



Episode 433: The Energy Paradox: What to Do
When Your Get-Up-and-Go Has Got Up and Gone
With Dr. Gundry

Child: Welcome to my Mommy's podcast.

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Katie: Hello, and welcome to the "Wellness Mama" podcast. I'm Katie from wellnessmama.com and wellnesse.com. That's Wellnesse with an E on the end, my new personal care line. I am here today for a round two with a much-requested return guest, Dr. Steven Gundry. He's one of the world's top cardiothoracic surgeons and he's a pioneer in nutrition, as well as the medical director at the International Heart and Lung Institute Center for Restorative Medicine. He's well-known for his books, including "The Plant Paradox," "The Longevity Paradox," and his newest, which we talk about today, "The Energy Paradox: What to Do When Your Get-Up-and-Go Has Got Up and Gone." And we go deep on the root causes of chronic low energy, chronic fatigue, and how to remedy these, and why short-term fixes like caffeine and sugar are not only not helpful, but extremely problematic long-term. We deep dive on the growing epidemic of insulin resistance in our country and around the world. And he gives some really practical advice for regaining your energy and having a constant supply of energy, not just one dependent on caffeine. As always with Dr. Gundry, it's a fascinating episode. I know that you will learn a lot, so let's jump in. Dr. Gundry, welcome back.

Dr. Gundry: Hey, thank you, Katie. Good to be back.

Katie: Well, I'm excited to chat again, because our first episode together, everyone absolutely loved and we got incredible feedback on. And you've done so much work in so many areas. I think your current area of research and your current book are even more applicable to my audience because this time you are tackling

energy and especially chronic low energy, which is certainly something I hear about from my audience, lots of moms, and certainly with things like newborns and raising children, and everything within the last year, this is an issue that many, many women and moms are working through. So, I am really excited to dive in and start broad and really get to some specific deep dive help. But to start off, just kind of walk us through the warning signs for chronic low energy and what we need to pay attention to right now if people are maybe in this area of low energy.

Dr. Gundry: Well, you know, I think it's funny that we have been kind of convinced, maybe from social media, that being tired, having fatigue, and not being able to do much of anything is normal. And part of our modern lifestyle, part of our stressors that we all go through, part of being a mom, and that we just have to, you know, suck it up or have another double espresso cappuccino, or have an energy bar, or have a power smoothie, and somehow just push through the day. And one of the things I found in my patients is that feeling tired is actually abnormal. And it's a warning sign that there's a whole lot wrong down in the engine room if you will, and it needs to get your attention.

Katie: Yeah, that's something that came up for me as well when I definitely struggled with fatigue and low energy for a lot of years, and especially when I had Hashimoto's and didn't know it yet. And that was a big frustration. I went to multiple doctors who told me, "Oh, that's just normal," especially for moms, especially after having a baby. "Oh, that's completely normal postpartum." And to your point, this is not only not normal, but it's a window into a potentially bigger problem. So, it seems like this is also something that has been on the rise even before everything that came with the past year. But why are we seeing this low energy crisis and why does it seem to be rising so sharply right now?

Dr. Gundry: Well, I think, number one, we can trace it back to several factors. One of the things I talked about in the book, "The Energy Paradox," that's fascinating to me, is a study that was done comparing the calorie expenditure, the energy production of the hunter-gatherers in Tanzania, who were called the Hadzas, and comparing them to office desk workers. And the study was designed to, kind of, show how much more calories and energy the Hadza produced there and used every day. The men walk 8 to 10 miles every day. The women walk three to five miles every day. They're lean. They're fit. They really have no chronic diseases. And then the researcher said, "Wow, it's gonna be obvious these guys, you know, use a lot more energy and they burn up all their calories. And that's why they're so lean." And imagine their shock when they found that the desk workers actually use the exact same amount of energy per day as these hunter-gatherers.

