Transcript of “Leanne Venier: Supersenses, Biophotonics, & Light Spectrum – #160”

Bulletproof Radio podcast #160
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Dave: Hey, everyone. It's Dave Asprey with Bulletproof Radio. Today's cool fact of the day is that women can see more subtle variations of red than men can see, which is because the red-seeing gene is in the X chromosome, so women have two of them but us men only have one. I have no idea if that has anything to do with red dresses and why they instill jealousy and make women feel like it's a threat, but what the heck?

Today's guest is fascinating. She's an international, award-winning artist and engineer, a scientist, and an expert in the science of color and light therapy. This is pretty cool because I use color, and I've certainly used light therapy in some of my own bio hacking, especially to adjust the way my eyes worked.

She's lectured at organizations like Mensa on the healing and consciousness-raising effects of color, the frequency of light, and even how art affects the brain, and the thing that I'm actually most fascinated about is that our guest, whose name is Leanne Venier, began her career as a mechanical engineer designing submarines and then became someone who works in healing arts. Leanne, welcome to the show.

Leanne: Thanks, Dave. It's nice to be here. Thanks for inviting me.

Dave: All right. I've got to understand. How did you possibly go from being a submarine designer to someone who works with light frequencies to enact changes in the human brain? That's kind of freaky.

Leanne: Okay. That could take up the whole show. Let's see. Reader's Digest Condensed version. Used to be an engineer, didn't find that particularly fulfilling. Went the conventional left brain road when I studied at university, but I've always been very right brained as well, very creative, intuitive, that sort of thing.
I ended up leaving that career, and I moved to Italy for seven years, and I started studying all these alternative healing modalities including how color connects with the body and the meridians, which are related to acupuncture. Do you know anything about the acupuncture meridians?

Dave: Quite a lot, yeah.

Leanne: Okay. There’s a direct correlation between color and acupuncture meridians. I came back to the States. I ended up going back to school for acupuncture and Shiatsu and then, I had a healing practice working with cancer patients.

This is why I get total Readers Digest Condensed version. Had a healing practice, then ended up craving more right-brained stimulation, and I started painting seven years ago and, when I started painting, people started having these really strong responses to the color in the paintings, so I would have these conversations with them one on one about how we take in color energy, wave lengths of energy, actual specific scientifically-validated rigorous studies on all of this and why we might be craving certain colors, and this is all tied in with Chinese medicine.

Anyway, long story short. That ended up precipitating all these conversations. People ended up talking me into putting information about this on my website, and I got contacted by a number of large medical universities to come and lecture there, and it just snowballed from there.

Dave: You're pretty out there, and I say that as a compliment in that you've explored a lot of different things. You've also gone down to Peru and explored lahuasca and talked about that from a medical perspective. What effect did that have on your use of color in healing, or were you already well along that path when you had your ...

Leanne: ... I was already well along that path. I went to Peru earlier this year, so this was eight, nine months ago, and I spent a month there, and then I did a nine-day lahuasca retreat.
That gave me more clarity about direction about where to head with a lot of this and take it to a bigger or a broader scale. Yeah, it was really very healing. Have you been on lahuasca?

Dave: I have. I'm also done a Peru and a couple of other times. Yeah. It's big. That's for sure, and I've done a lot of neuro feedback that also tends to elicit similar kinds of experiences.

Leanne: Oh, great. Yeah.

Dave: Another question I have for you. You've talked about having multiple super senses. You're a super taster. You have hyperosmia. You're a super smell/taster. Perfect pitch, which I'm jealous of because my singing abilities are not that good. I hired a singing coach who laughed at me ...

Leanne: ... That would deter me from going.

Dave: She did it so politely. She would say, "That was a nice, chaotic resonance." I'm like, "That means it sucked, right?" She goes, "Yeah," but it was polite dissing.

Then you also have a semi-photographic memory and what you describe as synesthesia, where you can touch or breathe toxic chemicals, and you taste them on your tongue.

I certainly have unusual senses for certain toxins. I will react to them in a very predictable way. It's so predictable that I don't even question it. It's just a sense that I have whether it's nice to have or not.

Leanne: By predictable ... I'm just curious ...

Dave: ... I don't taste it on my tongue. I feel it right here in my chest. My sympathetic nervous system reacts, and I know this feeling of it, and I'll walk in a room and be like, "Okay. There's something here." I also have a very strong sense of smell, so I can usually pick out what it is, but I just know, and the same thing even when I'm consuming things. I can tell, and that's how I reverse engineered Bulletproof Coffee.
I'm like, "Okay. I feel different on these things, and I'm very attuned to how my body's doing right now, so then maybe I can lab test this and figure out what's going on and then see if other people notice the difference and whether we can measure a difference with basically cognitive testing." Lo and behold, we could.

It's amazing what happens when some people who have some senses that others don't take those and then work on quantifying them.

Leanne: Exactly, yeah.

Dave: Have you ever done that with any of your senses there, especially as you said in this one where you can detect something in the air? Do you look at results of a lab test? Say, "Actually, I really did taste formaldehyde or whatever it was."

Leanne: No. For example, I don't always necessarily smell something, but I taste it, so there've been a couple times when people next door were spraying some kind of bug killer, some kind of insecticide that has no odor, and I was tasting this chemical, and I went outside, and I was like, "I taste something going on," and then I realized that the guy was spraying this chemical, and nobody else could smell it.

