



Episode 609: Dr. Jack Kruse on Junk Light, 5G,  
Optimizing Sunlight and Longevity

Child: Welcome to my Mommy's podcast.

This podcast is brought to you by BiOptimizers Magnesium Breakthrough... Did you know that there is one phase of sleep that almost everyone fails to get enough of? And this one phase of sleep is responsible for most of your body's daily rejuvenation, repair, controlling hunger and weight loss hormones, boosting energy, and so much more... I'm talking about "deep sleep". And if you don't get enough, you'll probably always struggle with cravings, slow metabolism, premature aging, or even worse conditions. And conversely, getting enough deep sleep helps with all of these things! I went from under an hour of deep sleep to 3+ hours a night with magnesium and better sleep habits. Why don't most people get enough of this one important phase of sleep? A BIG reason is magnesium deficiency—because over 80% of the population is deficient in magnesium.

Magnesium increases GABA, which encourages relaxation on a cellular level, which is critical for sleep. Magnesium also plays a key role in regulating your body's stress-response system. Those with magnesium deficiency usually have higher anxiety and stress levels, which negatively impact sleep as well. But before you go out and buy a magnesium supplement, it's important to understand that most magnesium products out there are either synthetic or they only have 1-2 forms of magnesium. The reality is, your body needs ALL 7 forms of this essential sleep mineral. That's why I recommend a product my friends over at BiOptimizers created, called Magnesium Breakthrough.

Taking this magnesium before bed helps you relax and wake up refreshed and energized - the deep sleep benefits are really noticeable. I also love that BiOptimizers offers FREE SHIPPING on select orders and they offer a 365-day money-back guarantee on all their products. You can get 10% off Magnesium Breakthrough — the best aid I know of for boosting deep sleep — at [www.magbreakthrough.com/wellnessmama](http://www.magbreakthrough.com/wellnessmama) Be sure to use wellnessmama for 10% off.

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Katie: Hello, and welcome to the Wellness Mama Podcast. I'm Katie from [wellnessmama.com](http://wellnessmama.com), and this episode is with someone I have followed for a very long time, and I'm just now finally getting to have on the podcast, who is Dr. Jack Kruse. He is a respected neurosurgeon, and a CEO of the Kruse Longevity Center in Destin, Florida, which is a health and wellness company dedicated to helping patients avoid the healthcare burdens we typically encounter as we age. He's a member of the American Association of Neurological Surgeons, the Congress of Neurologic Surgeons, and the Age Management Medicine Group. He is also highly, highly researched in tons of areas, and we get to go deep on some of these today, with a specific focus on how to really make this applicable and beneficial to kids and to our families. And we go deep on topics like junk

light on EMFs and 5G, on optimizing sunlight and why that's so important, and on longevity factors for us, as parents, as we start to get older.

And he talks about why lack of sunlight is actually more dangerous than smoking, and why our kids need more, and how to do it safely. We talk a whole lot about light, and how screens, and junk light affects our body at a mitochondrial level and how we can begin to improve this, and why he considers this actually the top factor for health, above diet, above exercise, above, certainly, supplementation, which we also talk about, and he, in general, does not recommend. He goes into topics, like why he would never recommend melatonin supplementation to kids, and how to actually improve their own production of melatonin for better sleep, why he would never recommend sunscreen, or sunglasses, for ourselves or for our children.

We talk a lot about low vitamin D levels, and how low vitamin D levels actually correlate with melanoma. And since the sun helps increase vitamin D, why avoiding the sun might actually be making this problem worse. Why wearing sunglasses decreases our melanin production in the skin, and makes us actually more likely to sunburn. We talk about indoor lighting, outdoor lighting, about hydration, about magnetism, and he gives some specific tips for testing your own house, and optimizing these factors in your own life. And then we also go deep on topics of vitamin D and omega-3s, and the best ways to get those.

So, Dr. Kruse is a wealth of knowledge. I know he's often considered pretty controversial, but I believe in this episode he really thoroughly explains each of his points with the science. We go into the biophysics a little bit, but he makes it very clear and easy to understand. So, I hope that you will learn a lot from this episode. I do think it's a very important one, and without any further wait, let's join Dr. Jack. Dr. Jack Kruse, welcome. It's an honor. Thank you so much for being here.

Dr. Kruse: Thank you for having me.

Katie: Well, I have known of your work for well over a decade now, and you have opened my eyes to a lot of things, and so, it's truly an honor to get to talk to you today. And I think you are an expert on so many topics that are really, really important to us as moms in understanding, especially for the sake of our kids. And I know there's 1,000 directions we could go that you could speak on so intelligently, but I would love today to start off broad with the category of light, and specifically, learning about the term junk light and all of the types of light we are exposed to now that we didn't use to be, and how those are impacting our health.

Dr. Kruse: Well, I mean, we can go a couple of ways with this. Off camera, we were just talking about light is really a two-sided coin. You have sunlight, which is the light that we're adapted to from an evolutionary standpoint. And then since 1893, we have modern fake light, which looks radically different. Like, if we had a spectroscope and we showed it to every mom here, they would look radically different when you looked at it that way. And if you understand light functionally looking at a spectroscope, that actually changes the dose of the medicine. So, light is like a medicine, and a lot of people don't realize that, but that's actually what it is. And if you look at what sunlight looks like, and you think about what all moms for the last, I'm gonna tell you, 75 years have been told by centralized healthcare is that the sun is toxic, and you need to put sunscreen on kids and keep them out of the sun, it completely goes against our evolutionary directive.

But to be honest with you, there's now hardcore data out there. Like, I'm sure you probably know about this, but I don't know if a lot of your listeners or readers will, there's been six meta-analyses in the literature. The last one happened in 2016 in Sweden, and it basically said that lack of sunlight is more dangerous to your health than smoking cigarettes. So, that should stop, like, every mother and go, "Wait a minute. I clearly don't want my kid vaping or smoking, but you're telling me that this effect is as big as them doing that?" And see,

the problem is keeping kids out of the sun doesn't have a negative connotation because of the dermatologists and pediatricians, and it needs to.