And when we do research, we have a hypothesis. And when we don't like what the data says, we make up something and say, "Well, it's obvious that we all use the same amount of energy no matter what." And that really struck me as very odd. And I go, "Well, why would a desk worker have the same, you know, energy expenditure as a hunter-gatherer? And it all comes down to inflammation. And we hear that word a lot. And we hear that word actually in COVID time because people with chronic diseases, pre-existing conditions, we now know is because of chronic inflammation. And chronic inflammation comes, in my humble opinion and others now, from leaky gut. And leaky gut is rampant in our culture because primarily the foods we eat and also because of our stress levels.

And any woman knows that a gut feeling is a very real thing. And many women in my practice in autoimmune diseases can relate to a stressful episode in their life. Whether it's a death of a loved one, or a divorce, or a birth of a child, that they can kind of pinpoint the day that their autoimmune disease started. And it was actually because of leaky gut. So, we're seeing now in COVID, a lot of people are eating for comfort. They're eating from boredom. And most of the time when we eat for comfort and boredom, we tend to snack on crap. We tend to eat Frankenfoods that are loaded with Frankenfats. And one of the best ways to produce leaky gut is to eat these foods, number one.

And number two, when we eat these foods, which have been designed to give our body a giant rush of simple sugars, simple proteins in the forms of amino acids and simple fats, the energy-producing organelles in all of our cells called the mitochondria, are slammed with basically rush hour traffic, in terms of processing these foods simultaneously, which they're not designed to do. And so, actually, our energy production grinds to a halt. And that's why you get this 2:00 in the afternoon slump where, you know, you just wanna take a nap or, unfortunately, reach for an energy bar or a coffee.

Katie: That makes complete sense. And that seems like a vicious cycle of, like, that gut thing that lead to low more low energies, then you crave more of those foods, and then that disrupts your sleep. And if we know if you don't...Even one night of inhibited sleep can lead to more cravings and hormone imbalance. And so it seemed like we're in this, kind of, just vicious cycle of that repeating over and over. And if anything, the last year has been a catalyst for many people for that to be...it seems even more so.

Dr. Gundry: Yeah, it's amazing. You know, we joke in my clinics about the COVID-19. And it's the COVID-19 pounds that people have put on in the last year. You know, there used to be the freshman 20 in college, but we've definitely got the COVID-19. And when we look at people's blood work, which we do every three months in the clinic, and I have continued to see patients throughout COVID, we see in a large number of even well-meaning people who are very, you know, committed to my program, that their insulin levels...Insulin is the hormone that handles the sugars and proteins that we eat and basically acts as a salesman to sell it to our mitochondria, to our muscles, to our brain. And insulin resistance is now rampant in this country.

About 80% of Americans have pre-diabetes, which is insulin resistance. And when I tell people that they're pre-diabetic, that's like telling a woman she's a little bit pregnant. And as you know, there's no such thing. So, we see that insulin resistance is going up during COVID. And that's because we've actually been slamming ourselves with all these simple sugars, and proteins, and fats. And our cells actually put up an active defense against being bombarded. And part of the book is unwittingly, we've all produced insulin resistance. We produce metabolic inflexibility by our current way of eating.

Katie: So, you mentioned, obviously, chronic inflammation being the common factor for a lot of these chronic diseases. Like, we learn more and more about leaky gut. Are these things that we can clinically test for or are these more symptom-based tests? How are you, kind of, quantifying these with your patients?

Dr. Gundry: So, great question. If you'd asked me probably 15 years ago what I thought about leaky gut, I probably would have told you it was pseudoscience. But thanks to the work of Dr. Fasano from Harvard and others, including my lab and my research, we now know that if you have an autoimmune disease, number one, you have leaky gut. If you have a chronic condition like diabetes, or heart disease, or arthritis, or high blood pressure, you have leaky gut. And we can measure leaky gut with some fairly sophisticated blood tests. But simplistically, and in the book, "The Energy Paradox," I show folks what to ask their doctors to measure. And a simple place to start is a test called C-reactive protein, sometimes abbreviated CRP. And I like to get the one that's hs-CRP, which stands for highly-sensitive or heart-specific CRP.

