of the the steps. And I tell people this all the time, like light therapy is so important 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 like UVA, UVB, what is the difference between sunlight in the morning and in 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, is that it's just one light, right.

But we are in reality we know that there's a spectrum. Right. So and really what we think about is the visible spectrum. Right. So the visible being essentially kind of the that the the blue purplish light that we can finally start to see.

And then the red light. Right. But but beyond the, the color of the rainbow, we have these invisible light that we cannot see with our own eyes. Right. So we have the infrared spectrum, right?

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

And then of course, we've got the UV light which we cannot see either. 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. And every aspect of this light spectrum is affecting our biology. Right? We are we are children of the sun, right?

Every life form on this planet is here because of the sun. The only reason we are alive is because of the sun. So it's really important to understand that just from an evolutionary biology lens, light is so primordial to the to our health and we we cannot forget it.

Right? And as we do forget it and we don't pay attention to it. We get sick in so many ways, right? So that the UVA light performs various functions. UVB light performs different functions.

And it's interesting to know, like we just talk about the skin when light hits our skin, light, the different frequencies have different penetration depth.

Right. So so the the UVB, which is the shortest wavelength we'll talk about here. It's only going to penetrate our skin just barely just just a few layers thick.

The UVA which is a little bit longer of a wavelength. We'll go deeper into the skin. Right. And as we get into the blue light that goes deeper green, goes even deeper yellow, etc., until we get out to the far infrared which penetrates fairly deep into the skin.

So this isn't just hitting our service and bouncing off. It was actually penetrating our dermal layers. And within the skin 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.

Right. We commonly think of melanin, right? As, as, a structure, a protein structure that can absorb light. But we have, you know, chaotic acid, we have hemoglobin, we've got water.

Right. These all have different spectral densities. And they they absorb different frequencies of light and make use of it in, in a variety of ways. Right.

And lest we forget, light is a fundamental energy source. So we are we are capturing this energy source. We are, we are are solar batteries capturing this energy source and making use of it in a lot of ways, right.

We commonly think of vitamin D, but there's so many other ways that we use light. And and particularly as it relates to this talk here, we convert hormones, right?

We we actually use them.

Morning vs Evening Sunlight and Circadian Timing

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 and certain frequencies of light and then, and then converts that energy into hormones, neurotransmitters, everything that makes our body function, really, really important topic, you know, and I think rightly so, UV and red and infrared have become quite popular these days in the health circles because it's it's the two main frequencies that we're not getting when we're inside.

Right. So in fact, back in the day and, you know, I'm the child of the 80s, we actually used to have incandescent light bulbs, right? Halogen light bulbs.

Right. And if you're listening to this and you're a little bit, a little bit older than me, then you remember this. We outlawed those in many states because they wasted energy.

Well, that wasted energy is 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 of green and spikes of orange.

But we're we're totally devoid of the UV light, and we're totally devoid of the infrared light. So this is a it's like if light were a diet, we are severe malnourished when it comes to these two frequency spectrums, which is why the infrared song have become so popular, which is why the red and infrared lights have become so popular, which is why getting outside is so important even in these sort of like depending on where you're at in the globe, right in the spring, in the fall, and even in the summer.

Right. 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.

So when the sun comes out versus when the sun comes down. So a lot of people talk about like blue light versus red light. Is there a difference. Yeah.

So you know, 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 out on the planet.

Right. But but generally speaking I think for for many of us in temperate regions in the morning, let's say in the winter, the sun is going to be so low in the sky that the UV and even some of the blue, but most of the UV will bounce back off of the atmosphere and back back out into space.

So in the morning, we don't really have, much available UVA, UVB, same thing in the evening. And which is why when you see a sunset, right, when you see the sun go down right, right above the horizon, you can look right into it.

Right? Because there's not a lot of that very, powerful UV light or even blue light. Right. And so what you're seeing when the sun hits the horizon and you can when you, when you see, when you have clouds in the sky, what you'll actually see is you'll see the blue and the purples and the greens bouncing off the clouds, because they're actually bouncing off the atmosphere and going back into space.

