How to Identify Your Energy Blockers and Beat Fatigue – Dr. Steven Gundry with Dave Asprey – #803

Announcer:

Bulletproof Radio, the State of High Performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today is going to be an episode with a friend and someone who's been really impactful in the world of medicine and in the world of understanding what's going on in our guts, in our bodies, a major voice in the world of talking about food toxins and what they do to us, and that not all foods do the same things to our bodies. He's also a cardiothoracic surgeon for more than two decades who really retired as a cardiologist to teach patients about food, how to get ahead of the problem, and what to do.

And spent 16 years studying the microbiome, and you've heard of him before because of a couple of his New York Times best-selling books, has been on the show three times already, and one of my favorite guests, just a leader in his field, none other than Dr. Gundry, author of The Plant Paradox and The Longevity Paradox. Dr. Gundry, you're coming back on the show to talk about your new book, The Energy Paradox, which I'm really excited about. Welcome.

Dr. Steven Gundry:

Well, I got my energy up for this one, Dave, and thanks for having me back.

Dave:

You've always been full of energy. Every time I've ever spoken with you on the show or off the show, you're bouncing with energy. And, how old are you?

Steven:

Just turned 70 this year, so I'm now in my seventh decade.

Dave:

Wow, you have the energy of a young person, so you're doing something right. You really do. The relentless curiosity and just excitement about what you do. We were talking before the show, you have a stack of books behind you, and I do as well, although mine are off camera. And we were talking about the Japanese art of Tsundoku, I think I said that right, and [crosstalk 00:01:51] this is the art of collecting books you're not going to read. And this happens because people send you all kinds of books. People send me all kinds of books, and I just want to say, I have stacks of books.

I have stacks of books that I want to read and haven't read yet. I have stacks of books that I want to read and I am reading, or have read, and then I have stacks of books that got sent to me that I'm probably not going to read. And your books are consistently in the stack of want to read, and have read, because you put a lot of good work in them. So thank you for writing books that are worth reading. I really think you move the needle on those, so thank you.

Steven:

Well, thank you for reading them. And I read yours, too, so there you go, mutual admiration society.

Dave:

Tell me why you wanted to write a book about energy?

Steven:

Well, believe it or not, I didn't want to write a book about energy, and it actually started, I was on my way to do a PBS, a public television promo special down in Orange County, California, one day, and I got a call on the speaker phone that said that this woman who was going to be the host wasn't going to make it in. And I said, "Oh, dear, something go on?" They said, "No, she's been feeling pretty low energy recently, and she just didn't have it in her to come to work today." And I went, "Wow." Well, we did the show, anyhow, and somebody filled in for her, but it really bothered me for a few days that somebody didn't have it in them to show up to work.

And as I thought about it I realized that, particularly when I started the practice that I do now, restorative medicine, over 20 years ago, a major diagnosis code that we would bill for was called fatigue and malaise. And about 50% of all the people I would initially see that code would be part of their diagnosis. So, thinking back on it, I'd always been an energy doctor, I just hadn't looked at it that way. And so, I said, "I need to write a book about this epidemic of fatigue, low energy, that most of us take for granted or we think that this is something because of our stressful existence or our hard work is just something underlying that we have to deal with or overcome." And it's absolutely not that case at all.

Dave:

I hope that some people listening, hearing that, felt a little bit of relaxation from it. I'm reminded, one of the early investors in Bulletproof, when they first invested, he wrote a piece for Median and he's a well-known venture capitalist named Dan, and he said, "After I realized that I could things about my energy," and this was in the context of the Bulletproof recommendations, and you and I agree on so many different things, but he said, "I sat down in my car at the end of the day about two months after starting to focus on my energy, and before I drove home I actually started crying because for the first time in my adult life I went through the day without crippling fatigue and I had never told my colleagues or anyone else that that was a part of my life."

And it resonated with me because one of the reasons that I created that name in Bulletproof: The State of High Performance, the subtext for that is, to know you have enough energy to handle whatever life brings your way, because I never had it. As a young guy, I remember, my career's on fire, I'm making money and doing all kinds of big things, but I am just like pedal to the metal and slowing down, and I can't push any harder, I don't know what to do, and it's feels unsafe when you don't have enough energy. And so you were seeing this in patients and you thought, "I've got to write a book about it." Give me the two sentence what's going on with this. Like, why are we low energy?

Steven:

There's two reasons, two major reasons. Number one, you and I now have been talking about leaky gut for so long but people are actually beginning to believe that there is such a thing. Quite frankly, if you had asked me maybe 15 years ago what I thought about leaky gut I would have told you it's pseudoscience, but now, I mean, thanks to really good tests that have been developed in science by Dr. Fasano and others, and certainly from my clinics, leaky gut underlies almost all diseases that you could name. It is the underlying cause, and Hippocrates was right, all disease begins in the gut.

And leaky gut produces inflammation, and quite frankly, inflammation requires huge amounts of energy. And I like to think about our immune system, 80% of which lines our gut, as are soldiers in a war, and soldiers, troops, need a lot of supplies and they burn a lot of supplies, a lot of energy up in producing inflammation. And that energy, or those supplies, are not available for the muscles that need

them, for the brain that needs them, and so it's being literally sucked from us. That's number one, and I'd love if we have the chance to talk about the famous heads of study versus desk workers.

But number two, and I think you and I both agree with this, my focus has been on mitochondrial function as has yours been, and mitochondria are really good at processing either sugars or proteins or fatty acids into ATP. And they're really good at processing one substance at a time, and in fact they use slightly different mechanisms to process any of the three of them, but our current diet which is, oh, 60 to 80% processed and all the processed foods. Our foods have been hyper soluble and hyper absorbable so that now, we have sugars, proteins and fats arriving instantaneously for processing in our mitochondrial, what I call, freeways.

And what we have, we've produced mitochondrial gridlock which never would have occurred in our grandparents' age when everybody ate whole foods. But now all of these foods are arriving simultaneously for processing and quite frankly the mitochondria are in rush hour literally 16 hours a day. And those of us in LA know 16-hour day rush hour, and nothing happens, nothing moves, tempers flare, fender benders happen. And our body has elegant ways to try and slow down this rush hour. And the book is about the methods that we put in place, inadvertently, to slow down this rush hour, and insulin resistance is actually one of the sad but effective ways of stopping rush hour. So, that's a nutshell.