He said, "You can't smell it. It's odorless." I said, "I know, but I taste it. I can taste the chemical," so it's not non-volatile, it just doesn't have any smell that's perceptible.

As far as doing any kind of chemical analysis, no. It's been like a canary in the coal mine kind of thing.

Dave: There's a group of people listening to this who are going, "Oh, for God's sake, these people are talking about being canaries and whatever else." How do you respond ... 

Leanne: ... I think it's a recessive gene. I think we probably all used to have this, and it's gotten burnt out.

Dave: Yeah. The fact that it's there, and some people can detect that it's there, and some people can't, but it's there, is kind of interesting, and you
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could say, "Because I don't detect it, it doesn't matter," but I think that the evidence is not in your favor if that's your argument.

Leanne: Anything that has that toxic aspect and you can detect it if you have this super sense, if you want to call it that, that means that it's a potential carcinogen in your body, so you immediately avoid those kinds of things whereas other people would just be exposed to them and be oblivious to it, especially touching things, putting toxic body lotions. That's something that people do all the time. It's like, "Oh, read the ingredients. What's in that stuff?"

Terrible. If I put anything like that on my skin, it's like, "Blah."

Dave: We have a rule in the house, because I have two young kids. If you wouldn't be willing to put it in your mouth, you shouldn't put it on your skin. That's not to say that all of our soap tastes great, but it means if you put it in your mouth, it's not really going to harm you. That's a generally good rule. If the ingredients in there are things that don't belong inside, they don't belong outside.

Leanne: I agree.

Dave: The reason I ask you that is that you were engineering submarines. Did you actually go aboard submarines that you were engineering on?

Leanne: I did, yeah. Actually, when I was working at Lockheed, when I first got hired there, I had to go down to the naval base, which is on Coronado Island, and one of the projects that I was working on was the deep submergence rescue vehicles. You see them in "The Hunt for Red October," that movie, which are designed to go down, rescue a distressed sub, take the people ... They don't rescue the sub. They take the people up and down from the distressed sub.

Yeah. I'd have to go inside there. They're like, "Okay. Now, you're an engineer on these, so you can go down for a ride in the sub. You get to go down ..." I have claustrophobia, so I went in, and I'm like, "It's so small in here. I've got to get out."
Anyway, I didn't actually ... I went into them, but I didn't ever go underwater. I don't think I could have handled that.

Dave: It always seemed to me that submarines would be the most unhealthy place possible, because you have all sorts of weird vibrations, which mess with your biology in ways that most people aren't aware of. Physical vibrations, there's tests of truck drivers, and it causes long-term weird neurological things.

You have horrible-quality lighting, and bad recycled air and bad food and no sunlight. Could you design a more hostile environment for humans?

Leanne: Yeah. I would not want to have to spend any extended period of time in one of those things and then the possibility of getting stuck down underwater. That's a whole separate talk.

Dave: You designed them, but you didn't go hang out on them very often. I got it. It seems like with your level of sense and taste that you're like, "Wow, diesel. I smell diesel," and that would be all you'd ever smell.

Leanne: Even flying on an airplane, when they rev up the engines before you take off, I'm like, "O-o-oh."

Dave: They put something in jet fuel that is a neurotoxin, and they put it in there specifically because it makes the fuel less likely to aerosolize in case of an accident. They don't want you dying in a fireball, which is probably a good goal.

The problem is that the pilots don't turn off air intake when they're revving the engines, so you get unburned jet fuel cycling through the cabin, and there's a whole bunch of pilots now who've been permanently neurologically disabled. I had some of them reach out to me. They're like, "Dave, no one hears about this," and flight attendants, too.

I'll tell you what I do when I get on a jet. I can hold my breath for two minutes, and if I smell jet fuel, I just sit there and hold my breath for a while because I don't want to breathe it. I want to let it recycle through,
and if not, I'll breathe through my sleeve until at least hopefully, some of the particles got stuck on my sleeve.

Maybe I look weird. I actually don't care that I look weird, but it's not okay to breathe jet exhaust, and if you're a pilot and you're listening to this, please turn off the air intake before you rev up the engines so that people like me that fly all the time don't die of weird brain diseases. All right.

Leanne: Yeah, totally. My experience has been that they tend to last longer than two minutes, but it may just be that sensitivity, but it would probably be a good idea to bring one of those little toxic air filter things that are pretty small.

Dave: Yeah, I've considered it because I do fly an awful lot, and I know how bad it is, but it probably scares the living crap out of all the passengers around you.

Leanne: You just look like you're from China.

Dave: There are people that wear those, if they work.

Leanne: [inaudible 00:12:09]

Dave: Yeah. I suppose if there's no wires coming out of it, you're okay.

Leanne: Exactly. It's just paper in a little ...

Dave: Now we've talked about airplanes and submarines, neither one of which I was figuring we'd talk about. Let's get into some of the things that you're going to be talking about here coming up, things from the Bulletproof Conference.

Things like light. Listeners are probably wondering at this point, like, "All right. We know light makes vitamin D, for instance. Big deal, but what you're talking about is the specific color and frequency and biophotonics. What's the physics and the science behind what you're doing?
Biophotonics is this big body of research that’s going on all around the world. There are researchers that are involved in biophotonics research. What this is based on is the fact that the human body actually emits light. We give off light, and they now have a very sensitive CCD camera that was developed, and they individual photons of light that are coming off of humans.

