THE MODEL HEALTH SHOW

EPISODE 468

Circadian Medicine, Circadian Fasting, & How To Stop Being So Effing Tired

With Guest Dr. Amy Shah

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SHAWN STEVENSON: Welcome to The Model Health Show. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today. Energy, it is a critical component of all of life. There's an energy dynamic that's required to do every single thing in our universe. There's a statement that energy cannot be created nor destroyed; it can only be transformed. And we are a transformer. Being a human being, we don't just get energy, we make energy. Even moving our bodies a little bit, we're generating something called piezoelectricity. We're generating energy, we're generating heat. We can warm up a snuggle buddy, alright? Somebody's cold, come get in a blanket together, the blanket isn't what's making you warm, you're generating heat, and trapping it under that apparatus, alright? So just understand, you are an energy being, but that energy can get gummed up. You could put a kink in the hose that flow that's wanting to be generated and utilized throughout your entire system.

We can create these energy blockades in our system, alright? So that's when we start to experience this lack of energy. And one of the things people would come into my office, day after day, new people coming in, "What can I do for more energy?" That was like the top question people would ask, "What can I do? What can I take to have more energy?" And that's that allopathic thinking that there's a pill that can fix this situation. And instead of removing the cause that's leading to the symptom of having low energy and also changing the paradigm, changing the conversation around what energy looks like, because we're inundated with this idea that as we get older, our energy levels are supposed to decline, our energy levels and our capacity is supposed to... Oh, you're 30 now. Welcome to your 30s. Good luck. All the energy that you had early on... Now people are seeing it in their 20s, this issue, this new blanket term, this blanket statement of chronic fatigue happening earlier, and earlier, and earlier in life, when this is not normal, this is not our normal state. We are energy beings, but we have to understand how these energy pathways work.

This experience of energy being created in our bodies, we have this kind of end product creation of something called ATP, right? Adenosine triphosphate, that's this energy currency being created by the miraculous mitochondria, these energy power plants in ourselves. But what's allowing the mitochondria to do their jobs? The mitochondria themselves are operating in a water medium, so does water play a role here? Can dehydration, something as simple as that, lead to more fatigue? Absolutely, it can. One of the studies that I talk about in my new book, "Eat Smarter" had test participants, just their normal baseline hydration level, just dropping 2% lower in their normal baseline hydration level, led to increased incidents of fatigue and decreases in cognitive performance. That's just water. It's just one piece of this energy equation. So today, we're going to be talking about this system of energy and how it's

actually lined up on a ticking clock. There's a clock, there's a countdown going on every single day inside of ourselves and we've got the most incredible person to talk to us about how this internal body clock works and how we can start to optimize it.

So really, really excited about that. But as you know, a big part of our energy, we don't just get energy, we make energy. But the things that we interact with, with our nutrition, that all adds to this energy equation as well. So we want really high quality fuels, we want clean, burning energy, and specifically, to nourish our brain that is operating and really the governing force with so many processes that the body is doing. So what are some of the things that can actually cross the blood-brain barrier, this internal security system and actually nourish your brain cells, and help your brain to express more energy? Well, the brain has its own diet, we call it neuro nutrition. It's very choosy, it's a choosy lover. Choosy lover. It's very choosy at what... shout out to The Isley Brothers, right? And also Aaliyah. Aaliyah slipped a little bit of "Choosy Lover" in there, too. Shout out to both. But your brain is very choosy, it's a choosy lover with what it allows into the brain to actually utilize its energy.

One of the things that we know now, for certain, is able to cross the blood brain barrier, this is highlighted from researchers at Yale University, and this was publishing data finding that MCTs, medium-chain triglycerides can readily cross the blood-brain barrier and be utilized by brain cells for energy. It's no joke, MCTs are really incredible, medium-chain triglycerides. Another way that the MCTs are able to nourish and fuel process in the brain to provide energy for the brain is through ketones. Medium-chain triglycerides directly trigger your body to release ketones, whether you're doing a fast, whether you're doing a low carbohydrate diet, these are these tactics to get to this ketosis, so the generation of ketones, just bringing in a high quality source of medium-chain triglycerides allows those ketones to be released, which also are able to cross the blood-brain barrier and provide energy to the brain. Really, really powerful stuff.

But even to take it a step further, this was published in the Annals of the New York Academy of Sciences, sought to find out if MCTs could have an impact on improving the condition in patients with a known cognitive decline, being Alzheimer's Disease, which is largely considered to... Once you have the onset of Alzheimer's disease, it's just a decline, there's nothing you can do about it. But now we have data that shows other than. The patients in the study were advised to incorporate medium-chain triglycerides, which again, are quickly metabolized by the liver and the brain to be used as fuel for cognitive performance and energy, and the scientists found that the consumption of medium-chain triglycerides, MTCs, directly led to improved cognitive function in mild to moderate forms of Alzheimer's disease and cognitive impairment. This exists. There are so many incredible things we can do with our nutrition to provide energy to our brain, to provide optimal cognitive performance, this is why every day, including today, I had my MCT oil from Onnit, O-N-N-I-T.com/model. You get 10% off their

incredible MCT oil and also their emulsified MCT, which is what I had today. I had the almond milk latte flavor, alright? So MCTs are incredible. The emulsified makes it more like a coffee creamer, so it's easy to add into teas, and coffees, and smoothies and things like that.

But the original MCT oil, you want to get it from a high quality source. The sourcing matters. You don't want to just get companies... You hear this powerful insight about MCTs, and then we get it from low quality sources, and also they come along with some nefarious additives and fillers oftentimes as well. So the original MCT, as well, it says, "Clear liquid." Onnit has the very best, they have the best sourcing. Go to O-N-N-I-T.com/model. You're going to get 10% off all their MCT oils, and also their incredible array of snacks like their fat butter. Have you had their fat butter yet? This combination, so they've got a snickerdoodle fat butter, they've got an incredible peanut butter blend with the fat butter, they've got a hazelnut chocolate blend that are using... Some of these are incorporating macadamia nuts and it's just... They're so delicious. Chia seeds imbued that... Just so good. High quality organic ingredients, they taste amazing, but we're talking about, again, utilizing fats for fuel, fats for fuel for cognitive performance, for heart health. The list goes on and on. Check it out. Go to O-N-N-I-T.com/model to get that MCT oil in your system. It's incredible for your brain, cognitive performance, and energy. And on that note, let's get to be Apple Podcast review of the week.

ITUNES REVIEW: Another five-star review titled "Truth Bomb After Truth Bomb" by Maryg87. “This podcast is such a valuable resource for everyone who wants to be the boss of their own health. Shawn calls things by their names. He's not afraid to expose the lies that we've been fed for decades by the pharmaceutical, medical and political establishments which pretend to care about our health. I learn something new and useful every time I listen to a new episode. Thank you, brother. Keep them coming. Let's get our power back.”

SHAWN STEVENSON: Let's go. I love that so much. Thank you so much for leaving me that review over on Apple Podcast. That really hit my spirit. We've got some epic, epic stuff coming up, so we're not stopping any time soon. We're going to keep it coming. And if you've yet to do so, please pop over to Apple Podcast and leave a review for the Model Health Show, it means so very much. And we're just going to keep it going starting right now with our special guest and topic of the day. Our guest today is Dr. Amy Shaw. She's a double board certified medical doctor and wellness expert specializing in allergy and immunology, and hormones and gut health as well. She graduated magna cum laude from Cornell University School of Nutrition and went on to complete her MD residency and fellowship training at Einstein, Harvard and Columbia University Hospitals. She's been named in the top doc list from 2016 to 2020 by Phoenix Magazine and featured on national television and magazines such as Elle, People, Shape, the Today Show, and so much more. And she's on the Model Health Show today to enlighten us about some powerful new topics. So let's jump into this conversation with the amazing Dr. Amy Shaw.