And the easy way to remember CRP is crap. And if you have an elevated CRP, and I go through a lot of patients in my practice who came in with an elevated CRP, one of the things that happens is you feel like crap. And CRP is a very easy way of determining whether your immune system, whether your white blood cells are activated, and they're involved in a war against the particles that are coming across your gut lining. And the really amazing thing is that when your CRP is elevated, you have no energy, you feel like crap. And when it all goes away, it's amazing. Number one, your CRP falls. And the second thing that happens is you go, "Wow, I forgot what feeling normal feels like." Like I say in the book, "Been down so long, everything looks like up to me," from the famous novel. But it is amazing how my patients, as their CRP falls and things normalize, they, you know, where did all this get up and go, you know, come from?

Katie: That makes sense. And you also talked about insulin and quoted, "I didn't realize it was that high," that statistic of how many people have insulin resistance and then now pre-diabetes or, in many cases, we know in the U.S. that diabetes rates are rising as well. Can you kind of just define, maybe clinically, what those different brackets look like for us? I know this is an area I've been just tracking myself because it's one that can be tracked at home, whether it's a finger prick meter or I've worn a continuous just for the data to see my own response to foods. And I know, for instance, my fasting blood sugar every morning is between 75 and 82, which I believe is a healthy...

Dr. Gundry: Which is great.

Katie: Can you, kind of, define what those brackets look like? Because I feel like this is a great test. I encourage people to get, I have them from pregnancy, but a finger stick meter, just to keep track of. This is data you can have at home that's a window into your metabolic health.

Dr. Gundry: Yeah, I'm actually far less interested in people's particularly fasting blood sugar. I'm more interested in their fasting insulin level. And in fact, I will tell anyone who's listening that if you were allowed only one blood test and one blood test alone to tell you your long-term fate, it would be a fasting insulin level. And that fasting insulin level should be well less than 10. If you're above 10, you have insulin resistance, you have pre-diabetes, no matter what your doctor says. Both Dr. Dale Bredesen and I, Dr. Bredesen, of course, wrote "The End of Alzheimer's" book and "The End of Alzheimer's Program." And both he and I think that your

fasting insulin levels should be under six. I run mine 2, my wife runs hers at less than 1, I hate her. I can't catch her. But lower is absolutely better. And so, you can get this in any doctor's office, half the doctors will look at you strange and say, "What's that?" I have third-year family practice residents rotate through my clinic. That's their last year before we're going out into practice. And unfortunately, none of them have ever heard of a fasting insulin level when they come into my clinic. So, don't go and expect your doctor to know what it is.

Katie: Yeah, I think mine kind of hovers between 1 and 2 as well. How does that relate to, is it Hb1A1c?

Dr. Gundry: Yeah, hemoglobin A1c. So hemoglobin A1c basically gives you an idea of how much sugar and protein that you're handling for the two months prior to the test looking backwards in time on average. The problem with hemoglobin A1c if it's elevated, and elevated is above 5.6, then by definition, you have pre-diabetes. If it's 6 or above, by definition, for most of us you have diabetes. But one of the sad things about hemoglobin A1c, particularly for women, particularly for menstruating women, is that many women, during their childbearing years are mildly anemic. And hemoglobin A1c as the name implies, hemoglobin is part of that word. And so if you have slight anemia, your hemoglobin A1c will often be in the normal range, even though you have an elevated insulin and even though you may have an elevated fasting glucose. So, it's not as useful to test as many people think, particularly, in, you know, women before menopause.

The other thing that I've noticed in all my patients, even men, I can have men who have an absolutely normal hemoglobin A1c but they have, you know, a big gut, they have a very elevated insulin level, and yet their hemoglobin A1c is normal, and their doctors tell them, "Hey, you don't have any evidence of diabetes, pre-diabetes, you're great." And yet, here they are with all the markers of metabolic syndrome, high blood pressure, high cholesterol, high triglycerides, you know, hypertension, and their hemoglobin A1c is normal and their doc's going, "No, you don't have any diabetes, no evidence of it." And then we get their insulin level and it's 25. And we go, "Whoa, of course, you do."

Katie: Wow. Okay. What about the adrenal connection, because that's another word that gets brought up a lot, especially if we're talking about low energy people or fatigue. That word, adrenal fatigue is often brought in. And I know this seems like a relatively controversial topic, especially in the actual clinical data and in the research of what we're seeing. So, what do you think on the whole adrenal equation?

