



1099: You are Solar Powered:
How to Super Charge Your Body
With Peter Forhan

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pink lemonade, and they always have their happiness guarantee. Go to drinkmnt.com/wellnessmama for a special offer.

Katie: Hello, and welcome to the Wellness Mama podcast. I'm Katie from wellnessmama.com, and I have been excited for this conversation for a long time. I'm here with Peter Forhan, who I met at a conference years ago and had one of the most fascinating conversations I've ever had about light that I'm excited to replicate with you today.

Peter is a light physicist, of which I feel like there are not very many of those, and he studies the intersection-

Peter: True.

Katie: ... of biology, chemistry, and music, and we're gonna go at- into a lot of different areas today. I follow you. You talk so much about light and physics and, more importantly, the health implications.

You make this very practical, and I feel like you have a deeper understanding of this topic than anyone I've ever spoken to. So I'm really excited to bring our conversation from Colorado into this conversation and make this very practical for moms and how we can improve our life dramatically by understanding our interaction with light and with nature and with so many other factors below that. Peter, welcome. Thank you so much for being here.

Peter: Thank you for having me. I, I love these topics. I love being able to share all the things that I've learned, and then I love being able to share, how we can improve health, especially through light and through, through knowledge. And so excited to jump into it, excited to have the conversation.

Katie: Well, and for all of you listening, I'm gonna be taking extensive notes during this episode and putting a lot of links in the show notes. Peter has some amazing resources, and many of them are free, and I have found them invaluable. You also have a TED Talk that was taken down. I'll link to that as well because it's phenomenal.

But it was titled The Photosynthetic Animal, and I would love to start here-

Peter: Yeah

Katie: ... as background because I would guess a lot of people maybe haven't thought of human beings as being photosynthetic. And I feel like this is gonna be really important context for the rest of our conversation. Can, can you walk us through what that means for someone who maybe doesn't understand photobiomodulation or doesn't understand what that means, that human beings are photosynthetic?

Peter: Absolutely. So the word photosynthesis, we typically think about chlorophyll photosynthesis, right? We, we, we think of a plant, we think of green leaves, but that's chlorophyll photosynthesis. The word itself, photosynthesis, means synthesizing usable energy from photons, or light energy in, cellular energy is created.

And human cells do that, as all biological cells do that. And the reason that happens is because if you go one step back, it's because water is photoelectric. So what happens is that water intakes light energy and stores that light energy from the sun as electrical energy. So the reason that humans are photosynthetic is because water is photoelectric.

The reason that plants are photosynthetic is that water is photoelectric. And this is really the big insight that has kind of been, the rug has been pulled out from physics and biology of not acknowledging water is photoelectricity, because we are primarily water by weight, 70%, and we're 99% water by molecule count.

So it's kind of before we're anything else, we're a water solar panel that is intaking solar energy and converting that to stored electrical charge. And so the TED Talk, that was, that was-- I had a wonderful time. I did all these hand drawings for Parrot. I laid out all this logic train in science, and then it's kind of this, this headbutting of paradigms right now, which is that the healthcare system does not acknowledge that human cells intake light energy and increase mitochondrial energy output, or ATP, yet that's also a demonstrable fact that is proven clinically.

And until we kind of merge that bridge, we're in this kind of funky time where we, we see these amazing results of photobiomodulation and of and red light therapies and, and related technologies and related techniques, but we're not being clear about why it's happening. And to be very, very, very clear about why it's happening is because we are photosynthetic beings.

We are solar panels. And if you're a solar panel that's only getting 1% of your optimal amount of sunlight intake per day, then it's like you're a battery that's always at 1%. And I think the vast majority of people living in an industrialized world are getting maybe 1% to 5% of their optimal solar energy intake.

And just like a battery would be, you know, chronically on low power would describe itself as feeling low energy and would be unable to perform necessary functions and be slow in healing and be low in energy, that's kind of what's happened to us as a population on a whole over the last 100 years. So kind of just like as an intro to that, right?

As, as an intro to this whole conversation at large, is what I study and what fascinates me is how, how literally is light absorbed and converted electricity, and then what are the implications of us intaking light energy and generating an electrical charge in our cell.

Whether you're a human being or a horse or a mouse or a green leaf or whatever it is, that's kind of what I think is gonna be a major foundational step forward in our, paradigm of healthcare.

Katie: Yeah, I love this topic so much, and, it seems like the- we're at a really exciting time with kind of the head butting amongst us, and I hope we get some better questions-

Peter: Yes

Katie: ...And better answers through that process. and I love this concept. I think you explain it really well, and I think I'd love to just kind of get into the science a little bit so people can understand what's actually happening when we interact with light. Because I know many people are on board with, like, red light therapy for instance, and have red light panels.

Peter: Yeah.

Katie: And I've told people, like, that's great, and that same light is present outside from the sun, and it's really present-

Peter: Exactly

Katie: ... at sunrise and sunset. Also, it's free then. So, like-

Peter: Yeah

Katie: ... don't use the technology to replace. If anything, use it to supplement what we know, from, that comes from nature.

Peter: Exactly.

Katie: So can you walk us through, like, kind of the mitochondria and ATP piece in plain language? Like, if we're a solar panel like this, what's actually happening in our body when we interact with light in the right way?

Peter: Yeah. So I'll, I'll kind of give two answers, one that most people are very familiar with, and then a bigger, more important answer that most people are not familiar with.

So the more familiar one is that every cell in our body has a bunch of little power plants called mitochondria. The mitochondria intake the glucose from the food that we eat and the oxygen from the air that we breathe, and it runs it through this electrical membrane process. At the end of the process, an electrical hammer hits those two things and creates ATP molecules.

ATP is the usable chemical energy of the body. And so that whole process is kind of what is driving, how we are-- why, why we breathe and why we eat to create cellular energy in our body. But what's really, really cool, and which is also clinically demonstrable, is that the mitochondria absorb light in the red and near-infrared part of the spectrum and it uses that stored light energy to boost that electrical membrane process.

So the way I describe it as an analogy is that every time the mitochondria is gonna make ATP, it's like it's pulling back an electrical hammer and then hitting the glucose and oxygen to make ATP. And what's incredible is that the pulling back of that electrical hammer can be accomplished by the absorption of red and near-infrared energy.

So instead of our body cranking back the wheel every time we wanna make ATP, light absorption can crank back that wheel to make the ATP. And so if you kinda zoom out one step, what we see is that the mitochondria are photoelectric. The mitochondria intake photons of light energy and boost the electrical gradient across the membrane.

It's basically like a battery, that is boosting the positive and negative difference as light is absorbed. And so what this means in a very specific scientific sort of measurable context is that the ATP of mitochondria is boosted significantly when the mitochondria is absorbing red and near-infrared light.

There are studies that show this being between 60% and 200% increase over cells that are not receiving the red and near-infrared light, which is wildly significant as, as a measurable value. And what's so cool about this is, is you can run this experiment with the proper ex-tools yourself, including taking cells off your arm, putting them in a Petri dish, measuring their ATP there, and then doing it all in the Petri dish.