Dave:

So, basically, our mitochondria aren't working very well because they're gridlocked and they're overfed with the wrong stuff, and that leads to inflammation. I like to say, look, if the energy goes into making muffin top, it didn't go into anything useful, including giving you energy. And, for me, understanding that I had massive amounts of both of those going on and I had huge leaky gut from 15 years of antibiotics and eating foods that weren't compatible with me, like kale, and being a vegan... Wish I hadn't done that, that this was at the crux of brain energy and when I could turn it back on, wow, there were many levels of performance and energy that I could have.

I'm 48 and I have way more energy than I had when I was 20. I mean, way more. And, it's been for me, though, a million dollar, multiple year road of hacking and doing all kinds of stuff to hone in on this. How did you hone in on it?

Steven:

Well, again, when I started this about 21 years ago, after seeing Big Ed who I talk about reverses coronary artery disease with food and some supplements that he bought at a health food store, I mean, reverse inoperable coronary artery disease. I mean, it makes it go away, and I've been taught and I teach that that's impossible and that's why I'm going to do a bypass on you. But when he did that, one my mentors said, "Look, there's nothing new to be learned, but research means look again." And he was right. So, when Big Ed presented me the opportunity to look again as a researcher all my life, I researched, and sure enough, what Big Ed had done was actually predictable if you bothered to look in that area.

So when I first started seeing patients, I saw a number of people. One of the most common markers of inflammation is called C-reactive protein, and it's abbreviated CRP. I call it crap because if your CRP is elevated, quite frankly you will feel like crap. At that time I didn't know really much about the leaky gut or that gut... I'm a heart surgeon, for goodness' sake, I'm a cardiologist. So I would say, "Okay, what causes elevated CRP? Well, in a woman, maybe, it's a urinary tract infection. In a man maybe it's dental hygiene, maybe he got some deep pockets. A cold will do it, the flu will do it." So I'd do

a lot of workups for people looking for these obvious reasons, and in so many people there was no obvious reason.

And so then, because of my background in intra-transplant immunology I started looking at autoimmune disease markers, not a thing heart surgeons usually do, and lo and behold, about 50% of these people with elevated C-reactive proteins had undiagnosed autoimmune diseases that were... being able to pick up and that actually led me into The Plant Paradox. But, getting back to CRP, another 50% of these people didn't have an autoimmune disease, and when sophisticated, good leaky gut tests came out and we started utilizing them, lo and behold, all these people with an elevated CRP had markers of leaky gut and food sensitivities.

And strangely enough, when we took these foods out of their diet, and when we reinforced the gut wall with simple things like Vitamin D3, lo and behold, their C-reactive proteins came down to normal and coinciding with that, their fatigue and energy went through the roof. Many times they didn't come in complaining about that. Let me give you another example. As a heart transplant surgeon and as a kidney transplant surgeon, we would see people who, through the years, their heart was clearly not functioning well, and they'd had gotten used to it, very much like you got used to being a high-action individual yet was dragging constantly. You just blew through it.

So, when we put a new heart or a new kidney into these people, within a day, 48 hours, they'd go, "Oh, my gosh, I forgot what feeling normal felt like. I've been down so long, everything looks like up to me," as I talk about in the book. And the same thing happened with these people, with these elevated markers of inflammation. When that inflammation subsided, they went, "Oh, my gosh. I forgot what feeling normal feels like. This feels great. Is that what it feels like?"

Dave:

It's amazing, looks like someone turned the lights back on.

Steven:

Yeah. It really is. And the same thing happens in our brain, as you well know. This inflammation, when you have leaky gut, quite frankly, you have leaky brain, and your brain becomes on high alert and there is now beautiful ways to measure neuroinflammation. And so, this brain fog that now I see in, I mean, in millennials, and people in their 20s, going, "It's not working up there." Yeah, I see that in 80-year-olds and you go, "Yeah, yeah, okay, things aren't as good as they should be." But at a 25-year-old? There's something radically wrong.

Dave:

That was me. I had massive word loss. I couldn't remember words, I couldn't remember anything in meetings, and I bought disability insurance. I'm like, "I don't know what's wrong." The doctors are saying I'm fine, but I don't trust my brain anymore. And as an entrepreneur who makes my living with my brain, like, I don't know if I'm going to be able to keep making a living because I wouldn't hire me. And that's scary when you're 25. I mean, it's really scary. And I think it's happening all over the place. And just like you're predicting, on my path, like, "Oh, look I do have these crazy inflammation markers." And the two things that I look to go down when people go on any diet that works, whether it's Plant Paradox, Bulletproof Diet, paleo, whatever's working for them, they should see that they're losing weight and their energy goes up.

And if it doesn't, you pull the labs and you see C-reactive protein and homocysteine, the other big marker of inflammation and different causes for those two things. But then you start looking at the root cause of those and you do whatever it takes to get rid of a chronic infection, get rid of the leaky gut,

and the C-reactive protein goes down and the homocysteine goes down, magically the lights come back on and then they need new pants. But the new pants are a side effect of the lights coming on. And with new pants, smaller pants, not fatter pants, just to be really clear. Are there other markers like maybe Lp-PLA2? Are there other things that you pay attention to, or are those the big two?

Steven:

Oh, sure, Lp-PLA2 is actually... I've written a couple of papers about Lp-PLA2. It's actually a tractor beam that pulls cholesterol into the endothelium, and I tell people it's literally a Star Wars tractor beam. I showed years ago that modifying your diet, adding polyphenols, like grape seed extract and pycnogenol and fish oil, dramatically makes PLA2 go down and then, thanks to my patients, when it went down, a lot of them would say, "Well, I don't need those any more, and I stopped them." And then, up comes Lp-PLA2 again, and I go, "Well, what happened?" They say, "Oh, I didn't need those anymore because it's fine." And I say, "Tell you what. Go back on those and let's check in about two months." And sure enough, went down again.