We now know that we do take in light, and we give off light. We're very much like plants in the way that plants use photosynthesis to create energy and to basically survive and thrive.

The whole concept of biophotons started in 1922 with Alexander Gurvich who was a researcher. He wasn't studying anything about communication between plants, but what he discovered is that plants actually communicate with each other, and he didn't have the technology back then to prove that they were doing some kind of communication, but it turned out they were communicating through UV light.

In 1972, Dr. Fritz Albert Popp who was in Germany, and he’s the father or grandfather of the whole biophotonics movement around the world, he wanted to prove this theory that we actually do give off light emissions, and he had one of his Ph.D. students who didn't believe that we give off light, he said, "Okay. You build me a machine that will prove that we don't emit light as human beings."

The Ph.D. student actually built a machine that proved that we do. That was a photo multiplier back then. He basically was like, "Oh, okay. I guess we do give off light."

Anyway, Dr. Fritz Albert Popp, ever since then, has been doing research on this and has discovered that when we have cancer in our bodies, the light communication that is happening between our cells is not happening properly. The cancer cells actually scramble the light communication.

It sounds very esoteric and "Woo-woo," but if you think of how plants live, how humans live, we're designed to live under sunlight. So many
people nowadays are not getting sunlight at all, so we have all of these increased cases of cancer. There's been this whole myth about sunlight is bad for you, causes cancer, and it's totally not true. Lack of sunlight actually causes cancer, pretty much every kind of cancer.

Dave:  
Don't sunburns cause cancer, but sunlight doesn't cause cancer?

Leanne:  
Sunburns, yes. Sunburn is bad, but what's called "chronic sunlight exposure," which means regular sun exposure, not just going out once a month and getting a sunburn.

Dave:  
If you can see the difference between my regularly-exposed arm and my farmer tan line here. I have chronic sun exposure. It's called a "tan."

Leanne:  
No, no, but that's good. Chronic sun exposure is good because a tan is the healthy way that the body responds to sunlight, and UVA and UVB. There's all kinds of scientific evidence now that it's not just the UVA and the UVB, it's sunlight in general.

There was just a study published this year, just a few months ago, that was done in Sweden, and it was testing 30,000 women over 20 years, and it correlated their amount of sun exposure to all caused mortality, which means that anything that they died from. They were twice as likely to die from anything when they got less sun exposure. Does that make sense?

Dave:  
It makes great sense.

Leanne:  
Yes. We're designed to live under sunlight. We're designed to take in light and use it for our cellular processes and then, that's how we live and thrive, and a lot of people don't get any light anymore. They only get artificial light, and there's all kinds of problems with lack of melatonin and any of these directions go ...

Dave:  
... I get it, so light has an impact on our circadian rhythm, and I think anyone who's listened to this podcast for a while would understand. Okay. Light makes vitamin D. Bright light at night lowers melatonin, and if you've heard the talks with Steve Folks, even red light in the morning and at night, too, affects cortisol production.
These are hormones that are controlled by the color of your light and the intensity, to a certain point.

Leanne: The thing [inaudible 00:17:29] need to avoid is blue light.

Dave: You want to avoid blue light except in the morning, right, because blue light wakes you up in the morning.

Leanne: Yeah. No. I'm just saying at night. Nighttime, you want to avoid blue light because blue light suppresses melatonin production. We've got blue light receptors in our eyes.

Dave: You want to avoid blue light and certainly, that's something that we do in our house. I have dimmer switches, and we actually have amber-colored lights, like special ones with little switches. I carry them on the website, but they're not a big part of Bulletproof, but there's something that's like, if you have especially young children, and you have to wake up at night for them to pee or for you to people if you're pregnant, and you're turning on bright lights every time, your kids won't sleep well, and then you won't sleep well, and then life isn't very good.

If you have little nightlights that don't disrupt melatonin, and they're in the hallway, everybody wins. That's what we have at my house.

Leanne: Just make sure they're not blue because a lot of nightlights are blue.

Dave: Yeah. Oh, these are amber lights. They're specifically zero blue.

Leanne: Perfect. That is the perfect color for a nightlight, if you have to have a nightlight.

Dave: Yeah, and we don't sleep with those in the room. The rooms are pitch black, and if your kids are afraid of the dark, go get a [inaudible 00:18:29]. Mine were always in the dark, so they were never afraid of it because that's how you sleep, and their rooms are pitch black. It works.

Leanne: It's much healthier.
We understand all those things, but you're talking about ... Okay. It's not UVA. It's not UVB. It's not hormone signalling it. Like there's some other magic in light. What is that? Do we know? I accept that there's something special about sunlight, and I think we know some things about it, but what are the things that we don't know about sunlight? What's in there?

Besides all the research that's been done on the UVA and UVB from sunlight, there's all kinds of research on specific wavelengths of light that are used for healing applications. Most of the research has been done on red and blue light. All sorts of wavelengths of red and blue light and near infrared.

