

Radical Healing: Light, mitochondria dysfunction and weight gain

Insatiable Season 6, Episode 5

[INTRO]

[0:00:08.9] AS: When you're fed up with fighting food and your body, join us here. I'm Ali Shapiro, creator of the Truce with Food® program and your host for Insatiable; where we explore the hidden aspects of fighting our food, our weight and our bodies and dive deep into efficient science and true whole health.

Fair warning, this is not your parents' healthcare. This is a big rebel yell to those who crave meaning, hunger for truth and whose lust for life is truly insatiable. Believe me, freedom awaits.

[INTERVIEW]

[0:00:47.3] AS: Welcome everybody to Season six of Insatiable. This season, **our theme is Radical Healing** and what's possible when we get to the cause of what ails us. We're using activist, Angela Davis' definition of radical, which is to get at the root of things. We heal when we're in choice, not when everything goes our way. We're going to explore how to get to the root of our stories and how radical healing changes our lives.

Before we get to today's paradigm shifting talk about rewriting a story about what health means from a biology/weight perspective. I do want to invite you to the 2019 round of Truce with Food®. Truce With Food® is my online personalized program that creates lasting food freedom. It runs only once a year and registration opens in

January. I would love to have you, as an insatiable listener interested in these topics and especially rewriting your story, join me and a small intimate group of others as we finally call a Truce with Food®. Again, the program only opens once a year, so don't miss out. You can join the waitlist at alimshapiro.com/trucewithfood2019.

All right, now, on to today's episode, which again, another bucket list person, my friend and expert to the extreme, Brandon Mentore. Have you ever wondered why you love to watch sunrises and sunsets? Or, if you travel overseas, they tell you, "get outside and you feel awake," or how it's nearly impossible not to stare almost hypnotized into a campfire? Today's answer may surprise you. On today's episode, **Radical Healing: Light, mitochondria dysfunction and weight gain**, Brandon Mentore and I discuss healing through light. Brandon is going to share what made him pay attention to light as a factor in health, weight loss, and personal training.

We're also going to discuss how light frequencies and body magnetization, an overlooked root cause, contribute to problems like weight gain, autoimmunity, sleep disruption and cancers like breast cancer. And the results from looking at nutrition and health from a light perspective. Plus, some recommendations on light hygiene in developing our skin sun callous. So, you're going to have your mind blown.

But first, a little bit about Brandon. Brandon Mentore is strength and conditioning coach, probably one of my oldest Philly friends. Sports nutritionist and functional medicine practitioner. Based out of Philadelphia, he's been working with people for 20 years. He has a degree in Exercise Science and multiple certifications from various organizations, covering a wide range of disciplines in the health and fitness industry.

Guys, when I'm confused, I call Brandon. He has over a hundred publications online and in print, has written a book and has been fancying the emerging field of quantum biology for the past four years.

Thank you so much for being here, Brandon.

[0:03:47.1] **BM:** Awesome, so glad to be here, thank you for having me, thanks for the invitation.

[0:03:51.4] **AS:** Yeah. So we met like 15 years ago? I don't even know how long ago at a pulp check, another kind of health rebel, one of his training in Philadelphia. You had already taken it but I was taking it and I remember thinking that you surprised me to be who you were. I thought you were going to be machismo, you're so buff and attractive and you have diamond earrings, and then you're soft spoken and humble.

[0:04:16.3] **BM:** Yeah, I'm a little bit of a pattern interrupt. Kind of like a weird, as far as that goes. I don't know wear the diamond earrings anymore though.

[0:04:25.4] **AS:** Oh you don't, you lost them?

[0:04:27.9] **BM:** Yeah, no I have like little pea shooters, that's about it.

[0:04:31.3] **AS:** Oh okay. I have been studying light. I've been talking about it with my private clients for a while. They're so excited about this episode and I'm so excited for listeners to hear it as well as people in my group programs because I've started paying attention to light the past several months and I'm intrigued, fascinated, and I want to know first of all, how you started paying attention to light and by light, I mean, the sunlight, the blue light from our computers and even frequency of light like EMF's. So Internet connections, cellphone.

When did you start paying attention to this invisible factor in terms of health and weight loss and training your clients?

[0:05:11.6] BM: Well, I started to look at light as a kind of health modality. In an effort to, I work with many clients and the thing is that everyone is different biologically. So much variation, what works for one person doesn't work for the other person. So I've always been kind of in a frame of mind to be reductive. I'm trying to figure out what is the essence of – what makes a person more healthy versus unhealthy.

After kind of like going through some rabbit holes and digging down to the roots, you know, breaking down food to the absolute smallest unit, which is electrons by the way. Breaking down sleep and how it helps us recover and how light influences that, everything kind of like came back to light frequencies and magnetic fields and electro magnetics. It's kind of like an obscure field but you have to go to physics and that's where I kind of started to venture into more of the quantum biology aspect of it.

There were some answers that – there some questions that biology couldn't answer for them and I had to look to physics. As I got more into physics, I started to go down more rabbit holes to find out this person and that person and how physics drives biology and in order to understand light and how it works on our body, you needed to use physics and then when you marry that to biology, you have what's called quantum biology.

Because the platform of our entire physiology, believe it or not, is based on quantum physics. It's actually incredible. We're all literally super human, we're all beings of light, that's not woo, it's actually been proven scientifically and proven for decades but nobody really pays attention to it because they're so biology focused and again, like I said, I kind of ran into walls with that and so I had to go on the physics still.

As I did that, I found more and more that light was really what was driving. It's hugely important, especially at this time because our technology is, you know, exploding and booming and getting more and more of an, it's proliferating into our lives at a rapid rate, it just keeps going.

[0:07:21.0] AS: Let's take a step back because this is a huge paradigm shift and we're not going to be able to help everyone shift their entire mindset for the wide ranging implications of this. But you talk about biology, you're hitting walls with biology. So you had to go to physics and now you understand — you're still understanding biology but from a quantum biology perspective.

Can you explain some of the key differences and maybe how we would have to unlearn certain beliefs compare it biology, compare it to quantum biology.

[0:07:54.0] BM: Right, okay. The first thing you need to understand or realize is that the mitochondria is probably the crown jewel or the centerpiece of our entire metabolism and health. As you break down some of the typical modalities that we use, like you know, food and sleep and things like that, it's really all in service to the mitochondria.

You know, we learn and we hear that the mitochondria are the power house of the cell. Well, it's way more than that. That's just like saying, the president of the United States is some dude that sits in Washington and signs the bills. It's much more than that so you make sure you go vote tomorrow.

[0:08:33.0] AS: By the time this goes out, we will have already known.

[0:08:36.5] BM: Oh that's right, I'm sorry, okay.

[0:08:39.4] AS: I'm doing it. Covering all my bases.

[0:08:42.9] BM: The mitochondria are basically like the crown jewel, they're very sensitive to magnetic fields and light frequencies and current. If you boil down food, right, to what we actually need and what we extract from it, it's actually electrons.

There's a long process that it goes through from carbohydrate and a protein to an amino acid to the basic molecules of what food are.

They basically convert into electrons and there's a thing in the mitochondria, it's called the electron chain transport. Food – electrons basically enter into that system and that drives all of the energetics of our body, right? There's actually a motor, it's a quantum nano motor in the mitochondria that spins at a rate of 9,000 RPM's per second. Just to give you an idea, if you are in a car that's 102 miles an hour, and that thing is fast, it's like having a Ferrari basically in your cells, okay?

We have thousands of mitochondria all over the place, right? Humans concentrate their mitochondria in their hearts and their brain. The faster that motor spins, it creates a magnetic field, there's an electric current that goes through it. That's why you can measure like a heart field like 22 feet away from your body that's been shown in the study. The brain is very similar as well.

So you have a high magnetic field and it's all because of these electrons are basically, you know, running the system. Electrons are basically a particle of light. So whether we get electrons from the sun, if we get it from water, we get it from food, that's what it ends up being. To the degree that you have electron density is your ability to basically like charge your batteries and run all of the metabolic processes in your body.