Dr. Gundry: Well, I think, number one, I measure fasting cortisol, you know, in all of my patients. And while I do occasionally see low cortisol levels in patients, usually who have been on steroid drugs for one reason or another, and occasionally, I do see high cortisol levels, 95% of my patients who are complaining of adrenal fatigue or, conversely, hypercortisolemia have absolutely normal cortisol levels. And what I talk about in the book, "The Energy Paradox," is just like we know that insulin resistance, you know, underlies most of our metabolic problem, what people don't know is that there's actually adrenal resistance, adrenal steroid hormone resistance. And that is, the cells are not getting the message from the adrenal glands, even though all the adrenal hormones are completely normal or can be even elevated.

We used to think, as an example, that diabetics, they didn't make enough insulin and that was the problem. And when we gave them more insulin, lo and behold, their blood sugar went down. We now realize that the vast majority of type 2 diabetics make far too much insulin, but their cells are insulin resistant. So what I see in my clinic is not adrenal fatigue, not adrenal hypersecretion but the cells themselves are resistant to the effect of adrenal hormones. Now, a lot of that actually has come from glyphosate, which is the active ingredient in Roundup. And interesting data, particularly in rats, but hey, that's okay, we're very close to a rat. And, you know, if you wanna call your husband a rat, I'll back you because we share about 90% of our genes with rats. But glyphosate actually blocks the effect of adrenal hormones.

And so, glyphosate now is in everything. We used to think that glyphosate was just in GMO foods like soybeans, but now Roundup is sprayed as a desiccant on normal crops, on conventional crops. It's sprayed on almost all wheat, almost all corn, almost all oats, almost all soybeans, almost all flax seeds, and canolas, at least in this country, and it goes into our cereals and it goes into our animals. So most of us are just absolutely awash in glyphosate. And so, one of the reasons that we have adrenal fatigue is not the problem with our adrenals. It's for the receptors on our cells being blocked, just like insulin resistance.

Katie: Okay. Got it. That makes sense. You also use the word metabolically flexible. And I'm a big fan of this as well. Like, for a long time, I've heard a lot of different approaches until now I definitely figured out what seems to work best for my body. But one thing I had to learn the hard way was my tendency naturally is I want to get into a very regimented system so I can just follow it. And what I've realized over time is actually what the goal with our bodies should be is to be adaptable and metabolically flexible so that we can handle, kind of, whatever we need to, from an activity level, from a food level when we have to. But can you walk us through what you mean by metabolically flexible and how we can get from this, kind of, chronic low energy state to this state of energy and being metabolically flexible and adaptable?

Dr. Gundry: Sure. Normally, our mitochondria...which, again, are the ATP-producing organelles in almost all of our cells, and some of our cells have thousands of these little mitochondria to produce energy. Normally, our mitochondria can take the energy from carbohydrates, from sugar, and convert them into ATP. They can also take the energy from proteins, from amino acids, and convert them into ATP. And they can also use free fatty acids and convert them into ATP. The process involves a slightly different set of, if you will, enzymes to accomplish. And a mitochondria, if it's working properly, can virtually switch on a dime from using glucose to make energy to using free fatty acids to make energy. And in the day and night, in a normal 24-hour cycle, we would normally use sugar as our primary fuel glucose until we stop eating. And then after about eight hours or so, most of our sugar resources in our body in the form of stored glycogen would be used up and we'd flip a switch much like a hybrid car, then we'd start burning free fatty acids as a fuel. And that switch can be literally instantaneous.

But what's happened to almost all of us now is that our mitochondria have been so literally overloaded 16 hours a day with primarily simple sugars from our ultra-processed foods that they're pretty much stuck in a glucose-burning mode, number one. Number two, even if they wanted to switch over to burning fat as a fuel, a high insulin level, which chronically 80% of us have, prevents us from actually getting to all that wonderful fat that we've stored. So, a high insulin level actually prevents an enzyme from releasing fat from our fat cells

called hormone-sensitive lipase. And there won't be a test but guess what hormone-sensitive lipase hormone is sensitive to? It's insulin. And so that's why I see so many of my patients when we first start working with them when we try to have them do time-controlled eating where we lessen the amount of time that they eat during the day, they tend to fall flat on their face because their high insulin level won't allow them to actually go release free fatty acids as an alternative fuel. And the book, "The Energy Paradox" shows people in a six weeks program, how to gradually retrain your cells to release fat as a fuel and to drop your insulin levels so that you can go get all that fat you stored and use it.