A lot of people might not realize that when you go into the sun, sunlight is white light, which consists of all the spectrope colors, so it's got red, orange, yellow, green, blue, indigo and violet light. When you put them all together, it makes white light, and we see these spectrope colors whenever you see a rainbow in the sky, so if it rains, [inaudible 00:19:36] the water that's left in the air, and then there's this reflecting and refracting property of the white light that splits up the white light into all its spectrope colors, so that's where you get the rainbow effect, which is like when you see Newton's ... He shined white light into a prism, and it splits up into the seven spectrope colors like the Dark Side of the Moon album cover.

I knew you were going to bring up Pink Floyd. It had to happen.

Everybody knows that image. They might not know that it was Isaac Newton, but they'll recognize that Dark Side of the Moon.

Anyway, sunlight has all of these colors in it. All of the research that's been done on all of the different wavelengths of colored light, again, mostly red, near infrared, and blue.

Okay. A few examples. One that many people have heard of. This is probably the most common one. Babies are born and then, within a few days of being born, they develop jaundice, and what they do in the hospitals ... It's been the hospital standard since the 1950s, they put the
baby under blue light. It's this big wavelength of blue light, 458 is what's considered optimal, although now there's new research that says actually even more into the green is even better.

What happens is, you shine blue light on the baby's skin so it's absorbing blue light through the skin, goes into the blood. It converts the bilirubin, which is circulating in the blood, changes the isomer structure of the bilirubin, and then the baby can excrete it through the bile and the urine whereas, otherwise, it stays circulating in the body, and very high levels of bilirubin can actually be extremely dangerous and cause brain damage and things like that.

Blue light is the only treatment that they use in hospitals now, and it's taken for granted. Some people think it's UV. It's not UV light, but you can do the same thing. You can take your baby, instead of paying extra time and money for the hospital stay, you can take your baby home and put the baby in the sun, and I know a number of people who've done that. It's great.

Dave: My son had a little bit of that going on. We took him outdoors and amazing. It just went away.

Leanne: I know, and it's very fast. Yeah. Oh, go ahead.

Dave: I actually have blue lights and red lights, and I've used color therapy in things for collagen synthesis for a long time, but it's unnecessary. We could do something more frequency specific if needed, but it wasn't.

Leanne: Yeah. I always tell people, "Any type of light therapy device ... " This one I use for delayed sleep phase syndrome. If I want to ...

Dave: ... Is that the Phillips one?


Dave: They sell those at Costco now. I live in Canada.

Leanne: I know. They're sold. It's great. It affects the pineal gland, melatonin secretion and that sort of thing, so the 466 to 477 nanometer range in
blue light is what affects our blue light photo receptors, and that corresponds to clear blue sky, so that's the color that I just showed you. That's the color of the clear blue sky. That's a much brighter light than you would get if you're sitting outside.

The reason that you use these is if you have, for example, seasonal affective disorder, if you're living in a place where it's a cloudy climate. You're not getting exposure to that blue light or people that delayed sleep phase syndrome where your body clock gets thrown off, which I've had a few times in the past because I'd push myself past my time of sleepiness, and I work late.

Anyway, so you go to bed really late. You can't go to bed earlier morning, you wake up really late. Then you're lethargic. Your whole biorhythm and body clock thing is thrown off. That's a really good way to reset your body clock. It's also really good for jet lag.

Dave: I used to use a similar device when I would fly from basically the West Coast in the U.S. all the way to London every four to six weeks, which is the worst direction, the worst amount of time, and I did a lot of experiments on jet lag there including the effect of earthing as well as carrying one of those little lights with me and timing food and exercise, all sorts of stuff to try and manipulate body temperature. Bright lights and touching the ground seemed to really be the big keys, and eating a lot.

Leanne: I haven't done earthing for jet lag.

Dave: It's pretty big, actually. About 20 minutes, at least. I discovered it. I didn't discover earthing, but I'd heard something about it, and just remember, I did all these experiments, and I did yoga the one time it was sunny in the UK. I did yoga in a park, and I had no jet lag.

The other times, I'd do it in my hotel room, and it didn't work. It took me actually till I stopped doing that much travel, and I realized, "Wait. That's what it was," and I tried it. Now I always ... Especially when I'm going long distances like to Australia or somewhere, I make a point to
walk around barefoot for a while, and I will travel within the U.S. with like an earthing sheet.

Leanne: Yeah. I didn't know anything about the connection with the earthing and the ...

Dave: ... It's pretty big. Yeah. That plus changing your light, like I've found that and getting my nutrition right, like jet lag, whatever, it's not really a big deal.

Leanne: I just intuitively knew this years ago. It's like if you're going to a new place, then go out in the middle of the day. I have a feeling that our body will reset its clock. You know immediately by the color that's in the sky what time of day it is where you are, so your body will be like, "Oh. I'm not in Kansas anymore. I'm in London."

Dave: Yeah, and it's interesting, too because where the light falls in your visual field matters, too. Our bodies are so cool, and we're so unaware of these levels, but bright blue lights up here above the line of the horizon are different than bright blue lights shining up because different quadrants ...

Leanne: ... I thought the same thing about that.

Dave: Oh, yeah.

Leanne: With the Phillips GoLite, they always tell you to have it at table level and shining up into your eyes, which is very different from going out into the sun.