Obviously that kind of like relates back to nutritional density. That's what you're really actually saying. We say, "Okay, you should have a diet that's, you know, nutrient dense." What those nutrients through the vitamins and the minerals and amino acids, protein, those fats, carbs, all those things. It basically ends up into electrons there are some foods that are more nutritionally dense and there are some that are less. So like for example, processed foods.

They have less nutritional density than natural foods, organic foods, there are some that basically have none. Like sodas and candy and things like that, right? There's really no nutritional value whatsoever. When you start to break down all of those foods and you have a high nutritional density, you increase your electron density and that's why you feel better because you have more batteries, more power to run your system. So that make sense?

[0:11:26.9] AS: Yeah. Well, I'm thinking too, just for listeners, for them to understand. If it weren't for the mitochondria, we would all be bacteria still, right?

[0:11:36.9] BM: Absolutely. Well, mitochondria is a bacteria and we stole it, you know –

[0:11:43.0] AS: Or it was cooperative.

[0:11:43.7] BM: Millions of years ago. If you can't – we kind of like usurped it and took it in and it's an endosymbiotic relationship. We took it in and we integrated it into our physiology so all eutherian mammals which is includes humans, mammals that hibernate and things like that. We kind of brought in this mitochondria to help us move across the plains and lands as the evolutionary man did.

[0:12:10.4] AS: To power us through, right?

[0:12:12.9] BM: To power us through. So we basically have like a battery charger that is recharged every day or supposedly recharge every day by the sun. That's how we do it, plants do it the same way, the problem is that plants don't move. We have the advantage where we can move across the tectonic plates and we move across the earth and we need some way off charging our system and evolution selected for the sun to be able to do that within us.

[0:12:38.5] AS: Oh, thank you so much for explaining that because what I wanted to show people from a philosophical standpoint, we often think of Darwinism survival of the fittest. That is true, however, nature is much more cooperative and us, taking the mitochondria, I mean, you could say we took it or we could as we all created together so we all survived.

[0:13:00.8] BM: Well, it's been a beautiful relationship so far. Maybe even like steal it, but it wasn't ours to begin with. I guess it happily integrated with us. I think, a symbiosis is, you need me, I need you.

[0:13:13.5] AS: Yeah, it's equal, right?

[0:13:14.5] BM: It's flopping it. Yeah.

[0:13:16.1] AS: It's a fair relationship. I think what you're saying, the reason I want to bring that up is because we often think of the sun as like, you know, you're going to get tan or people are actually afraid of the sun, right? We should even talk about how you don't maybe use sunscreen. That's a nuanced answer but what I'm trying to show people is we actually need to be in cooperation with our environment.

It's not an afterthought, it's not something that just happens like, your health is – your relationship to your environment is so important of the sunlight and the rhythms that are instigated by the sun. That's why I just wanted to kind of like, there's a huge philosophical jump, right?

We used to think the mitochondria was ruled as a hierarchical from the nuclei, right? But now we know it's actually getting inputs from the environment, it's not a top down hierarchy, it's a give and take, is that correct?

[0:14:08.5] BM: Oh absolutely. It's a total environmental sensor. It actually pays attention to what's going on in the environment and that information, whatever the environment you're in, you find yourself in, is what drives mitochondrial function. We have two genomes, we have a nuclear genome and we have a mitochondrial genome and actually, Dr. Doug Wallace who is a PhD here in [inaudible] here in Philadelphia, he's going to win the Nobel prize because he is the one that actually discovered that we get our mitochondria from our mothers, from our maternal line.

What he was able to find was that 80 to 85% of the diseases that we experienced today like you know, all the neurodegenerative diseases, the metabolic diseases like, you know, diabetes and metabolic syndromes and things like that are mitochondrial in nature in terms of like their dysfunction.

What happens is, the mitochondria typically pays attention to your environment, pays attention to light frequencies and all of those things. What happens is if you put on like say sun screen or if you are in artificial light like fluorescent bulbs, if you are exposing yourself to blue light, which is any screen that you're looking at, your phone, tablets, iPads, computer screens, even the LED TV's have an effect because what you're looking for, we've gotten away from full spectrum lighting, which is the sun.

You know, you talked about in the beginning how people love a sunset, love a sunrise, we love being by the ocean because the magnetic fields are higher there. Those are all queues that, that's by design, we're all queued to be addicted to nature and connected to nature, that's what the whole science of grounding is about.

You know, there's a huge magnetic field that the earth emits. It's 7.83 perks, it's the Schumann resonance, our brains, the alpha wave of our brain waves actually resonates at the same exact frequencies, 7.83. We're designed to be connected to the earth and we've disconnected ourselves through technology, through indoor living, to

artificial lighting and it's starting to maximize and become a little bit more risky and dangerous as our technology and our technological power increases.

We don't know what the effects are. We kind of do because they've been studied but they're latent. It's like you know, what you do today won't have an effect for months or years and that's where it's insidious, that's where it's a problem. You can't really go wrong with nature. Getting out in light, full spectrum light, getting out of artificial light and mitigating your exposure to non-native, what they call electro magnetic frequencies, dirty electricity, even electrical pollution, electro smog, all those kinds of things, all play into the health of you know, light health, the [inaudible] field.

[0:17:01.3] AS: Yeah, just to back up quick, you know, on the podcast a lot, I talk about the patriarchy but guys, these is one of the ways that it's screwed us over. They were only looking at men and not the value of what the mother brought. This is not to blame women, because we have to – what we're talking about here is the environment that a child grows up in, in the nine months matters as well as the mother's health is so important and the mother's health is not all on the mother, it's on us as a society to support the mother's health.

This is just, I mean, we talk about these things and I want people to understand the downstream effects of the loss when we just dismiss, you know? An entire sex, not gender but sex.

[0:17:45.2] BM: Right, that actually plays into the role of how the health system works too. I mentioned before, there's a mitochondrial genome and a nuclear genome. Well, everybody in medicine is focused on the genes like you know, from the nuclear genome. Well what happens is, at what epigenetics is, actually, epigenetics are the additions from your original blueprint of your genetics that get added on from what happens in your environment.

Well, that's all mediated through your mitochondrial genome and what happens is, you don't want to ever turn on your nuclear genome because that means things are bad. That means it's like your house is on fire, we have to go back into the system and try and reboot it.

[0:18:24.2] AS: Oh wow.

[0:18:24.6] BM: It's important to make sure that you keep your mitochondrial genome intact because it runs all of the energetics and system. When that gets fatigued or if your mitochondria you know, get damaged or dysfunctional, then it signals to your nuclear genome they're like, "Hey, look, we've got some problems, we need to go in and start to change the genetics of how we express our bodies and express our reality to adjust for these problems."

You're in a hostile environment and let's say you have a less than ideal environment. Let's say you're around a lot of power lines and you know, electro smog and you know, you got a stressful life, a crazy job and all this other stuff. Whenever genetics, predispositions you have in your nuclear genome, say it cancer or diabetes or anything like that. Those things will start to be expressed. Because your body's trying to pivot so that it can help you be a sustainable organism and that's not necessarily what you want.

Cancer, right? For example is a morpheme, it's trying to turn away from the hostile environment, it's almost like it's trying – like cancer cellist someone that doesn't feel a part of the family basically. It's almost like an orphan. Yeah, it kind of goes its own way and it's like, "Well right, you know what? We're going to create our own community and what a cancer will do, cancer metabolic is very cultural like. You kind of create little colonies, you have tumors and you have satellite cells and all these other things. It kind of runs its own network and that is a reflection of the environment that you find yourself in.

There's even a cooperative nature that you have to have with a thing like cancer or any kind of disease because your body is really trying to figure out how to integrate itself. A lot of times, we take the approach of like you know, "Fight cancer and all that other stuff," sometimes it's not very helpful because it puts you in obviously like an aggressive angry state, this is why you know, mindfulness and meditation and gratitude and all these things are helpful because it's more cooperative and less combative, does that make sense?