Katie: Yeah, that definitely is appealing, the idea of being able to burn stored fat. What other changes from a food and gut perspective...? I wanna go some other directions as well but any other changes from a food and gut perspective that you encourage? I know you go deep in the book, but just high-level anything else?

Dr. Gundry: Yeah, high level...The other thing that's happened to us in Western society is we have a diet that's pretty much devoid of prebiotic fiber. And the exciting revelation in the book is that most people have heard of probiotics, those are friendly bacteria that people think about in yogurt or kombucha. There are prebiotics, which are the fibers that we can't digest, but our gut bugs, our microbiome, has to eat to, number one, grow, but number two, when we give our probiotics prebiotics to eat, they make compounds that are now called postbiotics. So, we got probiotics, prebiotics, and now postbiotics. And postbiotics are just probably the most exciting new finding in the gut that we know about. These are short-chain fatty acids, like acetate and butyrate, and gases, like hydrogen gas, like hydrogen sulfide that actually turbocharge mitochondrial energy production.

And this is such exciting work that it's actually a language where the gut microbiome talks to mitochondria to make energy. And in the absence of this language, the mitochondria actually cut back on energy production. So, just by eating more prebiotic fiber and there's great places to get it, the inulin-containing foods, like the chicory family of vegetables, radicchio, Belgian endive, chicory, asparagus is a great source of prebiotic fiber. Any other resistant starches like the tubers, like yams and sweet potatoes, for instance, jicama is another great example, it's supercharging your mitochondrial energy production.

Katie: That's really cool. I think people are familiar certainly with probiotics and now more so prebiotics. But I think that idea of postbiotics is a somewhat new one. When it comes to food, another topic I know that you address in the book is, kind of, fasting at a high level, and which I know is a controversial topic in general, especially for women, but also how to get the benefits of fasting even without actually fasting. Can you talk about that a little bit?

Dr. Gundry: Yeah, fasting, particularly for women, the idea that we need to go on fast the lasts several days is, quite frankly, in our culture, a pretty dumb idea. And it's a dumb idea because we store almost all of our organopesticides and heavy metals in our fat cells, believe it or not, just like a tuna or a swordfish does. And those tuna with toxic levels of mercury are, you know, 1,000-pound creatures that are pretty good at swimming. And you go, "Wow, you know, they got toxic levels of mercury. How come they're so strong and big?" Well, it's because, just like us, their heavy metals are in their fat cells. When we go on a fast, we release

heavy metals from our fat cells and also all the organopesticides. Now, our liver has no ability to detox heavy metals. None. So the liver filters out the heavy metals and dumps them into our bile. And the bile goes into our gut. And we're dumb enough to reabsorb those heavy metals out of our gut. So it actually creates a vicious cycle.

I first learned about this many years ago from Dr. Ray Wolford, who is a pathologist on the doomed Biosphere 2 experiment in the Arizona desert, where people were supposed to act like they were on a mission to Mars and grow their own food in a geodesic dome. And after six months, people had lost over a third of their body weight and they actually had to start trucking in food. But Ray Wolford studied heavy metals in these people and found that their heavy metal levels during this starvation, if you will, went sky-high in their blood and didn't come down for over a year because of this. So, that's one good reason why fasting is not a great idea.

Now, on the other hand, time-controlled eating is a totally different way of eating. Work by Satchi Panda from the Salk Institute in San Diego and others have shown that the average American, particularly now during COVID, eats up to 16 hours every day intermittently throughout the day, literally from the time you wake up to the time you go to bed. And so the vast majority Americans only are not eating for about eight hours a day. And his work showed that if we could get people to eat 12 hours a day, instead of 16 hours a day, it would actually make a huge difference in not only their energy levels but also in their weight. But we can go farther than that.