Even in that instance, you'll see the ATP jump happen, without it even being connected to the body. And so that is independent of a human mitochondrial or a human cell with human mitochondria. That happens for cats, for dogs, for horses, for reptiles. If you're water-based biology, and we all are, that, that effect is happening.

And so kind of the, the simplest one sentence there is that mitochondria absorb light energy, increase their electrical charge, and then use that electricity to make more ATP. And so that's really, really important as an effect of why photobiomodulation and red light therapy, work. But even bigger than that, and kind of one step zoomed out from that, is the reason that happens is still because water is photoelectric.

The mitochondria are making, They're taking in liquid water, and they're making it gelatinous water, right? And so this is kind of then the big point that connects so many seemingly disparate fields of health and biology. And this is-- I first learned about this from

the amazing work of Dr. Gerald Pollack, who wrote a book called *The Fourth Phase of Water*.

This kind of like steered my life in a very different direction from where I was going previously, 'cause I was, I was, I was learning a biochemical paradigm of healthcare, and then I started considering the water-light impact of what biology is. And so what Dr. Pollack laid out and demonstrated very, very well is that water absorbs light energy and increases an electrical charge.

And when this happens, liquid water, right, that's like this, converts to being a gelatinous phase of water, like jello. And this is a really important point because we were taught in school that water has three phases, right? It has the liquid phase of water, like in this jar, it has ice, the solid phase, and it has water vapor, right?

The gaseous phase. However, right, we are mostly water, 70% by weight, but my arm, right, it's doesn't feel like liquid, it's not a gas, and it's not ice, right? What my arm is, is like a jello, a gelatinous phase, right? And so what Dr. Pollock lays out very clearly is that this gelatinous phase of water is like synonymous to our biological water.

And this biological water, this jelly water, is holding an electrical charge, and that electrical charge that it's holding to be that jelly phase, came from light energy absorption. And so what's so cool is that, yes, mitochondria boost an ATP from absorbing light energy, but the reason that happens is because all of the water in our body absorbs light energy and stores it as electrical charge.

And that's why I use the phrase solar panel a lot, is that we have a very good mental model for what a solar panel does. It absorbs sunlight and it increases electricity. But what we find is that literally every single cell in our body, and any biology body, has that same function, at its core, absorbing light energy, storing as electricity.

And then we use that electricity to do all numbers of things, right? So we might see someone who's in neurodegeneration, and their brain cells are degenerating, get proper photobiomodulation, red light, near-infrared light to the brain, and repair and grow new neurons. And that's incredible because that's, that's, that's hope for a huge number of people that are in neurodegeneration.

But the reason that works is the same core reason, is that we intake light energy, we store and capture it as electrical charge, and then our body uses that electrical charge, in some cases to make ATP, in some cases to boost, blood flow, in some cases to reduce inflammation and break up inflammatory cytokines.

But then what it comes down to is one sentence, which is our body heals itself. Light gives us extra energy And that's really the big difference of paradigm between biochemical pharmaceutical drugs and holistic, right? Biochemical pharmaceutical drugs say, "You're missing this protein or this chemical.

Here it is. Take it in," right? Compared to your body needs enough energy to do its proper functions, and it needs to get rid of the toxins that are blocking its proper functions. And if you improve the nutrients and the energy that you need and you reduce the toxins going in, then the body can effectively heal itself.

And that's a really, really inexpensive thing in many contexts to do, compared to the biochemical paradigm, which can be extremely expensive as well, which adds a whole nother kind of layer of, difficulty and of prickliness to the whole conversation surrounding health.

Katie: Yeah, I absolutely agree with you. I love that explanation, and thinking of ourselves as a, a solar battery operating at 1%, I feel like that's a really ful- really powerful way to think of that. I know so much shifted for me in my health when I started thinking of the body, to your point, first as this bioelectric thing, not biochemical.

Because it's a whole different paradigm and a whole different way in which we approach things. And I've said so many times on this podcast, I think our bodies are incredibly capable of healing when we give them the right tools. And I think light is the one that does not get talked about enough, and that I potentially have seen be much more powerful than all the others.

And even if you're going to do all these other things, my premise is getting this piece first is such a, a powerful foundation that lets all those other things be more effective and more supportive when we understand it. And you also talk so well about kind of like chronic solar dehydration and what happens when we -

Peter: Yes

Katie: ...Are not charging that battery, when we're not understanding things from this electric first model. So how would someone know if they might have chronic solar dehydration? Or what does that look like when the body's at, operating at 1%?

Peter: Absolutely. Well, first we have a really good, easy analogy, because everyone's familiar with smartphones now, right? So when I have my phone battery, you have, in the upper right-hand corner, I have my battery percent. Really easy mental model, right? As that battery percent falls and falls and falls, it hits 20%, what happens? Your phone says,

"You're low on battery. Do you wanna enter low power mode?" Right? And you click, yes, enter low power mode.

And so what does the phone do, right? It dims the screen, it slows functions, it minimizes incoming and outgoing signal, it closes background apps that are not necessary, right? It does all these things to maximize the battery life to do what? To prevent the phone from dying, right? 'Cause if the phone goes to 0%, it then dies.

And so once it gets to 20%, it enters low power mode, and then it keeps going down and down, and then you get to about 1% or 2% of phone battery, and then what starts to happen, right? Apps start crashing. It starts glitching out. Messages and s- things start just, you know, things kind of start k- k- k- glitching out.

And that's also, as that battery gets lower and lower and lower, it's trying to prevent it from dying. It's trying to do every- anything it can to not die. And so what happens, is that when we get to these really low battery levels, we can then j- see a very easy sort of biological analogy there. And when what's happened today in the biochemical paradigm is it's like my phone's at 1 or 2 or 3%, and we're asking, "What app do I need to download to help my phone run more effectively?

There's gotta be an app out there that I can download and just take to fix this problem." And of course, it doesn't matter what software you download, it doesn't matter what chemicals I sprinkle on the phone, the thing that it needs is the electrical charge, and the only way to get the electrical charge, is to plug in the device.

And the way that we as biology get plugged in is we maintain proper hydration, we maintain proper mineral hydration, and then we intake radiant energy from our environment, and that's what creates electricity in our body. And if you're missing the hydration or if you're missing the minerals, sun might make you feel tired and make you feel-- and, and get burnt really easily and make you feel exhausted.

And if you have those pieces in order, you'll have-- you'll see- observe the opposite effect. But what's cool about these, the bioelectric paradigm is we already, our language already is this, right? Someone will already say like, "Oh man, I'm feeling so low energy. I feel like I have no energy for this," right?

It's like, okay, like what do you, what literally do you mean though, right? Because, 'cause I, I like we say that, but we, we don't realize how literal we're being in our words. And when you realize that when you're, when you feel chronically low energy, it's like, okay, if there was a battery hovering over your right-hand shoulder, what percent do you think it would be?

And that is a, that's an important sort of overlay to add to health because then what you see is, okay, where are we today compared to where our ancestors were? And where we are today is we're living inside. We're, we're, we're wearing, sun cover- covering clothing over the vast majority of parts of our bodies.