Dave:

I have been on pycnogenol and grape seed extract for 25 years. When I was much younger I would get these nosebleeds and they're tied with toxic mold exposure and some certain genetic stuff, but it's really annoying to be just walking around and your nose starts bleeding. And for me, that was the first thing, like, "Wow, if I take these things, after a little while, my symptoms get better and then that stops happening." And I don't have to take them all the time because I'm in a healthy situation where if I stop taking them for a day or two it doesn't matter.

But when I was 20, if I didn't take those every single day, my symptoms would come back the next day, and it was such a big thing. I was living in a house with toxic mold and I had leaky gut, and all kinds of stuff that I was doing wrong because I didn't know any better. But I love it that you're mentioning those because these are simple interventions, getting some polyphenols in, some fish oil, it's not that hard, it's not that expensive, and it's something that changes your energy, not just how you look or some lab panel. It's that you woke up in the morning and you didn't feel hung over.

Steven:

Yeah. And that's a good point that I bring up in The Energy Paradox. I see so many people, particularly women, who have had the complete workup in their doctor's office and their doctor finally says, "Everything's normal. It's all in your head, these feelings." And they come and I do a different panel, and I go, "You know, I've got to agree with your doctor. It's all in your head." And they go, "What?" And I say, "Yeah, we can actually see the inflammation in your head. You're not making this up. Yeah, it's there." And when it goes away, that's what's really remarkable.

Dave:

It's really offensive as a patient when you go in and they say, "Here's some Wellbutrin. It's in your head." Like, no, it's a hardware problem. It has to be. I was of the opinion that it was because I wasn't trying hard enough. I'm just not pushing hard enough. And that leads you to burn the candle at both ends which turns up inflammation in our immunity, like too much stress that you put on yourself makes you more susceptible to getting Hashimoto's and all these other things. So it is a paradox there, where, as you put in the title of your book, "Okay, so you're going to push harder, and, oh, it is a brain problem." And there are other aspects of it being a paradox, though, so what are the other parts of it that are paradoxical that people don't see?

Steven:

Well, something I alluded to when we first started, and you mentioned it. We literally are overfed and underpowered. We've been told, and you see it on commercials every day, that you need this energy drink or you need a 30 gram protein drink to get your energy up to take on the day. We are overwhelmed with these energy sources, refined energy sources that in fact don't get converted into energy. They literally clog the fuel line and that's our big paradox. We are overfed and underpowered.

Dave:

Yeah, you can put more food in but if you can't use the food, you're underpowered and that's mitochondria in a nutshell. They're good at sucking the food in, you're not going to have high blood sugar, you're not even going to have high blood ketones because you use those, too. And it seems like it's missing in a lot of the world out there. I've had a lot of benefits. I started doing continuous glucose monitoring about four or five years ago, and more recently with levels. Levels Health has their new app that does continuous glucose monitoring, and it's fascinating.

You're fasting and saying, "Oh, I just felt a little bit of hunger," and you look, and your blood sugar is 105. You have plenty of energy in there. The body's just telling you to eat even though it's not time to eat yet, based on data. And then the data lets me retune, like, "Oh, wait, maybe that was a craving and not hunger." Talk to me about cravings versus hunger. What's going on in there?

Steven:

Yeah, I think that's a great way to look at this. First of all, we're, as you and I know, we're not designed to eat breakfast, or break our fast. We actually have an elegant design not to eat breakfast. About four o'clock in the morning our cortisol levels start to rise, our norepinephrine, epinephrine levels start to rise that pumps blood sugar up in anticipation that we're going to start day activities without the need for a fuel source. And one of the things I just [inaudible] with my insulin resistant, diabetic, pre-diabetic patients which are 80% of anybody, is measuring your morning blood sugar. And it's like, it's designed to be elevated a little bit. And if you look at the Hadzas, one of the last hunter-gatherers in Tanzania, they don't eat breakfast, they don't eat until ten or eleven o'clock, and it's just a little munch of something.

I mean, as I tell my patients, you really think we crawled out of our cave and said, "What's for breakfast?" There wasn't any breakfast. We had to find it and break fast was when we found food. We were designed elegantly to go for a considerable period of time without eating. And, interestingly enough, fun fact, having been a professor at Loma Linda University Medical School for many, many years and have been in this institution, Kellogg's Corn Flakes was the first predigested meal. It was actually advertised as the first meal that was completely predigested so that it would be instantly available for energy. And, boy, was that a bad fork in the road.

Dave:

It was a bad fork in the road, and there was also the idea that it was meant to lower libido.

Steven:

Yeah. That's true.

Dave:

And a lot of people don't know that history. Graham crackers and Kellogg's Corn Flakes, were, "Oh, sexual desire is bad for people, therefore, here's some food that will turn that off." And like, "I wonder what else might happen if we turn it off?"

Steven:

Well, you know, and it's interesting, as I write in the book, I have actually never met a man who I could not get to have a normal testosterone by changing these ultra-processed sugary foods and get them out of his diet. The guys who have low testosterone have elevated insulin levels and they're eating a lot of sugar. They're eating a lot of fruit which is, unfortunately, now bred for sugar content. And they have low testosterone. There's no doubt about it.

And then when we take those things away from them, within three months, their testosterones, their free testosterones are now normal, and they go, "Where did that come from?" So, maybe the Kellogg's brothers were right, that if you want to lower testosterone, you should eat these healthy foods.

Dave:

It seems to make sense to me. I do know that if you have low thyroid or you're living with estrogen around you, say, toxic mold, or xenoestrogens, things like that, it's hard to get it up. Or if you're obese. I know when I was 26 I had less testosterone than my mom, and I wasn't eating a lot of processed foods, but there were definitely some things going on there.

So I am not opposed to testosterone supplementation, and I find I can get mine up to low normal if I'm very careful with sleep and I don't eat junk food and all that kind of stuff, and I eat enough saturated fats and all, but I still supplement testosterone because I want to keep my levels to kind of slightly above average for a 30-year-old, and I'm 48. What's your take on testosterone supplementation? I mean, you're 70. You don't take any testosterone?