Dave: It is. Certainly, especially some of the functional movement stuff, but there's a quadrant in each eye, and different quadrants in each eye affect different parts of the brain even. Like sound goggles, the expensive ones, like the ones I've got, they actually have different lights in different quadrants, because you can actually pattern the brain differently depending on how you do it, which is fascinating, and it's something that isn't in common knowledge, so people don't think about that.
In my own case, because I have problems in my left visual field, likely from probably something in utero. My upper left visual field isn't that strong, and I tend to get the most neurological stress from lights up here. It's interesting. Lights over here don't do the same thing, but you'd think they would, but it's quite interesting.

Leanne: There's an LP about when you're communicating or when you're thinking and accessing different parts of the brain where your eyes actually look, so there's probably some connection with that, I imagine.

Dave: There certainly must be. One of the other things about light I wanted to ask you about was, what about healing? Speeding up healing using light. Have you worked with that at all?

Leanne: Yeah. Red light is very good for that. Red light actually stimulates the mitochondria in the cells, so you can use red or near infrared. NASA discovered ... This again, is a rediscovery. A lot of these things go way back.

The scientific proof came first in 2001 with NASA when they realized that using a certain wavelength of red light, 660 is usually considered to be the optimal wave length of red light, and you can shine that on the skin, and it will heal wounds more quickly. It will stimulate collagen.

If you want to go deeper into the body, because red only ... Depending on the wavelength, it will go to a certain depth. Near infrared will go deeper because the wavelengths are longer, so near infrared, 880 nanometers is a common one, and that can be used for treating arthritis, for healing bones. They're doing experiments for treating MS using red light. Multiple sclerosis. What else? Nerve regeneration, paralysis. There's a whole list.

I have a number of them cited in my YouTube video in Color Consciousness and Healing talk that I have on YouTube.

Dave: We'll link to that for everyone who's listening. I've actually got lasers, like lasers that use most of these frequencies because you can get further into the body or even into the brain to stimulate mitochondria
with them, and it should sound a little bit scary, shooting lasers into your brain.

You want to know what you're doing, but it's something that is done in some medical offices today, especially for people with traumatic brain injury and things like that, but you can increase mitochondrial function with a light shining on your skin. We should pay attention to this.

Leanne: You can do it on your brain. You don't need a laser. You can use incoherent light as well. They're doing research in the UK with 1072 nanometers near infrared light and for treating Alzheimer's and dementia. We've got one of these contraptions.

Dave: This is a $12 light from Amazon, 850 nanometers, very bright, powerful LED. If you shine this at your brain for too long, it will cook your brain. It's bad. I took the filter off, but if you shine it for a little while, you actually can grow more mitochondria. Hmm.

Kind of interesting. Before this, I used a single LED. Since about 1997, I've had one super high-powered LED at this frequency that dramatically improved the way my brain worked.

Leanne: That would actually be really good for any kind of muscular or bone or anything like that because that ...

Dave: ... Or gut. Yeah.

Leanne: Yeah. Any of those. I'll have to look for that one.

Dave: Okay. It's just an 850-nanometer, 45-degree beam angle, LED from Amazon. I had to tape on a power supply of some sort, but you can hurt yourself with a light like this. A powerful light like this. What happens if you get too much light?

Leanne: The thing about incoherent light as opposed to coherent light, lasers are coherent light, so they actually can cause damage. What everybody says and the research says is that with incoherent light, which is exactly what sunlight is, you're not going to cause damage because the cells will shut themselves off. They get full, and then they're like, "That's enough. I
won't take in anymore," but with lasers, the cells can't shut themselves off so you can cause damage. You can blow out meridians, acupuncture meridians and stuff like that, so it's safe to use LED in general.

I've used red and near infrared for 40, 50 minutes, an hour, no problem. If I have light on me, I'm treating something, neck pain or whatever, shoulder pain, and yeah. No problems. You know when it's done because the pain goes away, and then you can stop, but I haven't had any negative side effects, and all the research that I've read has said, "You can't overdose on the LED. You can very much do a lot of damage with laser coherent light."

Dave: It may also depend on heating effects if you're using the far infrared LEDs and things like that.

Leanne: Oh, yeah. Far infrared isn't used for healing. It's only the near infrared.

Dave: Right, but even near infrared can have a heating effect. It can get too hot.

Leanne: Yeah. Well, yes. You actually do feel its heat, though, so if it starts to get hot ...

Dave: ... Except in the brain where you don't have nerves.

Leanne: You put these things attached to the body.

Dave: Yeah. In fact, I don't know if I ...

Leanne: ... Yeah. I don't know how long they're doing ... The guys in the UK, there's a Dr. Dougal that's been doing ... He's got this helmet that's a 1072-nanometer helmet ...

Dave: ... I want that thing ...

Leanne: ... You want it? They're very affordable now. They're under $2000.

Dave: Oh, really?
Leanne: Buy them. Yeah. They sell ... Because they're funding their own research program instead of trying to go the conventional way. They're selling the helmets to be able to do the research. Sir Terry Pratchett, who's the sci-fi writer, who was diagnosed with Alzheimer's years ago, and then they worked with him a few years ago. I can't remember exactly what year it was. It's in my [inaudible 00:31:51] but he actually had reversal of his Alzheimer's symptoms and is still writing now and thought that he'd be out of it by now because of the progression of his Alzheimer's.

Dave: Improving mitochondrial function can only help. It's unlikely to cause problems for almost anything.

Leanne: Exactly. They're also using red light for stem cell regeneration.