My work and others, Dale Bredesen's work has shown that if we can get people towards a six to eight-hour eating window...Now eating window means the time you start eating after, you know, fasting "break-fast" as I call it in the book, to the time you stop eating in the afternoon or evening is an eating window. And if we can get that eating window to six to eight hours a day, all sorts of great things happen. Your insulin resistance goes away. Your weight normalizes. You don't have to change what you're eating. You just have to compress that window a bit. Now, that's easier said than done. And "The Energy Paradox" teaches people how to get there in a step-by-step fashion, rather than overnight trying it.

Katie: Got it. Okay. You also talk about something called exercise snacking. Can you define what that is and how to use it to our advantage?

Dr. Gundry: One of the interesting things, everybody knows you're supposed to exercise and that exercise is good for you, and it's true. We now know that there's a whole set of hormones that are produced in our muscles when we exercise called myokines. And myokines not only stimulate mitochondria to produce more energy, they also stimulate mitochondria to make more of themselves and have turbocharging mitochondria, but they also produce BDNF, brain-derived neurotrophic factor, which actually builds brain cells. And just as an aside, women should know that women, sadly, are far more susceptible to Alzheimer's than men. It seems like that shouldn't be. You guys are clearly the smarter and stronger sex but women get far more Alzheimer's than men. And studies in exercising women show that women who exercise on a routine basis have an 80% less chance of getting Alzheimer's than women who don't exercise routinely, 80%. And if you develop Alzheimer's, you will develop it 11 years later than if you didn't exercise routinely.

So, the old idea that we gotta walk 10,000 steps was actually made up by a Japanese pedometer company to sell pedometers. There was absolutely no evidence that you have to walk that far to have a health benefit. Actually, it's probably 2,000 to 3,000 steps. But what's really great and the evidence that I show in "The Energy Paradox" is that you can break exercise intervals down to very tiny intervals, even a minute. For instance, walking up and down the stairs for a minute will give you almost the benefit of walking for 10 minutes on a level surface. You're watching TV, get down and do a plank or do a modified plank. One of my favorite examples of an exercise snack is twice a day, hopefully, we're all brushing our teeth. Well, you're not doing anything while you're brushing your teeth, so you can do deep knee bend squats. And there you have two minutes of squats every day. While you're watching TV, you can do jumping jacks for a minute.

The other exciting thing about exercise snacking is many times, particularly during COVID, we eat or we're hungry because we're bored. And if you use that cue to say, you know, "I think I'm actually bored." If you do a short burst of exercise, and I do mean short, one to two minutes, it will, number one, boost your mitochondrial health but number two, it will actually cut your hunger signals. And that's why I call it an exercise snack. And whenever you get that urge to snack, turn it into an exercise snack. And you'll notice that urge to snack on junk food goes away.

Katie: Yeah, I've had that experience to exercise or even often hydration. I feel like we're bored or thirsty or need to move rather than need to eat, right? It's at least worth trying those things first because they're gonna be beneficial either way.

This podcast is brought to you by Joovv Red light therapy. Red light therapy, also known as photobiomodulation, is gaining popularity and with good reason. Many people swear by it for skin health and to help slow the aging process, but research shows that it can benefit the body in many ways. In a recent episode of this podcast, one guest explained how dramatically light impacts the body, influencing everything from sleep to hormones and much more. He explained that some research shows that red light can help protect against damage from too much artificial blue light exposure or too much sun exposure. I noticed this as well. Red light does naturally occur at some times of the day too, which is another great reason to get outside first thing in the morning with your family or as the sun sets, but for those of us who can't make that a habit every day, at home red lights like Joovv are the solution and I have one in my bedroom at home. Learn more and lock in an exclusive Wellness Mama discount at joovv.com/wellnessmama.

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mineral rich toothpaste nourish your body from the outside in while you nourish it from the inside out, for amazing hair and teeth. Check it out at Wellnese.com.