Steven:

No. And I can tell you that nobody in the blue zone supplements with testosterone, and they seem to do pretty good at 100. And I would chase some of these 100-year-olds up hills and 80-year-old and I can't keep up with them. I think, and I write about that in the book. Now, do I think that some people need supplementation? Yes, I do use supplements in my patients, but it's actually few and far between. There are about 5% of women in my practice that are clearly estrogen dependent for brain function, for prevention of just incapacitating hot flushes, and these tiny bits of topical bioidentical estrogen will flip the switch.

The other area where there is some use for testosterone in women, about 15% of women in my practice will respond to testosterone with an increased sex drive, but I live in two cities, they're epicenters of Doctor Feelgoods, Palm Springs and Santa Barbara. And I can tell you that I see women who are shaving their arms and shaving their beard with testosterones higher than men to try and give them a sex drive. And if a little bit doesn't turn on the sex drive, 500 testosterones is definitely not going to turn on sex drive.

Dave:

I am with you there. Just because something is good it doesn't mean more is better. And that can be true... Or even of fasting. You can overfast and things like that, as well.

Steven:

Oh, yeah.

Dave:

You get cortisol from over fasting, then your testosterone is going to drop as well. One of the things that actually made me happy in the Energy Paradox is you say, adrenal fatigue is not the cause. And I'm very interested in your thoughts on this. I've been diagnosed with extreme adrenal fatigue. I think it's mean to tell people have low adrenals, that they can't have a cup of coffee in the morning to help their cortisol go up when it should. In fact, if you want to feel like crap all day, have this low adrenal function, and no ability to turn your energy on. What's going on with adrenals versus mitochondria?

Steven:

Yeah, I look at fasting cortisol levels in all my patients when they walk through the door, and I hate to have kind of this dichotomy of patients. A lot of them say, "Oh, yeah, I have no adrenal function. I have low adrenals. I have adrenal fatigue." And the other half say, "I have hyper cortisol. I have high cortisol levels, and that's why I can't lose weight. That's why I can't sleep." In fact, I would say that maybe 1% of my patients actually have adrenal fatigue that I can measure and do something about, and maybe 5% of my patients have hyper cortisol levels that, quite frankly, is an easy fix that I talk about in The Energy Paradox.

So, what's going on with everybody else? I think just like we understand now insulin resistance, that you can have... Insulin should be capable of transporting glucose and proteins into cells, including the brain, but when you have insulin resistance you have higher and higher levels of insulin but it's not getting into the cells. And the reason for that I talk about in The Energy Paradox. That doesn't mean your pancreas is fatigued, or that your pancreas is not working. In fact, 99% of my type 2 diabetics make too much insulin. Their pancreas is working overtime. So their pancreas isn't worn out like we used to think. And it's the same thing with adrenals fatigue.

We develop adrenal resistance, and one of the interesting drivers of adrenal resistance is glyphosate, Roundup. And glyphosate absolutely makes your mitochondria unreceptive to the actions of the adrenal hormones. And so, it's not, in most of my patients, that the adrenals are having a problem. It's that the cells are listening to that message is being blocked, very much like insulin.

Dave:

And that is not common knowledge, whatsoever, especially the link with glyphosate. Did you see that $10 billion settlement for the cancer claims? Against Monsanto? [crosstalk 00:31:19] So that's just the first of many coming because we can have a whole nother lawsuit about adrenal resistance in the world, so there's endless claims and all of them are going to be lawsuits. So, sorry, Bayer, you guys are in trouble.

Steven:

Yeah, and as I talk about with the seven deadly energy disruptors, glyphosate is number two on the list, right behind broad-spectrum antibiotics. I mean, this is an antibiotic against the world, and most people don't know that glyphosate was patented as an antibiotic initially [crosstalk 00:31:54]

Dave:

Yeah, it destroys the soil, soil bacteria for that reason, right?

Steven:

Yeah. It's really good for that. It's destroyed our soil bacteria. I talk about our soil in our gut, and glyphosate, by itself, number one, changes our microbiome, kills bacteria. And number two, without any help from anything else, is a leaky gut promoter. It will break tight junctions. And it's everywhere. People keep thinking that this is only used in GMO foods, but as you and I know, it's now sprayed on almost all conventional grain crops, all conventional soybean crops, most conventional canola crops, and it's not washed off and it's in all of our kids' foods, it's in most of our foods. It's even in California wine, for God's sake. Even the organic wine.

In fact, I'm good friends with several biodynamic wine growers in Santa Barbara County, and one of them has a particular vineyard that he cannot certify because the vineyard next to him sprays with glyphosate, and it drifts, and he can measure it, and he says, "You know, I can't stop my neighbor from doing this."

Dave:

It is at some point in our lifetimes, it is going to be just... We're going to look back and say, we just committed an atrocity against the planet that's going to take 100 years to recover from, because of what it's doing to the soil and the animals. There is emerging thoughts that there's this really big thiamine deficiency, even in wild animals, that's probably tied with glyphosate, because it's changing the bacterial makeup of the planet. So we've got to get us up to it, but if you're looking at this from, "Okay, screw the planet, I'm just going to be myself," which doesn't work very well, by the way, but if that's where your mind is, look, broad-spectrum antibiotics, like the ones I took for 15 years for chronic sinus infections and strep, that was not good, but-

Steven:

And so did I.

Dave:

... so we know that feeling. And, the exposure. I actually lived in a farming area, as a teenager, of California, the Central Valley where they have airplanes spraying the stuff, you know, God knows. So you look at all that and say, "Okay, if those are two things that suck energy and you feel bad, well, every grain you're eating right now in order to make it ripen more quickly, they spray it with poison so the plant goes, 'Oh, I'm dying, I may as well put my last dying gasp into my seeds,' and then they feed it to you, and it ruins your gut bacteria and just causes this adrenal resistance we're talking about." So, those are two, and those are both things that are fixable. Don't take antibiotics, unless they're absolutely necessary, and if so, recover afterwards-

Steven:

Yeah, that's [inaudible 00:34:48]

Dave:

Yeah. And then don't touch anything that was treated with glyphosate. And the big food companies, if it doesn't say organic, I'm not buying it. And they will change. And they will change rapidly. They're already changing. You can buy grass-fed yogurt you couldn't buy 10 years ago, because we wanted it to be grass-fed. If you spray glyphosate on grass it doesn't work anymore. It dies, and you can't feed it to animals, so

it's kind of self-regulating there. Okay, so those are two. What are the other five of the seven big energy disruptors you talk about?