When you think about the flip side of this, that those kids have grown up, especially kids today have grown up in a world where everything is blue-lit, like blue-lit screens, digital babysitting, when, you know, families go and buy a kid iPhone, iPad right off the beginning, if you put a spectroscope on that technology screen, you would not like what you see. And we now know the science is well-developed that blue light causes breakdown in the retina. The breakdown in the retina leads to changes not only in the retina, but also in the brain. So, the number one thing that people probably wanna hear about, when I was a kid, you know, we never had school shootings, we never had, you know, kids killing themselves left and right. Today it's an epidemic. What many of you may not know is that that's directly related to the amount of screen time that you have. And the reason for that is blue light destroys dopamine levels. And dopamine is a chemical that I think most people have heard of. It's most widely associated with Parkinson's disease, but that's not the key thing. If you go and look at addictive behaviors or depression, it's also associated with those. And the reason for that, in the pathway of your eye, you have a clock called the suprachiasmatic nucleus. And we now know in the last five, six years, that those neurons stop at a place in the brainstem called the habenular nucleus. The habenular nucleus in that part of your hypothalamus actually controls your mood.

So, I know moms have probably heard this as well, children are much more sensitive to non-native EMF or fake light because their brains aren't fully myelinated. That's the reason why children can't, you know, rent cars or hotel rooms 'til they're 25 years old, because their frontal lobes are not even myelinated. The flip side of that argument is they're much more sensitive to these frequencies, and parenting has changed so much in the last 30 years that people think it's a-okay to go give a kid an iPhone, and in my opinion, that's child abuse. It's just like going into a Walmart and beating the snot outta your kid and everybody just standing there and looking at it. And the reason why is because it doesn't have a negative connotation, kinda like I told you about the sun. So, when you add these two parts of the coin together, too much artificial light, you know, at night, and no sun during the day, you set these kids up for an absolute train wreck in terms of their health. And we now know that children compared to years past aren't as healthy as they used to be. I mean, there's a lot of other things that go into this, but is that the underlying theme? It is.

Katie: Well, that makes sense, especially when you talk about how the blue light can affect sleep in such a drastic way, and how sleep for kids, it's so connected to their circadian rhythm, their hormones, their proper brain development, all of that.

Dr. Kruse: Well, I mean, I'm appalled as a neurosurgeon that parents see no problem putting their kids on melatonin instead of, you know, getting off their lazy a## and reading a paper and say blue destroys melatonin. See, that's part of my frustration, is that it's not like this science isn't well-developed. You can go on the internet right now and read. You know, this isn't Jack Kruse's opinion. This is in major medical journals where we know that it destroys melatonin levels. And parents think, "Well, if I destroy it with the iPad, he'll scream when he's in the restaurant. I want some peace in my life. I'll just give him 6 milligrams of melatonin at night." That decision-making process is so bad because you're setting that kid up for so many problems down the road. The problem is doctors are not doing a good job explaining to parents why that's a bad decision.

Katie: That makes sense. And I'm with you on not giving melatonin to kids. And I know with my kids, our rule is screens go away after dark, and they also don't get a phone until they're driving, basically.

Dr. Kruse: I would tell you that I think that rule is too lax. Now, I understand why you compared on a relative basis to everybody else, that's a good choice. But me as a neurosurgeon and knowing what it does to the

central retinal pathways and to the brain stem, I think in the next 10 or 15 years, you're gonna find out that almost all cases of neurodegeneration begin in the eye from this process we're talking about. And when these children grow up and they're 30, 40, 50 years old, and you're gonna start seeing people who got these diseases when I was a kid at 70, 80 years old, but now it happens in 30 and 40-year-olds, that's when people are gonna get the wake-up buzz.

Because it usually takes somebody getting a punch in the mouth before they actually change because right now, people cannot fathom that a change in screen time, a change in light makes this big a difference. But, you know, the funny thing about this story is, and I always bring this up, nobody would ever question if you went out and planted an orange tree in your backyard, put nutrients in the ground, but then your grandmother came over and put a tarp on it. You'd say, "Well, that's the reason why we didn't get oranges." But nobody thinks about that with our skin, our eyes, or the light that we're putting in front of the kids' eyes. And to me, it's absolutely astounding that you get it when it comes to plants that are grown outside, but you don't get it to your kids.

Katie: That's a great analogy and I'd love to go deeper on that because I think you're right. We're seeing a generation of moms who we've been told by dermatologists since we were teenagers, "Wear sunscreen every day. Avoid the sun. The sun is dangerous." And now this is advice that's being passed on to our kids. And you mentioned that lack of sunlight is more dangerous than smoking. Can you explain the mechanisms there and, like, I think this is such an important topic. And then I think if moms just had their kids in the sunlight more, that alone would make a huge difference. So, what's going on in a kid's body when they're not getting enough sunlight?

Dr. Kruse: Well, the number one thing, sunlight is a multifactorial thing. Let me try to explain this as best I can without being too technical. I want you to think about a barrel of oil, okay? Most people know that a barrel of oil has to go to a refinery, and it gets processed, and it becomes 60 different things that we use in industry, like, you know, lubrication, gasoline, kerosene, all different kinds of things. Your mitochondria in your body do the same thing with light. So, I don't want you to think this is just about blue light, or purple light, or orange light, or red light. There's consequences to how light is refined in your body. And when the dominant life force, or I should say light force that your children are seeing are artificial manmade light, they're not able to refine things in them. Like, you mentioned a couple of them already, melatonin and the problem that they have with hormones. It's a huge, big issue. And the problem is you need to understand how those things occur. So, we're designed to refine that light.

Now, if you understand the mitochondrial biology, there's two main portions of the red... I should say of the spectrum of light, and I want people to think about the Pink Floyd album cover, purple and red light. They're on opposite ends of the rainbow, usually UV and infrared-A. And those two forms of light are really important for us because what do they do? They control the two change programs in our mitochondria which recycle our children's energy. Why is this a big deal for moms to hear? Most people have been told, especially through podcasts, that melatonin is predominantly made in your brain and in the pineal gland. Not true. 95% of melatonin is made at your mitochondria. And the reason for that is melatonin controls apoptosis and autophagy, which are the two change programs. Well, it turns out apoptosis is controlled by purple, which is UV light, UVA and UVB. And autophagy, which is the recycling of mitochondria, is controlled by the red light. So, when you go and put sunscreen on your kid, what effectively are you doing? You're blocking just about all of their ability to do things with the purple part of the spectrum. You're not affecting a lot of other parts, but you're affecting that one.