[0:20:25.0] AS: Yeah, totally. I want to go back to about other issues that come up when our — So basically what I'm hearing is we have this like genome that is genetically driven but then we have this other genome, that's mitochondria driven that is trying to protect, it's kind of like the protection so that you don't have to ever go to do or die mode.

[0:20:47.8] BM: Right, exactly. You don't want to go back into Your system and have to reboot because —

[0:20:53.3] AS: Yeah, it's almost like, pulling on your backup battery, right? Rather than just using what's — it's like —

[0:20:58.0] BM: Exactly.

[0:20:58.5] AS: It's like, "Oh, that's draining. That's draining." One of the things though. I love that you brought up cancer and obviously, autoimmunity issues as well, our immune system then starts to weaken but I think one of the things that what really surprise people is about weight gain. We think of weight gain as like excess energy. However, if we look at it through this quantum biology in mitochondrial lens, wouldn't it be an energy deficiency?

[0:21:24.6] BM: Okay.

[0:21:26.1] AS: Or no, am I wrong?

[0:21:26.6] BM: Okay so, it's an energy efficiency.

[0:21:28.4] AS: Okay.

[0:21:29.2] BM: Put it that way.

[0:21:30.7] AS: We're both right. No, kidding.

[0:21:32.5] BM: Yeah, that's kind of a little bit more because you know, you can have a deficiency as far as like a dysfunction but that doesn't necessarily mean — because sometimes you want to be able to like reduce things and be deficient in certain things and efficient in other things. But anyway, so as far as weight is concerned, body weight, what happens when you sprain your ankle or you bruise something? It swells, it gets bigger, all right?

One of the things that mitochondria do is they're basically embedded in water. There's a geometry to it and this is where the physics comes in. The geometry of your mitochondria determines how well they run. If they have a tight geometry, everything's coupled together, right? They have like a tight relationship together, then the electrons can tunnel through, it's a principle known as quantum tunneling, right?

If the mitochondria are not tunneling properly and the geometry is spread out and they're spaced apart then what happens is, you have gaps in electron tunneling, you have gaps in energy and you begin to swell and what happens is that causes inflammation because the opposite of electrons is protons. Now, protons, if you break it down into physics, it's basically just inflammation.

What happens when you have inflammation, you have redness, you have swelling, you have bloating and this applies to basically all organisms, all life, all matter. For example, a great analogy has to do with like stars. If you remember from grade school, you learn how stars turn into red giants because they're starting to basically lose a lot of light and a lot of energy, they get bigger and the same thing happens in people. The same exact thing happens in people. **So, when you lose light and you lose energy and have gaps, those electrons can't tunnel and bridge across.**

Then you start to expand and that's where obesity kind of comes in because it's also, plays back into like Diabetes, you know, your resistance for insulin, melatonin, all of these things that are supposed to be tightly coupled and work close together tend to drift apart and that's when the mitochondria start to bust, they start to be dysfunctional, there are programs in the system like apoptosis, which is basically cell suicide. You have autophagy, which is you know, cellular cleansing, you have mitophagy.

These things basically are control mechanisms to make sure the system is running smoothly. But if you're not supporting it with the proper light frequencies or an over exposure to artificial light, like blue light at night, things like that. Then, you start to, your mitochondria start to like break down. That causes more inflammation and then the swelling.

What happens is, if you don't have a healthy enough full spectrum dose of lighting I guess you could say, and you have an excess of like say, blue light or artificial lighting, what will happen is you just create more inflammation and when you start to expand, there's really not much that food can do because it's the light environment.

You can eat, you know, there's people that will try to work out as much as possible and eat as healthy as much as possible, but if they don't fix their light environment,

then you have a problem with trying to lose weight, trying to be a fat burner. For example, I'll give you an example, right? Mitochondria, oscillate at a hundred hertz, which is the perfect fat burning frequency in a mitochondrion.

If you are exposed to like say, blue light or even radio frequencies from like say a cellphone or a WiFi or Bluetooth or any kind of like, you know, anything that gives off a signal, then what happens is the oscillations change. Instead of burning at 100 hertz, you're burning at 60 hertz. You're not able to really utilize the metabolic of the food that you eat and you know, the metabolism that you would get from a normal fat burning.

That's because your mitochondria are paying attention to all these things. If you don't get the metabolic right with your mitochondria, then things start to break down and things start to slow down. So then you can increase weight, you have more – you creep up with like certain diseases, your hormones get thrown off and just the system just gets really, really sluggish. Not only do you have an expansion problem from like say inflammation and swelling. You also have a slower metabolism. So it's like a double whammy.

[0:25:57.1] AS: If we think of like the battery metaphor and we're thinking like a phone battery. I think it's almost having like 25 different browsers open and everything just spinning.

[0:26:07.1] BM: Oh yeah, absolutely.

[0:26:09.2] AS: Getting stuck there and like slowing you down and almost like, yeah, as you were talking, you know, I love finding root causes because then you simplify. Like, "Okay, I just have to focus on these three levers." It sounds to me what I wanted to especially do this is light is to me is one of those levers now that I understand it. It helps with sleep, it helps with hormones, it helps make sure your metabolism's running well,

it helps your mood, it helps everything else and it's like, if you can just prioritize this, a lot of other things fall into place.

[0:26:37.9] **BM:** Right, absolutely and you have to get your light right because the solution and you know, the antidote is in it and you have to – we heal in the red and we kind of like damage in the blue, okay? For example, blue light basically raises glucose independent of food. It causes insulin resistance, independent of food. It also causes the breakdown of the inner membranes of your cells, right?

When you have all of these effects, kind of like effecting your body independent of food, it's almost kind of like you're in between a rock and a hard place because if you don't know this, then you could be on the cleanest diet possible or, you know, on some type of program as far as health but you're taking one step forward and one step back because you haven't corrected for your light environment. **That happened to one of the keto guys, have you heard of Jimmy Moore?**

[0:27:38.0] **AS:** I've heard of him, yeah, wasn't he paleo? I thought he was paleo.

[0:27:43.2] **BM:** He was paleo and he was obese, he was paleo, lost some weight and then he went keto. He went keto and keto is actually an interesting diet protocol that you can use. What it actually, what it fundamentally does is it puts the brakes on the physiology that's kind of like out of control. It really works with people who are unhealthy.

Because you get quick changes because you're basically activating a primordial set of metabolic factors and regulations that helps kind of like, keep you healthy. In the short term, ketogenics works but what happened was, Jimmy Moore, he does a podcast and he's like, you know, professional, he's around a lot of technology and blue light and all the other stuff.

He stayed on it because you know, obviously, keto worked for him, so he stayed on it and that was the gospel for him. So he became the keto guy. Well, after about several months, he started to – his weight started to creep back up and he kind of gained all the weight back and one of the reasons why is because he never really factored in for his light environment. He does a lot of podcasting, he's around blue light and internet and WiFi and all this other stuff.

Blue light and electromagnetic, EMF can affect your insulin resistance and affect your blood glucose and all these other things independent of food. There's not much that keto or any kind of diet will do. Because that's the root cause.

[0:29:04.8] AS: Did someone tell him that?

[0:29:07.2] BM: Jack Cruz has been telling him that for years.

[0:29:10.1] AS: But he won't listen?

[0:29:11.7] BM: I don't know? You know, he's got his own platform and he's got his own thing. It's almost kind of, it's tough to pivot off of – you know, if your business model is all off of like a keto platform, it's kind of tough to pivot and say like, "Okay, this and that." But you know, I don't know.

[0:29:27.5] AS: The truth has a hard time. The truth has a hard time in wellness too because there's not as much money in the truth, right?

[0:29:35.5] BM: Yeah, exactly.

[0:29:36.9] AS: People were selling you, you don't need supplements, you don't need all the meal plans and that's a whole other –

[0:29:44.4] BM: That' the thing, **that's the beautiful thing about quantum biology is that all of the remedies and solutions are free.**

[0:29:51.8] AS: Yes.