We're working inside, we're commuting underneath a car hood in shade. And so the amount of solar energy we're exposed to, is roughly between about 1 to 5%, estimatedly, of what we would get in a natural environment, whether you're a pale skinned person or whether you're a very dark skinned person, which we, which we should touch on as well is that difference in melanin and darkness of skin as well, 'cause it has major implications.

But everyone is kind of, we're now living in this industrial environment where, we're just getting too little of the, of the light energy. And then what happens is when we get too little light energy, we do finally get out in the sun, our body's not remotely ready to be, to get proper sun exposure.

So we get too little, and then we finally get a week off from work, we go to the Bahamas, we lay in the sun, and now our body's like, "Whoa, 10,000 times more energy than we're used to." And that's what, that's where you get those dangerous burns coming from, is a body that's not at all adapted to solar exposure suddenly get way too much solar exposure, and that kind of begets its own sort of downward spiral.

And so you're exactly hit it on the head though when you said the goal for light health is to get more sunlight intake in, in a, in a safe, reasonable context. And, and in that context, all red light therapy and photomodulation devices and infrared saunas and saunas in general are great, but they're all secondary to trying to get that from the natural source out of the gate.

And so if you can't get your 100% battery charge from the natural source, then you really, really, really wanna be interacting with photobiomodulation, red light therapy, infrared saunas, and so on. Because it's way better to get the energy one way or the other, than to say, "Well, I can't get any sunlight today. I can't get any light exposure. I'm gonna work all day, work all night."

And so that's where red light therapy, and, and saunas have an amazing, amazing impact, on the bin. But I believe that any clinical evidence we have for red light photobiomodulation and so on, of which there's a vast amount, and at some point in the talk maybe I'll share my screen just to walk through how much more, how many more thousands of studies there are than people assume, all of that can be accomplished by proper doses of sunlight exposure.

But it's also, you know, it, it can be very difficult to get proper doses of sunlight exposure, especially to the sensitive regions of our body that might get 0% sun exposure, right? The, the regions we cover up in our body that used to not be covered up, well, now they're at 0% battery, and when something's at 0% battery chronically, then you're gonna have degeneration be a, a rule, right?

It would be, it would be weird if a part of the body didn't degenerate if it was never getting any battery charge. Now, that would be a strange thing to occur. But when we don't speak in this context, we kind of are just ignoring the battery hovering over our shoulder, and trying to solve the battery issue through chemical means, and that doesn't work very well.

Chemicals can effectively numb the symptoms, right? You can numb pain really well with chemicals, I agree, but if the, the goal is not to numb the pain, the goal is to resolve the site of the damage that is causing the pain. And that's where light therapy, hydration, holistic health, recognizing, the pursuit of wellness compared to the pursuit of, of numbification, that's kind of where they all then meet back together.

But yeah, so I'll pause there.

Katie: Well, and I know you mentioned you have 25 very specific tips related to this, and I do wanna make sure we get into those. But before we do, I also would love to do a little myth-busting around melanin, because you mentioned melanin.

Peter: Yes.

Katie: We had a fascinating conversation about this in Colorado that has stuck with me for years, and I feel like this is a very misunderstood part of our bodies.

And I know many people have been... The, the most they know of it is that melanin causes tanning, and the dermatologists tell you that any melanin is a sign of skin damage and should be avoided. So I would love to dive into how incredible melanin is and how much it's-

Peter: Yes

Katie: ... so much more broad than just getting a tan, because this fascinated me when you explained it.

Peter: Yes. and so everything I've said so far in this talk, I ha- I have skipped a very important step, which is that, yes, water is a solar panel, but melanated water is a thousand times better at being a solar panel. And so th- like I'll give an example. This is clear water, right? You can see right through it.

You can't see through me, even though I'm mostly water. The thing that's giving my skin tone, the reason that my skin looks like this instead of clear water, is purely because of the melanin. And so melanin is the darkest naturally occurring, molecule in nature. Melanin is a fascinating, massively important, molecule for health, and also for civilization at large, which is a larger topic we can get into too.

But melanin, typically people think about melanin's role in the body as being a UV light sunscreen, right? So it's like it- the darker somebody is, all that means is the more melanin concentration they have. So if you take 100 people from the palest person on earth to the darkest person on earth, and you had one, you know, a spectrum of 100 people, the difference in that skin tone is the amount of melanin concentration.

And so we teach that melanin's role is to protect us from UV exposure, but that's actually a tiny sliver of what melanin does. The reason melanin protects you from UV light exposure is because melanin makes your skin into a solar panel, and it's not that it shields from UV light exposure, it's that it absorbs UV light and converts it to electricity.

And it absorbs blue light and green light and yellow light and orange light and red light and infrared light and even longer wavelengths and converts that to electricity. So what melanated water does, which every single cell in our body is covered by a membrane of melanin. And so what's really cool about melanin is that we would assume that the most melanin we have is the outside of our body, 'cause it's acting as a UV light sunscreen.

But actually, the highest concentration of melanin in our body is in the middle of our brain in an area called the substantia nigra, right? The black substance region of the brain, and it's the black substance region because it's melanin. And so this begets a large conversation, which is that melanin's role is not to shield UV light.

Melanin's role is to make our body a better and better and better solar panel. So the darker somebody is, the more solar energy they can absorb before they have to get out of the sun from getting a burn, right? The paler somebody is, the less solar energy one can absorb before they'd get a burn. And so melanin gives us that solar panel, solar panel ability, and it also comes with, with a cost.

And this cost is very interesting and very relevant, because we don't discuss this cost, which is making melanin is an energy-intensive process, for our body to do. But if you're in proper sunlight, it's a really, really good thing to do because the amount of energy you get back by making melanin is, is, is you wanna, you wanna be doing that.

The reason we tan, right, is we go out in the sun, we get exposed to the sunlight, and then the body goes, "Oh, wow, we got a lot of sunlight today. Let's make some more melanin so tomorrow, if we get the same amount of sunlight, we'll be better able to absorb and process

it." Part of that means you also are able to properly shield and get burnt, but that- that's only, that's the effect of having more melanin, not, not the purpose of the melanin.

The purpose of the melanin is to be a better solar panel. The UV light defense is a, is a happy benefit of that. But then what's happened is that the darker somebody's skin tone is, the higher the benefit of getting light exposure is, but also the worse the negative of getting too little light exposure is.

Somebody very pale has some benefit from getting light and, and some benefit- from some negative from getting too little light. But that is, that's a smaller bound up and down than someone who's darker. And so what's happened is you take 100 people, line them all up in skin tone, which is just melanin concentration, and you put them all in the exact same environment and keep every other metric the same.

The darker somebody is, the more negative effect you will have by being chronically solar deprived compared to pale-skinned people. And this has massive implications, veering into the world of, of civil justice implications as well. Because by not having the conversation about, one, what melanin is, and two, that we are photosynthetic beings, we are also ignoring a massive confounding variable in every single study of health that's ever been conducted, that of your solar energy and light energy intake, that disproportionately negatively affects people with darker and darker skin tone.