Steven:

Well, I think, you've already touched on another one, the environmental pollutants that are everywhere, the estrogen disruptors, and I spend a lot of time in The Plant Paradox talking about that. I think one of the things that really needs to come forward, and I get a lot of pushback against this, is fructose. And fructose... In my first book, Dr. Gundry's Diet Evolution, one of my sayings was, "Give fruit the boot." And everybody goes, "What?"

Dave:

Fruit and veg, they are the same thing. Oh, wait.

Steven:

Yeah, they are the same thing. No, they're not. And most of the vegetables people think they're eating are actually fruit, they're not vegetables at all. But fructose, and I spend a lot of time about this in The Energy Paradox, fructose is a very funny sugar. It's absorbed directly from our intestines, not into our blood stream, but makes a beeline directly into our liver via the portal vein. And there, it actually stops ATP production. It blunts ADP from turning into ATP. And instead is actually converted into fat and uric acids. So, triglycerides come from fructose, and uric acid, which causes gout and kidney stones and high blood pressure, is the second product.

So anybody who's got an elevated uric acid or an elevated triglyceride, you can thank fructose for that. So fructose is made into a fatty acid called palmitate, and same fatty acid that's named from palm oil, but palmitate is used by cells to make a waxy substance called ceramides. Now, some women have heard of ceramides because it plumps up their skin and makes them lose wrinkles. Ceramides are used by fat cells to keep the cells from bursting. You can only pump so much fat into a cell before it explodes, and you and I know what happens when cells explode. It's a bad thing.

So, we actually use palmitate to make ceramides to toughen up fat cells, and it's the ceramides that actually prevent insulin from doing its job. So, unwittingly, in our effort to have a fruit smoothie before we go to the gym, or have an apple that's now the size of a grapefruit that has a name like Honeycrisp, we have produced fatty liver disease. We've produced heart disease, and we've stopped our energy production all in the name of healthy eating. [crosstalk 00:38:05]

Dave:

You always make me happy when we're talking. I'm like, "God, you connect pieces." I remember back when I was saying, "Well, I have prediabetes, and I'm not quite 30," so I looked at what the American Diabetes Association, which is the largest lobbying group to cause diabetes as far as I can tell, was saying, and they said-

Steven:

I would agree with you.

Dave:

... Oh, thank you. So, "Eat fructose because it doesn't raise your blood sugar the way glucose does." So I bought a tub of fructose and I eat it, and I'm like, "Man, I feel like crap when I eat this." And I found I

was like, "I just don't want to. I'm not going to do it." But here's a question for you, and there's actually some studies on using pure glucose, so regular sugar, for listeners, sucrose is half fructose and half glucose, right? So it's basically those two stuck together. Now, if you were to take just glucose, without fructose, what happens?

Steven:

It turns out, everything is just absolutely wonderful, and you can't produce a fatty liver. You can't make high triglycerides, and these experiments have been done in mice and rats and even in humans, and lo and behold, it was the fructose in table sugar, in fructose, in high fructose corn syrup, that was the culprit all along. And so, if we could separate out fructose from glucose, from table sugar, the villain is actually fructose. And our entire diets have been manipulated for us to eat fructose in massive quantities, sadly.

Dave:

Now, I went through a phase, I'm always experimenting, and if you take a tablespoon of pure glucose and you put it in your bulletproof coffee, holy crap, you're going to be on fire. But, your insulin is going to pop like no one's business, right? Your blood sugar goes up, but then it comes back down, presumably because you don't have all the palmitate and things like that. Is it advisable if people are going to use a sugar, that they use pure glucose versus regular sugar?

Steven:

Oh, please, don't. I mean-

Dave:

Exactly.

Steven:

First of all, we don't need sugar. We don't need glucose. We can do just fine without it. There's plenty in our everyday diets. There's plenty in leafy greens. Don't worry. There's still plenty there. So, no, please don't go adding glucose to your bulletproof coffee. Please. Please.

Dave:

I don't recommend it either. Unless you're about to get a migraine. And if you put a little bit of it in there and it's a short-term thing in order for your brain to get a little bit of a burst of glucose at the same time as ketones, I've seen it work over and over. So, we know caffeine helps with migraines-

Steven:

Yes.

Dave:

... and we know that a short burst of just raising blood sugar and also having ketones present, so there's a little times when you might do it, but you're taking a hit. You are going to be cooking inside of your arteries with advanced glycation end products from high blood sugar, but maybe that's better than what you were facing. But otherwise, no, there isn't an argument for it. But I would say, if I was going to use a sugar-like sweetener that was caloric and was going to raise my blood sugar, why not use glucose versus

fructose? But you shouldn't that either, it's just a lesser evil than using fructose. And it sounds like you're in alignment with that.

Steven:

Yeah. Exactly. Fructose, again, people... It's hard to believe but a cup of grapes has actually more sugar than a normal, regular-size Hirsch's candy bar, and not that I'm telling anyone to eat a Hirsch's candy bar, but of the two, I could tell you what I'd rather have to eat.

Dave:

I do the same conversation. A plate of French fries versus a cigarette? The cigarette's less harmful, but, really, they're both a terrible idea. Just the inflammation isn't as long from the cigarette versus the French fries, but, for goodness' sake, maybe neither one is necessary in your life.

Steven:

Exactly. Exactly.

Dave:

All right. So we've got those four. Fructose was the fourth. Give me the fifth.

Steven:

Well, so you have blue blocking glasses on now for-

Dave:

They're TrueDarks. They're only blocking some blue. Not all blue. I need some during the day.

Steven:

Yeah, you do need some blue during the day. That's very true. We are awash in blue light, and blue light, particularly after dark, is one of, probably, the worst things that you can do for your sleep, among other things, for your cortisol levels, and actually for your hunger.