So I was reading through your book and you mentioned, of course, attending Harvard, working, living on the East Coast Boston area, and that kind of infusing you with the Patriots and the Red Sox. So you're a big Patriots and Red Sox fan.

DR. AMY SHAH: I am. Why? Are you a Yankees fan?

SHAWN STEVENSON: No, no. I just have a little bit of a vendetta because the Red Sox did beat the St. Louis Cardinals in the World Series a couple of times. And same thing, Super Bowl was Tom Brady's mystique and legend was birthed through beating the Rams, the St. Louis Rams at the point.

DR. AMY SHAH: That's right. I moved to Boston when both of those teams were still awful. Okay, so you have to give me some credit, I was not a bandwagon fan, but I would be working in the ER and these 90-year-old women would be like, "Tell me the Red Sox score." That's all they wanted to know. They didn't even care, they were like, "We just need... "They would announce it overhead when they got to the playoffs the first time, and so it was just part of the culture and it was so cool that people could bond from every background. If you were in the ER and you saw someone from the South of Boston or you saw someone from Wellesley, they could bond over something. And so that was... I think that was really cool. And unfortunately, I never saw that before. I never lived in a big, big sports town. New York was always big sports, but you had Mets, you had Yankees, you had Giants, you had Jet... There was a little divide, but this was really strong, and the hospitals were part of the culture. So that's how I got into it.

SHAWN STEVENSON: That's so crazy. That's such a good story and that connective tissue, you know?

DR. AMY SHAH: Yeah.

SHAWN STEVENSON: I think that's one of the tenets that humans kind of carry, is like we want to come together for a common goal and face off against a common rival as well.

DR. AMY SHAH: Yes, that's why, as divisive as this year was, people found communities of like-minded thought leaders, and that was good. But that part was so great, I loved seeing... I grew up in a place... In New York, there was people from all over and have so many different backgrounds, and everybody was living and co-existing together, and so I love the fact that there was something that was bringing the community together, so...

SHAWN STEVENSON: I love that. Well, I'm also loving your book, it's phenomenal, of course. And first of all, can you tell us what our circadian timing system is, what our circadian system is, and how does this play into our energy?

DR. AMY SHAH: Shawn, it is everything. We are a different person at different times of the day. Can you believe that 80% of our genes have this circadian on and off pattern? So in the morning, you turn on the genes of metabolism and you turn on the genes of thinking, concentrating all the things that your body knows to do during the day and at night, two to three hours before bed, our body knows to turn off those genes, to turn off the metabolism, to turn off the genes of daytime and to concentrate on repair and renewal, which is equally as important to us, as you know, for aging, longevity, disease and even energy, you need that counter balance.

But our society, we have flipped this completely upside down. We pay no attention, and all of our society is built on this system of light all the time, eating all the time, and thinking that we need to be doing complicated tasks all the time. So one of the biggest things I discovered is that not only do we have a clock in our brain that kind of looks at light, we have one in every single one of our cells. We have a clock, and our skin is protected against sunlight and light during the day, but they put that guard down at night, and so if you're getting a ton of blue light later in the evening, your skin is aging and getting damaged at higher rates than it would during the day.

SHAWN STEVENSON: Yeah, this is bananas. Our skin, like you mentioned, our skin has photo receptors that literally is communicating with our other organs, the same thing with our eyes, telling each cell what time it is and what to be secreting, different neuropeptides and neurotransmitters hormones, all of that stuff is happening, and it's based on this circadian clock, and now circadian medicine is really becoming a big place of emphasis in research.

DR. AMY SHAH: Yeah, blood pressure medications, certain blood pressure medications are two times or three times more efficacious when given at night versus given in the morning, because if you think about it, 80% of our genes are turning on and off, our body's function is different at different times of the day. So when I say you're a different person at different times of the day, I'm not even kidding, your thoughts, your body's functions are all different at different times of the day.

SHAWN STEVENSON: And also our gut.

DR. AMY SHAH: Yes.

SHAWN STEVENSON: As well, the microbiome changes as well.

DR. AMY SHAH: Absolutely, and not only our gut, the bacteria in our gut, those little guys that actually have personalities and they have food preferences, they are on a circadian pattern. Every single organism and cell in this world, even mitochondrial species before we were even humans, if you look at back to the very first cell, has a circadian clock and needs sunlight and darkness. So it's really fascinating that we've completely disregarded this in designing our society. So one of my hopes from this book is that these smart entrepreneurs, these tech guys, they say, "Oh, you know what, let's do stuff to optimize our thinking power and our health by maybe designing things that help us with these circadian patterns."

SHAWN STEVENSON: Yeah, okay, so a big summation here, and this is a big statement, our bodies, every cell in our body is trying to be in sync with nature, basically, this kind of diurnal nocturnal patterns, so it's running different processes at different times. Now when this body clock gets screwed up, I would imagine this is when problems start to happen.

DR. AMY SHAH: Absolutely, and you can break them actually. So as we age, our circadian clocks become a little weakened. And so you'll see as people get older, they have a little bit more trouble sleeping and they have a little less energy sometimes if they're not really optimizing their energy patterns. But we can also break them by constantly eating and seeing light at the wrong times. And so what we're doing is not only are we feeling jet lagged perpetually and feeling tired, but we're also causing ourselves disease and we're breaking these clocks over time.

SHAWN STEVENSON: Okay. So we're recording this right now, around a time when daylight savings happened. And I know you're from Arizona, which is one of the, I believe, two states that doesn't accept this changing of our clocks, our entire... What do you think about daylight savings time?

DR. AMY SHAH: I am not a fan of daylight savings time, I think it's antiquated, old thing that they decided many years ago that we could reverse easily. It causes so many problems around not only do we have confusion, but we also have people who are jet lagged, perpetually feeling exhausted for a week every time this happens. And so we really don't need that anymore, I'm a fan of getting rid of that.

SHAWN STEVENSON: Yeah, and you just said it could be something... This was based on a time when we needed daylight savings because we didn't have the lights for real. We've got a lot of folks doing the candle thing. Now we can literally, like you mentioned, we can manufacture our own daytime whenever we want, but also just throwing off that clock, and if you look at the data, it's kind of really shocking, but then again, it just makes sense, we see an uptick in heart

attacks, we see an uptick in traffic accidents, the list goes on and on, and the question is why, and it's really because it's throwing off this kind of chronobiology.

DR. AMY SHAH: If you look at shift workers, people who are working overnight and some of our first responders, people who have helped us so much this year, their longevity, their health is being affected by their jobs when they're working late into the night. So I talk... I've been talking a lot with someone about creating some improvements for these people so you can... Your body is still on a light and dark cycle, whether you work overnight. It doesn't matter. You still have to get some sunlight during the day, you still have to limit how much you're eating overnight. So some of these tenets that we can give to our first responders, there's actually a big study with firefighters going on at the SOC Institute where they're doing a lot of this time restricted feeding, trying to figure out what are the optimal times that people who don't work regular hours could do so that they don't end up with diseases and death rates that are far higher than the regular population.

SHAWN STEVENSON: It's shocking. It is absolutely shocking. But then again, if we... These things would seem obvious on the surface, what you're talking about, but because our culture is so, in a big sense, not really associated with what health looks like... So even in my book, Sleep Smarter, I talked about this massive nurses study and seeing shift work, 30%, greater incidents of breast cancer. We see higher rates of insulin resistance, we see higher rates of obesity. Just about everything. And then you come to find out one of those circadian controllers, which I want to ask you about next, being melatonin, which we just kind of glorified as a sleep hormone, but it does so much more, it's also a very potent kind of anti-cancer operator in the body as well. And so what happens when we throw that off? So let's talk about some of the things we can do to start to address why we're so effing tired, and a big part of that is our hormones.