Dave: I've certainly started training red light on myself at night because it doesn't disrupt my circadian rhythm, and it's good for my cells, good for my mitochondria. If you do a conference call thing at night, it looks like I'm in a disco or something because it's just red light.

Leanne: You can just have a light shining on you all the time. You can get the adjustable ... I don't know if you can see it. These kind of things. Where's my little remote control?

Dave: While you're pulling that out, I have to say I'm going to see if I can get one of these helmets at the conference, the Bulletproof Biohacking Conference on September 26th because we have all kinds of biohacking toys that you can play with but heck, for that matter, maybe I'll just wait around.

That's a near infrared lamp or is that your red light?

Leanne: This one is just a multi-colored one.

Dave: It's like a $30 bulb, right?

Leanne: Yeah. They're $20 to $30. I've done spectrometer readings on this to see what the actual wavelength ... This isn't really ... There are diodes that are made with certain chemicals that emit certain frequencies or wavelengths and this, I think, had ... I did spectrometer readings a few
weeks ago on this, and it had like maybe eight different red ones that it was emitting. Maybe not even that many.

Dave: It's still daylight for me, but I have red LED tape lights from Costco that let you control frequency. They're above my desk, so if you're watching this instead of just listening in your car, if you're on YouTube or iTunes or the Bulletproof radio channel, you'll see that I just turned this bright red color because I'm underneath red lights.

Leanne: You're pink, all of a sudden.

Dave: Yeah. It's a sunburn. It's kind of a quick and dirty thing you can do. It can change the quality of your morning, and if you have red and blue in the morning, it does one thing. If you have just blue ... The bottom line is this has an effect on you, and if you're in an office, and there's fluorescent lights above you that are not at all a natural color spectrum, what are those typically do to people?

Leanne: Actually, a lot of the spectrum, the fluorescent lights that are typically used, have a very high percentage of blue light. If you get too much blue light and you get that constant blue light, it actually makes you agitated.

Dave: Yeah. I'll say.

Leanne: Like you overdose on the blue light because your body's like, "It's like the middle of the day all the time." You actually can get very jittery. Who was it, in the 1980's? Oh, my God. I'm blanking on his name, but he did studies in elementary schools and studied children under the effects of fluorescent light ...

Dave: Yeah.

Leanne: ... John Ott.

Dave: Ott. Yes.

Leanne: Was it Ott or was it ... Because Jacob Liberman, "Light Medicine of the Future," was it ... Oh, God.
Dave: We'll put it in the show notes, so we'll make sure we find it because it's shocking.

Leanne: God. I have so many names I have to remember. Anyway, but he studied the effects of using fluorescent lighting in schools versus using full spectrum lighting. When you put it in full spectrum lighting the ADHD dropped down to insignificant, 77% drop in those type of hyperactivity behaviors. Better learning, better information retention, better health of the children.

They're doing a study right now in Germany, doing a similar thing, and they did one recently also in the UK. All the studies have shown the same thing. Full spectrum lighting in schools is much more beneficial than any of the fluorescent lights that are typically commonly used.

Also in offices. I don't know if you know this, but in Holland, there are a number of companies that have integrated the whole concept of blue light, and they have these adjustable panels where they have fully adjustable lighting in their offices, so they have a panel where you can say, "Okay. I want ..." I forget what the settings all say, but something like alert or calm or things like that. Basically, you turn up the blue light in the morning, and then you turn up the blue light after lunch because that's when people have that dip, that energy dip.

The blue light, they just turn up the blue light, and they don't have to use [inaudible 00:36:19] or anything. They just push a button, and people wake up. Their productivity goes up. It’s pretty cool.

Dave: If you want to make people stupid and obedient, what color would you use?

Leanne: Oh, stupid and obedient? I'd probably just keep with the fluorescent lights.

Dave: Me, too, but I wasn't fishing for that. Part of the reason that I'm a biohacker is that these technologies and these effects are real, and they're measurable, and there's science behind them, and most people don't know about them, which means, if someone is using them for their
benefit, not yours, and you don't know it's possible, you won't think about it, but if you think about it, "Hmm. I could hack myself with these." Someone else can be hacking you, too, so I've been in light environments that make me feel incredibly stupid.

In fact, you go to a Big Box store. I'm talking like, Bed, Bath and Beyond or Walmart or whatever, they want you to buy the most things. They study store lighting very carefully because why do you think they're so over-illuminated?

You go in there, especially at evening, it's like a pulsing sun in there in terms of brightness.

Leanne: They don't want you getting sleepy. They want you to buy.

Dave: They want you a little disoriented, so you go in there ... I was going to buy some of this, some of this, and you go to the ... "Why did I just buy all this stuff?" I think, honestly, this is not a nefarious plan that some evil lighting genius did. They just did some basic studies. Neither of those two companies, just the Big Box retail environment people, and said, "Hmm. Average revenues go up when we increase lighting intensity using fluorescents," and they do, but it's probably because people make worse decisions.

"I'm going to go in here, and I'm going to buy this one thing," and you walk out of there going, "Why did I just do that?"

I've always felt odd and disoriented when I go into stores like that, and I always thought it was the air, but if I put on a hat and sunglasses, I don't feel like that. My kids go bonkers under that kind of lighting. I have really ...

Leanne: [Crosstalk 00:38:00] bouncing off the walls?