And those darker and darker skin tone people also disproportionately get benefit from improving their access to light energy and light absorption. And so melanin connects so many unexpected fields and, and unexpected kind of, phenomena in physics as well. And so we create melanin. We can create more melanin by helping the body get proper light exposure, by, by getting our sun baths, by consuming melanin-rich foods, even adding, melanin, to our water, through the forms that occur in nature.

And so th- it's one of these things where it's like we don't really ever use this word, yet every single cell in our body has it, and the role that it's doing that we teach about is so much smaller than what it, what it's actually, what's, what it's actually performing. And so a lot of my re- health recommendations are things like this, which is like we know a sliver about a topic, just enough to like kind of satisfy our desire for curiosity.

But when you dive into that topic at large, you start to see that sliver isn't, like, wrong, but by only addressing the sliver of the truth, you're missing out on a, on a massive aspect, of what that thing provides biologically, melanin being a very good example. And I guess just one more point on the melanin front, 'cause it's what my TED Talk, that was, that was removed, discussed at length, is that the heme in our body, heme B, which gives our, makes our blood red, and the chlorophyll that makes the green leaves green, and black melanin that

makes squid ink and octopus ink black, are all fundamentally the same molecule with a different metal at the each core of them.

And so we have red blood because the me- metal at the middle of the melanin group is iron. Plants have green chlorophyll because the metal at the middle of the melanin group is magnesium. And so we are way more like, plants than we, than we care to acknowledge, all the way down to the molecular form.

Our heme of our body, our heme B group, is practically, the green chlorophyll, but with a different metal substituted. And so this becomes kind of a larger conversation as well about the interconnectedness of biology, and how we can utilize those insights to boost our health. And with that as a transition, I can kind of then talk...

I mean, you mentioned there was, recommendations I have, that I, that, like melanin and like sunbathing, that kind of connect and apply to all these topics at large. But I'll pause there for, for questions on the melanin side.

Katie: Yeah, I love this. You kind of opened my eyes to this whole new understanding of melanin, and I think this is such an important piece to understand for why all of these things you're gonna talk about work so well.

And I can just say anecdotally, not from a research perspective, the best I have ever felt in my life, and when I reversed my autoimmune disease and all kinds of other problems, my non-negotiables, I did not exercise hard. I was not taking a ton of supplements. I was not on a super restrictive diet.

I made it non-negotiable to watch the sunrise every morning and get that light in my eyeballs and as much of my skin as possible. I literally scheduled sunlight snacks all day long, 'cause I was fair-skinned to begin with- ... so I wanted to work up slowly. But I would take a break every hour-

Peter: Yes

Katie: ... and go in the sun barefoot for 10 minutes, and over time I realized my capacity to be in the sun expanded more and more, and I started feeling almost this like euphoria the more sun I would get. I, like, felt it in my body instantly. So I didn't know-

Peter: Yes

Katie: ... all of this back then. I just had the lived experience of saying, "Okay, I know something in this is benefiting my body." And then I also made sure my light environment at night was very, like, low lighting, red light, restorative, and that I went to bed early. And I think that combination of light and sleep is what really, like, let my body then do what it

already knew how to do and heal. So I've talked about this extensively, and I love that you work in hydration, minerals, and radiant energy, and I feel like there's still some misconceptions around a lot of those.

And so I would love to kind of dive into your tips in whatever direction you wanna take that on how can we as listeners for our families optimize these things. Like what are the practical ways-

Peter: Yes

Katie ... to start improving them? 'Cause I've seen firsthand how phenomenal it can be and how quickly it can actually work, and so I would love for you to kind of walk us through the practicality now.

Peter: Yeah. So, well, one, I'm so happy to hear and glad to hear about how, the learning of and technique of sunlight is able to benefit that healing journey. That's what I really like to deal in, is I'm not selling a product, right? I'm trying to explain techniques, not technologies, 'cause if you have the proper techniques, those are the things that can be disseminated to every single human being on earth out of the gate, right?

The techniques are the knowledge in how to work with your environment. Technologies can be very good, but the, to scale technologies and to sell technologies and to get them to people is at a completely different ballgame than to explain technique, and to make those techniques accessible. Things like sunlight snacks, things like watching the sunrise and sunset, which is, which is an important point I'll touch on, too, which is that everything I've discussed with light so far is dealing on the aspect of light that's absorbing light energy and storing it.

There's another aspect of light, which is the hormonal side, and this is where watching sun, sunrise, sunset, and, and make, maximize our darkness at night and turning off LEDs play. So absorbing light energy, that's that whole photosynthesis side, super important. Light, hormonal effects, also very important, and a lot of people are living in a really incoherent, light hormonal environment.

And so w- w- it's becoming more and more, known and popular discussed that, that the light from things like LEDs and overhead lighting, kind of mess with our circadian rhythm, and, and they do. And that's, and that's a really important aspect of what happened, what our ancestors and, and in sort of indigenous lifestyles look like compared to where we are today.

And so our brain goes through the cycles of serotonin release in the morning when we view sunlight and, and view outdoor lighting. Our body releases serotonin, which is the hormone

that says, fills you with energy, says, "It is daytime. Let's, let's be pumped. Let's be excited. Let's go work. let's have that kind of good baseline happiness."

And then as the night wears down, and it becomes darker and darker, in the presence of darkness, that serotonin hormone is converted to melatonin. And melatonin is the hormone that goes to each of our organs and says, "Hey, prepare for bedtime. We're getting ready to wind down to go to sleep," and then helps us with that sort of cleaning process, our whole kind of detox while we're sleeping at night.

And so if you're low in serotonin, you are going to, by definition, become low in melatonin. And what happens is that- Instead of in natural environment where we rise with the sun, we release serotonin, we wind down, we convert serotonin to melatonin in darkness. Instead, we're kind of at this baseline, crackly, staticky light environment all day for the majority of people, which is that we wake up to LEDs, we drive under LEDs, we, we work in LEDs, we lay in our bed looking at LEDs, and then only in the very, very final point at night we turn off those LEDs, and then for most people, there's still a bunch of light sources in their room.

And so our brain never... It's completely confused, right? It's never knowing is it the middle of the day, is it nighttime? And so we, we get in this, this negative balance of serotonin and melatonin, and this makes us have slow, lethargic, days, and then we're kind of like low-scale tired all day. When we finally do get the opportunity to sleep, because we're low on that serotonin, we're then low on the melatonin.

And so we've been tired all day, but now we're laying down to sleep and it's taking us like 30 minutes, 45 minutes, an hour just to let our body try to fall back into sleep, and then that begets its own kind of stress and anxiety response. And so there's this downward spiral of our serotonin-melatonin imbalance.

A major, major function of that is our light environment. And those are easy things that can be simply improved. Like you said, watching the sunrise or, or at least even if not getting up for sunrise, just going outside and doing a walk before you before you turn your phone on, before you engage with lights that are not the outdoor lights.

And then similarly, what we can do at night is we can turn off all the lights. We can unplug anything in your home that would be emitting light or forms of radiation, like Wi-Fi routers. We can take our phone, set a macro to turn our phone into a red light, and so you don't have to have anything coming out of your phone except red light with just a couple button clicks.