DR. AMY SHAH: Well, one of the things, I wanted to follow up on what you were saying, is the Ruth Patterson study. She took breast cancer survivors, and she said, "I think there's something to be said about this circadian rhythm thing. I'm going to have these breast cancer survivors fast overnight, just as darkness to light." So she just told them to 13 hours, 13 and a half hours, they didn't want to do something too stressful where these breast cancer survivors, and they found some amazing results. 34% less cancer rates, recurrence rates in the group that was fasting for a moderate amount of time, 13.5 hours on average. This is something that I think is so promising. If we can... Like you're saying, melatonin has a lot more to do than just telling the brain to go to sleep. It's doing a lot of other things in our bodies, and if we optimize that, we can really improve our rates of cancer and all kinds of metabolic diseases.

SHAWN STEVENSON: Yeah. So powerful. That's so insightful. So on that vein, and I like to reiterate this as much as possible, if you can just share, first of all, we hear this word thrown

around a lot, especially when we run into problems, hormones, my hormones are acting up, this and that. So what are hormones and how do they play in this equation of energy?

DR. AMY SHAH: That's such a great question. We hear about hormones like cortisol, testosterone, estrogen, and there are these... Even in medicine, they're kind of these enigmas, because we don't really know exactly what's happening. But what I was shocked to find out is that there is this constant communication between our gut, our immune system and our hormones at all times, and they're talking to the brain, and this is the center of our energy, this energy trifecta. So understanding that hormones are determining our energy, our metabolism, our sleep, and so much more than what you think of them to do really can help you.

And the other thing is, I think you've talked about this before, but hormones are not just doing one task. We think of our body in medicine, in conventional medicine, as these separated systems. And you have your thyroid hormone. That's totally different than your estrogen, or your pituitary hormones. No, they're actually all interconnected. They're part of this huge highway that starts from your GNRH, which is gonadotropin-releasing hormone in your brain, and it goes down then to the pituitary, then it goes to the thyroid, and it's part of a highway. And if there's an accident on any one of those exits, even if it's way far from the thyroid, you're going to get symptoms of thyroid slowing... Slowdown of the thyroid. So when people say adrenal fatigue, I kind of cringe, because I think, it's not a problem, necessarily, of the adrenals, but think about the back-up. Where is a back-up? It could be in the brain, it could be your thoughts, it could be your stress levels, your cortisol that you're spilling into your system. So that's where I think hormones are really misunderstood.

SHAWN STEVENSON: Hold on. So you just said your thoughts could be impacting what's happening with your hormones.

DR. AMY SHAH: Yes.

SHAWN STEVENSON: So I've shared the statement that every thought, you have correlating chemistry that's released into the body. And so if we're chronically stressed, that would... This is one of those components you talk about in the book, being a big energy drainer, is this kind of chronic habitual stress we're experiencing.

DR. AMY SHAH: I think we don't talk enough about how our HPA access or hormonal highway is triggered and changed and slowed down or sped up by our thoughts. I think that's a part of medicine that is so fascinating, is very established, there's many studies that show that your thoughts contribute to feelings of fatigue, feelings of GI symptoms. So not only does the gut give you feedback to your brain, but the brain gives feedback all the way down to the gut. So I

talk a lot about managing your energy, maybe not giving your energy so freely to everything and everybody. This past year, we know, we didn't do much, but our energy was drained, mostly because we were stressed, we were getting notifications all the time of emergency things, and people... A lot of people were triggered with thoughts of their past or traumas, and so there was a lot going on, and basically, we were feeling tired because... Not because we were running around 'cause we really weren't moving at all. It was our thoughts.

SHAWN STEVENSON: That's so powerful. So powerful. Yeah. Many of us, of course, were just thrust into complete 180s or just a complete upheaval of normalcy, our routines, our patterns, so that inherently creates stress as well. So suddenly, you're boxed in with your significant other who you love, but now, it's just like you start to realize, "Well, maybe I don't like this a little bit." And just these different conditions, obviously, are stressors as well, but plus, I think a huge amount of people, their circadian clock was thrown off as well, because even if people were... There are some folks who actually got more sleep because they didn't have to go, but their sleep, now, maybe instead of getting to bed at 10 PM, now they're going to bed at 1 AM, just because they got Netflix, and I'm not going, leaving the house. So our routines being thrown off can cause us stress as well.

DR. AMY SHAH: I was so shocked to find out that your body's actually more sensitive to light and to food cues late at night, because your body wants to know like, "Okay, is it okay to go to sleep or is there some danger? Do you need to stay up because there's something bad happening?" And so it's very tuned in to the light that you see and to the cues that you're giving it. So if you're telling your body, "Hey, I'm watching the news tonight and there's all this craziness happening in the world, and I'm eating all this food late at night," you're basically telling your body, "There's an emergency." Like, "You can't go to sleep." And so that's why people could not sleep at night, they were having stressful thoughts because your body's literally in its fight or flight state at night when it should be going into its repair renewal mode.

SHAWN STEVENSON: Right. Oh, it's so important. And there's an important tenant here too, even if you do pass out, you're unconscious, this can also disrupt your sleep quality as well.

DR. AMY SHAH: Yes. Sleep quality is so important. I think we all talk about sleep hours as something, but sleep quality is important. If you go to sleep and you're able to fall sleep even after watching all those negative news stories and getting all that blue light, think about the quality of your sleep. One bout of blue light delays your melatonin production by 90 minutes, and so you're basically telling your body, "Hey, don't start all those repair renewal processes yet. We're not ready." And so that gets delayed, and then you short change it because you wake up in the morning.

SHAWN STEVENSON: Yeah, yeah. That's so, so important. Because I think, again, I want to reiterate this because it's so important, that even... Same thing goes with our food, there's this paradigm with the calories, and with sleep, it's the minutes. It's not just the calories, it's not just the sleep minutes, it's the quality of each. And you can have... Same thing with your calories, you got Twinkie calories and you've got broccoli calories. Same thing. You could have Twinkie minutes of sleep where you're unconscious just because of exhaustion, but you're not going through your sleep cycle efficiently. And like you just mentioned, if we're turning off the news, or just turn off the TV, even if it's something that is enjoyable, it's still stimulating these... As you're talking about, if we're looking at circadian medicine, these programs for daytime is basically telling your brain, your entire physiology that it's a different time of day than it is, so how can you expect you to go through your sleep cycles normally?

DR. AMY SHAH: And I feel like shouldn't we be doing things in society and shouldn't there be inventions now that can help us, now that we know this knowledge, to help us with this? Because I think that if we just change a few... So in my book, I basically talk about changing a few habits that I didn't know. I went to school for nutrition. I got a double board certification from the top schools in the country, I didn't know how important circadian biology was to our health, and how changing few things about my daily routine could actually help me. If I had known that earlier, I probably wouldn't have gone through my burnout journey like I did.

SHAWN STEVENSON: Yeah, and this is so perfect, it's a great segue. Isn't segway, isn't it what Paul Blart rode on in "Mall Cop?"

DR. AMY SHAH: Yeah. Yes, the segway.

SHAWN STEVENSON: All right. So, it's a great segue, shout out to Paul Blart, "Mall Cop" part two, did you see part two? If you didn't see it, make sure to not see it because... No, I'm just kidding, it's great. I like him. But that's a great segue because I wanted to ask you about this. Your story is so similar. I worked at a university for many years, so I had the opportunity to work along with medical students, women in the nursing programs, guys in the nursing programs, literally every day. And just hearing these horror stories... And I just came... Again, I just accepted it as normal, at the time, they're doing clinicals, they've got their classes, they're trying to intern, all this stuff. They're gaining weight, they're burned out, they're not sleeping well. Many of them are coming down with infections a lot, getting sick, even chronic diseases start to manifest and show their head at some point, gastrointestinal problems, the list goes on and on, and we just accept it as normal. So we have a culture of healthcare that's not really teaching the providers how to be healthy and take care of themselves. It's literally, it's kind of like a badge of honor to run yourself into the ground and you experienced that.