Dave:

Yes! You're saying about hunger. I love this. Yes. Tell me more.

Steven:

Well, so, way back when, we would be exposed to much longer periods of light during the summer, and the blue light, actually, stimulates ghrelin to make you hungry. Why? Because back in the summer and early fall was when most of the food was available. The animals were fat, the plants were growing, the fruit was available. Believe it or not, great apes only gain weight in late summer and early fall during fruit season because they have a period of time when they're going to have to live on their fat, and were the fat storing ape. That's why we're so good, because we could store fat.

So, blue light drives us to be hungry, and there were some really cool experiments with college students working with blue light and lo and behold when they were exposed to blue light their ghrelin levels went up when the blue light was blocked, their ghrelin levels went down, their leptin went up. So, blue light makes you hungry because that's the way it worked. Even 100 years ago, or a little over 100

years ago, when we had fire light and kerosene lanterns and gas lanterns, that was primarily yellow and red spectrum, and that did not stimulate. And there are many of us who blame Edison as one of the major drivers of modern diseases, because light, and particularly now LED lights, fluorescent lights are pure blue lights, and I happen to have them in my office, and I don't change it. But-

Dave:

I call them the corn syrup of lighting.

Steven:

Yeah. And so, we're really being poisoned by our lights. And you can prove this even in animal studies. You expose rats who've been conditioned to eat during the day and sleep during the night, and expose them to blue light and they will completely change their eating patterns around. Bad stuff.

Speaking of bad stuff, the other one is, we are now, as you know, surrounded with EMFs, electromagnetic frequencies that are of our making. There's nothing like electromagnetic rays from the sun, we can't help that, and there's certain of them that are really good, like infrared and near-infrared, but now, particularly with the advent of 5G, I am worried about what's going to happen to us. In fact, Santa Barbara where one of my offices is, has put a hold on 5G and I hope we keep a hold on 5G in Santa Barbara.

I have a number of patients who are clearly sensitive to these radio frequencies, and when they go about blocking them with high dose magnesium, with, here's a tip for your listeners, sesame oil is a really good way to block the effects of EMF. Sesame oil is great for you in many ways. Lowers your blood pressure dramatically.

Dave:

That was a really common allergen, though.

Steven:

It is, but sesame, itself, is an allergen in about, oh, I'd say 10% of my patients, but I've yet to see one of them respond negatively to sesame oil, and there's some very good human studies looking at the effect of two tablespoons of sesame oil a day. The raw sesame oil, not the toasted, dramatically lowering blood pressure in hypertensive patients, and when the sesame oil was removed, their blood pressure went right back up. Two tablespoons [crosstalk 00:46:48]

Dave:

Interesting. That's not one that I've heard before specifically for EMF. But it-

Steven:

In the book.

Dave:

... makes sense. Well, I was just going to say, it has in the book, and that's breaking stuff. We were talking about blue light. I remember a long time a Bulletproof follower, Richard, was like, "Dave, I don't get it, I'm exhausted and hungry at the end of the day, during the week, and I always eat the same thing. And then on the weekends I eat it and I feel great." And he sent me an email all excited saying, "I finally

figured it out. I'm in the office under blue lights." And so he got the TrueDark glasses and said, "I wear these during the day and, no, I'm not hungry at the end of the day," exactly like you're saying.

This is a real thing, and I've actually got a couple of patents now on different colors of lenses that do very specific things that are not just blocking blue, like blue's a part of it but there's all these different spectrums as a park of TrueDark, and it's changed my sleep a lot. Can you talk for a minute about what good quality sleep does for our blood sugar regulation and our energy?

Steven:

Yeah, it actually is. Interestingly enough many of us associate sleep with melatonin production and/or associate melatonin with causing sleep. But one of the really exciting things in The Energy Paradox is that melatonin is probably the best mitochondrial antioxidant there is, and you can actually see that plants manufacture melatonin, and you go, "Oh, wait a minute. Why would a plant make melatonin? It doesn't need to go to sleep." It uses it to protect mitochondria from radiation from the sun. And, we can actually eat plants to harvest melatonin.

And, fun fact, pistachios are the highest source of melatonin of any food, and interestingly enough, probably red wine and olive oil are so good for you, as well as coffee, Dave, because of their melatonin content, rather than resveratrol or the other polyphenols that we associate with them. So, melatonin is one of the great energy saviors of all time. But, sleep, as you know, we have receptors in the back of our retina that go to the suprachiasmatic nucleus which is the great regulator of how we stay awake, how we sleep, and it's incredibly, exquisitely sensitive to changes in light. And just as blue light is one of the worst things for stopping sleep, red light particularly at sunset and sunrise, is really one of the best ways to recharge your whole system.

Dave:

I love it, or, so in alignment, some of bulbs I've been making at TrueLight, my company there, are specifically circadian aligned and not just taking out blue during the day, but it's, what do you do at night? For the last 10 years people have thought I either run a house of ill repute or a submarine, because my exterior lighting at the house is all red. It doesn't disrupt the bugs and wildlife have... Not just farm animals but owls and things that live near the house, and I can go outside and look at the stars and it doesn't mess with me. So, we have red light at night and it looks funny but, man, the change in how you sleep and how you feel the next day, it's a really big deal.

So I've been working a lot on products to let people, meaningfully and affordably, do it. Even my phone, this will look really kind of lame, but you see the back of my phone here? If I turn on my flashlight, the light is red. I have a little... it's one of the stickers that we make for covering LEDs at TrueLight. And it's there because, yeah, my flash doesn't work anymore because I... Who needs a flash on your phone, anyway, but the flashlight's red, so at night I can aim it at things and it doesn't mess with me, because it doesn't take that much bright white light at night to mess with your sleep. It's so profound, but people think it's crazy, and you're a very well-credentialed-

Steven:

No, you're right.

Dave:

... guy, saying there's something here.