So, what's the major effect? It inhibits the child's ability to make vitamin D. And when you can't make vitamin D, what does vitamin D do? Most people don't get told this. A thousand genes in us get turned off. What's the single most important? Well, it turns off T regulator cells. That means your immune system is totally jacked up. And where this scales, you know, to the misinformation that the dermatologists and pediatricians do, people don't realize, people who get skin cancers, what's the number one link if you read the literature? Not if you listen to them, but if you read the literature yourself? Low vitamin D levels go with melanoma. So, if the sun is the cause of melanoma, explain to us why everybody that's got melanoma has got a low vitamin D count. It turns out a lack of sunlight leads to skin cancer. And when you really examine it, you'll find out that too much blue light, not enough red and not enough purple, is the real answer of how that light is refined in our body to wind up with the cancers that, you know, your moms are trying to protect their children from.

So, I would tell everybody whether it's sunglasses, clothing, sunscreen, do what wild animals do. When you've had enough sun, go under a tree, go under an umbrella. You know, there's no animal that comes out of its mother with sunscreen, you know, sunglasses, or clothes. And as simple as that sounds, people are stunned by that, but it's the truth. And the thing is you don't realize the consequences of poor thinking can actually make your kids sicker. Like, you think you're doing the right thing by listening to the dermatologists and pediatricians. The papers that are out for the last 20 years totally disagree with that. The problem is sunscreen, for example, it's a \$7 billion business. They're not gonna tell you the difference because that \$7 billion goes away. So, you have to be an informed consumer to know that the stuff I'm sharing with you today is something you wanna do.

And I'm also not saying that your kids need to go out and get French fried in the sun. You have to do it smartly. You have to learn how to build their solar callous up. There is a path to do that. I'm not sure that's something we wanna get into here, but that's something you can look at on my Patreon site. But I can promise you that God or evolution, whoever you believe in, put a pathway in you to actually put natural sunscreen in you, in your skin. You just need to know how to develop it. And I like to give ladies the example, it's kinda like when you go in to Louis Vuitton with your husband and say, "Look, I really like these shoes, but I try 'em on and they hurt your feet." And your husband says, "Buy 'em anyway. You can wear 'em five times, you break 'em in." That's actually effectively what a solar callous is. You have to learn how to break your skin in to use it properly so that the child can go out in the sun without fear that they're gonna, you know, cause some problems for them. That program is in just about every mammal on this planet. Why? Every mammal but us doesn't wear sunscreen, doesn't have clothes, doesn't wear sunglasses.

And I think some moms are gonna be stunned by this because the moms are making the big example. When I see a mom and she's got sunglasses on, I know by definition her child was being abused. The reason why is when you put sunglasses on your eyes, do you know what it does? It decreases the melanin production in your skin. So, for those of you who don't know, melanin is the thing that gives you the tan in your body. So, what does that mean? Wearing sunglasses makes you way more sensitive to the sun. And that's functionally what happens in people that get the disease that you've probably heard of that Michael Jackson had, which is vitiligo. And I want you to think about every picture of Michael Jackson from the time he was 25 to 50 before he died. He had sunglasses on, he always wore 'em everywhere, didn't he? That's where the vitiligo comes from. So, the key is when you continue to break the rules of nature, you're gonna pay the toll in disease. The problem is when you're a mama and you got these kids, you're gonna have to probably go in and I wouldn't say fight because that's the wrong answer because you'll probably get fired from the medical practice. You're just gonna have to be more informed than your doctor. You're not gonna hear any of these things from them because the system is gamed for their effect. Like, when you stay out of the sun, you become a much more frequent visitor to the pediatrician's office, much more frequent visitor to the dermatologist's office.

Katie: Yeah, and I think you're right, it requires becoming very informed as a parent and being very confident in those decisions because I know like we don't have sunglasses in our house, they don't exist in our house. We are at the beach all the time without sunscreen. My kids are barefoot 90% of the time. And I get heat from other people I don't even know on the beach about like, "Why aren't your kids wearing sunglasses? Why aren't you putting sunscreen on them?" Because it's so ingrained in society. So, I'd love to talk a little bit about if this is a new concept for moms, and they wanna now be aware of this, and use light to their advantage, and start getting more sunlight, what are some ways in our homes that we can minimize besides just avoiding screens as much as possible? Like, what are some ways we can improve the light situation in our homes, and/or how do we optimize sun exposure with kids? Is it as much as possible safely?

Dr. Kruse: Well, I think you need to become educated a little bit more about light. And I think one of the ways to do it is go buy yourself a spectroscope because I don't want you to come listen to this podcast and listen to me and trust me. I want you to actually test this for yourself. So, for example, I'm sitting in my house right now and I really didn't want to, but I had to because I have a cold today, I'm not feeling great. Behind my computer is a red light. You probably can see it from the reflection. The reason for that, it's sunny here. The sun comes through the window, the blue light comes right through, but all the purple light and 40% to 60% of the red light is blocked. So, what do I have to do? I have to reintroduce some of the red light that's being blocked by the window to offset what I'm getting from you. Now, I have an f.lux screen that I'm seeing you through, but even with that, I'm still protecting my eyes with the blue-blocking glasses.

So, believe it or not, if you are watching this video, you're actually seeing me do some of the things that you need to consider. So, when you're inside, open a window, okay? That's how light works. All you have to do is open a window. When you filter light, even through glass, you are changing the spectrum of the problem. Like one of the diseases that modern medicine has no idea is linked to indoor living is fibromyalgia. Those are people that are all blue light toxic. Why? Because they're not getting any red light on their muscles. That's the reason why their muscles constantly hurt. It's because they're chronically energy deprived. So, if your kids are inside, you wanna do the same thing. Let 'em do their homework outside. Let them do as much as possible outside. I think one of the big problems with kids is video games. I would absolutely eliminate them. And no, I know it's gonna cause a huge problem, you know, in a lot of people's houses, but if you knew how bad they really were, this is almost akin to letting your kid, you know, start his own drug business and selling it. That's effectively what they're doing. They're creating all these little addicted kids from the blue light toxicity. Inside, open the window, introduce red light into the inside environment. I think those are probably the simple easy things that you could do.