DR. AMY SHAH: That's exactly what I was going to say. Not only is it normalized, it's actually rewarded. You want... People feel like, "Well, if you are getting sleep or if you are doing some of these things to help your body recover, that you're not as motivated, you're not as dedicated, you're not as good at what you do because you're taking a break." So I think part of this is changing what we normalize because I think we can do better work. It's not because I want people to do less work, we can do higher quality... Think about you after you went through a health journey and you can do the work that you've always wanted to do in a better way, when you are actually doing a few little things to improve your health, so... Not wearing it as a badge of honor. Overworking, being burned out does not deserve a badge of honor. What deserves a badge of honor is that you can do the best work while also taking care of your body. I mean, that deserves the badge of honor, right?

SHAWN STEVENSON: Yeah, I love this so much. And for me, I'm just a very kind of data-driven person, this knowledge exists, it just might not be in the mainstream narrative, which... There's a study and it was published in The Lancet, and it was a study done on physicians. They had them come in and complete a task and then they sleep deprived them. They had them to complete the same task and they made 20% more mistakes doing the same thing. And it took them 20-30% longer to do the exact same thing. So, what we're gaining in "work," we're losing in efficiency and also creating problems and mistakes that then we have to use so much time and energy to try to go back and fix, if you can fix them. So, it's just operating on a plane of logic of like, we want to show up as our best self, your family wants your best self, your job wants your best self, not like the shadow realm version of yourself showing up.

DR. AMY SHAH: You can have bouts of intense work.

SHAWN STEVENSON: Yes, absolutely.

DR. AMY SHAH: As long as you balance that, so it's not like we're saying people should just never put in all their effort. I think you have to understand that once you have these tools given to you, you can use them at your discretion when you need it, when you need a little reset, when you've gone really, really hard for a few too many days and you need to reset a little bit. These are tools, this is not supposed to be, "Hey, take a vacation every day of your life." So I think that the culture and the thought process of what we consider work and what we consider self-care. Self-care, for a lot of people sounds like, "Oh, are you telling people to go for a massage and eat chocolate cake every single day?" No, I'm actually saying self-care so that you don't die, so that you can do the work that you want to do without all the diseases of Western culture, and it's not about taking a bubble bath, what we think of self-care.

SHAWN STEVENSON: With the Crystal. I'm picturing Puffy in the bathtub, I don't know why. It just jumped into my mind.

DR. AMY SHAH: You know, bubble baths.

SHAWN STEVENSON: So this brings up a really important dynamic, which is even the term self-care, it's become more popularized, but there's going to be some pushback with that because there's a perspective that our society is already so self-centered and so focused on this kind of self-centered and greediness and now you need self-care. But in reality, it's just that framing, because the truth is your self-care and paying attention, healthy self-care to oneself enables you to be a better human in the lives of the other people around you. So, we need to get rid of this rhetoric and kind of concern about somebody having that, and you actually encouraged this, especially for women and especially for moms to have a certain amount of self-care every day as part of like pouring into that bank account.

DR. AMY SHAH: You know thousands of years ago, this was built into our cultures. And you look at cultures all around the world, and you look at the blue zone cultures, and you look at Ancient Cultures, and they built in... When I look at the practices that I talk about in the book, these are things that were built into our culture that we've lost. So, it's not like you're adding in things that are... These are things that were supposed to be in our culture, we're supposed to get some natural light in the morning, we're supposed to have a community of people that we can talk to where... All of this is lost, and especially in this last year, we've really seen how bad our society has been 'cause we weren't able to connect with people, maybe we didn't get the sleep, we don't have the tools to control our stress. And so we've seen the manifestations of that, both through more infections, but also through a lot of mental health disease during this year.

SHAWN STEVENSON: This really leads me back to that question in talking about the impact of our hormones, and specifically brought up our gut health and this incredible world of the microbiome. And one of the hormones that plays a role in energy for both men and women, we have receptors throughout our entire body for estrogen, for example, you shared in your book something really insightful about a relationship between our microbiome and estrogen. Can you talk about that?

DR. AMY SHAH: We always think of these systems like we said as all separate systems, that we have our hormones and then we have our gut, and then we have our immune system. And what was so eye-opening to me, and that's what I talk about in the book, is that they're like on walkie-talkies with each other all day long, so the micro... The microbes in your gut, these army guys, they're calling up the immune system, they're saying there's something weird going on here, they're deciding what to do with the hormones in your gut. They're deciding whether to metabolize, whether to create, whether to clear out the old hormones. So, without them, without those gut bacteria, you cannot do that, you cannot manage your hormones, you

cannot clear out, and they can even make more hormones. So, we really need to understand that interconnectedness so that we can better manage.

So what I've realized is, oh, when you want hormone balance, when you're talking about hormone balance, which is like this weird term that can mean anything, what really you want is to optimize that gut communication that's happening between the gut bacteria, the immune system and the hormones. And if you can optimize that communication, then everything runs smoothly, and you feel energetic, you are lean and healthy, you don't get disease. But without that communication, that when you have broken that communication by killing off your gut bacteria by being so stressed all the time that your hormones are completely out of whack, or by being inflamed or eating food that is going to inflame you, you are going to throw that balance off. And so the things I talk about is what you're eating, when you're eating, what you're thinking can modulate all three of those areas.

SHAWN STEVENSON: That's interesting. So we're going to talk more about what we can do to fix these clocks, because when you say, "Break the clocks," I'm thinking of like just hitting it with the sledgehammer kind of thing, but to fix these clocks and also to protect them. But you just mentioned in reference to estrogen, for example, certain gut bacteria... And is it the estrobolome?

DR. AMY SHAH: Yeah, estrobolome. Yeah.

SHAWN STEVENSON: Estrobolome, that's been... Now, it's a recent discovery that it's responsible for the metabolism basically breaking estrogen down and helping to eliminate it from the body, is that right?

DR. AMY SHAH: Yeah. So when we talk about people having too much estrogen or estrogen dominance, and what we don't... We can't just replace estrogen and add progesterone, and that's what we've been doing all this time. But what we now realize is that when you understand this complex relationship with the hormones and the gut, what you really want to be doing is replacing the gut bacteria and getting more of it and more diversity in there, so that they can help you kind of get rid of that estrogen. They can help you make more when you need it. They can help you decide how to feel. So much of our emotional serotonin is in the gut, and so really getting that relationship right through food, through our habits, through chronobiology, and through thoughts.

SHAWN STEVENSON: Perfect. We've obviously had this big skyrocketing rate of advances in technology, but it's paradoxically come along with a decline in our health. If our technology's improving, why is our health devolving? So let's talk about what are some things that we can

do? Like why is this and what are some things that we can do for the purposes specifically in having you here of improving our energy in relationship to our technology?

DR. AMY SHAH: That's such a great... That's such a great analogy. Like overpowered, over... There's too much information, we're overwhelmed, yet we're tired, and we're under-powered, and we don't have the energy that we should. And this is such a big problem. In fact, I think the rates went up 33% in the last year of burnout and stress-related problems, and it was already an epidemic to persons even before this last year. So we know we're doing a lot of things wrong, and some of those are technology. Technology to be able to eat at all hours of the night, to work at all hours of the night, and the technology to create an indoor environment that does not require natural light during the day. Las Vegas, for example, the casinos, they create a scenario of light so that... At all hours, and so that you never feel tired and ready to go to sleep so you can gamble more. They're manipulating that aspect of our brain. What we did to ourselves is that we created an environment where our body doesn't really know when it's daytime, when it's night time. It has to guess, and that's where I think the technology could help us and not hurt us.