And all these things go a really long way in how we can help our light environment match that of our past. And so that to say is that this is a book that I spent, the last sort of four

years writing, but like 25, 30 years of my life in a, in a form have contributed to it. And so this is my 25 recommendations in visual form.

And so far in this conversation- I just discussed the circadian rhythm of how light affects our circadian rhythm. We discussed photosynthesis and how we're like plants, and we discussed sunbathing. And another point on sunbathing, and as this little image, I don't know how clear it is you can see, but we can use, silk and, and, cloth to filter sunlight from impacting us if we're worried about getting burnt.

If we're underneath a piece of silk or a piece of, piece of linen or cloth, we will not get sunburn, but we can still get the light energy through that cloth filtered out, down to its red and near-infrared components. And so we can use things like that to boost the amount of time we can spend in the sun without resorting to spreading, chemicals on the skin.

And so with those three as an example, all of those are kind of in context of it's never just about, like, the one thing that to do to, to, to fix it. I-- if someone ever asked me like, "Hey, what would you do to help with this disease?" This very specific disease. I take a step back because it's my-- I give the same answer to every, every question about a specific disease, which is I would improve my nutrients and reduce my toxins.

And the way that you can improve nutrients is here's twenty-five of them. And for most people, we don't know the nutrients or we haven't locked in really, like, the things that we should be getting that we're not getting. Some of them are very obvious, but some of them are not at all obvious. And so I'll pause there because then I can go into kind of like twenty-two more very targeted, very specific recommendations.

And I organize them by the five elemental system of the Ayurvedic, of the Greeks, of the Egyptians, of the Japanese Shinto, which is we've been discussing light at length so far. And then you have the light, you have the fire, you have the air, you have the water, and you have the earth. And when we, when we conceptualize and organize things this way, it makes it really easy to kind of remember, all the recommendations and how to kind of categorize them in ways that we can keep those five elemental bodies, all balanced.

So before I jump into that, I'll just pause for any questions on, kind of the, the bits that I covered about circadian rhythm and our, our, hormonal light environment.

Katie: Yeah, and I've mentioned the camping study on my podcast before. And so just to echo what you've said I find it fascinating how they have studied this a little bit.

I feel like not nearly enough, but they found that even just a few days of being in this natural light environment like you're talking about, being in touch with the earth and not being on

screens the whole time, that sleep patterns adjusted very quickly, and that even hormone levels in the body changed very quickly.

So this isn't... This is something that the body knows and of course needs and adapts to very quickly when we give it the right inputs. And so definitely wanna go into the other 22, but I also just wanna specify before we go in, I think people have a misconception also around sunlight that it's i- in bright midday sun it's, like, almost entirely UV. And you've talked about infrared and how-

Peter: Yeah

Katie:... important that is. So I just wanna kind of talk about the spectrum of light that we're exposed to when we're getting bright light during the day, and how a lot of the studies have been done on isolated UV, which we don't actually encounter in nature, because even during bright sunlight-

Peter: Exactly

Katie: we're also getting infrared and near-infrared. But I just wanna hear your take on that and then jump into the other tips as well.

Peter: Yeah, so, so midday sun exposure is only about 1 to 2% of, of UV light present. And you're, you're exactly right. When we, when we, like, study in a lab the response to a UV light dose, we're taking that as isolated and, and, and measuring it.

Now, of course you can absolutely get too much UV light on the skin that causes a burn, a- and you, and you do want to avoid that. But at the same time, we're kind of chronically getting way, way, way too little, and there's really simple methods you can take to say, "Okay, I'm solar saturated, right now, and I'm gonna remove myself from the sun," before you might have to add a sunscreen, before you might have to take other precautions.

And so a really useful tool that we have now is on everyone's weather app, if you open the weather app and scroll up on the weather app, it tells you the UV index of the day. So just as a, as a look. So on mine right now, my phone says there's a four UV index outside. And you can use that number as a stand-in for, the, the strength of UV light present.

And so a lot of time- a, a big error that I see a lot of people doing is they'll, like, go to the beach, and it'll be, like, 5:30 PM, and the UV index will be, like, a one, and then they're, like, spreading sunscreen on all, on all their kids. And, like, you cannot get burnt at a UV index one. There's, there's physically not enough UV light present between that moment and the end of the night, to get a burn.

And so we really wanna work with the knowledge of UV index before, when we're engaging with light because there are a lot of misconceptions. And so a phrase that I use is to practice safe sun, right? And so it's, it's not just like, go lay outside as long as you can every single day to get your sunlight.

It's practice safe sun, and the goal is to get your best amount of sunlight. Not too little, not too much. Just in the exact same way that we would with hydration, right? You can hydrate so much that you die, and you can hydrate too little that you die. The goal is to get the optimal amount- and so there's a lot of techniques that I write about to do that, such as using thin silks to let through that red and near-infrared, of which the vast majority of the sunlight exposure is, right?

If you p- if you look up a sunlight spectrum and look at the graph, you'll see that the vast, over half the energy is invisible to our eyes, but we feel as that warm radiant heat, which is called infrared light. A lot of it is that red, orange, yellow light. And then you have the green and the blue and the UV.

And to the point about hormonal is that that UV light and that blue light in a natural environment are only present in the middle of the day. And so when our brains see blue light or bright white light at night, our brains conclude it's the middle of the day because that's the only place that it would occur.

And that causes our serotonin-melatonin cycles and thus our circadian rhythm to become all messed up. And so love the camping study, and it j- I also just love the camping study as a recommendation to someone that has kind of internalized that they're like, "I am anxious," or, "I can't sleep well," or, "I am always feeling XYZ."

It's like, have you... You know, I think in most, most, most cases, it's like your environment is anxious. Your environment is preventing you from sleeping well. And those things become really easy to recognize in hindsight once you go somewhere and you're like, "Wow, I feel amazing. My anxiety is dropping. My, my sleep is, is equalizing."

It's a lot easier to see that in, in hindsight than it is to assume the benefits that you might f- have by doing them because they seem so simple. And that's the beauty of it. Things can be really, really simple and have really profound effects. And sort of to that point and to kind of complete then the light portion of these 25 recommendations is that darkness at night, right?

One of the great things about camping is that it's very dark at night. And when it's really dark at night and there's no LEDs, your brain and your body go into this deep sleep that is much more restorative than if there's blinking lights or anything else in your room or environment that's confusing your brain.

And so I guess with that on the light portion, I can, I can kind of pause on the discussion of light. Light will connect all the topics, because we're kind of a water-based solar panel, solar battery before we're anything else. Before we're a food consumer, we're a water-based solar panel battery. But most...

But a lot of people sort of know the things I've discussed so far or at least, at least bits and pieces of them. What I think is really fascinating is all the ones that people have never considered, but they, but they, but they realize in hindsight, are actually like health techniques that, that are not just a, a thing they liked to do when they were a kid, but are actually a very specific health technique, as far as improving holistic health and overall wellness.