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

So our eyes and our brain have have throughout the millennia, adapted to this reality that in the morning and in the evening, we only get the red, the 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 day. So as the storm starts to rise, we're getting more of the blues, the UVs, and the intensity that light goes through our eyes hits something

called the that over the optic chaos, the super charismatic nucleus in the middle of our head, that light gets converted into an electrical signal that talks to our pituitary, talk to our hypothalamus, talks to our pineal gland, and that hypothalamus pituitary connection is really, really important because that drives so many of the hormones in our bodies.

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

So that clock is really, really important. When that clock gets messed up because we don't get that morning light, that midday light, then our 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 that our our entire biology is, is is writing the, the the rhythm of the sun.

Right. So our biology changes as a sun rises and it changes at night. We know this right. And we actually know it. If you if you've ever traveled across time zones like what we call jetlag, is this 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?

How Circadian Rhythm Controls the Body Clock

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

That's the circadian shift that's happening. We call it jetlag. Right. So that timing is really, really critical. And we don't get enough light in our eyes from from the sun itself, 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. No, it's it's 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 our 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 kind of assert itself with regard to timing. But the primary cue for circadian rhythm, which again governs our entire biology, our entire biology is the light source.

It's why so many people have so many issues with regard to gut health, energy, mood, digestion, detoxification. Right? 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 the middle of the night. It's stronger blue light. Right?

So, so, the middle of the day is when we get the most intensity. Right? But but we don't get any of that UV light in the morning. So I try to go out and get a suntan at 8 a.m., just not going to work.

I even for somebody light skinned like me. Right. We got it. 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 the morning, when the sun is rising and when it's setting, you have the reds, the orange, the yellows, but not a lot of blue or purple or green, you said.

But then pretty quick, right? So it doesn't take long once it gets above the horizon at a certain angle. Now those blues start to penetrate, pretty pretty easily.

But the is it the red light or is it the blue light? Only that that makes your, supra osmotic chiasm like stimulated in 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 super cosmetic nucleus, your skin is going to perceive the very subtle and and, and progressive shifts in the daylight.

Right. So it's like it's like it's a certain balance in the morning. And then and then as the sun rises, it starts to shift. Right. And so it's the green lights too. It's the yellow lights, it's the orange.

It's all that subtle shift that, that the brain is picking up all the nuance. Like as the sun is rising. Right. So and it's also why, you know, your eyelids are very thin.

Right? So if you were to shine red light on your eye, that penetrates easily through that eyelid, right? So the red lights perceive very easily to eyelid.

Same thing with orange, same thing with yellow, same thing with green, same thing with blue. Right. But once you get to the purple it's it's not going to penetrate the eyelid very well. Right.

It doesn't go that deep. So that's why I was talking about the skin. The different depth of penetration actually become important. So as the sun starts to rise, if you if you think about camping right, the sun starts to rise. Right.

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 super cosmetic nucleus waking you up along with the temperature.

Temperature starts to rise, cueing the body. It's time to wake up. So imagine camping for three weeks. These subtle cues, or maybe even not so subtle.

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

And it's in. It relies on these entrainment cues, meaning that it's not just one day that's going to fix you if you. And then they've taken people that have, unbelievable sleep disorders out into the woods in this very example, in this, in this 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 increasing, the body started to move, the body started taking food and you do that same rhythm every day.

Then the body knows what to predict tomorrow, right? That's the idea of jetlag. If I fly to London, my body's still trying to predict. Based off of San Diego information.

Now the information starts to change. Well, the body's going to have to reset its clock and it's going to take time to do that. So this is why correcting some sleep issues, mood dysregulation 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.

It's ready to digest food, ready to turn on hormones, ready to get ready for exercise. All the things that we do throughout the day. So, I mean, I know 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 blue light from our phone, right? All this

blue light from TV and our phone and our.

But you're saying that the blue light is what we need in the middle of the day to actually make hormones? Blue light is very important, right? It's a part of the sun. Right?

So like the issue with blue light is that we are we are overexposed to it. Right? If I'm looking at a computer screen, a TV screen, an iPhone and iPad, these are all backlit with blue light.