Katie: And then obviously avoiding having screens on, especially after dark. Are there types of lighting for in the home that are better alternatives than others? I know everything seems to be switching to like LED...

Dr. Kruse: I don't use any light in my house. I would tell you what I have, and I'm talking about during the day, I have the red light on now, but on my kitchen here, I have a UVA light and two red lights above me, but they're hardly ever on. In the house, I have circadian lighting. These are set for 9 a.m. light, but I don't like them either. I always want regular light. So, at nighttime, what do I use? I use candles and I use fire. I have a real fireplace and I have candles all throughout the house. When I tell you that I'm a Nazi about light, especially at night, it's absolutely true. And this time of the year, it's really hard because it's Christmas time, so everybody's got their Christmas lights on. Almost everything in my house is red-lit. You know, I don't use white bulbs for anything. In terms of light, if you can get your hands on incandescent, the government is trying to take those away, try to buy a whole bunch and save them. LED lights, halogen lights, any modern light is absolutely toxic for your kid.

Katie: And again, that's all solved as well by being just outside, to your point, as much as possible.

Dr. Kruse: Well, when you need the light though, get them to use headlights. They have headlights that are red-lit. Get the kids to do that. The kids are much more amenable to that than parents are because they think it's kinda cool. But most of my members, they use red lights inside and they'll put the headbands on that you can buy from, you know, Home Depot.

Katie: Okay, good to know. And then another recommendation I've mentioned hundreds of times in the last 10 years on this podcast is that importance of morning sunlight. And I know you're making the point that being outdoors as much as possible is really important, but it seems like data does look at getting light as soon as possible outdoors, not through a window after waking up is important for that circadian signaling. And at least in my kids, I seem to notice a pattern of them sleeping better when we're really consistent with that morning light and bright midday light. But what's your take on that? Are there specific times of day?

Dr. Kruse: Well, there's a couple of reasons for that. The first thing is, as you mentioned, when the first light of the sun comes up, it resets the circadian mechanism in the central retinal pathways. The second thing that happens, most AM light, that sunrise is red, doesn't have any UV in it. So, red light is really, really powerful for healing. But probably third and the most important thing, it starts all the hormone cascade that normally happens between 6 and 10 a.m. that's supposed to happen. So, what does it do? It's kinda like... I like to describe it to parents so they understand. It's like having a default mechanism on your phone where you know how you can reset the phone? Every time you see the sunrise, you're resetting the default mechanisms in your brain. So, that way you can constantly tell time.

Now, the other thing that's important is, and I don't think a lot of parents realize this, when the sun sets. Sunset for kids is also important. Going to see the sunset. If you really want your kids to perform optimally, especially with their brain, seeing the sunrise and sunset is huge. Most people don't do that. But that gives you the time of how much sunlight you're in. And it turns out the longer light you get, the better you are. People forget at the equator, you get 12 hours of sun every day. Like, at the 28th latitude, we lose about four hours this time of the year. If you go down inside the 20s at the 20th latitude, you only lose 45 minutes. So, you can see inside the tropics, you have more light stability. And it turns out light stability for children is a big deal because why? They have a developing brain. So, that's the reason why I always tell people that nothing replaces sunlight. There's no artificial light out there. Even if you're using the right colors that are better than the sun, the more sun you get, the better it is.

But here's the cool thing about kids. Kids don't need as much sun as their grandmothers or grandfathers do. Older people need more light than kids do because kids are...if you look at their body weight, they're mostly made out of water. 80% of babies when they're born are water by weight. When you get to be my age, you're about 55%. And it turns out the number one chromophore for sunlight in our body is water. So, that's a benefit for children because it means the sun really helps them. So, they don't need as much as you think. And the kids, they'll be perfectly fine if you let them play outside and build, you know, their life that way. I think the real problem for parents right now is peer pressure from other parents. And I've heard, you know, the story, "Well, my friend who's eight years old has got an iPhone and an iPad. Why can't I have it?" I don't know how to solve that problem. In my house, it would be pretty simple, "I don't really care what anybody else is doing. You know, I own that brain until you're 21 years old because I'm paying your bills, and I think I know a little bit more how to build a brain than most other people. So, I want you to do as much as you possibly can to maximize your opportunities. And then after you're outta my house and I'm not paying your bills, you can do whatever you want."



Katie: Yeah. And also, I think kids are so capable of understanding if we educate them about these things from a young age. Like, I find my older ones typically make healthy choices because they've heard this stuff since they could talk.

Dr. Kruse: You just got me thinking about something, you know, because it's the Christmas season. One of the things that I'd love to see parents do because not only would this be a journey for your children, but it would be a journey for you. Go out and buy a spectroscope in your house. Because let me tell you something, when you get a spectroscope and you start pointing at all these lights, and then you go outside and look at the sun and you see the difference, like, it makes...it crystallizes the decision for people. And, you know, then they're gonna take it to their grandmother's house, their kids' house. Kids will be interested in that. They'll be very, very interested to see how light changes. Not only that, they'll get to see how the sun changes from sunrise to sunset. That's also, you know, really key for them to understand. And when they get that information, you'll be stunned about how kids make better choices even when the parents won't.

Katie: That's a great idea and I will put a link to that in the show notes as well. I think kids are so capable of understanding this, and I think that's a really cool way to let them see it and understand it themselves and so that they make those choices as they get older instead of us making those choices. You also mentioned earlier the term non-native EMFs. And I know this is another area that you are probably one of the top educated people in the world about. And I would love to talk briefly about non-native EMFs and things like 5G, which you've talked extensively about, and especially in relation to our kids, why we need to be aware of this and what we can do about it.

Dr. Kruse: Yeah. Well, non-native EMF, technically, just to define it, is everything outside the visible spectrum. Most people know that terrestrial sunlight from our sun is 250 to 760 nanometer light. Everything else in the electromagnetic spectrum is garbage, which we call non-native EMF. We are not designed to operate within it. So, for example, in the visible spectrum, we just talk about blue light. Blue light subtracted from the rest of terrestrial sunlight, technically, is non-native EMF. Why? Because you're not designed to get blue without the purple and the red. So, that's fixable there. And that's probably the number one non-native EMF out there.