Steven:

Oh, yeah, I was a consultant for years with a lighting science research group, and we worked on sleep and lights for nursing mothers. One of the worse things you can do is have a light turned on while you're breastfeeding your child at night. It'll screw you up, and will probably soon learn that it actually screwed your baby up, too. So there's great lighting opportunities to use a red spectrum light at night, and put on your blockers at night, too.

Dave:

So, we've hit on six of the seven energy blockers from The Energy Paradox. What's number seven?

Steven:

Oh, yeah. Well, actually, pharmaceuticals. Pharmaceuticals. They are a part of The Plant Paradox, seven deadly disruptors, but they get worse with every passing day. The proton pump inhibitors, Prilosec, Nexium, Protonix, what we didn't know, and I was old enough to remember when these were lifesavers. We used to do a lot of gastric ulcer surgeries and slice people open and cut vagus nerves and take out half stomachs, and these drugs which blocked the production of acid in the stomach because they were proton pump inhibitors, were lifesavers.

But, when they started being used for heartburn, for indigestion, what we soon learned was that they weren't specific to the proton pumps in the stomach. And guess what? Mitochondria make energy by pumping protons. That's actually how they do it. And so these drugs actually stop your mitochondria from making energy. So it's actually no wonder that there's an FDA black box warning that these drugs should be only taken for two weeks and two weeks only, because of the danger they have for your energy and your brain and your heart, because all of those depend on proton pumps.

Dave:

I look at all the stuff I did wrong when I was young. I had, for the first time, real serious GERD when I was about 22 and went to the doctor. I'm like, "Man, it's like someone lit a fire and it's really bad." And he said, "Oh, try Pepcid." All right? And I tried it, was like, "This is amazing." So I took it for a good year or two before I figured out it probably wasn't good for me, but of course I'd been on antibiotics a lot during that time. so I look down this of all these things.

I did every one of them, even the early days with cell phones, I had a two-hour commute, cell phone up to the head, and of course I was on my stack of pharmaceuticals, so it's no wonder I was feeling like garbage. And people want to say, what's the one thing, and like me, you're saying, it probably isn't just one thing, but it's seven things.

Steven:

Yeah. And even like statin drugs, people don't realize that, okay, statin drugs lower your cholesterol, which may or may not be a good thing, but statin drugs block the production of coenzyme Q10, which is one of the critical coenzymes in the electron transport chain that makes ATP. So if you block the production of one of the critical enzymes for making ATP with a statin drug, it's no wonder that statin drug use is associated with increased congestive heart failure and with increased diabetes.

And it's like, "Oh." And, luckily, in Canada, it's against the law to give someone a statin drug without prescribing coenzyme Q10. But most cardiologists in the United States don't know that connection. And I see so many people with low energy on statin drugs, and they don't have any

coenzyme Q10. And we can measure that. And it's like, "Hey, did you know you have no coenzyme Q10?" "Uh, no."

Dave:

I take 300 milligrams of CoQ10, and I have for the last 10 years, and I consider it to be just a foundational anti-aging thing to do, and I don't take statin drugs. What's your take on directly consuming CoQ10 as a supplement?

Steven:

I think it's a pretty good idea. I take PQQ as well as coenzyme Q10. In general, a little dab will do you. If you seriously are on a statin drug, do not pass go, get to a drug store, get to Costco and get some coenzyme Q10. It's one of the smartest things you can do.

Dave:

And as far as I know, the first company to pair CoQ10 with PQQ was Bulletproof, our Unfair Advantage formula, which is an ampule, so it's sublingual as well. Has been out for, I want to say eight years, and it was so powerful. I want to first say that people would say, "I have to have this in my brain," because they would feel the difference because their mitochondria was so wrecked. And it's only 10 milligrams of coenzyme Q10, but it's the PQQ that goes with it. So that idea I think really has merit. And the cost [crosstalk 00:56:35] of both of those has come down a lot over the last 10 years.

Steven:

Yeah. PQQ is part of my MitoX formula at Gundry MD, so, yeah, the research is pretty impressive about how important this coenzyme is to ATP production, and it's, unfortunately, not known about my most practicing physicians.

Dave:

One of the things I really appreciate about your work is this mindset that we share, but it's about... Maybe we can stop doing this stuff that makes us weak. And you don't have to just go lift more weights, but maybe you just set down the backpack full of cement you're carrying around before you do your weightlifting, because you don't have to carry that all day long. And why do you think that so much of the advice we see, whether it's from doctors or from online health expert kind of people, is missing the... This is the stuff that's interfering with you. Why is this so low on our priority?

Steven:

In general you can't make any money at it, I guess, is one thing. But just a simple thing that I talk about in the book is, fasted exercise is so much better for you than... I'm going to take my energy drink and go exercise, or I'm going to have my smoothie and go exercise. It's like, "What are you doing? You're taking all of your energy down to your gut and putting all your blood flow down there, when in fact it should be available to your muscles for use."

I'm old enough to remember my mother would not allow us to go swimming for an hour after we ate because we would get cramps and die. And there was... Remember that? And there was actually some truth to that wives' tale, that, in fact, you divert huge amounts of blood flow to your gut to digest food after a meal, and it's taken away from your muscles and your brain, for that matter. And that's why

in The Longevity Paradox, and in this book, I ask people, "Please, please, please, stop eating for three hours before you go to bed. Please."

Dave:

Three hours before bed and eating right before you work out is not a good idea, and that's why in Fast This Way and in The Energy Paradox we will say, "Well, look exercise at the end of your fast, and it works better." And I want people to exercise less, not because they're getting too much exercise, just, if you're doing exercise in a way that doesn't serve you, maybe you should only do the exercise that's working for you and don't do more than you need to, because you're doing it inefficiently, because that gives you time back. So the idea of, "Oh, it's going to work better if I do it this way, therefore I don't have to do it twice," I don't know, it works for me.

Steven:

No, it's exactly right. Then I have a lot of exercise snacks in the book that are one minute little exercises that you can do any time you want. In fact, walking up and down stairs for a minute is going to give you a tremendous kick in energy. Also, it'll break any feelings you have of hunger. So, I mean, as I've written about, I was running 30 miles a week doing 5K, 10Ks, half marathons on the weekend. I was going to the gym one hour every day and I was 70 pounds overweight. And I'm going, "What the...?" And I was eating a healthy low-fat diet. And I'm going, "There's something wrong here."