Blue Light, Screens, and Nighttime Disruption

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

Right. So blue light is is it can be used therapeutically. Absolutely. In so many different ways. So blue light is not, the enemy here when we are looking at screens, and inundated with blue light at the time of the day where blue light should not exist, that becomes the problem, right?

So blue light helps us wake up. It helps get rid of, you know, seasonal affective disorder, like the blue light 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 right, it's dark outside. What colors would I naturally see in my environment?

Red and orange and yellow from the fire, you know, orange and yellow from the stars and the moon. That's kind of it. There is no blue. There is no green, there's no UV.

So after the sun sets, we should ideally, in a perfect world, we would never be exposed to those frequencies of light. And without the blues, the greens and the purples, the UVs, then the all we're seeing is red, orange and yellow.

And the body interprets that signal as nighttime. Okay, now need to turn on these hormones. Now I need you to turn on detoxification. Now I need you to, you know, upregulate, melatonin.

All of the things that we that happen at night start to get initiated because the body knows this natural spectrum change throughout the day. But what we've done is we've thrown a wrench in our biological clockwork.

We're now looking at blues and greens. We're exercising late at night. We're eating late at night. That is throwing a wrench in this biological clockwork.

So our timing is all screwed up throughout, throughout our brain, in our body, because we're giving it the wrong signals. So at night, blues and even greens are very harmful to your health because they're they're providing a signal that is counter to what the body wants to do naturally, based off of this 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 red light bed. It is actually just giving you back some of that red light spectrum that you should see during the day, because you get a lot of blue, especially if you're not outside.

There's also penetrating your skin to help with things like inflammation and stuff like that. Okay. Yeah. And then you the powerful. Yeah. And 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. Is it the blue light that we need.

Is it just all the 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 does with hormones. I mean, red light is interesting, but you can use it at night.

And I've had lots of people report that, that it helps them sleep. Right. If they use red light therapy devices, if and I've heard I've had about maybe 30 to 40% of the people also say it actually prevents me from sleeping well because it gives me all this energy.

Right. So red light is a really interesting sort of frequency, right? Because we know that red light 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 mitochondrial function. So 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. So so takes cholesterol. Red light interacts with it, make things like testosterone, progesterone, estrogens, corticosteroids like cortisol, aldosterone.

So, so red is an important, frequency when it comes to hormones. Same thing with you UV light. Right. So UV light of course we know makes you vitamin D.

But we also have these other hormones that that play a role too. Right. So things like I mentioned aromatic amino acids right. These would be things like fennel fennel alanine tryptophan histidine.

So when you take fennel alanine 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 converted into serotonin and melatonin.

Right. And then histidine gets converted to your kind of acid and histamine and, and these type of things. So these UVs and the reds are both really important to make sex hormones and, and neuro hormones that affect our mood as well.

Red and UV Light for Hormones and Energy

So again it's 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. And my not only is it more powerful, but it's setting the natural, natural biological rhythms.

It's also seasonal. Right. So there's a 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 outside every day, your your skin, your eyes, your hormones, it all is going to change seasonally. And we may not be able to perceive this, but our body, our eyes, and our skin absolutely can.

So a huge fan of red lights, huge fan of using UV light. UV has a ton of amazing applications for skin itself. For things inflammatory skin conditions, a lot of things.

So we can use, I think as 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 for UV, we use, 411 411 nanometers.

Is 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's going to continue. And we're going to start to recognize scientifically, oh, this frequency of light this this this specific frequency.

And we're doing this with the red light. Right? We know certain, frequencies of red light have different effects on the body. I think we're going to continue to do that throughout, and we're going to continue to work more because we're understanding that light is the ultimate supplement, in my opinion.

So how much time every day to somebody need to spend outside then in the light, like looking at the light. Are we talking like 15 minutes in the morning, 15 minutes at night or 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, darker eyed clients essentially needed more light, right.

So they have a more protective function with the dark hair, dark hair, dark eyes, dark skin that requires actually more light to convert hormones to do the things that they need to do 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 skinned people aren't as protected, right? So we're more affected by various frequencies of light, so we can be damaged by the light in a variety of ways.