These days, you're correct, Wi-Fi, 3G, 4G, 5G, big deal. For parents to pay attention to this, they probably, if they think this is BS, what they need to do is go back to read the NTP toxicity report done by the federal government where they irradiated nocturnal mammals, I should say mice and rats, for a period of time with just 2G and 3G phones. The animals all got tumors and cancer. So, it's not like we don't know that this happens. And when you wanna jump down the rabbit hole further, then I would tell you to go read a book called "Going Somewhere" by Dr. Andrew Marina. He's a physicist and a lawyer. He's actually been testifying about this stuff at Congress since 1977. His testimony began when he showed that the power grid in New York state that went from New York City up to Niagara Falls changed the earth's magnetic field 80,000 kilometers in space. So, for people who don't think that we have the data, just remember the year I said, 1977, okay? And the books are out there, the data is out there.

But the same story that happened with sunscreen, \$7 billion industry, non-native EMF, probably \$4 trillion, \$5 trillion industry. So, there's a reason that you don't get told the truth. The reason why is because they want you to be an obedient idiot so that you're in their paradigm so they can keep harvesting. And the problem that a lot of people make, especially parents, "Well, these kids do it, or this family does it, or we all do it." And the problem is this is part of the reason why we're all much sicker, where in cities, especially, our longevity's been going down for the last five or six years. So, you have to ask yourself, what are you willing to do to offset your risks? Now, some people may say, "I'm willing to do some, but I'm not willing to do it all." That's fine. I think any step in the direction of wellness in decentralized nature is a good step. I just want people to know that this

data, it's not wacky, it's not quacky, it's well-published in great journals. The problem is it's been blocked from you. Just to keep current events, I think the way I would try to explain this, this is kinda like what Elon Musk is going through with Twitter right now. You're now seeing the curtain pull down in what the Twitter files were all about. It was about blocking you or censoring you from the truth. Well, that's actually what we're talking about right here. The reason a lot of you don't know about this is because industry who's been printing money selling you this stuff and causing you problems, it's a big issue.

Katie: Yeah. And I know as you bring awareness to a lot of these things, I've also heard you say many times in interviews, like you're still optimistic actually about the future. You think we might come through a big crisis of this, but overall, you're actually optimistic for what the future could hold. And I know I think back to, I believe it was a study out of Boulder, the camping study that looked at even just to give people hope, one week of camping without artificial light improved circadian rhythm.

Dr. Kruse: Three days. Three days.

Katie: Three days minimum? Wow. And they saw changes in their hormones, their sleep. They synced to the sun. So, I think if moms are feeling overwhelmed, like this is actually something, especially in kids, they can adapt quickly to better lighting, to better sunlight, to better sleep. All these things happen so fast in kids.

Dr. Kruse: I'm gonna tell you something even more stunning you may not know. There's a book out there that most of my members read. It's written by an ophthalmologist in the '40s and '50s. His name was Fritz Holowich. And these are the days where we didn't have intraocular lens for cataracts. One of the interesting things that he did is when he operated on these people and took the cataracts out, he saw all their hormones improve post-op. So, we're talking about one hour. He put them in natural sunlight and you saw the improvement in the hormones that came out in urine and blood. So, I want people to know that the camping study is directly tied to this story. And what people don't realize is your central retinal pathways and your skin are the two ways light gets in to every single mitochondria. Remember the analogy I gave earlier about a barrel of oil? If you really understand light like oil, you'll get it. You have to think about your little boy or your little girl like an oil refinery. Your job as the parent is to make sure you deliver the barrels of oil. Their body will do the rest.

Katie: Yeah, that's a great analogy. And I think from listening to your work, I know we would put light kind of top of the list as far as triage theory of importance. But then I know there are many things below that. I know you said like diet and exercise are less important than optimizing the light piece, but assuming parents are hopefully gonna be aware of this light piece, what other factors would you put below light as most important for our kids?

Dr. Kruse: I'm gonna tell you probably for children, I'm gonna say probably magnetic effects. You know, meaning like some of the things that you were talking about before, bringing your kids to the beach and letting 'em run around, that's huge. You know, the effect of grounding. The problem is if you've got, you know, wires buried in your ground, doing that in a city actually could be harming your kids. So, that's why I hesitate, you know, to give that advice. You kinda have to have like a body voltage check in your area before you allow your kids to do that.

The other thing is I think water's important too because one of the things that you need to realize when you have a child that's afflicted with non-native EMF, generally what that does, what's the ultimate cause in the kid? It dehydrates them. And if you remember what I said to you earlier, when a child is born, they're about 80% water by volume. And when you're old like me, you're 55% by volume. But if your kid has way too much

screen time, you're effectively dehydrating them. So, what I like to explain to parents is every time you give your kid a phone, a screen, a tablet, it's like sticking their head in a microwave oven. And everybody has the experience of taking a piece of steak and trying to reheat it in a microwave oven. And if you don't wrap it in a paper towel, it tastes like shula. The reason for that is because you're taking the water out of the tissue. The same thing happens in children.

So, when you're trying to rehydrate a kid, is there water that's better? Probably, yes. I would say high-latitude water. So, Icelandic, VOSS, things like that. If you have the money to spend, I don't think everybody needs to do this. But what people don't realize, and I don't wanna get too deep into the biophysics because I'll probably lose your people, there's a big reason for that. Turns out the way we work, the batteries in us, water is a big component with sunlight. We've spent a lot of time talking about the light component, but it turns out that water in our body is the battery. It's a capacitor. And we bury the light in the water. And it turns out everybody thinks water is H<sub>2</sub>O. And what they don't realize is that hydrogen has different isotopes on earth. And it turns out the second isotope, deuterium, is linked to the hydrology cycle of where we live. And it turns out with non-native EMF, you don't want water with a lot of deuterium. So, the big issue is water that comes from higher latitudes, for kids that have really low melatonin levels or screwed up cortisol levels or, you know, behavioral problems, this would be a huge benefit for them.

Katie: Yeah. And I know that alone could be a topic of many episodes, but in general, as for parents just thinking of higher altitude waters when possible, are there any options for home filtration and/or minerals? I know there's so much information out there about which types of filtration is best.