Another thing I've talked a lot about on this podcast, and I know you talk about in the book, is the importance of light, and especially sunlight, and how this has an impact on our hormones, on our energy in so, so many ways, which makes sense. A lot of research indicating, essentially, it's a nutrient for our bodies, sunlight is. But walk us through how to use light to our advantage, especially when it comes to energy.

Dr. Gundry: Well, first of all, anyone here in Florida, I'm in California, anyone who lives in the Palm Springs area where one of my clinics is, we see a huge influx of people from the Pacific Northwest, Seattle, and Portland, and Vancouver come seeking sunlight during the winter because, quite frankly, there is none up there. And we are creatures of the sun. And really exciting research shows that sunlight actually activates melanin, that pigment in our skin, to produce ATP. And some of us, I think, are intrinsically aware that something happens to us when we're exposed to sun. But we now know that we actually produce ATP just like a plant does from sunlight, which is actually pretty doggone exciting research. The second thing is we really need sunlight to turn vitamin D into its active form. The third thing is that the red and yellow of sunlight, particularly early morning and late afternoon, actually activates a lot of feel-good hormones through receptors in our retina. And so, the more I can get people to enjoy early morning or later afternoon sunlight exposure to their eyes is great.

Now, at the same time, we are awash in what I like to call junk light, blue light, and green light. And green and blue light actually activates two things. It activates the hunger hormone ghrelin. It makes us hungry and it actually keeps us awake. And some of the last things we wanna do is be awake and hungry. This was actually well-designed during the summer. We would be designed because of the long links of daylight and the bright light to be hungry and to not sleep very much because that's when the food was growing and that's when the animals were fat. But in the winter, we'd be designed with longer length of darkness to not be hungry and to use up our fat stores. But now, many of us think that Edison was one of the causes of all modern diseases when he invented the electric light bulb. It's gotten crazy now because we're exposed to blue and green lighting almost 24 hours a day from our own devices, from our TV screens, from our cell phones, from our iPads. And that blue light actually works against our sleep, against our satiety. And the more we can filter out that light, particularly when we come home, whether we use blue-blocking glasses, whether we change our screens to have nighttime modes, all of these things make a big difference in the end.

Katie: Yeah, I talk about this a lot. I don't think until you try it you can realize just how profound of an effect light can have on so many things, especially energy levels. And that morning sunshine is a regular habit for me of getting outside as soon as possible after waking up, which starts that whole hormone cascade, and it really does improve sleep. Like, it's a noticeable change when you do that regularly. You also mentioned that sunlight turns vitamin D into its active form. And I think this is an important point. I'd love for you to elaborate a little bit because I think a lot of people have a fear of sunlight and they think they can just take vitamin D and get all the same benefits. So, explain that a little bit more.

Dr. Gundry: Yeah, I am a huge fan of vitamin D supplementation because even in Southern California, 80% of my patients are vitamin D deficient when they walk into my clinic. And vitamin D has profound effects on, again, helping us to deal with COVID-19 just for one thing. But we need sunlight to actually activate vitamin D activity. And, you know, even in cold climates, and, you know, I grew up and spent, you know, half of my life in the great cold north in Omaha, in Milwaukee, and Ann Arbor, Michigan. So, interestingly enough, you can get out and enjoy sunlight and sunbathe. During the winter, it was not unusual for us to go wash our cars in a T-shirt and shorts at 36 degrees. Plus, believe it or not, that cold exposure actually supercharges your mitochondria. So, go out there, come on, get 20 minutes. You won't freeze to death, I promise.

Katie: Let's go a little bit deeper on that. Because I feel like this is a definite resistance point, especially for women quite often is that cold and how it's beneficial, as well. We actually have a cold plunge at our house now because I've seen the benefits. But why is the cold beneficial? What is it doing to our bodies?