Right now, the way it's built is that all this blue light late into the evening is hurting us to the point where we're getting sick, and we're getting tired, and we're getting burned out.

SHAWN STEVENSON: Yeah. So what are some things we can do? Obviously, there's blue light blocking technology, but I think there's a step that's even better.

DR. AMY SHAH: Yeah. I think getting some natural light during the day, even at the beginning when you're burnt out, and I know there's people who say, "Well, I don't have time." Just step out for one minute twice a day is what I ask because the lux of light that come from the sun or even a cloudy sky, are far higher than what you would get through a window or just in passing or whatever. So you want to have 10,000 lux of light, for example. When you turn on your light in the morning, that's like one or 2000 lux, so you're not getting the light that you need to send a signal to your brain and to all of your cells that it's day time. So you really do need to get that natural light, and that comes with getting outside. So getting outside, free, easy, one minute, twice a day, that's like a first step and you're going to feel so much better just doing that. I tell people they can multi-task. So people feel stupid just walking outside and just standing there, right? So maybe you do a little bit of mindfulness or maybe you take a look at your life for just a minute, and a lot of things happen when you just take a minute to kind of get out of your to-do list.

SHAWN STEVENSON: You could listen to a podcast when you step outside.

DR. AMY SHAH: I love podcasts. I used to listen... By the way, just an aside, I used to listen to you, I'm thinking now, when I first was going through my journey, which was like six, seven, eight years ago. I listened to your podcast, I was so into reading and listening, and I remember you had a co-host. You're probably... When did your podcast start? 'Cause I remember listening when there was a co-host...

SHAWN STEVENSON: It was about 8 years ago.

DR. AMY SHAH: Yeah, I remember when it first started, I used to listen to it. So kudos to you. That's when I started to really understand, "Okay, I need to get outside. I need to get out of my to-do list. I need to work on all of these things that are actually hurting me in the long run."

SHAWN STEVENSON: Yeah, that's so powerful. And this is the beauty that we have, it's using technology like that in a positive way, but not being inundated by it, not using it in a way that's kind of counter-productive to our natural human state. So you just mentioned stepping outside, getting a little bit of daylight helps to set those circadian clocks in ourselves, and I know you've experienced the same thing, you mentioned this in your book.

How you would go in... Because I'm from Missouri, from St. Louis. Same thing, I would go in for school and for work, and it would be before the sun comes up, and then by the time I'm done, I come out and the sun's down already. And it's just like, basically, a five to five thing. So having that experience, not getting dialed in with what's nature doing, but then what's on the other side. So you mentioned getting a little bit of sunlight, but what about in the evenings? Of course, again, we've got great blue light blocking tech, it's wonderful. I've been one of people to really push it into public awareness, but maybe we can do something a little bit stronger.

DR. AMY SHAH: Better. So first of all, when you look at sunset versus sunrise, your body actually can tell the difference. We have brain patterns and photoreceptors, it's so fascinating to me, that know the difference between a sunset and a sunrise. So they know sunset means, "Okay, time to get that melatonin ready, time to do all these things." So having an evening routine is... Everyone's so fascinating with morning routines, but having an evening routine is just as, if not more important, than having a morning routine.

SHAWN STEVENSON: That is so good. Thank you. And if you think about it, when we're kids, a lot of us, we have a evening routine. There's like a bedtime routine for our kids, and including myself, was like one of the best times in my life. My grandmother, we had a little evening routine, take a bath, we say our little, "Now I lay me down to sleep," read a story, that kind of thing. And now, as adults, we just kind of fall into it. It's kind of like, "I should probably get to bed."

DR. AMY SHAH: Yeah, sometimes fully clothed, sometimes... There's no pattern, there's no...

SHAWN STEVENSON: There's nothing like sleep when you fall asleep with some Timberlands on Now, with that said, one of our top five, I know it's definitely in the top 10, but I think it's in our top five most popular episodes, is the episode we did on eating routines. So we'll put that in the show notes for everybody. But I love this conversation so much and I want to talk more about how our nutrition plays into this, but not just the food itself, but also when we're eating and this incredible framework that you have, and we're going to do that right after this quick break. Sit tight, we'll be right back.

Researchers at Yale University School of Medicine, the researchers found that one of the biggest culprits behind our obesity epidemic is neuroinflammation. Brain inflammation increases the propensity of obesity and obesity increases the propensity, the likelihood of neuroinflammation, they go hand in hand. So we've got to address this. One of the things that's been proven to help to reduce neuroinflammation is cited in a study published in PLOS One, Public Library of Science One, revealed that the super green algae spirulina has a potential to, one, improve neurogenesis in the brain. So the creation of new brain cells, specifically the hippocampus, is where we get a lot... And the hippocampus is the memory center of the brain. This is kind of important. And two, the study revealed that spirulina is able to directly reduce neuroinflammation. It's incredible. It's helping the structural integrity of this master gland, this master organ controlling everything about us.

The most complicated object in the known universe is also one of the most fragile. We've got to protect it. This is why, for myself and my family, Spirulina, Chlorella, Ashwagandha, all of these powerful foods are put together in the incredible blend at Organifi. This is a regular staple here in my family for good reason. Spirulina, being one of the highlighted ingredients, not only does it have this benefit for neurogenesis and neuroinflammation, but also has rare nutrients like phycocyanin. The same thing with Chlorella as well, that phycocyanin is one of the few things that can trigger stem cell genesis, the creation of new stem cells. Very few things have been found to do that. And then Chlorella is in the formula as well, and that growth factor, the Chlorella growth factor, it's just remarkable, and also its benefits in helping your body to metabolize and eliminate heavy metals and the list goes on and on. It's incredible. But the bottom line is this, it tastes good. It tastes good.

I've experimented for at least about 15 years with all these different green formulas, different green super food plants, many of them is not very good, okay? Many of them... They shall remain nameless, but I've tried them back in the day before tasting good was an option. It's just like, "Just get it in by any means necessary." If you got to do the whole pinch the nose and get it... Whatever. But now, pleasure leads to longevity. Pleasure leads to taking a practice on it, and embodying it, and making it part of your routine, your habits, your daily life. So this is

why I appreciate the fact they've created a formula that actually tastes good, all organic, cold processed, so you actually retain and get the nutrients that we're looking for in Organifi. So pop over there, check it out. It's organifi.com/model, that's O-R-G-A-N-I-F-I.com/model. And you get 20% off, 20% off their green juice formula, their red juice formula, and also their gold as well, so they've got some incredible blends all done the right way with integrity, again, organic, low temperature processed, and yummy, all right? Organifi, you got that yummy, yummy. Organifi.com/model. And now, back to the show.

Alright, we're back and we're talking with best-selling author, Dr. Amy Shah about her new book, I'm So Effing Tired. But in this, it's not just the fact of detailing how our energy actually works, but real world clinically proven solutions. And one of the things that you talk about that not a lot of people are mentioning this dynamic, is circadian fasting. So fasting has become something that's a part of the popular lexicon in the health space, but doing this based on our circadian clock, what are... These timing systems in all of our cells are expecting from us. So let's talk a little bit about that and why you made that an important thing to talk about.

DR. AMY SHAH: I think we're... It's the science is brand new. We've known for thousands of years that we have these circadian rhythms, but the Nobel Prize in Medicine a few years ago went on to researchers looking at circadian biology, because now we're realizing, "Oh wait, it's not just sleep and wake, it is everything." Everything can be... And I don't want to overstate it. You can't say, "Oh, just eat junk food, and as long as you watch your circadian clock, that's fine," but I do think it's equally important to time things during the day, as it is the quality of your food. So it's that important. Up to 80% of our genes work on a circadian pattern, so you really want to be eating, sleeping and getting light at the right times of the day.