And so what I've done is I've organized them by these five elemental categories, right? and then so like an easy one that we can start with is, is water and hydration because everyone knows you need to be hydrated, but most of us don't practice hydration in the optimal way. and so a big part about this is like what's the best type of water to drink?

What's the best kind of water to drink? How does water be absorbed by our body in the most effective way? And this is where we can turn to the, principle of minerals in our body because if you are low in minerals, good- you're not going to ever be properly hydrated. minerals and hydration go hand in hand, and it would be weird if you weren't low in minerals because our topsoil since like 1910 has lost over 90% of the minerals.

So even if you're eating mineral rich foods, the mineral rich foods are still being planted in topsoil that is really, really minerally deficient. And so most people hear minerals and think iron, but when I say minerals, I mean iron and copper and magnesium and zinc and selenium and down the line. And so what happens is that when we're across the board sort of full spectrum minerally deficient, it's not obvious that we're minerally deficient full spectrum but it is obvious the symptoms that come with that, kind of this always present dehydration.

Because we need proper minerals for our mitochondria to function properly. We need proper minerals to be hydrated properly. And what's a beautiful, a beautiful testament to the interconnectedness of nature is that where in nature can we observe our proper optimal mineral balance? And the answer is the ocean, period, right?

So our blood has the red component, which is about half of it, and then the clear kind of yellowy component called plasma, and the mineral content of that plasma in an optimal form, it matches that of our ocean. And so the best way to get your mineral balance is to swim in the ocean and to kind of just lick the, you know, just, just by being in the ocean,

you're gonna kind of absorb and taste and get that water into your mouth to help maximize minerals.

If you don't live by an ocean, then the next best thing to do is you can buy, concentrated seawater drops that are desalinated and then add them back to your water. And that's an incredible thing to do, because that's also how we would be getting minerals in a, in a natural environment, which is swimming in minerally rich water and drinking from mineral rich sources, of which a lot of water, a lot of high quality water will have those minerals in them as well.

But minerals are a tough thing because if you don't know you're minerally deficient, you might have 10 symptoms of that. And then what happens, just like chronic light dehydration or chronic dehydration, is if you have 10 symptoms that are the result of one thing and you go to the doctor, you might get, "Okay, you have this symptom, here's the drug for it.

You have that symptom, here's the drug for it. This symptom, here's, here's this for that." But no amount of drugs can resolve chronic dehydration, right? No amount of drugs can resolve chronic light dehydration. No amount of drugs resolve chronic mineral deficiencies. And that's kind of where it becomes really, where it's really exciting from a healing standpoint because things can be really simple to resolve in hindsight, but it's also very difficult from a, a sickness perspective, which is that you might have-- you might be 30 years into a mineral deficiency and have internalized those symptoms of mineral deficiencies as a thing that you just are.

And where this is manifested in a very interesting way is that of iron and anemia in women, because the main holder of minerals in our body is that of our blood, right? That's the really mineral-rich part of the body that's then giving those minerals to be incorporated into mitochondria and so on. If you took the exact same populations of men and women and you make them all minerally deficient, well, what happens, right?

Every month, women bleed and men don't, right? I don't know the last time that I've bled, right? I don't like-- I don't, I don't know the last time that I got a cut and bled, and my blood is hugely minerally dense, right? And so if you have the exact same population of women and men and women getting the exact same amount of minerals, every month, over time, women become more deficient, more deficient, more deficient of minerals as they lose blood, where men don't really lose blood.

And then what happens is you go to the doctor, and you probably at some point then get a diagnosis of anemia or being too low in iron, and then you're given iron supplements. But the thing is, is that you're not only too low in iron, you're low across the board in the full spectrum of minerals, and you can't just take iron to resolve a copper deficiency, and you

can't just take iron to resolve a magnesium deficiency, and you need all these minerals full spectrumly in order to get back, to that proper balance.

And so what's happened is then we then take, iron supplements. Our body doesn't have the proper other minerals to integrate them properly, and then that iron gets deposited into our body. But the results show your iron levels are improving, right? And this is kind of the whole thing with the materialism paradigm of, of healthcare, which is like, okay, the test results have improved for this one metric, so it's working, right?

But is it actually working? Are the actual things that you came in for the first time, resolved? You know, th- that, that then is a question for the i- for the individual. And that's kind of where I think, like, these topics are so important is that it's like if you don't even know to ask about a copper level or a magnesium level or a zinc level or a selenium level, you're probably not gonna, like, stumble into that.

But it can be something that's, like, pennies a day to resolve, and it might be a thing that you've internalized for 30 years of, of, of thinking this was you as opposed to just being your copper was at two and your copper needed to be at 10, right? And so that's, that's then one more of these 25 things, mineral balance, that I kinda speak about and write about and how it affects everything else.

Katie: Yeah, I think that context is so important. And I do hear from many women who have low iron, low ferritin, or they'll have one marker that flags differently. And then we're given the advice to spot treat that one thing versus make sure the body has the whole foundation of what it actually needs. And I'll make sure I link, of course, to your website, but I know you have this book which I'm gonna order in hard copy, but you also make available for people to read online for free.

And so I, I wanna just offer that as a resource because your information is so phenomenal. And I think even if we stopped right now and didn't even go through the rest of the tips and people just implemented the ones you've talked about, I think there would be tremendous change. But I'd love to get through some more of them and I'll, like I said, link to lots of resources in the show notes 'cause this is such a deep topic.

Peter: Yeah, so I'm, so what I'll do now is I'll kind of rapid fire because everything, we- we- we've covered like four or five in kind of the deeper dive form.

The book goes deep dive on all of them, but for right now what I'll do is like rapid fire on a bunch of them, and then if you wanna be like, "Why would that possibly work," right? Then it's like, okay, now we can get deep science if you want to. But I'll kind of just go, I'll just go down the list basically.

So f- our fire body, right? We have a light body, we have a fire body, we have the air, we have the water, our hydration, and the earth. Being near hot sources of energy like fire are, are giving us that sunlight supplement, right? If I'm standing, sitting near a fire, I am absorbing red, orange, yellow, near-infrared, mid-infrared, and far-infrared light.

And so campfires are amazing. They're so good. They, they feel good. We love them. We, we, we, we have a deep human connection, like fire is what let us do such a huge number of things, and literally one of the best forms of photobiomodulation, of red light therapy, is to sit around a campfire. The infrared goes through your clothing.

It feels good. It warms you from the inside out, and it's literally doing light therapy. and so having campfires with your family, in your backyard, on camping, whatever it is, it's like you don't, you don't need to buy a device. You can, you can start there, and that's an amazing way to supplement energy intake.

The next one is writing. Our... I, I, I think there's an amazing aspect of the, the human experience, which is placing yourself in front of a blank piece of paper with a pen every single day, even if you don't write anything, but giving yourself the opportunity to do so is an incredible, literally a healing technique.

I have gotten to an amazing journaling routine. I'm like four years into it now, and nothing would stop me from having my journal routine, every single day, just pouring forth what comes through and kind of a recounting of my previous day. And giving yourself the opportunity to write, even if you only write a sentence, you might fill in full pages.