Dr. Kruse: I don't think any of 'em are good. I'm gonna be honest with you. I think when you look at the risk-benefit ratio, I'm not a big fan. I don't think you're getting huge benefits. The same thing with like molecular hydrogen machines, just not a big fan. I think the way you wanna default your family is learn more about the recipes that nature uses and mimic those. Like, it's kinda crazy. I always try to tell people, I don't have to teach hippos and lions quantum physics, but I have to teach humans that. Why? Because we have this brain in our head that allows us to break all of nature's rules. And it's kinda like the thing I was just talking about with isotopes and deuterium.

We haven't got to the food side of the story, but this morning on Twitter, I just saw somebody retweeted a thread that I had on nitrogen, on the Fritz Haber-Bosch equation. And just so you know, there was a guy on Twitter that said, "4 billion people are alive today because of the synthetic creation of ammonia." And I'm like, "Yeah, but do you know what the problem is?" And I went through this whole tweet storm, and it turns out that the whole tweet storm basically allows the wrong isotope of nitrogen in when you use the synthetic pathway, versus how we do it naturally. And I said, "If you wanna know why kids have gut problems, SIBO, all these other problems," I said, "That is there." And not only that, it changes the groundwater, which is why I tell my members, don't eat any food from California. And when you think about how much food comes from California, you start going... And believe it or not, they still call this food organic when it's made with synthetic fertilizer. It's nuts.

Katie: Well, and again, that's a topic that could be a volume of podcasts on its own, but I feel like you've shed light on a lot of areas where there's misconceptions about things that are commonly considered healthy when it comes to food. And you have a different perspective on a lot of kind of the most essential things we actually need to be doing when it comes to food. So, with the caveat that this could take hours to fully explain, can you give us an overview of some highlights? And I'll definitely point people toward your Patreon to actually keep learning more.

Dr. Kruse: Yeah, I think this one is simple. Most people don't realize that food is a story of light. And I wanna say that again. All food webs on this planet tie back to the sun. Don't forget that. Now, here's the caveat. Modern foods that are built in labs, therein lies the problem. And generally, the problem with fake foods, Frankenfoods is what I just mentioned before about the isotopes. In other words, photosynthesis is the change program or the quality assurance program that the bad isotopes of nitrogen and hydrogen don't get in. Photosynthesis creates food the right way. So, for example, everybody learned in third grade, CO<sub>2</sub> plus water and sunlight equals sugar. That's not controversial. What they forget is that glucose is burned in your mitochondria and it reverses the process.

Here's the interesting part. Photosynthesis can use any water, okay, to grow. But you know what you'll be surprised to hear? That if you use deuterium-laded water, that your crops go down 40%. So, when people hear me talk and they wanna know why I don't really spend a lot of time talking on food, because if you don't know these little details and you don't realize that food is an electromagnetic barcode of where we are on the planet as we travel around the sun, you're designed to eat food that grows in the ground at the latitude that you're at. That's all you need to get right about food. If you do that, you win. And I'm sure you've done numerous podcasts with people about the food issue. And I think the reason that these people infuriate me is because they never get to that level that you need to realize your mitochondria is an electromagnetic cipher of the electromagnetic barcode that's in food. And if you provide your family food that's made with fake fertilizer or food that's made with deuterium-laded water, no, that's not gonna be the same as if it was made completely by photosynthesis. And unfortunately, these days, a lot of the foods that we buy in grocery stores are all processed. And when someone else says processed, they're not meaning the same thing I do. I'm talking about an isotope level.

And when you understand what's happening in mitochondria, like you open up a biochemistry book and you see all these different reactions, like there's six, or sorry, nine enzymatic steps in glycolysis. Well, the reason why those steps exist and drive doctors crazy when they're in medical school is to make sure the right isotope of hydrogen is on the carbon backbone. But guess what? Do doctors learn that? No. You need to know that. And the thing is if you eat a banana at the 28th latitude, you're good. But if you eat a banana that came from Chile, you know, at the 30th latitude, right now, you created mismatch in your body. What is that mismatch? In parlance, we call that chaos. Okay? You developed chaos in your body. What do we call it in medicine? Inflammation. What is inflammation? A function of when we talk about biology. It's the pH level. Remember what pH stands for? It's the hydrogen in there. So, we're back to that story about hydrogen. If you have too many hydrogens, you get a lot of inflammation. So, it kinda tells you that this story about hydrogen is maybe something you wanna pay attention to. Why? As you know, H<sub>2</sub>O is hydrogen, and almost all foods are made with carbon, nitrogen, oxygen, and hydrogen. And when you begin to realize that, you go, "Maybe I need to think about this a little bit differently." And if you really wanna jump down the rabbit hole, yeah, you probably find a guy like me, and I'll explain it to you. But I'm gonna be honest with you, food is a really easy thing to get right. If you just eat a circadian diet seasonally, you can't screw it up. Just don't eat fake food.

Katie: Yeah, I think that's such good perspective and I love that you take, I guess, what'll be more of a biophysics approach versus a biochemistry approach, which I don't feel like anybody else is really talking about at this level. So, I've been fascinated by your work for a while because of that.

This podcast is brought to you by BiOptimizers Magnesium Breakthrough... Did you know that there is one phase of sleep that almost everyone fails to get enough of? And this one phase of sleep is responsible for most of your body's daily rejuvenation, repair, controlling hunger and weight loss hormones, boosting energy, and so much more... I'm talking about "deep sleep". And if you don't get enough, you'll probably always struggle

with cravings, slow metabolism, premature aging, or even worse conditions. And conversely, getting enough deep sleep helps with all of these things! I went from under an hour of deep sleep to 3+ hours a night with magnesium and better sleep habits. Why don't most people get enough of this one important phase of sleep? A BIG reason is magnesium deficiency—because over 80% of the population is deficient in magnesium.

Magnesium increases GABA, which encourages relaxation on a cellular level, which is critical for sleep. Magnesium also plays a key role in regulating your body's stress-response system. Those with magnesium deficiency usually have higher anxiety and stress levels, which negatively impact sleep as well. But before you go out and buy a magnesium supplement, it's important to understand that most magnesium products out there are either synthetic or they only have 1-2 forms of magnesium. The reality is, your body needs ALL 7 forms of this essential sleep mineral. That's why I recommend a product my friends over at BiOptimizers created, called Magnesium Breakthrough.