[0:29:52.3] BM: Light, water, magnetism, grounding, I mean, it's just – I got some protocols for you guys so that you can just implement stuff that's just so simple, it's just so easy and it's free.

[0:30:04.6] AS: I think that's the challenge, right? I mean, I work on so much of narrative coaching and helping people own their story and the big challenge is, is when you're in a certain paradigm, you don't know what you don't know and you block yourself from knowing the very information you need. You stay in these crazy loops.

[0:30:23.0] BM: Right, exactly.

[0:30:23.6] AS: If we think health has to be complicated and that you buy it and it has to be built up and we're a culture of extremes, right? It fits in that narrative and linear of, "Okay, input in, input out." Versus, "Look, if you charge yourself up, doing these basic things, exponential results because nature is exponential, it's not linear."

[0:30:44.0] BM: Exactly, that's a great point, that's a fantastic point. I was actually going to bring that up because that's one of the things, if you want to actually understand your own body, understanding quantum biology and everything like that. Everything is non-linear. A small thing has a massive effect. It's not like one for one, it's not that at all, it's usually like the opposite. It's not linear at all.

[0:31:06.9] AS: Yeah, I'm thinking of like how we all get in this vicious cycle. Let's take for example, sun screen and the sun, right? I did it when I was living in Philly, I did a

whole NBC segment on foods that help you better absorb the sun, right? People don't realize that the foods that they eat can help prevent sun burn based on, if you're burning, and now granted, you have regular exposure to the sun but if you're burning when you go out into the sun, it says, you actually need more light and more light density from a nutrition standpoint, not sun screen, right?

[0:31:39.1] BM: Absolutely, yeah. I mean, using sunscreen is like, if you were to put a plant out and then put a tarp over the plant, it's not going to grow, it's not going to yield any fruit if the food plan is like that. Sun screen and even clothes can be problematic because what actually – it's really interesting, this goes back to the non-linearity. Light is localized too.

Where you actually get the light matters just as much as getting overall light in general, you know what I mean? For example, like breast cancer. If you want to heal through light, you need to actually expose your breasts to light, you know? Obviously, we have cultural norms, you can't walk around naked and things like that.

I've actually recommended my clients who have like their own private backyards and you know, obviously there's no creepers around or anything like that expose their skins as much as possible to **healthy AM light, which is really where all the healing is**. AM light. Because AM has primarily infrared light and infrared pierces the skin all the way down to the fat layers, the subcutaneous fat. What happens is, the infrared has all of the light frequencies in it that help repair and heal.

A lot of people may not know this, but melatonin is actually made by AM infrared light. It's a solar hormone. You release it at night, but it's built in the morning.

[0:33:05.2] AS: So taking melatonin at night is like going to make you fall asleep in the morning?

[0:33:10.7] **BM:** Well, it can do that but there's worse things. Taking melatonin sometimes has useful applications but in general, as a rule of thumb, you don't want to take supplemental melatonin because it uncouples your system. Melatonin is tightly regulated. If you take an exogenous melatonin, you throw off your endogenous melatonin.

[0:33:33.8] **AS:** Man, this is like the before warning, why you shouldn't take supplements without really knowing what you're doing.

[0:33:41.2] **BM:** Right, there's a lot of things like that. Insulin is the same way. **Insulin is built in the morning as well, they're solar hormones, insulin and melatonin.** Melatonin is made in the eye, the signal to make melatonin and release melatonin is all regulated by the eye.

So if you look at a – for example, blue light is a light frequency that typically is more prevalent and present and regular daylight around noon. Like 10:00 to 4:00 or so. Blue light is pretty predominant and we need blue light because it actually uncouples our body, it uncouples our cells so that we can liberate energy so that we can move and do things.

But the thing is that, blue light, within sunlight has balanced because you have full spectrum light, you have blue, you have red, you have green, you have all those things. Now, there's also a light temperature associated with light, it's just measured in Kelvin, right? Blue light and regular sunlight outside, outdoors is somewhere between 1,400/1,500 kelvin. Kelvin basically will tell you your light temperature of how bright it appears and how powerful it is. Take a guess of what a cellphone emitting blue light has a light temperature of?

I'll just make it easy for you, it's like upwards of 6,000, which is massive.

[0:35:00.2] AS: That's like – oh my god.

[0:35:03.9] BM: Yes, it's massive, it's bad, it's really bad and **so what happens is, every time you look at your phone, you're telling your eyes or you're exposing your eyes to the stimulus that it's noon.** Let's say you come home at 9:00 or 8:00, you know, from work, had a long day, what do people mostly do? They sit on the couch, they watch some kind of mindless television on their Led TV with blue lit screen. They're looking at their phone on Facebook and going over the day and catching up on this and that. You're telling your eye that, and your body that it's 12:00 in the day, it's noon. At a time when you should be winding down, you should be getting tired and melatonin is being prepared to release. So what happens is blue light destroys ocular melatonin. As I said before, melatonin is made in the eye.

The signal gets triggered from your eye, basically off of the absences of light, darkness obviously. But, if you're coming home at a time when you're supposed to be winding down, getting prepared for sleep and you're flooding your eye with blue light from TV's and iPads and Kindles and smart phones. **You're basically shutting off and destroying melatonin.**

The melatonin that's supposed to be released at night when you sleep is nonexistent. That's why people's sleep is horrible, it's terrible. Because you don't actually have the melatonin to regulate all of that and then **melatonin is also one of the most powerful antioxidants you have in your body. It's actually more powerful than glutathione.**

Everybody thinks, "Oh yeah, glutathione, glutathione." Melatonin, it blows glutathione out of the water. And, melatonin also, it runs all of your repair and regeneration pathways so you know, obviously, there's a repair and restorative element to sleep. If you destroy ocular melatonin, you get none of that.

What do you do? You wake up tired, right? You wake up and your sleep is probably crap, you may have slept but you didn't get any restoration and then how do you go on about your day? What do you do? You drink coffee. Then, a lot of times, nowadays, people, the first thing they do when they wake up is check their phone. Instead of having a normal rate of light exposure, some full spectrum light like a sunrise for example, you're flooding yourself with the 6,000 kelvin light temperature, destroying any melatonin that was going to be made for the next day and you just, now, you're in a wicked cycle.

That's where the adrenals kick in to try and help that out and that's where you have like adrenal fatigue or also known as adrenal resistance and things like that. It's just – you just start to run down your mitochondria and your melatonin pathways, everything, it's really bad.

[0:37:41.9] AS: Wow, you know, as I'm seeing this, it's like, sometimes I'm imagining people listening to this and they're like, "Oh my god, this is another thing that I have to pay attention to," and it's because we are so out of whack with nature, right? If we would just follow nature, everything would be easy.

[0:38:00.8] BM: Yes, absolutely. So let me tell you. **Here's what you do, okay?**

[0:38:05.0] AS: Yeah.

[0:38:06.5] BM: The best thing you could possibly do is to make sure that you see a sunrise and I actually didn't really start to notice this until I applied it to my own. I'm a pretty healthy person, I understand my alpha very well in tuned with my own body chemistry and things like that.

[0:38:22.6] AS: And you're buff. Check him out on Instagram folks.

[0:38:27.3] BM: Yeah, I try to be buff and you know, the more healthy your mitochondria is, the more buff you could be and the more you're able to keep your weight off and stay in a healthy body fat composition. But, I ride my bike everywhere. I haven't had a car in over 10 years. I ride my bike and I have clients in the morning. I like, you know, 5:30, 6:30 in the morning. You know, super early. I notice one thing. I always see the sunrise. I always, I'm out and I'm always exposing my eyes to the sun or at least daybreak, okay?

The most important thing you can do is get out into the AM light. You're talking about 7 o'clock, eight, 8:30, that's the sweet spot depending on where you are in the country and your latitude and all of that other stuff. There is a great app you can download called D-Minder. D-Minder is an app that basically tells you where you are locally to find out how much time you need in the sun to create, I forget how many IU's of vitamin D. It is like 2,000 or 3,000 something like that. It will tell you in minutes.