And when I really scaled back my exercise program, and of course changed my diet, lo and behold, look what happened. Same with you. And it's like, "Wow, traditional advice hasn't served me very well." And that's one of the things I like about you, Dave, we're both, sadly, I guess, disruptors, and let's keep disrupting because what we're doing isn't working, folks.

Dave:

Yeah, that 80-something percent of people have metabolic dysfunction, 42% are obese in the US. If exercising more was going to work, we actually do exercise more than we did in the '70s. It doesn't work.

Steven:

Yeah. That's true.

Dave:

So, moving, great. And I so appreciate that you come from such a deep and storied medical background. I mean, you've done the real heavy duties of robotic surgery and all that, and even from that relatively, I'm going to call it biased perspective, because you went to medical school, you went through the system, but you just had that curiosity and that awareness, of, "Wait it's not working. What else can I do?" And that takes a different mind and it takes a certain amount of courage to do it.

I think it happened to a lot of people with your books and with your work, and I'm happy you're doing it, and I can also tell you're not slowing down at all, and that's awesome. That's how it's supposed to be.

Steven:

No, I'm now in my seventh decade, and I work seven-days a week. I see patients six days a week, including on the weekends. I'm at Gundry MD on Fridays every week. And if I'm an example I clearly got

more energy now than I did when I was 40-years-old. And it's like, "I can't slow down. Why would I?" And my patients teach me every single day. They teach me. And so, what I write in my books is the result of daily patient interaction, measuring effects on people, asking them to stop eating certain foods, asking them to go to Trader Joe's or Costco to buy a vitamin, or go to Gundry MD, or go to Bulletproof, and there's lots of ways to skin a cat. And I publish my results.

Dave:

You do publish your results. And something you mentioned there, I don't know one supplement company that makes everything that's out there-

Steven:

That's true.

Dave:

... and there's quality supplements, and then there's supplements that are not worth taking. And I do my best on the show. Of course, we both have supplements that we make that are good, right? And I talk about other good supplement companies and I talk about myself, too. And for listeners, if you're confused about it, I'm not going to talk about something that is bad. If it's low quality, it doesn't work, I might talk about it and say it doesn't work, but it's okay to say, "Look, there's a lot of good options out there."

And if you look in vitamin cabinet, there is no predominant brand. Of course I take all my stuff. I take some of your stuff, right? And that's normal. And I have to-date never seen one company that has everything you'd ever want to take, which is why I do my best to be a good curator of quality for people, and I think you do the same thing.

Steven:

That same thing. And believe it or not, in my offices, I don't have any of my supplements for sale. I will send people with a list to Costco or Trader Joe's or a health food store and say, "Here, go get that. I know these companies are good. I've actually been to their manufacturing facilities, and I know, don't go to these companies because I've been there, too."

Dave:

Right. It's a complex industry and a lot of people... I just want to do one thing. Well, look, when it comes to avoiding stuff you can't do just one thing because we had seven things here, certainly we've both talked about foods and maybe that food's making you weak, right? And we have a very strong alignment there. Like, maybe kale isn't... all that it's been made out to be. Maybe hummus actually sucks, even though it might taste-

Steven:

Yeah, yeah, yeah.

Dave:

... you know, those kinds of things. And it's the same thing with supplements. There isn't just one thing to do. There's lots to do, and if you were to name the single one supplement that would be at the very

top of your list, if you're going to take one, I know what my answer is, but I'm curious what yours would be.

Steven:

It's Vitamin D3. It's Vitamin D3. It's number one. I see so, so many people with autoimmune diseases and leaky gut who have low Vitamin Ds, and boosting their Vitamin D to 100, to 120, 130 nanograms per milliliter, makes all the difference in the world.

Dave:

You go up to 130? Wow, I usually go to about 90.

Steven:

I go up to 150, and Quest and Cleveland HeartLab now say that 150 is a normal level. In fact, I have some people with autoimmune diseases that we run at 200, 250. Never seen Vitamin D toxicity yet. Mark Hyman hasn't yet either. Think about that. So I've run mine at greater than 120 for the last 20 years to prove I'm not dead, and, so far, so good.

Dave:

And I'm assuming you take Vitamin K2 with it as well?

Steven:

Yes, I do. Vitamin K2.

Dave:

That's I think important for listeners. You really need both of those because the K2 will prevent calcification from high Vitamin D levels. Okay.

Steven:

Correct. It'll take it to your bones.

Dave:

There you go. Well, Dr. Gundry, I love having you on the show. You've just got so much excitement for what you do, and your advice is well researched. It is well thought out, and you do this amazing evidence-backed thing called clinical evidence, which is at least as important as double-blind pharmaceutically-funded trials. So, thanks for just keeping on it. It's always an honor to speak with you.

Steven:

Well, thanks, Dave, and for everybody listening and watching, just remember that fatigue is not your fate.

Dave:

Great timeline. [crosstalk 01:06:24] Guys, the book is The Energy Paradox. You know Dr. Gundry, he's all over the internet, well-known guy, and a friend, and someone who's trustworthy. So, check out his new

book, The Energy Paradox, and I would ask you to do me a favor. Actually, two favors. One of them is, whenever you buy a book, always review the book because that's like leaving a tip for your barista.

I know how many thousands of hours it takes to write a good book, and Dr. Gundry and I both stay up late at night and focus on writing these books, and it's a labor of love. I also know, Dr. Gundry, on an hourly rate, writing books is not a very good thing for you, or me, probably. No, we do it because it matters, right?

Steven:

That's true.

Dave:

That's one ask, leave a review. The other one is, if you haven't purchased Fast This Way, it is entirely compatible with the stuff we talk about, and if you buy them together, then Amazon tells everyone else, these books should be paired together. So, pick up your copy of both of them, if you haven't yet, and I appreciate your listenership, and I hope you get a lot of value from this episode. I always get value from talking with Dr. Gundry. I took a few notes today. This stuff about adrenal resistance is brand new, especially coming from glyphosate. See you on the next episode.