Dr. Gundry: That's a great question. I recently had Wim Hof on my podcast talking about that. A cold exposure actually activates a hormetic response in our mitochondria. And it actually turns on not only brown fat to make thermogenesis to actually make heat but there's very exciting research that we have three forms of fat in all of us. Brown fat, which is the fat that babies are born with, which actually generates heat. Then, there's white fat, that's the plain old fat that all of us have, which is a pretty nasty organ in and of itself. And then there's new research into what's called beige fat. And the exciting thing about cold plunge and cold exposure, and you can do this by just exposing yourself to 30 seconds to a minute of a cold shower at the end of your shower, will actually start converting white fat into beige fat. And the more you activate beige fat, here's the great news, the more it will actually burn extra calories as heat. It's almost like, you know, a freeway of burning up extra calories that all of us, you know, wanna eat or all of us have stored.

So, just the mere exposure to cold even for brief periods of time will activate this response. The same thing my research as a heart surgeon looked into what's called heat shock proteins, which, as the name implies, exposure to sauna or heat will actually do the exact same thing by a hormetic effect on revving up our mitochondria to actually produce more energy and to dissipate energy. So, these are easy tricks that anybody can do. And I talk about it in the book.

Katie: Absolutely. I know sauna isn't available to everyone everywhere but it is one thing when I look at the data, I think, you know, if it were a pill, everyone would take it because the effects are so profound. And the more we learn about sauna, the even more beneficial it seems, certainly within the right dose in the right ranges.

Dr. Gundry: Yeah, and the other thing I talk about in the book is, you know, even if you do not have sunlight exposure, and big cities are a perfect example of this, it's pretty easy now to get red light therapy boxes. They're fairly cheap. And near-infrared and red light therapy, even if you shine it on your skin, on your abdomen, or into your eyes can have a profound effect on your mitochondrial function. And, again, it's an

exciting trick that's becoming available to the mass market as these things get more out there. I personally have two Joovv devices that I use. And I'm not a paid spokesman for them. So, they're good devices.

Katie: Yeah, and I think that's a recurring theme that you do so well through this book is that when it comes to energy, like, often it's people try to default to things that give a direct, maybe what feels like energy, whether it's caffeine or food or sugar. But those are not just short-lived, but also sometimes detrimental. Whereas for long-term energy and long-term health, we wanna focus on energy on that more cellular mitochondrial level. And when we look at it that way, that's when we can really tap into that more unlimited energy that isn't fleeting and isn't related to food cravings or lack of sleep. And I think you tie that in so, so well in this book. And I know we're getting close to the end of our time. I certainly encourage you guys to pick up a copy of the new book, "The Energy Paradox." It's available anywhere books are sold. But any other starting points that you would give people as just a point to jump in and start improving their energy levels right now?

Dr. Gundry: Well, I think, number one, one of my recurring themes throughout my books is the more I can get people to stop eating major lectin-containing foods, the better they're going to do. And those include the whole grains. I'm a big fan of beans if they're pressure cooked because they got great prebiotic fiber, but please, please, please try to stay away from beans and legumes if they're not pressure-cooked. And the great thing is now there's two companies that have pressure-cooked beans, not only Eden but also Jovial, like a happy person, jovial. And these are great ways to get the prebiotic fiber in beans without the nasty lectins in beans. And please, please, please don't eat peanuts and cashews. Please stay away from them. And this oat milk craze, number one, almost all oats in the United States, including the organic oats contain glyphosate. And oats contain a protein that looks virtually indistinguishable from gluten. And the vast majority of my patients who are gluten-sensitive are sensitive to oats. So please avoid the oat milk craze. Those are some simple steps.

Katie: Got it. And all the other things we've mentioned, I've been taking notes and recapping. All those notes will be in the show notes at wellnessmama.fm. So you guys can start there along with a link to the book and to our previous podcast, Dr. Gundry. So people can listen to that one as well, where you talked about a lot more deep dive on diet and also longevity, which you've written about. Again, highly encourage you guys to check out all Dr. Gundry's books. He is a wealth of knowledge. And, Dr. Gundry, thank you for your time today. It is always a pleasure to chat with you and to learn from you. I'm very grateful for your time.

Dr. Gundry: Well, Katie, thank you. And for your listeners, I just want everybody to understand that fatigue is not your fate and it's not normal.

Katie: Absolutely. I echo that 100%, and I hope that this has been really beneficial to you guys. I know I learned a lot. And as always, thank you for sharing your time, your energy, your most valuable resources with us today. 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.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.