Like, "Okay you know you need to stand out in the sun for 15 minutes in day break so that you can make X amount of vitamin D for you." It's a free app; it's really good. It could let you know what's going on geographically in your area, because obviously every area is different.

[0:39:40.2] AS: Yeah, we have to use blue light to learn how to be in the sunlight.

[0:39:44.9] BM: Yeah, exactly. Right, exactly.

[0:39:47.5] AS: Look at it at noon.

[0:39:49.5] BM: Right, exactly you can't throw the baby out with the bath water because we need some of it, but you just want to make sure that you have more like a natural light than you do the artificial light.

[0:39:59.1] AS: And by sunrise do you mean, because I have been telling people at the dog park about this, okay? Because once I get on something I have to tell everyone and they were saying, one guy was saying that he's read that there's two different types. There is morning light and there's sunrise, is there?

[0:40:14.1] BM: Okay, so it doesn't have to actually be the sun because say like 6:00 in the morning, 5:45, the sun is not actually up yet. It's cresting right? So as long as you have like day –

[0:40:25.9] AS: Like in the summer.

[0:40:26.2] BM: Right, exactly just day light. Day light is fine, you don't have to see the sun. 42% –

[0:40:32.5] AS: Oh my god, not to interrupt you but me, I'm so induced, I have been staring at the sun like I want it. I want it rise so don't do that?

[0:40:41.0] BM: Oh okay, don't look directly at the sun but looking at it –

[0:40:46.5] AS: Don't – right I was seeing dots.

[0:40:47.5] BM: Right, exactly.

[0:40:51.0] AS: A little too black and white there, Ali.

[0:40:53.2] BM: Your eyes are smoking right now. Yeah, your eyes are smoking right now I could see, okay? No, you don't want to look directly at the sun, but you want to look in the direction of the sun so that the rays are bathing your retinas.

[0:41:06.6] AS: So no sunglasses people.

[0:41:08.7] BM: So that means no sunglasses. No sunglasses at all that's like putting a tarp over a tree. It's just not going to work and you don't need to spend a lot of time out there. You just need to be out there for about say 15 minutes and that's how you actually build your solar palace because in the morning, you have primarily infrared light. Infrared light preconditions the skin to absorb UV light which is really where it's at.

UV light is a healthy form of light.

Everybody thinks it's bad and ultraviolet damage and all this other stuff. We can get into another talk about why that's bullshits, but UV light is actually where a lot of the regeneration and health comes in. It's just been demonized, almost like fat, fat has been demonized, you know what I mean? So when you're out in the morning, all you have to do is just be out even if it is overcast. It doesn't matter, 42% of the light that hits is infrared.

So morning light is where you will build your melatonin where your cortisol will be attenuated, where your adrenals will calm down and you will begin to shrink. Remember I am talking about the geometry of your mitochondria, the tighter that they are then the more efficient they'll run. The more efficient they run, the more you use energy better and you have to eat less because a lot of times if you have gaps in energy then your body will try to make up for it by increasing your appetite so that you can eat food and get more energy. So –

[0:42:34.8] AS: **Is this why we're not as hungry when we're in the sun all day?**

[0:42:39.0] BM: Absolutely, you can be on the beach and you don't have to eat all day and it's because we're completely connected into the ground or the sand. So you are getting a magnetic field that is pulling inflammation out of you and allowing the electrons to tunnel to a much greater degree and then you are exposed to the sun as well. It is like you are plugged into like a phone charger that is being plugged in.

[0:42:59.8] AS: A charging station. That sounds amazing.

[0:43:01.8] BM: Yeah because that's what it is.

[0:43:03.7] AS: You can be healthy just lying there like you can, everyone, "No I have to stay on the ground, you don't understand, I have to lay here."

[0:43:11.1] BM: Exactly, hug a tree, all of those things in the sun, you know it is a real thing and it's all based on physics and that is why it seems like woo.

[0:43:21.3] AS: Well it does until you realized that normal is not working. I am tired of people blaming the woo when it is actually common sense, right? And it is a way to diminish, like woo is a way to diminish witches and the more intuitive female side of things. It's meaning even though I say it myself but just again, if we are going to talk about how the patriarchy has screwed us left and right, let's add that to it too. But normal is not freaking working. Why is everyone afraid to be weird when normal is so unhealthy?

I don't know, that's my little rant. So you are saying 15 minutes in the morning is a great place to start as the sun is coming up or morning light, whatever it is, whatever you can get in, go out there and start to build what you are calling our skin sun callus or solar callus. I love that, but it is how we're charged up from a sun standpoint.

[0:44:11.0] BM: Right, I usually recommend my clients go do a walk in the morning. So just a nice easy –

[0:44:16.1] AS: Sorry I am getting so excited because I have been trying this before we're going to – and it makes such a difference for me. Like I take Coffee out, granted it is nice to have a dog, you have a reason. But I have been working out up to 45

minutes in the morning. I am not going to look directly at the sun anymore, but I have been working out at 45 minutes.

[0:44:33.4] BM: Yeah that's perfect. You do a nice little walk in the morning, get your skin exposed, your head, there's light receptors in your skin all over your skin. Obviously that is how we tan. So you do like a 30 to 45 minute walk in the morning and you are good to go and then your only job after that is to limit and protect yourself from blue light and artificial light because most people after that time, they go into work and they go indoors and they're exposed to this and that.

So what you want to do is you want to take as many precautions as you possibly can to protect yourself against blue light because blue light by itself like say on a phone or on a TV on a computer screen is absent of all of the balancing out colors if you get in full spectrum light and that is where the damage is. That's where it is a problem because you are getting exposed to not only one frequency of light that uncouples you, which is a bad thing. It creates inflammation and all these other things. But it is high powered too. Like I said, blue light in the sun is 1400 kelvin on a phone it's 6000 to 6500 and they are getting even more powerful. So that is a problem.

So the things that you can do is **basically you want to make sure that you protect your eyes and so what I do and we talked about this before, is I always make sure that I have eye protection.** So I would take a couple of different measures. So on your smart phone if you have an Android, you have a blue light filter, right? So you click on that and it gives you a small little – a slight yellow haze over your phone, which is good, not good enough but it is a good start. On an iPhone it is called night shift mode I think, right? So you could put that on. I also use an app called Iris. Iris is a blue light filter app and I keep it on all the time because that filters out even more blue light.

On the iPhone I think it is an app called Flux I am not exactly sure. I have an Android so I am not really too familiar with the iPhone stuff. But I know them by name. So it's

like a Flux, the app is called Flux. So you put night shift mode on, you use the Flux app and then I even go the distance with glasses. So you have blue light blocking glasses that you can get relatively cheap. You can find them on Amazon, I have three pairs. I have the designer fancy chic looking ones that are made by a company called Prospek.

You could find those on Amazon. They are lightly tinted and they block 50% of the blue light. So I use those ones when I am going out or if I don't want to look too weird because they do have a yellow tint. The more blue you block, the yellower the glasses are, specifically. So I use those when I go out or if I am going to be in a concert or some kind of public space where there is artificial lighting and especially at night.

I have another pair of glasses by Eye Keeper that blocks out 98% of the light and they are a little bit more yellow tinted and I use those when I am at home and I'm on my computer, if I am playing a video game, I am looking at a TV or anything like that because at night, I want to make sure that I protect my melatonin because my melatonin is an anti-carcinogen, antioxidant. It is going to get my sleep, my repair, my regeneration, all of that stuff. So you want to protect it as much as possible and then I have these other ones that look really funky. They are made by a company called Uvex and they look like they're welding metal. They are like these big goggles and if you happen to wear glasses or contacts or you have a prescription, you can wear these over the glasses because they are that big and they're that sexy looking.