Dave: Yeah. They're like well-behaved kids for the most part aside from normal things kids do, but they go in there, and they're like ... "That's not normal." The same thing. You put hats on them, it takes them 10 more minutes to go bonkers, so it's repeatable, and it's probably happening to
other people's kids because I don't think that I'm that abnormal. Maybe I am, but ...

Leanne: Yeah. That might explain why you see so many unruly children in those kinds of places, running around screaming.

Dave: I think it's a part of it. I know that in my case, people see me wearing my cool orange biohacker glasses. Those are Irlen lenses, where it's a custom 10, the color that makes my brain relax the most, and it's different for different people, but when I wear those in an office environment under fluorescents, I'm pretty good all day.

If I don't wear those, in a meeting after like 45 minutes, I'm like, "Man, my visual stress is causing my brain to not work very well." Then I'm kind of dopey.

I don't like being dopey so I don't really care if I have to wear a clown hat. I'll wear that, too, as long as my brain works the way I want it to work.

Leanne: You said they're amber, though, right?

Dave: Mine are actually a mix of rose and amber and a little bit of grey. That's what causes the most relaxation.

Leanne: Okay. Interesting because amber cuts out blue wavelengths.

Dave: Yeah, the excessive blue from fluorescents, it helps with that for sure, and it also increased contrast and for me, I think increasing contrast causes relaxation because my brain doesn't work so hard to tease out the contrast.

Helen's also going to be speaking at the Bulletproof Conference, and it's very interesting because it can be a personal effect of light on you as well as some general principles about red and blue light that are biological effects.
What about blink rate of lights, though? That's something that I think you might know something about. How important is it whether the lights are flickering or not flickering?

Leanne: What they do know is that with fluorescent lights that have that very subtle flicker, that causes a lot of the stress in education. As far as pulse rates for healing effects, the research that I've read ... I'm focused on healing the physical body. Most of the studies that I've been doing have been about using specific wavelengths of light for healing, for eliciting certain responses in the body, for healing cancer, affecting melatonin suppression and that sort of thing, so what I've read about pulse rates in light therapy devices is that there isn't enough valid research that supports it for any kind of physical healing modality.

I don't know about any kind of psychological effect with it because I haven't gone into that realm, but I do know that there are a lot of light therapy device companies that create these things, and they make them a lot more expensive than they need to be because they're putting in ... "It's got this pulse rate and this pulse rate, and this is supposed to heal this tissue faster, and this does that," but everyone says we respond very effectively to regular old incoherent light just like the sun puts out.

That's how we're genetically designed to respond to sunlight, and light devices that are most similar to sunlight have the strongest effect and the fastest healing for basic physical structures, but I know that you have a light device that does have pulse rates that you use for energizing.

Dave: I have a couple different lasers that do that. The first time I got one, I was frankly a little bit skeptical, and I had whiplash. I got hit for about 35 miles an hour from behind, and really bad whiplash, and the first time I got whiplash from years before that, it took a year at three times a week, chiropractic and massage and everything I could find. I was just in pain.

This next time, it was a harder hit, and like, "Oh, I'm in trouble," and a friend, a naturopath said, "Try my laser," and I'm like, "Whatever." We were sitting in a parking lot chatting about something, and after two three-minute sessions with a specific pulse rate on the thing, I felt like
electricity go up my back, and then I felt the muscles just relaxed. It was a very profound and obvious feeling. Like, "My hands are warm again. I can't believe this."

I said, "I have to get one of these," and I got the laser, and I was pretty much done with my whiplash in a couple weeks. I lasered all the time, and I used that thing for a long time, and I finally got another one that's just a more powerful laser that's got some violet in it as well.

It had red LEDs and infrared laser and red laser, actually, and you could put it on your gut, and it'll stop nausea, and on your head. It'll stop headache, and it causes a reduction in inflammation of the nerves. It helps you resynthesize or basically recycle ATP, so it helps you rephosphorylate at about 75% more efficiently and raises nitric oxide.

You can put it in areas where you want engorgement, and it'll help to cause that, and it's very noticeable, and the pulse rate is something ... With your eyes closed, you still can feel a difference between the different settings, so I think there's something to the pulse rate, but I agree. There isn't very much science, and what science there is goes back to the right frequencies from Royal Rife back in the '20s, and is their airy fairy stuff there?

If I had a blindfold, I can tell you if it's on a fast or a slow pulse, and there's something going on. I just don't know what it is.

Leanne: Yeah. I read one study that specifically, it was a Meta-analysis where they take a whole bunch of studies, and one group studies all of the other studies. They were looking for statistical correlation for the validity of pulse rates versus non pulse rate-like therapy, and for all the things that they were specifically testing it for, like wound healing and that sort of thing, and I can't remember what all else they were correlating it with, but they found that in almost all cases, the non pulse rate has stronger healing effect than the pulse rate.

It doesn't mean that the pulse rate doesn't work. It was just not as effective as the non pulse rate, and I think there might have been one situation where they found that using a pulse rate was more effective.
Again, these were studying all kinds of other research studies, so I think it's whatever works for people.

I do know that using red and near infrared on even people with long-standing shoulder injuries, in just a few weeks, has completely healed the shoulder that all kinds of physiotherapy and surgery and other things didn't heal, and the light therapy very quickly completely healed the problem.

Dave: I recommend people start with the cheap stuff, but there's no question about it. I had that $12 Amazon light, and there's great evidence. I've even seen the studies about pulse rate you're talking about.