SHAWN STEVENSON: So this isn't to just restrict yourself and to punish yourself and to get your body to do something that it doesn't want to do. The way that we really evolved, we had times when we were eating, and then we had times where we were not eating. And now today, like you mentioned, with technology, now we have 24/7 access, and we're also not sleeping well, so this is just creating this feedback loop where we're constantly eating.

DR. AMY SHAH: In fact, I tell... Somebody said that they wouldn't talk about my book because anything that had the word fasting in it signaled disordered eating. And I said, what I said is, "Actually, what we're doing right now in our society is disordered." So when you eat up to 16 hours a day and you only take a break overnight for eight hours, that's disordered. For thousands of years, we know, we have very good data, historical data, that we are not supposed to be eating late at night, that most cultures stopped eating either at sundown or shortly after sundown, because you didn't have the option to have refrigerators, microwaves, drive-throughs, and there was no light. So you pretty much wrapped it up around sunset, and then in the morning, probably didn't just roll out of bed and eat your toast and muffin. You

would go out, get some food, and maybe there's a little bit more of a break. And so what I'm talking about is taking a very natural break that we were actually programmed to do, and putting that back into our lives.

SHAWN STEVENSON: So that's what circadian fasting is?

DR. AMY SHAH: Circadian fasting is exactly that. It's taking a break between 12, 13, 14, even up to 16 hours, but doing it in a way that optimizes our biology. So we see intermittent fasting all the time in our lay culture, and it's almost like you can mean anything by saying intermittent fasting. People eat late at night, and then they don't eat all day, and they're eating their meals super late, and they're really kind of doing the wrong timing, in my opinion. If you're doing it for metabolic health, you really do want to match it up with the right timings. If you look at cultures all around the world, there's fasting in every single culture, and it's usually based on the circadian rhythms.

SHAWN STEVENSON: Yeah. This is so good. For me, I would always hear this... Just in the so-called health sphere, the gym science, and just these different domains about not eating late at night. And I was in one of the fittest conditions that I was in, and I ate late at night. And now this is not to say that I didn't have issues that I can now pinpoint that weren't... Certain things weren't necessarily matching up. We can, "get away" with different things, and it doesn't mean that you can't have a late night snack. However, when it becomes habitual... So one of the things that I came across was, especially once we venture into obesity, we have a much bigger uptick, over 50% greater increase in the secretion of cortisol eating a meal when we venture into being overweight. And now have that happen at night, now we start to understand why eating late at night can contribute to obesity, because guess what, that cortisol is going to be pretty unfriendly to melatonin and messing up your sleep cycle. And we know that sleep deprivation is a contributor to obesity and body fat gain, and it just gets us into this terrible feedback loop.

And so my point being this, so having a little bit of space there from the time we finish our meal, and also just even metabolically speaking, when you go to sleep, your bodies want to do so many other things, but digesting food requires a tremendous amount of energy. So what I want to ask you about is, when people are thinking about having a little bit of structure, just say I'm done eating at 8:00 PM at night, and then I don't have breakfast until 8:00 AM the next day. That includes my sleep. It's not that big of a deal, but just that little bit, that 12 hours, you start to really engage some really seemingly miraculous benefits with our health.

DR. AMY SHAH: Yeah. There's something called the metabolic switch. So in the New England Journal of Medicine paper about intermittent fasting, they said that... Dr. Mattson was the lead author, he said, "The magic of intermittent fasting is not just caloric restriction." So of course,

if you're... Honestly, if I told you, "You can't eat late at night," you're probably going to eat less calories overall, so that's going to be beneficial for you. So he said, "It's more than that. There's also other beneficial things that are happening." It's like exercise.

You get benefit from your muscle getting the exercise, but there's all these downstream benefits of exercise, so something called the metabolic switch is something that I talk about as being one of the magics of intermittent fasting. Taking a break between your dinner and your breakfast can help deplete the glucose in your bloodstream, and then it helps deplete the glucose in your liver, and once you start getting low on that glycogen from your liver, you start to activate these pathways and that metabolic switch going back and forth between using glucose for fuel and using fatty acids for fuel, that's the magic. This Metabolic switch is what you need to be turning on, and most Americans never turn on that metabolic switch ever, because you're never getting to the point where you're depleting the glucose that you have overnight.

SHAWN STEVENSON: And so that's... We're going to see uptick in obviously insulin sensitivity, autophagy, BDNF, everything is going to start working better.

DR. AMY SHAH: Inflammation, cholesterol, blood pressure, diabetes, so insulin dysregulation improves and brain health. Yeah, so one of the best things... And gut health. So all these things, all the things that we're talking about here are the energy trifecta gut health, hormone health and immune health all improve from doing this kind of circadian style intermittent fasting.

SHAWN STEVENSON: I just shared this study yesterday, and this was a randomized control trial, and it's just looking at what if we just condensed that eating window with the calories staying the same, and this was with diabetic patients. One group is eating what I was told to do at my university classes, certification programs, eat five to eight meals a day. But these one set of folks were eating five to six meals a day and another group ate just two bigger meals instead. Same amount of calories at the end of the study, the folks who ate just two larger meals a day, same amount of calories, lost more weight, lost more hepatic fat, had a greater improvement in insulin sensitivity and more... And again, it's not about deprivation, matter of fact, let's address this, how do we get to a place where we're not running around, and this is so hard and we're depriving ourselves, what are we missing when we even have that concept come up that it's too difficult, it's not natural? And we are going to be just having this incessant hunger?

DR. AMY SHAH: The problem Shawn, is that we all live in a diet culture, right, where we are taught about deprivation and reward through foods. You reward yourself with a cheat day and you deprive yourself all week, and so I think that sometimes something like intermittent fasting, the word even triggers people into thinking they're going to be deprived and then that

they're going to be hungry because we're so used to diet culture. So I do tell people that if you are triggered by the word or the concept, it's not right for you, you need to fix that first, because this is not talking about a diet or deprivation, this is resetting those ancient biological rhythms to help us get to a place with more energy and more health. We are not talking about a 30-day diet that's going to help you lose weight. So really separating out diet culture from what we're talking about is the key. Because if you're doing this right, you're not going to feel deprived, you're going to feel more energetic, your sleep is going to be better, and your long-term health improves, and so this is a lifestyle. It's not a diet.

SHAWN STEVENSON: Yeah, I love that. Okay, so from my perspective, I'm just going to share this. If you feel that deep desire to have the bowl of granola at 9 o'clock at night. That's okay. That's okay. We want to get to a place where you don't feel like you're going to die without it, we want to get to a place where you're not dependent on that next hit of whatever it is just for you to get by, and having this chronic dependency. I share this as well, there were times when I was eating all those meals a day, six seven meals a day, because it's what I was trained to do, and it just became so exhausting just even... And I would even think about the next meal while having the meal. And so my life was just revolving around food, which we need food to be... That's a beautiful part of this existence for sure, but we want to be able to manage ourselves without this chronic dependency, and for a lot of it, it's like being dependent on the next blood sugar spike.

DR. AMY SHAH: Yes.

SHAWN STEVENSON: To get by.

DR. AMY SHAH: That's part of the problem is that some people equate the lowering, that crash of blood sugar with actual hunger. And so I think what you realize... What I realized when I started to turn down how much sugar I was eating and how many refined carbs I was eating, I started to notice that my moods and my hunger was a little more stable and that I didn't need to be eating all the time. Biggest thing I noticed, Shawn, is when I used to go to airports before I started doing circadian fasting, when I would go to airports and I would feel like a tinge of hunger, I'd have this emergency feeling like I need to go get a snack. It doesn't matter whatever I can find, I need to eat it, because if I don't deal with this hunger feeling, it's just going to get louder and louder and louder. What I didn't realize is that a lot of these hunger signals are not actual hunger. It's sometimes your blood sugar is going down because you're used to eating so many high refined carbs that your blood sugar dropping even just a little bit signals to your body like, "Hey, I need another hit."