So it depends on, you know, your, your ethnic background. But generally speaking, a good rule of thumb is that 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, like maybe do breathwork or gratitude, whatever.

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

And the best way to do this is go for a walk. So within ten minutes, 20 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 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, their mood improves, their 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 body to 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 melatonin production starts in the morning. It's not like you just flip a switch. Once the sun goes down and your body goes okay, time to produce all this melatonin.

There's a process throughout the day. So that morning light is that kickstart that can help that nice high melatonin spike that we want in the evening.

It can reset the circadian rhythm, reset the entire, what's the word? I'm looking for the rhythm of melatonin as well as cortisol and many other hormones.

That morning light is is the I would say that 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, to to, 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. Right. And that's noon, middle of summer.

I don't do well outside for more than maybe half an hour. An hour. And I'm in San Diego. Right. So you can wear clothes, you can be under cover that light, that's that's reflecting off of the environment all around us.

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

So 15 minutes just in the morning, that's enough. Like that's. People. That's the minimum. So that's the bare minimum. And but think about how many people are not doing that right.

But ideally you're doing like 15 minutes in the morning, 15 minutes at lunch, 15 minutes at the end of the day are like, what is ideal? Yeah, whatever you can, 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, you could say interviewing, just talking to people from indigenous cultures, from from the blue zones.

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

They're working in their garden, they're doing work outside all day long. So all day, all right. This is how humans naturally have, have, have existed for most of our history.

How Much Daily Light Exposure You Need

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

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

So I just want to paint that picture just to show you how far we've strayed from all of our ancestors throughout history. And for most of the world today.

So 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 are those cultures? Do they run outside naked?

Not most of them. You know, they've got clothes on. So even in the hot weather, they're protected. So they're not overexposing themselves to the sun. And getting completely obliterated by it.

They've got hats on, they've got clothes on. Right. But they're outside and so they're getting exposed. And again, the primary primary window is through the eyes.

And so this light exposure and this circadian rhythm obviously which will produce melatonin and help with sleep that you're saying the light exposure helps your 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 we'll also help you make melatonin, 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 is obviously a big a big mood stimulator.

But how does light therapy affect your mood as far as anxiety, depression. And then like ADHD type symptoms, obviously the more light you have, the 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 let me back it up to you to the hypothalamus in the pituitary.

Right. So the hypothalamus and the pituitary are to two regions of the brain. Right. The pituitary is responsible for image a large portion of our hormone production.

Right. Things like oxytocin, things like, thyroid hormone. Right. Prolactin. You know, any hormone from the ovaries, from the kidneys. Right. From the bones.

Right. FSH, luteinizing hormone growth hormones. So that's all being released from the pituitary, right? So if we don't have I mean, oxytocin, right? Is the feelgood hormone, right?

This this relaxes us. This makes us totally chill, right? Have you ever been on a beach? That's part of the reason why we feel so good outside is because we're getting that light.

And the akitas in this produced from that light. But again dopamine. Right. These are these are converted from light interacting with these aromatic amino acids in part.

So it's responsible for directly some of the neurotransmitter production. Right. It's responsible for things like cortisol right. Cortisol really important hormone. Right.

We tend to demonize it. But you know the control and releasing hormone. We've seen that that sunlight on the skin improves cortical drop and releasing hormone.

And right. So, so these hormones that are responsible for us being able to handle stress, right. Really, really important to. And 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 very good, how do you feel the next day our body isn't able to reset.

It's not able to to find homeostasis because we didn't get nice. I mean, healing happens during sleep, but like 90% probably or more happen sleep. So for if we're not sleeping good.

None of that regenerative processes, none of the of the neurotransmitter balancing, none of the detoxification, all the things that we need to stay healthy, none of that's happened happening very well.

And if you're, you know, if you've ever been a parent, and you, you had, a baby, right, that didn't sleep very well, which I had for about a year and a half.

Right. Pretty erratic sleeper. My sleep suffered traumatically, I mean, dramatically. And so what would happen? Even though I know all this stuff about functional medicine have a body works.

I made worse choices with food, right? Because my willpower and my my hormones were off, right? My digestive hormones, my my hunger hormones, all the hormones that are related to me choosing foods were all off and out of whack.