Taking this magnesium before bed helps you relax and wake up refreshed and energized - the deep sleep benefits are really noticeable. I also love that BiOptimizers offers FREE SHIPPING on select orders and they offer a 365-day money-back guarantee on all their products. You can get 10% off Magnesium Breakthrough — the best aid I know of for boosting deep sleep — at [www.magbreakthrough.com/wellnessmama](http://www.magbreakthrough.com/wellnessmama) Be sure to use wellnessmama for 10% off.

This episode is brought to you by Wellnesse. That's wellness with an e on the end, my line of non-toxic, family focused personal care products including haircare, oral care and deodorant. At my house, kids toothbrushes and kids strawberry toothpaste are the favorites. The toothbrushes come in a 3-pack of fun colors, which makes it easy for my kids to know which brush is theirs. The strawberry toothpaste tastes great so there aren't any fights about tooth brushing, and I love that it's formulated around hydroxyapatite, a naturally occurring mineral found in tooth enamel. All of our toothpastes use only EWG verified safe ingredients, are free of toxins, and are packed with ingredients that naturally support the oral microbiome for stronger, healthier, whiter teeth naturally. Check out these and all of our products at [wellnesse.com](http://wellnesse.com).

And I know we've talked a lot about kids, and of course, all these same things that help kids apply to adults as well as far as sunlight and reducing junk light and hydration, all these things. But I'm curious if there's anything else specific to the moms that we could go through when it comes to helping improve longevity. Like, that's become a focus for me as I get older, is also wanting to look at optimizing longevity. Things I can do that maybe aren't as specific to kids, but that could help moms with the anti-aging and longevity side.

Dr. Kruse: Yeah. I mean, I love this topic because most of the people that are members of my site are women, and most of them are heads of the family. And I tend to focus more on women than men, which makes me a little bit unusual in this space because most people in the anti-aging space are focusing more on men. But the reason for that is mitochondrial DNA is only inherited through mom. So, you can learn a lot about mom and grandma, and your maternal side if you go through it. And the reason I like parents to learn about this is especially if you're a new mom, say you just had a baby, I would tell every single mother, you wanna learn about you, do a vitamin D level of your infant. Why? Because where does that baby get all of its vitamin D from? You. The baby is stealing it from you.

And so, for example, if you have a baby and you wind up getting say postpartum depression, I guarantee you your vitamin D level is gonna be below 30, because the baby got everything it needs, and you don't have anything left. The reason why this is important, remember that everything that that child is, most of it is coming from you. You get some stuff from your dad, but it's really about you. And people always ask me this

question, you know, when we talk about childhood cancers and this and that, and this kind of pisses a lot of parents off, most kids that have problems, it stems from mom and dad. It's called transgenerational epigenetics. And when I was a young doctor, we didn't know anything about this. We didn't start knowing about this until some Duke studies in 2003. Now it's become the big deal because I always get asked questions about, you know, childhood cancers. And childhood cancers always start in the mom's maternal DNA, meaning the mitochondrial DNA. And that can be passed on from great grandma to grandma to you. You put the engines in your children, not your husband.

So, that means if you optimize you, you can fix your kids. The problem is you need to know that you are the boss lady. And I mean that literally and figuratively. So, if you know that your kid's having a problem, before you ever take the kid to the pediatrician, you better start asking questions like, what about our environment or what about my maternal side could this be linked to? Because that is the place you need to go.

You have to remember centralized healthcare, which is what I've been trying to eradicate for 20 years, that's the belief when you go to the doctor, you get told whatever you get told. I'm more of a decentralized healthcare person. I'm trying to tell you what decentralized means is that there's no single controller. So, for example, we've talked for 45 minutes about circadian biology. The control of circadian biology is light and dark. In other words, it's not a single controller, it's two sides of the same coin. When it comes to centralized healthcare, when you take your kids to the pediatrician, you get told, "Oh no, you have to put sunscreen on, you have to wear sunglasses." In other words, it's a top-down authoritarian approach. I know better than you, I'm an expert, and you are paying me to be the expert to tell you because, you know, I've deciphered all these things from textbooks that I learned in medical school. The problem is the books that they learned from were 30, 40 years ago and they're not updated with the latest stuff. You need to know that. Once you realize that, you get the mindset that, "I need to think about nature and what nature's doing," then you'll move the needle.

Katie: Yeah, I think that alone is such a paradigm shift, and I love that you keep bringing it back to that, because it's like we keep looking for these complicated answers when the answers have always been in front of us through nature. And also, you mentioned vitamin D, and I would love to briefly touch on vitamin D because I think that might drive a lot of people to just start wanting to supplement lots of vitamin D to try to fix these problems. And I know you have wisdom around that. So, I'd love to touch on vitamin D and omega-3s which is another topic I've learned a lot from you about.

Dr. Kruse: Yeah. I would tell you, let's give the disclaimer, because I think when a lot of people listen to my podcast or they eat stuff or they follow me on social media, you hear that I don't like to talk about food, and I'm not really big into talking about exercise. It's not really true. I want people to understand light is by far the most important. When it comes to supplements, same reason. I told you before, supplements are basically fake Frankenfoods that you're adding to the mix. But here's the real caveat. If your body makes it endogenously, you should never take it exogenously. Why? It has to do with something called predator and prey. Remember I just told you the story about decentralized light and dark? So, let me give you an example. One that we used earlier today.

If you give your kids melatonin to help them sleep, it's because their mitochondria don't make it. When you give the kid melatonin long enough, you down-regulate the melatonin production that they make in their own mitochondria. So, you're turning off the machinery because you're getting an exogenous signal. So, it ultimately makes your kid worse. What's some of the effects that can happen to a child down the road? They can thin their retina, they can get retinal tears, they can develop really big problems with their central retinal pathways. Why? Because it turns out melatonin and dopamine regenerate all the photoreceptors in your eye. Does the pediatrician ever tell you that? No. Why? Because they're looking to give you the centralized answer

to get you out of their office in 10 minutes, and that's it, you know, for your \$25 copay. If you do your own homework, you'll find that those answers are out there. So, melatonin, I've already told you is made in the mitochondria. So, supplementing that is a big no-no.