So I wouldn't go out in public with these unless it's Halloween but I have those because they block 100% of blue light. So I wear those when I have to – Once I get into bed, I will wear the big ones just to make sure that I completely protect my melatonin because I am about to go to bed. So I set my alarm and all of this other stuff. I always turn my phone on airplane mode.

[0:48:29.7] AS: Yeah, that's a big one.

[0:48:31.1] BM: Yeah because what happens is and it's a little tricky nowadays because even if you turn your phone into airplane mode it doesn't completely turn the radio off. So you are still getting radio frequency signals bidirectionally at night even if it is airplane mode. So you've got to watch out for that but you wanted –

[0:48:47.8] AS: We shut off our internet. I started shutting our Internet off at night.

[0:48:50.4] BM: Absolutely, **yes you've got to turn your WiFi off**, you don't need it and it is just a signal that is just radiating through your house. It is 2.4 gigahertz constantly. So if you can't turn your phone on airplane mode, maybe you need it on for certain reasons, keep it away from your body and away from your person because there is a principle in physics called the inverse square law and it is real simple. It just basically means the further away from it you are, the less of an effect it has on you.

So I know some people that they have their phone right under their pillow or right next to their night stand and it's just like, that is bad. That's like sticking your head in the microwave and then putting it on defrost. You don't want to do that. You want to make sure that you keep your phone as far away from you. You also want to try to keep your phone away from your body parts when it is on. So I see these girls a lot in the gym they stick their phone in their bra strap or in their tank top.

I mean if you asked me how you get breast cancer, that's what you do and I see this happen a lot because you don't know where to put your phone especially if your phone is big nowadays. So it is hard to hold them and keep them somewhere. So that's the worst thing you can do, **don't ever put it in your tank top or the bra strap because you are basically irradiating your whole chest cavity** and then it also plays a role in your thyroid too because it is right in that same area.

And what I was telling you before, the effect of radio frequencies and light frequencies are local. So wherever it actually is there's a problem like if you keep the phone in your back pocket like I actually keep my phone in my back pocket but I turn it off. I put it on airplane mode when I am in transit and then when I get to an appointment. I place it down somewhere else, away from me. You can actually affect the organs in loco.

There are studies that show that males that keep their phones in their front pocket or back pocket have a lower sperm count, even with females sometimes they keep it in their back pockets. You have problems with ovaries and things like that because you are basically irradiating those tissues all the time and the phones make sure you keep your Bluetooth off, keep your GPS off. The less power that you are demanding on your phone, the better it is for you because all of those things they account for power and they are sending out frequencies every few seconds to make sure there is no gap in information. That's how technology works but it is affecting adversely.

[0:51:16.4] AS: This is wild. First of all, for everyone listening, I wrote down all the glasses and the apps, so on the show notes here, you can find all of that stuff, second of all this is making me think – I just totally lost my train of thought – oh I remember what to say. So just to recap for everyone, two things: you get light into your eye and your skin. So I think we are talking around it but I just wanted to be like this is why all of this matters because when you are radiating, it is going directly into your skin.

Which picks up on the sunlight and then obviously your eye, like Brandon said it is the messenger to your mitochondria probably in your head and your heart I guess, right?

[0:51:55.8] BM: Okay, wait, wait hold on. Let me just say one more thing before you keep going. **The other thing that I need to really mention is everybody talks about circadian rhythm.** Well the granddaddy clock of your entire body that runs all over your circadian clocks, you have circadian clocks and you have peripheral clocks right?

So there are central clocks and peripheral clocks, they all flow into the umbrella of your circadian rhythm.

The most important body clock of all is known as the SCN, suprachiasmatic nucleus. That particular clock sits right above the eyes and the retina informs it what it needs to do. It is the grandmaster clock and so that's why your eyes are so important because if you are flooding the eyes with incorrect light signals, inappropriate light signals or over exposure to unhealthy light signals, you can't synchronize your circadian rhythm, you can't synchronize your clock.

And all of the clocks below it, all of the peripheral clocks are set based off of the grandmaster clock. So if that one is off then everything is off and the best way to analogize that is through a GPS, right? So we have a GPS on our phone, we turn it on and it relays to a satellite in space. That satellite actually has to run 30 to 40 seconds faster than all the clocks down on earth because of a complex gravitational lensing. The concept, it has to do with physics. You don't need to know that.

All you need to know is that if that clock in sky is off then your ability to navigate is going to off. So if I need to get to Philly and that clock in the sky is off, I am going to end up in [inaudible] or I am going to end up in New Jersey. That's not helpful at all and it is the same thing in your body. It is the same mechanism and it is all regulated by the eyes. So your retina takes in the life signals, it helps synchronize your circadian rhythm. That's even more of a reason to protect the light that you bring into your eye or even lack of full of spectrum light.

[0:53:49.4] AS: That is super helpful I love that. I am thinking of it like clocks in the cartoons where they used to ring and it would just rattle everything. That's what I am thinking when it's off that. It's like you're pausing. So what if –

[0:54:03.6] BM: Did you know that, one more thing sorry, hold on to that thought. One more thing that is important in front of every single gene in your body there's a clock gene that sits right in front of it and you know why? Because it needs to sync the genome or the genetic material so it knows how to function. It is almost like an instruction like the instruction manual. So I think it is called B-Mal one and B-Mal two are our clock genes basically.

They sit in front of every gene in our body, we have 2500 genes, so every single gene has a clock gene so it knows how to synchronize and function. So all of those downstream effects play a part.

[0:54:40.6] AS: What if people have contacts or glasses? I know you can get prescription glasses. My friend got prescription glasses that blocks out blue light but what if you have contacts, how does that effect or you just wear regular glasses, how does that effect exposure to light?

[0:54:55.7] BM: It does, it blocks it. The windows block it like if you are driving in your car and the window rolls up and the sun is coming through, it affects it. You don't really get the same quality of light I guess you could say. So the best thing you could do when it comes to contacts is, it is not necessary to wear your contacts like say in the AM and let's say you could have a morning tea or something like that, keep your contacts out so you could at least expose your retinas to natural light before you put your contacts in.

And obviously if you need them to see and to walk and all of those other things that makes it a little bit more difficult but try to find some type of opportunity to have naked eyes, have naked skin even and expose yourself to the light and that is the other thing. The skin also has – so there is a receptor that's called melanopsin. There's melanopsin in your retina and there's melanopsin receptors in your skin as well. So even if you don't get the eyes naked, exposure to the light you can also use the skin, which is why

it is important to expose your skin and not put on sunscreen or anything like that. That helps.

[0:55:58.9] AS: Okay, awesome and I feel like I have so many questions I want to get to before the end. What about longitude of where you are and what about your race? Because someone like me who is Eastern European/white I guess but you are Dominican right?

[0:56:15.1] BM: No, I am Latino.

[0:56:17.9] AS: I know you're from Queens but are you from Latin America?

[0:56:21.0] BM: No, I actually don't have any Hispanic in me but you know I look like it but no.

[0:56:25.7] AS: I thought you were from one of the islands, part half weren't you?

[0:56:29.0] BM: Well I mean I have some Barbados and Trinidad but that's more like yeah, that's maybe what you were thinking of.

[0:56:34.6] AS: That's me, that's American bad with geography.

[0:56:39.0] BM: I am from where Rhianna's from.

[0:56:40.9] AS: Oh that's Jamaica I thought.

[0:56:44.7] BM: No Barbados.

[0:56:46.0] AS: Oh you know why I thought that because when we went on our honeymoon in Jamaica, they were playing Rhianna. See this is where my lack of

capacity for details. Oh my god I sound like this ignorant white person. I am just going to shut up right now, I'm just very bad about it. What about, I should not even say race because racism is a made up construct but your different skin pigmentations and where you are longitude-ly like where you are born and from versus where you live now.

[0:57:12.5] BM: Right, yeah it definitely affects it. So what you can do and [I wrote a blog about this on Medium](#), maybe you could post to it in the show notes. A way to build your solar callus is you have to first know what your skin type is. So there is a scale called the Fitzpatrick Skin Type Scale and the skin types scale goes from one to six. One is the lightest, so those are your gingers, you are super pale, lovely folks and then six is like the people that have super dark skin, equatorial individuals.