Were you pointing at the sun? What was that?

Leanne: I don't have any sun right now. It's dark here now, but yeah. Sunlight. Free. The important thing ... I did want to stress about this that a lot of times people think that going out in the sun ... First there was the myth that it actually causes cancer. It doesn't. People who work indoors are much more likely to get melanoma than people who work outdoors.

There's all kinds of scientific evidence that UVB and UVA, when you get them together, the UVB has a protective factor against any kind of damaging effects of the UVA. The vitamin D in your body actually kills any kind of malignant cells, so people are constantly getting cancer. It's a normal part of being a human. We get cancer. We get these precancerous cells. If you have a healthy body, your body's constantly killing them. It gets rid of them before they turn into a problem.

If you have sufficient vitamin D levels from UVB exposure, which comes from sunlight, then you won't get cancer. It's very simple, and there are all kinds of research studies and again, another Meta-analysis that came up this year. That was vitamin D directly correlated with all of these types of cancer. Increased vitamin D, reduced probability of all kinds of cancer. Not just death rates. Higher vitamin D, lower probability of dying.
Dave: That's one of the reasons that's the Number One supplement on the Bulletproof set of recommendations, but there's also something that happens around sulfation of vitamin D and only in sunlight. If you have vitamin D in the body, if you don't get sunlight hitting the body, you don't get vitamin D sulfate. You have to have sulfur present, i.e., MSM or sulfur-bearing foods like eggs, and then you have to have sunlight hitting it, and that has probably a whole nother (SIC) set of behaviors that we're just discovering in the body.

Sunlight's a good thing, but people don't get sunlight, like I live in Canada where like the sun is an occasional visitor. Should we be using some other kind of light, like a sunlamp?

Leanne: There are tanning beds that have UVB that are admitted. You have to make sure it's the right kind of tanning bed. They're few and far between. I don't know if they're becoming more common now but yes, you can get tanning beds that are for safe sun exposure with UVB or using vitamin D supplementation.

It's actually a good thing to supplement with vitamin D because again, if you're not getting sun exposure, then you need to get some kind of vitamin D. Hormone D. It's actually a hormone in the body. It's a misnomer to call it a vitamin. It's a precursor to a hormone that controls basically every cellular response in the body. It's a really important thing to have, and at least 50% of the world population is deficient in vitamin D, so it's becoming an epidemic where we have all these illnesses, cardiovascular disease, all kinds of things that are correlated with low vitamin D levels.

The best way to get vitamin D production is through sunlight because we metabolize vitamin D3 that's produced naturally in our bodies a very different way than we metabolize artificial vitamin D that we ingest. You can't overdose on naturally-produced vitamin D3. Our bodies actually store it in the winter months, so if you get what's called chronic sun exposure. You get regular sun exposure. Our bodies build up our vitamin D levels, and then it's designed to use it over the winter months when there's less sun.
Even in places like Texas, Austin, where I am, there are certain times of the year where you have to have the right angle of the sun and the UVB coming in to even be able to produce vitamin D. You have to have a 50-degree angle of the sun, and if you don't have that, you're not going to get vitamin D production.

In those times, yeah. You want to supplement, and really, the only way to truly know what your proper amount of supplementation is is to get your vitamin D levels checked. It's a really simple blood test.

Dave: Okay. We're coming up on the end of the show, and people can hear more of what you know about light when they come to the Bulletproof Conference September 26th through 28th. Bulletproofconference.com.

In the meantime, there's one question that I'd like to ask you, and it's a question that everyone in the podcast has answered. Top three recommendations for people who want to perform better in life, not just from a light perspective but of all the things you've learned, the three most important pieces of advice and because we're running up on the end of the show, it's got to be relatively short.

Leanne: Top three recommendations. Eating a healthy diet is definitely Number One. Making sure that you're not ingesting a lot of chemicals and artificial stuff and getting the nutrients that you need. I'm a big advocate of nutrients through food and getting proper sun exposure. That's another big one.

What would my third one be? Third. Probably doing some kind of meditative practice. Getting into flow state and being able to do that on a regular basis because I do teach about how to get into flow on a very easy and regular basis. That keeps things on an even keel so you don't get all stressed out, plus then you're way more efficient in everything that you're doing.

Dave: That was really good. Thanks for sharing those things because people care about how they can use light or anything else to feel better and perform better.
People can learn more at the conference and what's your URL?


Dave: Awesome. We'll put that in the show notes.

Leanne: Great. Thank you.

Dave: If you've enjoyed this episode today, I'd really appreciate it if you would swing by, order a BulletproofDietBook.com and preorder the book. It's coming out December 2nd, but if you order it now, I'll send you a whole bunch of digital content, and it would be an amazing way to say thanks for almost 150 episodes for free of Bulletproof Radio.

Thank you so much. Have an awesome day.

Leanne: Thanks, Dave.

Dave: If you haven't heard yet, we've got activated charcoal back in stock.

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NASA Light Technology Successfully Reduces Cancer Patients Painful Side Effects from Radiation and Chemotherapy

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Health and Light: The extraordinary Study that Shows How Light Affects Your Health and Emotional Well being by John Ott
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Vitamin D supplements and cancer incidence and mortality: a meta-analysis (British Journal of Cancer)

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