And so when I started to do this, I realized, "Oh wait, this is the same thing that happens to me. I don't need to be running and getting the first shake or Auntie Anne's Pretzel at the airport

when I feel that tinge, I can power through that and when I get home, I can have a nice healthy meal and I don't need to be acting on every little impulse." And that changed so much for me because people... I think we live in a society where we think we got to act on every impulse, like if we're not giving into our cravings, then we're not really listening to our bodies, but you have to remember that our bodies have been hijacked, our brains have been hijacked by these companies, that they want you to stay addicted, they want you to go and emergently at the airport, run to the Pretzel stand and go get something because that's good for their business.

SHAWN STEVENSON: I'm so glad you mentioned the aromas, for example, that Cinnabon, they specifically they're using... It's something called a gas chromatograph, like isolating flavors and isolating smells and chemically creating this thing to tickle your fancy to get you over there.

DR. AMY SHAH: I mean, they put people in full on MRI head braces while they have them taste foods so that they can pick up the one that lights up the most addictive areas of your brain. And so can you imagine that we are living in that world and then we're trying to manage our decisions when they've already been hijacked by all these companies? I feel so bad for children because if they don't get educated about... Yeah, you're being hijacked. Of course, they're going to go for the Twinkie or the Dorito's because it's lighting up all those parts of their brain and they don't know any better. So, we need to do a better job educating all of us, plus our children that making those decisions... Yes, it's going to taste better because it's chemically created to hijack your brain. And so then maybe they can make better decisions about what they're choosing because they understand that.

SHAWN STEVENSON: Yeah, and then there's... With that exact point, there's this vanishing caloric density, because our bodies, our brains, we evolved to suppress. Once we have something that's very strong, like a strong hit of something, our biochemistry starts to shift to tell us, "That's enough, back away." But they found out just the right amounts of certain things to stimulate you, that addictive part of the brain, stimulating that kind of dopamine loop without hyper-stimulating it, so that you can keep eating more. So, this is where we have that phenomenon of the Cheetos just disappearing and we could just go through a whole bag, and the next thing we know we've consumed 500 calories of what seems like air, the only evidence is those orange fingertips. It's so deceptively done, but again, it's still... They're trying to make a dollar, it might not be ethical, but they're trying to increase their shareholder value, they want repeat customers, and we've got to understand what that is.

So, once we make this shift, one of the big shifts in taking back ownership of our biology, not outsourcing it, is simply when we do eat, this helps to reduce that chronic desire to be eating all sporadic, like you mentioned, it could be 15-16 hours on average through the day people are eating, is nourishing yourself when you are eating. So a big part of that is making sure that you're getting this overlooked macro nutrient in the debates, people are debating carbs and

fat all the time still, but protein is left out. That's one of those big things. Protein is used to build your satiety hormones, it's used to build the organs that help to manage your blood sugar. The list goes on and on, so that's kind of important.

DR. AMY SHAH: And then I would say even more important. Actually, the most important in my eyes is fiber. So, what I have found is that we not only severely under-eat fiber in our... 95% of Americans are not getting enough fiber, we're getting 15 grams or less, if you really look at your diet, I was eating healthy, I was... I thought I was eating healthy. I was eating every few hours, I was trying to get my... I'd have a protein bar at work because I thought that's the way to go, but when I looked at my fiber intake to kind of buildup that army that actually helps with all of this energy and health stuff, I was getting very little. So, I think that fiber, adding in vegetables, this pre-biotic fiber, so it's the fiber that feeds that gut bacteria is the most overlooked nutrient in all of our diets.

SHAWN STEVENSON: Yeah, that's so good. For me, fiber, we've got... There's five main macronutrients, we only just talk about three, so we've got proteins, fats, carbohydrates, alcohol as well, and that's a whole nuance thing, and water. Fiber's like the sixth man coming off the bench, and even though it's not "digested," it has so many metabolic effects, so I'm so glad you brought that up. And the last point here, before I ask you about this, I think something that I want to ask you about, which is catering to a certain portion of the audience who tends to get looked over. But there's this term I want everybody to just sink into your mind and just have that in your mental Rolodex on deck, which is chronic nutrient deficiency leads to chronic overeating, chronic nutrient deficiency leads to chronic hunger. Our bodies that hunger, these hunger signals, this could be from food manipulation and addiction, but also our bodies are crying out for the raw materials it needs to rebuild you.

So, if you're deficient in selenium and magnesium and copper or whatever the case might be, we're going to... Our bodies are going to... We might bring in a sandwich and we really needed these 20 other things, your body's crying out for Omega-3s and you didn't get any. It's going to incite hunger again. So, when we're eating to eat nourishing foods, to give our bodies the things that it needs to rebuild you, and it just helps everything to gain that homeostasis. And what I wanted to ask you about was, what considerations, if any, can we talk about with women in regards to circadian fasting, because that's the kind of like... And I mentioned you, I tagged you the other day, when somebody's asking like, "Well, what about with women? Can this be appropriate?" And so often, studies are done, and recently, a shift has taken place, not taking women into consideration, and also just looking at women as smaller men. So are there any considerations for women in circadian fasting?

DR. AMY SHAH: This is such an important point. Circadian fasting and intermittent fasting in general is a term like exercise. So could you over-exercise? Yeah. So same thing, you can over-

fast. So there are many negative things that can happen from over-exercise. You can injure yourself. Same thing, if you over-fast, you can, not everyone, but you could injure your hormones and your metabolism. But that doesn't mean that you shouldn't exercise, right? That doesn't mean that you should not fast. What we're talking about, this overnight circadian fast, is something that we were programmed to do.

So I'm asking women to parse out for themselves that there is three-day water fasts, and then there, on the other extreme, is a circadian fast, which is natural, overnight, between 12 and 15, 16 hours, you decide, you pick your own adventure, because you don't have to do it every day, you can alternate. So personally, I tell people that I'm very sensitive to those hormonal signals, as many women are, and so I have to alternate the length of my circadian fasts. So I'll do a very short or no fast one day, and then the next day I'll do kind of a push fast. So maybe it'll be like 14, 15, 16 hours, depending on how I'm doing that day. And then the week before my period, it's called the late luteal phase of your hormonal cycle, it's okay to not go hard on the exercise, not go hard on the fasting. It's okay to do some more self-care, because you're in a phase of your hormonal cycle that is very low on the hormones and the building blocks of energy. So you're insulin-resistant, you're stress-resistant, or more stress-sensitive, I should say. So that means that these are not the times of the month that you should be going hard on the fasting and on the exercise.

So listening to your body, but also knowing these tips and tricks to navigate is really, really important. So for women, I say, absolutely you should try intermittent fasting. There's... Anyone who wants to challenge us on that, I will challenge them any day. It's such horrible advice to say, "Oh, women should not intermittent fast." That's like saying, "Women should not exercise." You're doing a disservice to half the population by saying that, 'cause now you're confusing them. Now they're saying, "Oh, maybe I should be eating 16 hours a day, and I should be eating every two hours. Maybe I was getting it wrong." No, it's very healthy to take a break between your last meal of the day and your first meal the next day, but just take it easy. We have very sensitive hormones. In our brain, we have something called GNRH, gonadotropin-releasing hormone, it's pulsing all the time, and it's super sensitive to stress. It's also sensitive to light and all of these other inputs, but super sensitive to mental stress or to physical stress.

So if you are stressing your body out, it will stop pulsing and you will not get your period that month, you will not be able to be pregnant that month, so that fertility cycle, but also it affects your thyroid and your adrenals. All of it is shut off because your body's feeling a ton of mental stress. So you really... And women, I think, we think evolutionarily and biologically are wired more sensitive to that GNRH pulse. So it can stop at any point. Female athletes deal with this all the time. When they're training too hard without recovery, they... That GNRH pulse will pause and they will not get their period that month, and a lot of Olympic athletes and

professional athletes really do have to work on a lot more of the recovery and making sure that they're not giving their brain that danger stress signal to turn off fertility.