People that are genetically designed to be in very strong light cycles because obviously the darker you are the more you are able to protect against very, very strong light and the lighter you are, so from northern European and northern hemisphere areas, you need more light and so you want to be able to keep – you don't want the skin too dark because you off load too much UV but that is getting off track.

Basically, what you do is you take your skin type and you use a metric of vitamin D.

Because vitamin D obviously is made from sun light but it doesn't really work very well when you take vitamin D supplements if your light environment isn't that great. They can work if your light environment is that great but if it is that great then you don't need vitamin D supplements. So it kind of cancels or lose that power right?

Anyway, so what you do is this standard daily vitamin D production is about 5,000 IU's okay and so you can use that D-Minder app and what you do is you expose your skin and your eyes to the sun for certain time periods. So for example, if you have Fitzpatrick skin type one where very pale skin, very white skin and you are looking at

about – you need about 15 to 45 minutes of skin exposure, eye exposure to build vitamin D about 5,000 IU's. If you are let's say skin type number six and you say you're super dark like Lupita Nyong'o or somebody like that, right? You need about two hours because your skin, the pigmentation is so dark it takes a lot longer for that UV to penetrate and get in and do its work. So you need a little bit longer time.

So what you can do is you basically just take your skin type and you practice just like a training program, an exercise program, you use your timeframe like 15 to 45 minutes, 45 minutes to an hour depending on your skin type. I have a chart on the blog post where you just practice that over and over again and what that does is this is – you can use this for AM light. So sunrise is usually around 7:00 or later depending on where you are.

So if you catch it right before the sun comes up, you get plenty of IR or infrared light and then when the sun starts to rise you get a little more blue light because blue light in full spectrum light is healthy and what that has is it has more UV in it and UV is where all the healthy stuff does or the healthy parts of the light spectrum we are calling it and so what happens is if you expose yourself to the UV light for that time period, that 15 to 45 minutes or depending on whatever it is, then you start to build a solar callus.

Over and over again you do this just like repetitions in an exercise program. So you do this and then after a while when you do go to the beach or some environment that is typically strong, you will be able to handle much more UV light and not get burned. Now it is not a fool proof thing where it is like you are in Philadelphia for several months out of the year and then all of a sudden you go to Jamaica, you'll probably going to get burned because that is a different kind of sun, right?

Or even a place like Florida or like Miami. That would be the first exposure but you'll generally be able to tolerate more UV light and it will be able to work on it and just so

you know, when you get sunburned or a lot of times when you are in the sun all day you radiate heat at night when you sleep. Sometimes it is hard to sleep because your body is offloading the UV into your tissues. That is a good thing. Sometimes if you take in too much light or not too much. But if you have taken a lot of light your body has to try and process it.

So it goes through this processing phase where it is like offloading UV into your tissues and that is helping heal and repair you and all of those things but it obviously generates heat. So you are releasing heat and so sometimes that heat can be a little warm at night. The same thing happens with freckles. So you'll notice when you are in the sun and you have a freckle there is obviously melanopsin receptor in the freckles to a greater degree than part of your skin that doesn't have freckles.

So they absorb UV light to a greater degree and so the freckles will get a little bit darker and it is basically storing solar radiation, which is healthy. Solar radiation in those little receptors so that it can deliver it to your tissues, deliver it to your mitochondria. Now if you put sunscreen on or if you have clothes on or things like that it blocks all of that so you don't get any of those benefits but if you build your solar callus over time, you'll be able to spend hours and hours out in the sun once you get it to a certain degree.

And I was practicing that all summer and I have done that in the past few years and even now that it is turning into winter, I have a couple of perk spots that I go to in between appointments where I'll go I'll sit and I'll look directly, not directly into the sun but I will look in the direction of the sun and make sure that I bathe my retinas and get that UV light because obviously light is weaker during the winter. There is less of it and so that plays into seasonal effective disorder and all of these other things. It's the lack of light.

So I make sure that I always get my light nutrients during the day so that I am good to go and I actually can feel it. I feel as soon as the light starts to hit my retinas, it starts to warm me up and I lose my appetite because I am getting those electrons that I need to fuel the system. So it is not like I don't ever get hungry, but the cravings I get you could say is a great way to put it. Again sometimes you have cravings and a lot of them are mental but also are physical. You actually need the nutrition. I can get the nutrition from the sun and just by bathing my retinas for 15 minutes and because I have built on my solar callus over time.

[1:03:23.1] AS: So that was going to be my question. So because again, health is – what is interesting for me first of all is how even though nature is so powerful, it's so forgiving like if we only need 30 to 45 minutes a day and then minimizing the rest, it's not like we need to be outside all day. Like nature builds in lots of room for error. So if we are working on this for years at a time, is it better to stock up? Can you stock up in the summer so that you have reserves?

[1:03:50.2] BM: Oh yeah, absolutely. Yeah you can stock up in the summer and that's actually what I have been doing in the past couple of weeks because it is starting to get colder now. So I have been taking advantage as much as possible. But I have a callus built up where I can exploit that. It is almost like I said a training program, if you have a certain level of strength you won't be able to express it unless you trained it but this goes back to the non-linearity of it.

You only need a little bit of that AM sunlight or day break light to have huge effects on your overall biology. But the thing that you really have to protect against is the blue light, you know what I mean? So you only need 15 to half an hour of restorative, rejuvenate AM light. But you need to protect against all of that other blue light crap that you get during the day and in the evening. That's where the real problem is.

So you know the hard part is in the AM stuff. That's okay like yeah, you may have to get up a little bit earlier. You may have to take a walk, that won't kill you, that is extra cardio. But what's really tough is not looking at your phone 200 times a day, which is the latest studies have shown that we do that now. Sometimes 300 especially the younger you are. Not coming home and preparing yourself for sleep. You know like powering down, you want to make sure that your lights are dim. You want to keep the volume low on your TV and you want to make sure that you have your glasses on to protect that melatonin that your eyes is making and you don't want to be on your phone too long. Obviously it is for mental reasons too like mental health.

So you want to make sure that you limit your exposure to all of your electronics at night and at least protect yourself. Have your apps working so that it protects the blue light filter, night shift mode, all of those things they are like little pieces that you put into a whole protocol to protect against. The damages of blue light, if you do that then building your solar callus will be a breeze, because you are accounting for all the things that are actually detrimental to it.

[1:05:47.5] AS: I love that. I have been stopping and putting – I run a co-working space. I don't put the overhead light on anymore and I guess you could also wear clothes though in doors to protect yourself from all of that light.

[1:05:59.9] BM: Absolutely, that is actually when you want to wear clothes. Because I was telling you, right exactly. Because you have those skin receptors and they are paying attention to that light too.

[1:06:12.3] AS: I can just imagine health nuts walking in their co-working space naked it's like, "It's part of my cleanse," you know?

[1:06:22.3] BM: Oh yeah, I got my big buggy glasses at home with a trench coat on, I got my hood on protecting my head and all this stuff inside but then I walk into my

backyard and it's free willy. So I mean, you've got to do what you got to do. It's the world we live in.

[1:06:38.5] AS: All right one more question because we have talked a lot around it and everything and I love this idea that if we get the nutrients we need basically we need electrons and we don't need people stealing our electrons, which sounds like blue light does. If we look at food through a light density, are we looking then for seaweed that absorbs so much light at the bottom of the ocean, or how do we start looking at nutrition through a light —

[1:07:04.9] BM: Okay so the best way to look at nutrition is through maybe some of your listeners have heard of ATP, adenosine triphosphate is considered the unit of energy that the body runs off of. It is not exactly the truth but for explanation purposes let us just consider that, right? For every molecule of carbohydrate, or glucose that you ingest. You ingest the food, it breaks down into glucose and the same thing happens with protein, you get 36 ATP to use in your cells or run cellular programs and dynamics.