I've had people who have written to me who have been like, "I did that thing. I sat in front of the blank pieces of paper, and I just started writing, and by the end of it I was crying," right? And I'm like, and that's the incredible power of, of write, like just giving yourself that opportunity, you might be so surprised what pours through, and the healing it can bring by doing that, and making that a routine is something I highly recommend.

And it can turn into things that you didn't expect, too. It might start out as like a form of checking in with yourself sort of therapy, and it might turn into designing a game or writing a book or writing a screenplay. Like you, you, you don't really know, and there's so much amazing benefits that come with it.

Similarly, on that same route is physically engaging with music every single day. This is another huge, amazing birthright that we sort of have as, as human, which is listening to music is awesome. I love listening to music. But physically engaging and making music every single day, that stokes your energy, that stokes your being, in a way that doesn't really have other things that replace it.

And so whether that means playing piano, playing guitar, ukulele, playing the drums, singing out loud, playing along with your music as it goes, giving yourself the opportunity to do that I have found to be a, a, a love that I fell out of love with and then rediscovered during, during COVID, through, personally in my case, through ukulele and just starting to be like, "I love this. I, I adore it," and it, it, it furthers that kind of internal fire that's burning that is giving us that excitement and motivation throughout the day.

Because a really important aspect of our fire body, we- most people don't think about that word fire body, but I kind of define it like this, which is our motivation, our motive force, that makes us feel energized and makes us feel excited about tomorrow.

There's, there might be few things less healthy than being, scared of tomorrow or worried about tomorrow compared to being excited about tomorrow and having a exciting reason to get up in the morning. That's a really incred- That's a really, a, a big massive aspect of healing that I think people, a lot of people gloss over, which is like if you're, if you're not looking forward to anything coming up in your life, you're, like what do you think your biology's doing, right?

Compared to like, "Oh my God, I can't wait till a week from now when I get to do that thing," or, "I can't wait for tomorrow to wake up and continue that drawing or, or work on that song or, or go hang with my friends tomorrow." That's such an important aspect of our health and community that's often glossed over.

And so if people are looking for those things that, that make you feel that way, the best advice I can give to that is- check with your inner child. What did you love? What made you feel that way when you were eight, right? Maybe it was drawing, maybe it was music, maybe it was running around outside, maybe it was basketball, whatever.

But the thing that made you feel that way when you were a child is probab- is a thing that, like, try that thing again. Give your, give yourself some time. Check in with that, and you might, you might be shocked about how, even just things that might seem silly, right? They, they, they've quickly become a, a wellness practice beyond just, like, "I love to play piano, but I'm so bad at it today, so I'll never even start it again."

It's like, everyone's bad. Like, you're like, that's, that's the, that's the, that's the principle of starting something is you're gonna be, you're gonna be bad and work through it, and, and to find how that motivates, and moves. The next one is just kind of, we talk about red light therapy and near-infrared therapy, that literally increases your body's warmth.

That warmth that you absorb of infrared energy is converged to electricity, and so devices are good for that. The next one is that whole thing I was talking about of, of community. If

you are not feeling that you have a community around you, that's like one of the biggest negative health implications we have.

And what's happened today is we've convinced the public that we've created a community substituted through our digital social media platforms. That does not meet our community requirement. It, it gives us a hollow sense of completing our community requirement. We... Whether, whether that's like singing music around a campfire with friends and family and loved ones, like that is so important for our health and for our sense of security.

It's a thing that we always had in ancestry, right? Our ancestors, if you weren't in community as our ancestors, it probably means that you're gonna die pretty soon because you are, you're cast out into the wild and, and you, you don't have the people around you to support you. I think everyone today has some small amount of, of that, this kind of residual feeling of we are, like, more connected than ever, but we're feeling less connected than ever because we've tried to substitute real true community, genuine community for something that's digitally telling us it's community, but it doesn't hit that same receptors in our body.

And so those are five techniques for how we can kind of boost that aspect of our fire body to make us feel excited, motivated, and, and experience fun and community in our environment. The next category is that of our air and how we engage with air. For, for me, this was a huge one because I read a book called *Breath* by James Nestor like seven or eight years ago, and 20 pages in, I'm like, "Oh my God, I've been breathing horribly my entire life."

And, and I'm like, I'm, I'm like personally called out by this book. And so, like, it completely changed my, the way that I even think about I had never considered there was such a thing as, like, good breathing default compared to bad. And I started to, like, have this slow horror realization where I'm like, "I'm a chronic mouth breather."

And, and I didn't even know that was something... I didn't even know that was, like, a sentence. And then I start- I had to, like, And then I, you know, got this book, realized that it's like, oh, but how lucky I am to have realized this when I did because it's so easy to resolve, right? And so I started taping my mouth when I slept.

I wore, like, this, this thing that held my mouth closed when I slept. I got things that helped to open my nostrils up because my, my nasal cavity was, like, 5% of a satisfying breath I could take in my nose compared to my mouth when I first realized this. And now I... And then it's just this whole mental thing of every moment, try to breathe slow and easy, six seconds in through your nose and six seconds out through your mouth or nose, and just make that your default thing.

So the, the one-sentence recommendation that came from Breath that I will then share with everyone is slow down your breathing. Really slow it down when- whenever you can, whenever you have the moment to think that- of it. Through the nasal cavity, not through the mouth, and then out through the mouth or nasal cavity.

Six seconds in, six seconds out. when I first started trying that, it was so hard. It was like I was breathing through a straw, because my, because I just never consciously tried to nose breathe. Like, I might have nose breathed here or there, but it was, but my default was mouth breathing. And that's a hu- That, that improved my sleep quality significantly.

That improv- That's just like It's, I, I think every single preschooler immediately should be like, "Okay, guys, lesson one, day one, let's learn proper breath technique because that's gonna stay with you your entire life." And also literally change the geometry and stuff of the face. You can learn to identify in your own being.

I'm a mouth- I was a mouth breather for, like, 23 years, and it raises the palate of the mo- of the mouth, and it raise- 'cause it makes it, you, you become better at mouth breathing. It raises that mouth palate, it pushes that, a bridge of the nose out, and it basically f- makes your, your, face kind of more, contracted to help mouth breathe as opposed to nose breathe.

And that was one of the things I was, like, reading this book, I'm like, "Oh my God, he's describing exactly me right now." And so it helped me to resolve, and that's a great example of technique, right? I didn't need to buy anything, although I did get, you know, a \$12 product on Amazon to hold my mouth closed while I sleep, and some nasal strips from CVS while I was, retraining my body.

But proper breath, amazing. Amazing, free, and, and, and just to think six seconds in, six seconds out whenever you have the opportunity, hugely impactful. On that front, breathwork, free. Consider breathwork as a thing that you can do like you would, like you would treat a workout. For the sake of time, I'll just kind of use that term and, and, and open up all the endless amounts of wonderful books that describe it.

Walking through the forest, forest bathing as it's kinda called in Japanese. Plants release amazing, amazing, molecules into the air. We breathe them in, and it helps us. So walking in a forest has a lot of benefits. One of those benefits, is the things that we breathe in. Going rapid fire, cold exposure.