And so what I tell people, it's the same thing with intermittent fasting, if you do it too extreme, too aggressively, too long, you will send signals to your brain that you are in stress mode, and it will turn off fertility, but that does not mean you should not do it. Maybe shorten the amount of time, maybe it's not... Maybe it's too intense for you. Maybe you need to do it every other day, maybe shorter intervals. So that's how I would advise women.

SHAWN STEVENSON: That's good. Thank you so much for that. So what you're talking... What I'm really hearing is a sense of cross-training your cycle, in a way, cross-training your period and having considerations with exercise, having considerations with your nutrition, because you are changing. And men too, we have our cycles, which women would notice, like he's on his... whatever, but it's, of course, not the same. But just noticing our patterns. And this has to do with the... Still, that aspect of your cycle is to do with the circadian timing and honoring that. So I love that you said... So the week prior, maybe this is the time to shift over to some more, I guess, restorative yoga-type exercise for a movement?

DR. AMY SHAH: Yeah. Exactly. So late luteal phase. So we have a follicular phase and a luteal phase. The follicular phase is the first half of the cycle, then you have ovulation at day 14, and then for the last half of the cycle, you're in the luteal phase. So late luteal phase basically translates to the week before the period, days 21 through 28. That is when you are less insulin-sensitive, so that's when people get a lot of cravings, they get some mood changes, they also are very sensitive to stress. So women, if you are empowered with that knowledge, that changed my life, if you're empowered with that knowledge, you can time things better, you can do things a little differently. Maybe you don't do the HIIT crazy workout that day along with the intermittent fasting, along with doing something stressful at work. Maybe you dial it down to a little more self-care. Men should be cycling their workouts and fasting as well, but it may not be as obvious. You may pick a week that works for you. But for women, it's a very logical week.

SHAWN STEVENSON: Ooh, this is so good. Okay, so... Alright, I didn't say this, you said it, you're more sensitive to stress, right? Right before, so you might be a little bit more sensitive, period, a little bit more irritable.

DR. AMY SHAH: Yes. It is a fact. And it's different for every woman. Some women do not feel emotionally labile, and some are very emotionally labile. They can look at their calendar and know why they're crying at the drop of a hat. But everybody's different. So some people don't have that at all, and women who are on birth control or some other kind of exogenous hormones don't have that either. It's more muted.

SHAWN STEVENSON: I love that. So this is just bringing awareness to what's happening in our bodies. Again, guys, we have different cycles as well. There's ebb and flows with our testosterone production through the day with all of us, but especially what I wanted to encourage is, even for the guys out there, if you are with a woman, if you know a woman, if you have sisters or your mom, but especially in loving relationships, for you to start to cross-train things as well. I'm not saying I've had to learn, but I've had to learn. Like, "Oh, I see what this thing is, what's happening right now. Let me change my approach, my behavior, because it's not that she's wanting to be more sensitive right now."

But oftentimes, we'll start pushing back against that, not realizing what it is, like, "This is not rational." But it's not about that. And what we term rationality is just things that we don't understand. And so it's just for me to be more considerate, more understanding, more patient during these times, understanding that I need to cross-train things at this time. So maybe I need to be a little bit more soft, whereas like two weeks from now, she might want me to be a little bit more aggressive. So these are just all things to entertain, to learn about. I think it's really important.

DR. AMY SHAH: And women leaders and men leaders, if we understood this about women a little bit better, we could give them a little more leeway on projects or on tasks. So I personally know, because of this infradian rhythm, we call it, that the first two weeks of your cycle are when your hormones are in the best shape, and you can push it, you can train like an athlete, you can eat like an athlete, but you can also do a lot of stressful tasks in your life. And so if you can time it so that you're doing the best work and saving the most important work for that time, so not only timing your day, but also timing your month, that can really be beneficial. I hope that people can take away like, "Oh yeah, that makes sense. Not only do the times of day matter, but times of month would matter to me also, so that I can optimize how I'm doing the work in this world and optimize my own health by taking this information and using it."

SHAWN STEVENSON: This is awesome. Well, first of all, I'm So Effing Tired, everybody needs to get a copy of this book. Can you let everybody know what they can expect from reading this new book?

DR. AMY SHAH: Oh, that's a great topic. So you can expect the science behind this energy trifecta. They can expect how did we get this way. And then they expect a plan, a proven plan, a done for you plan, and some recipes to accompany this plan. So I didn't want to just give the overall scientific picture, I wanted to tell you, "Okay, here's how you would do this in the practical world." So you can get all of that.

SHAWN STEVENSON: Perfect. Alright, so the book is now available everywhere books are sold. Is there any other directive? Where can people connect with you, find out more online, all that good stuff?

DR. AMY SHAH: On social media, on Instagram, I'm @FastingMD. On Twitter, Facebook, LinkedIn, I'm @AmyShahMD. The book is at Imsoeffingtired.com or my personal website is amymdwellness.com.

SHAWN STEVENSON: Perfect. Alright, got one last question for you. You've been through a lot, you've accomplished a lot, you even lead the book off with a really crazy story, which I'm going to save it for folks to read the book. But in your experience and being able to traverse this conventional education and venturing more into what we now put this label of wellness and preventative care, for you and the way that you live your life personally right now, I know that you... This is why I wanted you here, is that you're somebody who is walking the talk, you're doing the things that you're teaching. So for you, what is the model that you are wanting to set for other people with how you live your life personally?

DR. AMY SHAH: Wow. That's a big broad question. I love it. But part of this that, really, I learned is that it's okay to set boundaries so that you can manage your energy. In the world, the way our society is structured, as of today, in 2021, the things that we have talked about during this conversation are still weird, outside the box, unconventional. And you need to give yourself permission to say, "I need to do this. I want to do this, and this will make me a better person." And be firm about that. And so it comes from the mind. Everything starts at, as we always talk about, starts from your mind. Give yourself the permission to do the things for yourself that are going to make you more energetic and a better person overall to others, because people feel guilty about putting up boundaries because what will other people think? And people will think boundaries are such a negative term. But no, this will actually open so many doors for you to be more of a giver, to be a better friend, to be a better spouse, to be a better mom or dad, and to live a healthier more vibrant life.

SHAWN STEVENSON: Awesome. Thank you so much for hanging out with us.

DR. AMY SHAH: Oh, this is so great. Thanks for having me, Shawn.

SHAWN STEVENSON: Dr. Amy Shah, everybody. Thank you so much for tuning in to the show today. I hope you got a lot of value out of this. This topic of Chronobiology is just going to continue to grow, circadian medicine and addressing these things, but we don't want to just start to look through that myopic conventional medicine lens of trying to come up with drugs and treatments to address these cellular clocks that we have. But what are the things that our genes are really expecting us to do? The circadian clocks that have been there since the

beginning of human evolution, what are the things that help all the clocks work in synchronicity?

For me, I'm thinking like "Back to the Future," when he's trying to hit the lightning bolt, the cord at the exact time that the clock hits, and this kind of... Getting everything synced up so you can go back to the future or to the future period. Just being able to modulate and to utilize our incredible bodies and minds in synchronicity, we can be unstoppable. And so I'm really excited about this and this conversation and continuing to expand upon it. And if you got a lot of value out of this episode, please make sure to share it out with your friends and family on social media. You could tag me and tag Dr. Amy Shah. She's @FastingMD and I'm @ShawnModel on Instagram, so tag us. Let her know what you thought about the episode.

We've got some epic, epic shows coming your way very, very soon, so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon. And for more after the show, make sure to head over to themodelhealthshow.com. That's where you can find all of the show notes, you could find transcriptions, videos for each episode. And if you got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome, and I appreciate that so much. And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.