If you take, let's say a mole of lipid like some type of fatty acid like a DHA or something like that, you get a 147 ATP. So what happens is ATP basically turns into electrons, right? So the electron density of a carbohydrate and a protein is three times less than a fat and this is why the ketogenic diet works because it is primarily a fat and protein diet. You are getting a huge electron density.

So you are looking for your fats like avocados and things like that, coconuts, coconut oil, butter even all of those things. More fats actually tend to have a more electron density so you get more energy from them and you don't need to eat it too much because they are dense like there's nine calories per gram of fat so that is not a lot when you factor it into an overall diet.

[1:08:33.6] AS: Is that why keto can really stop like you need it for the temporary time point because you are also getting so many electrons?

[1:08:41.7] BM: Right, exactly. Yeah, exactly. Now once it has that effect because you are getting an electron density so the mitochondria is really charged up by this, which is great but what happens is the light environment tends to – once you adapt to the diet, which everybody does, your light environment then tends to overpower that and depending on how well it is will determine what the effect and the outcome is. So if your light environment is not –

[1:09:08.3] AS: What I was going to say is I think this is the emphasis on you can only get so much from nutrition, right? It is not the be all end all.

[1:09:15.5] BM: Absolutely, if you were to look at it from a quantum biology standpoint, food makes up about 30 to 33% of your overall energy needs. That's all it's supposed to do. The rest you get from sunlight and from your own metabolics. The mitochondria actually drive a lot of that. That's why exercise is helpful, grounding is helpful, meditation is helpful because you are basically creating and generating your own electrons. But you have to do it in the right environment and then food becomes like we used to call dinner supper because it was a supplement.

Dinner really, it wasn't even really a thing until the turn of the century in restaurants and all of this other stuff came into being. But we didn't eat a lot, that is because what made up our entire diet was only about 30 to 40% of our overall energy needs because we were so connected into the ground, we were outside more, we didn't have technology, things like that.

So again going back to nature and what's natural is where the antidote is and it seems ridiculous because it is so simple. That is why it is so unbelievable because it's like really? It is almost too good to be true but it actually is.

[1:10:27.4] AS: Yeah and also when you said meditation I am also thinking with my clients we work on really transforming their stress and it releases – on a metaphorical level, it releases so much energy and they're like, "This was simple." I mean it is hard to do but then the long term effects were actually removing resistance and removing energy drains and it's so simple and they're like, "Wait, I didn't add more to do I just removed my bad habits," and it is like yeah, you freed up so much energy instead of just up against what we resist persists. But it just makes me think of how elegant and simple nature is and yet we try to – We create so many technologies that solve the previous technologies issues, right? Rather than –

[1:11:13.5] BM: And that is the thing, nature is so sophisticated, our mitochondria, our physiology is so sophisticated that it is almost an embarrassment the attempts that we try to make. It is already so perfect, it is embarrassing. We needed to do less. **Addition by subtraction**, how about that?

[1:11:31.9] AS: Yeah, oh my god so episode seven, the last episode of this season, Alana Gardener who is actually in Philly, she is a trainer, physical instructor and a therapist. She said the same thing, people will listen to that episode, addition by subtraction, I love it. It is a theme. When you get to the root, you simplify so you have more time.

So basically what I am hearing is we could all move to where Rhianna lives, get naked and stay on the beach and we'll lose weight.

[1:12:01.1] BM: You can do that or you can do it on your own backyard as long as you catch the light when it is the right time. Obviously in the winter it is more difficult but then also make sure that you **mitigate your blue light exposure** that is the big thing. That is the big thing, you should actually start with that –

[1:12:19.3] AS: Making us do the hard stuff first.

[1:12:20.7] **BM:** Yeah because the rest is a breeze after you do that.

[1:12:24.3] **AS:** Yeah and it –

[1:12:25.9] **BM:** Get funky glasses, download the apps and just get her done.

[1:12:29.4] **AS:** Yeah and I will say as I wanted to experiment on this before I talked about it and I have noticed it is subtle and again it may build this, my solar callus builds. Because I got to tell learning this I actually bought shorts this summer. I swore I would never wear shorts again and I bought them because I wanted to get the sun this summer but what I have been noticing as I use the glasses, I feel like I have more energy at the end of the day and then I don't go on my phone at night.

I feel calm enough that when I come home from my co-working space we go walk Coffee in the evening and I don't get back on the phone but when I am tired and I think it is from the light all day, then it makes me – that is when I scroll and everything. It is almost like I am trying to get the dopamine and the energy rather than –

[1:13:12.4] **BM:** Exactly you are supposed to get it from the sun but then what happens is if we get addicted to the phones and then we try to get our dopamine through the phones and that is we've got to check it all the time. But if you are out and you're exposing your eyes to natural light that dopamine builds and so you don't need the smart drug, the smart phone.

[1:13:30.4] **AS:** Yeah because the smart phones they actually drain our dopamine. Like blue light it takes dopamine electrons. I don't even know if dopamine has electrons but –

[1:13:38.9] BM: Yeah absolutely it destroys dopamine and so the only way for you to get is through the phone and when you get a ding, when you get a notification, when you get a call, when you get a text, it has been shown to release dopamine.

[1:13:51.9] AS: Yeah but doesn't the light drain your dopamine?

[1:13:55.4] BM: It does, but it almost like a tap, like a drip feed.

[1:14:01.9] AS: Yeah, oh my god I know we have taken so much of your time, Brandon. This was amazing. I really hope people take it to heart. I had heard about this a couple of years ago and was like, "Yeah, yeah," but as I really understood the paradigm shift that is when I started to experiment with it and everything is subtle but profound difference.

So thank you so much for your time. Where can people find more of you in addition to we will have all of this linked on the show notes, but where can people find you?

[1:14:30.9] BM: So I basically only typically operate on Instagram. My handle is [@brandonbodylogic](#) and I am working on a website to offer online health consultations with specific services like lab work, genetics, and metabolic analytics I guess you could call it and then also I have some of the programs for enhancing your light environment and protecting against blue. I do a lot of [my blogging on Medium](#) and I will be putting up a new blog there I think tomorrow. But yeah that's pretty much where I am at the moment and I mean you could me through you, right?

[1:15:16.0] AS: Yeah, but if people want to reach out directly I have trained with you, you're great and I will link to your Medium posts. But also for those in Philly, you are opening –

[1:15:27.9] **BM:** Oh that's right, I am opening up a healthy café with smoothies and coffee and fresh pressed juices and gluten-free and keto friendly and paleo, all this stuff. I live in an up and coming neighborhood that has no healthy foods and I am replacing the lights with infrared lights. I am having good quality stuff. Everything is going to be a nice little healthy oasis in a town full of bars.

[1:15:51.8] **AS:** Yeah and that is in the point breeze neighborhood, for Philly folks?

[1:15:55.6] **BM:** Point breeze yeah and I will also leave my email and contact information with you so that you can post that to the show notes as well if anybody want to hear about when the café is opening or if they want to work with me or anything like that. I can send that along.

[1:16:10.6] **AS:** Awesome, thank you so much for your time Brandon. Everyone is going to love this. Go out and follow him people.

[1:16:16.9] **BM:** I miss you, let's do another one because this is complex stuff. I didn't even get to the – well, we'll save that for another time.

[1:16:23.3] **AS:** Yeah, we'll have you come back on.

[1:16:24.9] **BM:** Yeah.

[1:16:27.9] **AS:** Thank you so much.

[1:16:29.4] **BM:** No problem.

[END OF INTERVIEW]

[1:16:34.7] AS: Thank you, health rebels for tuning in today. Have a reaction, question, or want the transcript from today's episode? Find me at alishapiro.com. I'd love if you [leave a review on Apple Podcast](#) and tell your friends and family about Insatiable. It helps us grow our community and share a new way of approaching health and our bodies.

Thanks for engaging in a different kind of conversation. Remember always, your body truths are unique, profound, real and liberating.

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