So I made worse choices for food while making worse choices. The food affects your mood, affects your energy, affects everything else. Right? Oh, I was tired.

I just didn't have the physical energy that I normally do to go exercise and do the standard things that I do to keep my body health. So I'm not exercising as much.

That's going to affect my mood in the negative direction. Right? And then just waking up, I was dysregulated, right? I didn't feel like myself. It's quicker to anger, didn't have as good emotional regulation because my neurotransmitters were all out of whack.

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

So what if your light diet is not very good and your sleep is not very good? There's not a single system in the body that is not affected, right? And when you have low energy, you have neurotransmitters that are that are all out of whack.

You're not getting good sleep, you're making poor choices with food. You're not exercising and moving your body like you should, and then you're going to feel like crap.

You're going to feel depressed. You're going to feel anxious. You're going to feel unmotivated, right? You're going to feel, more easily on edge. Okay.

All of this because primary is the line. So when when my my child finally started sleeping well and I started sleeping 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 that impacts mood in a positive way.

Right. So it's it's so it's so all encompassing that it's it's almost hard to find the one thing that is, is really responsible.

Light, Mood, Sleep, and Hormone Balance

Right. Because it's there's so many systems that are that are affecting one another. And so it's why I've seen again with so many 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 to shift.

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

And so light therapy is very important. And, you know, we have brought ourselves, like you said, into these boxes that are not conducive to how we used to live.

And so just being mindful of things like opening window shades if you can, or going outside for five minutes when you can, like anything you can 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 or depression and just your overall mood, how you feel, your body's ability to make hormones, how you sleep and all these things.

Like you said, play this big, impactful, you know, they're in this big web. They 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 of 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 just maybe leave you with it.

With a quick anecdote here. I had a client that was like 29 years old. He was, Canadian military, and he his testosterone was was just wasn't where it should be.

And this is a guy who eats, well, exercises regularly, and he couldn't get his testosterone up, you know, cause they measure them regularly in the outfit that he was in.

And he had this little, just this little tiny belly fat that he couldn't get rid of. And it wasn't he wasn't fat. He was the fat guy. But it was this little pad right in the middle.

And he's just he was frustrated because no matter what he did, he couldn't get rid of it. So I, I dug into his his health history and found out that his circadian rhythm was off.

He wasn't sleeping as well. 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 it, got him get some orange light bulbs for some lamps, light some candles, use salt lamps like this one behind me, whatever you can do it 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 he started sleeping better, right?

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

So it 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 their circadian rhythm was fixed because every other test, whether it was an organic acid test, whether it was hormone test, whether it was a gut test that would all be suboptimal.

If circadian rhythm was not very good and the others were swimming up against the stream because the entire biology is off. So I mentioned the super charismatic nucleus in the in the brain is the master clock.

Every cell in our body has clock genes, period. Genes. Them all genes.

Practical Takeaways and Clinical Examples

There's a host of genes that are inside the cell that are genes regulating the function based off of time. So we have clocks in our each each of our cell.

And our brain clock. And our cellular clocks must be synchronized or else we get diabetes. That's the paint. That's the cells in the pancreas that that don't have the correct timing, that we've seen this through the research.

The 2017 Nobel Prize was given to three scientists studying the molecular, biological clocks. So this this idea of chrono biology, time based biology is sort of new, but it's also been studied by, you know, and it's known in ancient, IRA that, wisdom and Chinese medicine.

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

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, it's sort of an emerging kind of science, but, it's so fundamental that I just I just want to stress this, that whatever you're doing with your health, if your circadian rhythm is off, then you're not it's not going to be functioning as well that the the acupuncture that you're doing is not going to work as well unless you're, you're hitting rhythms on the gut healing protocols.

All this stuff is going to start shifting as your circadian 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 is why I go to bed at 9:00 every night.

So 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.

So 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. And if you guys are watching this, hormone summit, Jason has his own summit as well. That is about, ageless Energy Summit.

So it he talks about a lot of this. And so you can find this on Doctor Talks as well. So thank you for your time. Thanks guys.