So now we're on water. Cold exposure. Lowering your body into cold, within reason, is, is good. A really easy technique to do, because most people don't have a cold exposure tub in their house, is, is to get a, a, a, a bowl of water, put s- a little bit in, freeze it overnight. When you wake up, fill in the rest with water.

The ice will float to the top, and then do a face dunk in the morning. And so ice sh- ice facial dunks in the water, an amazing way to get a lot of the benefits of cold exposure. And, it's a thing that doesn't cost any money, and you, feel, you s- you'll start to learn to love the feeling of the cold on the skin.

And, and that's great for a, a cascade of positive reasons. But the one sentence is the hormesis concept, which is you expose your body to some amount of stress, like a workout. The body, you know, pushes back, and it gets stronger as a result. Cold exposure being a good example. The next one is to drink living waters, right?

So coconut water, things that are coming, things that are living waters from a, from nature are amazing for a, for a whole cascade of reasons. The simplest one is that it's electrically active water. Compared to what we get out of the tap is electrically dead water. What we get out of a coconut is electrically saturated water.

And so if anyone wants to engage with, if they're, like, about to start doing light therapy or taking more sun baths, if you can add coconut water, into that routine, amazing. Also, fresh veggies and fresh fruits is liv- living water, right? An apple is, like, 95% water. Not liquid, not gas, not ice, right?

It's l- living, gelatinous, biological water. Eating apples, eating fruits, veggies, coconut waters and stuff, really, really good for hydration. You can hydrate yourself with, with those, things outside of drinking water. And then kind of more, it seems esoteric until you kind of learn the science of it, which is like engaging with our water and sending positive intention into the water, actually has a, a measurable e- effect, on the environment.

The longer form of that I'll save, but the, the easy form is like when you have food in front of you or water in front of you, something as simple as, as speaking gratitude to what you're about to consume, actually goes a pretty long way on the, energetic, in- into this energetic world that we find ourselves living, in.

The last four I'll kind of just rapid fire and we can discuss the others. I mentioned minerals. Big one is grounding. Physically connecting our body to the earth has amazing effects. Simplest form of why is that our devices emit non-native EMF radiation all over the world. we're bathed in it constantly.

It's really hard to avoid it. Our body absorbs that energy, and it becomes static electricity in the body. So it's like I absorb all this radiation, and it's like, like an old TV staticky. And that static stays in our body. And the same reason that we ground a TV or ground any device for that matter, is that that static runs off into the earth as opposed to staying constrained in the device.

We are like that. We get all of this non-native EMF radiation. We become staticky and we're like, "Why am I anxious?" Right? And it's like, maybe you're crazy saturated in non-native EMF radiation. And one of the best ways to mitigate those negatives is to physically place your skin against the ground. You can also use, technologies such as grounding mats or copper wires into your grounding outlets to do that while you're at home as well.

And you can use really inexpensive grounding testers to confirm that those devices you're using are otherwise grounding you. And if you can sleep grounded, one, one step better. I have a little grounding mat about yay big that I sleep on and keep skin contact to every night. So my whole night that I'm sleeping, I'm discharging excess static electricity.

The next one is how we can grow and interact with our food. But which is foods, I, I talk very little about diet because there's so much about diet in the world. And I kind of just, I, I'm like, we could talk forever about diet. My one sense on diet is, is eat whole foods and the lo- more local and, and less chemical interaction you can get, the better, without getting into the much longer food conversation.

And then on food is if you're engaging with food, there's, there's a reason, a, that prayer, and that gratitude, and that thanking, everything that has led to the food that comes in front of you, is, is a great practice to intake, both from the very literal sort of etheric energy, energetic quality of what you're engaging with, and also from the spirit and the source that connects all of us and just living in a state of gratitude.

And so having community with food, having, meals with the family as opposed to everyone going to separate rooms, is a really wonderful a- as a, as a health technique beyond just the all the other benefits that come with it. And so in, in, in fast form, that's 25 recommendations. the long form I, I, I write about, but I'll pause there 'cause I know I just threw like 20 things at you.

Katie: Well, I love it, and I think kind of circling back, no matter what any individual person listening is navigating in their own health, I would guess most people have not tried a lot of these and certainly not tried probably all of them. So I would encourage people, like everything you mentioned for the most part is they're extremely inexpensive or free and actually not tremendous effort as well.

So I would really encourage people to kind of add on as many of these practices as possible, not just for yourself, but for your kids as well, and see firsthand the difference. Because I think the things that you speak about are really the foundational things that really allow for the most impactful change, and we're so often marketed to and sold all these bio hacks or supplements or protocols.

And I think the things you're talking about are actually the groundwork for any of those things being impactful, and a lot of times them not being even as needed. I'm hoping that we can actually do more episodes in the future 'cause there are so many other topics I think we could-

Peter: Yes, of course

Katie: ...still go deep on. But for this one I'll link, make sure I link to everything we've talked about in the show notes. I'd love to just kind of wrap up by touching on any important misconceptions around these topics that you feel like are still really prominent, as well as really importantly, where can people find you and keep learning?

I'll link to the book and to your social media and your website, but how can people keep learning from you?

Peter: Absolutely. So, well, one, I would love to, conti- have another show. I think everything we discussed today is how to improve nutrients, but a major other aspect of what I deal in is how to decrease toxins, right?

And so it's like one sentence, how do you become healthy? Improve nutrients, decrease toxins. There's 25 nutrient recommendations. There's also a laundry list of toxins that we can avoid. Some of them surprise you, some of them are very obvious, and everything in between. And so where you can find my work is, theunifyingtheoryofeverything.com.

That's where my book is available, completely free to download, completely free to take the PDF. But it's also a book where half of the book is my own original art, and so it's a really good, like, coffee table book. All these principles and all these images and stuff, help to kind of tell this larger story.

So, so many illustrations, so many drawings, but also all completely free to download, completely free available. And yeah, I, I would lo- I would love to come back. I'd love to talk, Th- this is the, the sort of happily, happy bubbly, here are all the nutrients we can do. There's also the like, "Hey, let's have the serious talk about what toxins, we're exposed to that I wish we weren't, and here's the easy ways to, to mitigate them."

And so maybe that can kind of then be the, the topic of, of the next one. But, yeah, it's an absolute pleasure. You can probably tell I love, I love doing this. I love it. The, the reason I, I do all of this stuff is just to share it as far and wide and yell it from the rooftops as I can. And so any opportunity to do that, I, I embrace wholeheartedly.

So, so thank you, Katie, and all the wellness mamas who are listening as well.

Katie: I'm so grateful we finally got to connect, and definitely look forward to more episodes in the future. I feel like I could endlessly learn from you, and could probably talk to you for 12 hours and still not even scratch the surface of all the things that you could teach us.

But I'm so grateful for your time today. I was really looking forward to this episode, and you certainly did not disappoint. This was amazing. Thank you so much for your time.

Peter: My pleasure. Thank you. Have a great one.

Katie: And thank you as always for listening, for sharing your most valuable resources, your time, your energy, and your attention with us. We're both so grateful that you did, and I hope that you will join me again on the next episode of the Wellness Mama podcast.