Vitamin D, the same way. Vitamin D is made endogenously in our skin. But vitamin D is a very interesting vitamin because it's not a vitamin, it's a neurosteroid. And vitamin D, one of the things that it does is it gets created in the skin from cholesterol and 312 nanometer light, which is UVB light. It changes the double bond in a ring in cholesterol to turn it into something called 25-dihydroxyvitamin D. That's not the key factor. It has to go to the kidney and liver then to be converted to 125. So, can you have a problem with vitamin D that starts on the skin, or could you have a problem if the kid has a problem with their liver or their kidney? The answer is yes. A lot of times, this never gets worked out. The most common reason for children why it's a problem is their skin is blocked from clothing or sunscreen. The reason why this is a big deal in adults, let's talk about mom and dad now. Mom and dad, if you look at your blood work and you notice when they do a lipid profile on you, that your cholesterol level's going up, I can almost guarantee you what their answer is. They're gonna tell you they want you to be on a statin. I'm gonna tell you, you need to be in the sun more, because guess what happens? High cholesterol levels chronically over time is almost always associated with low vitamin D levels because you're not converting cholesterol into vitamin D.

Katie: Yeah, I think that's such an important thing to understand. I know I've seen drastic changes in my labs since moving to Florida and being in the sun every day for hours on average. What about omega-3s, though? Because I feel like this is an area where there's a lot of controversy, especially right now about if they are good, if they're bad, if they're rancid, if we should avoid them, if we should take them. What's your take on that?

Dr. Kruse: Uh-uh. You're designed to get omega-3s from the marine seafood chain. Supplementing it, I'm not a fan of. And the reason why, most people need to understand that exogenous pills are polyunsaturated fat, that's what DHA is. You have to realize how this works in an evolutionary standpoint. DHA is the only lipid in mammals that hasn't changed in 650 million years. In other words, there's something specific about this chemical that is highly favorable to complex life. And most people don't realize this. DHA, you know where the number one place that it's found? Your central retinal pathways right in front of your eye clock. So, what's the biophysics of DHA? Twenty-two carbons double-bonded that creates a pie electron cloud. Effectively what it is, it's a copper wire that connects your retina to the suprachiasmatic nucleus, then to the hypothalamus. So, remember all the things that we talked about, about refining the barrel of oil for your children? Well, if you don't have good copper wires in your refinery, how do you think you're gonna do? Not very good at all, right? So, that's fundamentally what the problem is. Seafood is the best way for you to get it. Now, how you get it from seafood, that's completely up to you. I would tell you use locally sourced stuff if you can. If you live in a place that doesn't have it, that becomes much more difficult. But I'd much rather you eat the real food than the supplement.

Katie: And are there any, for you personally, exceptions to that or things the body doesn't make that you would consider taking in a supplemental form, or do you stick to food and these other factors we've already talked about?

Dr. Kruse: Well, when I'm taking care of people, you know, on an acute basis, there may be things that I recommend on two or three-week period of time that I wouldn't on a chronic basis. You know, like, if you're trying to get over certain things, like for example during COVID when I told people, "Look, these are some of the things that you can do. These are things that would get you by for two, three, four months so you didn't have to worry about COVID if you were not going outside." But I would always tell people, "If you go outside,

raise your vitamin D level up, you improve your immune system." Your immune system technically is your best protection. So, anything you can do to improve that standpoint.

Now, there're certain people, like, remember most people that come to see me, their physiology is already trashed, they've already got diseases, so you're trying to ramp them up and get them better. So, everybody's unequal as one is different. And when somebody comes to see me, generally, it's because their mitochondria is already screwed. So, the things that I'm always gonna recommend, the base, is gonna be a lot of the things that you and I talked about already. I'm gonna teach them how to use purple and red light to re-innovate their bad mitochondria. But I may add certain things in if it shows that that problem exists. I would say maybe 50% of the time, that's actually the case, but most people, once you get 'em through their acute issue, you don't need to have any supplements.

Katie: Yeah, I think that's great to know. And like I said, there's so much we didn't even get a chance to step into at all today in this episode. I hope that maybe we'll get a chance to do another episode in the future. But before we wrap up today, I would love to know, do you have any recommended reading for people on any of these topics that you would point them toward? I'll of course link to your site and your Patreon as people can find you and learn more directly from you. But any recommended reading or books that you recommend?

Dr. Kruse: Yeah, I can give you a list, but if you go to my website, there's a thread on there about all the books that I recommend, so you could pull that up. But probably for the biophysics book, a couple of the ones I've already recommended, "Going Somewhere," by Andrew Marino is great for the non-native EMF. "Portion of It," when you wanna learn more about sunlight. A simple book by John Ott, "Health and Light." You can find that usually in goodwill. It's so old, but it's easy to find. If you want some really cool books on mitochondria, read any book that Nick Lane has written. He's a Ph.D. from Surrey, England. My favorite one that he wrote was "Power, Sex, and Suicide." And Jim Al-Khalili and Johnjoe McFadden, I think their book's named "The Vital Edge." Gerald Pollack's book is about water. If you wanna learn about water, you can read that. And if you really wanna jump down the rabbit hole about light, there's a book written by a guy named Roeland Van Wijk. It's called "Life Sculpt's Life." That book is...it'll blow your mind when you realize just how much we know about light, but it's not incorporated, you know, into clinical medicine. I mean, a lot of the data in that book goes back almost 125 years, and you just scratch your head when you read it and say, "Why are we not doing this stuff?" The answer is Big Pharma doesn't want you to know.

Katie: Well, I'm so glad we got to go deep on light today. I think this is not talked about enough, especially for moms. And you explained so well how this is probably the top thing we actually need to be thinking about with our kids before we're stressing about their diets or their exercise, and how it's gonna help all those other pieces fall into place so much more easily for sleep. So, I will, like I said, mention and link to a bunch of other resources that you have available so people can keep learning from you. Dr. Kruse, I know how busy you are and I'm so grateful for your time today. Thank you for being here.

Dr. Kruse: No problem. Thank you.

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

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