

THE MODEL **HEALTH** **SHOW**

EPISODE 530

The Science Of Body Fat & Epicaloric Controllers

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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. We need more inspiration and education than ever before. The good news is that we have so much accessibility right at our fingertips. Now, the more complex news is that we're swimming in a lot of contradictory data, a lot of "misinformation." And we got to use that word very lightly. But just stuff that can kind of pull us out of our rationality, and our ability to problem-solve, and our ability to really tune in to what's best for us as a sovereign human being right now. And so today, I thought I'd do something a little bit different, and really, this was a catalyst of some really special news that I got just this week, as of this recording. The Associated Press released its top 10 audiobooks sold in the United States, and I'm going to read that list for you. It's pretty remarkable. It's non-fiction.

On the list, number one, "The Storyteller," Dave Grohl. Massive audience. Huge influencer. Number two "Greenlights" by Matthew McConaughey. Alright, alright, alright. Number three, "The High 5 Habit" by Mel Robbins. The one and only Mel Robbins who we've had here on The Model Health Show. Superstar. She's the person who actually text me this list, 'cause I had no idea. Number four, "Atomic Habits" by James Clear. Perennial best-selling book. Just stays there forever. Number five, "Bad Republican" by Meghan McCain. Don't really know much about her, but I know she's popping out there in the interwebs. Number six on their list, "Eat Smarter" by Shawn Stevenson. Mmm. Mmm. Come on. Come on. Number seven, "The Art of War" by Sun Tzu. People studying up on war right now, don't know what's going on. Number eight, "The Subtle Art of Not Giving a Fudge." Okay, he said something different, but this is by my guy Mark Manson. Another perennial best seller, always in the top 10. We've also had Mark on the show a while back as well. Number nine, "Who I Really Am: Diary of a Vampire" written by Alice Cooper, mega rock star. Number 10, "Can't Hurt Me" by David Goggins, another perennial bestseller.

And right there, sandwiched in there, is this remarkable book about food. And for me... Again, I had no idea about this. Mel Robbins sent this list over to me. And we're about halfway through the year since Eat Smarter has come out, and for it to make this surge is just another affirmation to me that people care about this. In the midst of all this other stuff, whether it's politics, whether it's celebrity, whether it's social issues, whatever the case might be, people... The Art of War, for example, people studying up on that, mindset, philosophy.

There's one book on nutrition and health and food wellness that is cutting through and making a difference, and I just don't feel that that's an accident. I feel that there's something real and something true about it that's really connecting. And I feel that there's a statement... I've said

this before, that there's nothing more powerful than an idea whose time has come, and that time for us eating smarter, truly taking care of our own health and well-being, the health and well-being of our families and our communities, this is the time for it to happen. And so, to celebrate this, I thought it would be a great idea for somebody who's pointing the microphone my way, whereas I'm usually doing this when I'm having guests on the show and interviewing them and really digging in and looking around in their experience and their psychology, gaining their insights. A really good friend of mine, who also has one of the most popular, most downloaded, biggest shows in the world, our good friend Lewis Howes at The School of Greatness.

He interviewed me on his show, and he was really operating from a spectator perspective, from a really curious mind, and asking questions that most folks want to know, and so we're digging in. And in this interview that I'm sharing here on my platform, I thought it was so powerful. We're going to be talking about how fat is actually stored on your body and the various types of storage fats that we have. We're going to be talking about what the key epicaloric controllers are that actually determine what calories do in your body. We're going to cover how food began to be tied to character, to our personal psychology, how food began to be tied to social structures of morality, and how we feel about ourselves as a human beings and about other people. We're also going to talk about how our microbiome influences our metabolism and how to radically improve your microbiome health. Very practical things. Also, we're going to cover some of the most important nutritional and functional aspects of stress and what we can do to improve our resilience, our mental health, and our metabolism.

This is absolutely packed with insights and good vibes, and I really hope that you enjoy this. And thank you so much for celebrating this moment with me. Again, Eat Smarter, top 10 in the United States of all non-fiction books on Audible. Alright, so check out that audio version of Eat Smarter. Keep that momentum rolling. And also, I want to hook you up today with something that you can get access to for free, and it has a lot to do with the health of our mitochondria, it has a lot to do with the health of our nervous system, with our endocrine system. Literally, how our body does, pretty much every process is driven by the sodium-potassium pump. And these electrolytes are critical to so many aspects of our health.

Let's take our cognitive function, for example. Sodium is one of the most important nutrients regarding helping our brain. First of all, just helping our tissues to retain fluid and have fluid balance, specifically our brain, which is about 80% water. If we're lacking in the right type of sodium, literally our brain starts to lose volume. This is not a joke and that is not good. So, it's not just getting hydrated, it's also making sure we're getting appropriate, adequate amounts of sodium, which most people in our society, contrary to popular belief, are not. A study conducted by researchers at McGill University found that sodium literally functions as an on-off switch in the brain for specific neurotransmitters that support optimal cognition, that

support optimal brain function, and they found that sodium protects the brain against numerous neurological diseases, like epilepsy. This is really important. This is so simple. Foundational, but are we doing it? Are these key pieces of health and wellness getting to our citizens? Sodium, number one.

Also, sodium is critical for optimal blood glucose levels, which is, blood glucose is critical for our cognitive function and brain health. It's all about those glucose pathways and everything working efficiently when it comes to the brain. A study conducted by researchers at Harvard Medical School and published in the journal "Metabolism" found that a low sodium intake can directly increase insulin resistance even in healthy test subjects. So, this is something. We could push ourselves into insulin resistance, even if it's acute insulin resistance if we're lacking on the right sodium.

So, sodium is one. Another one of these critical electrolytes is magnesium. A fascinating study published in the journal, Neuron found that magnesium is able to actually restore brain plasticity and improve cognitive function. So, helping the brain to adapt and evolve. Plasticity means if a process, for example, it's damaged or a certain neural pathway breaks down or is damaged, or whatever the case might be, the plasticity of the brain, its ability to adapt and change, your brain can find another way to do things, another way to create and to develop learning, and to lay down more myelin so that things become automatic.

Magnesium is a key player in this whole process of brain plasticity and cognitive function. Right now, you can get access to something that I had today before the show, it's one of my favorite things, the only electrolyte that I use, is from LMNT, that's L-M-N-T. Go to drinkL-M-N-T.com/model and you get to try this incredible electrolyte blend for free. No sugar, no artificial dyes, no unnecessary preservatives, only high-quality electrolytes in the right ratios. They actually use clinical data to come up with these ratios with magnesium, with sodium, with potassium, so that it's really hitting the right notes when it comes to our metabolism. Again, go to drinkL-M-N-T.com/model. All you got to do is pay a little in shipping, and they're going to send you a free sample pack of LMNT to try. Again, go to drinkL-M-N-T.com/model. And now, let's get to the Apple Podcasts review of the week.

ITUNES REVIEW: Another five-star review titled, "Inspiring, Encouraging and Refreshing" by 31 for 2. "Shawn, thank you for sharing the gift of you. I am very grateful that I stumbled upon your 'Sleep Smarter' book a number of years ago, and then this year found your podcast. So appreciative of all the transforming information you share. You make me want to be the best me I can be. Don't stop sharing."

SHAWN STEVENSON: I'm not stopping any time soon and this means so much. Thank you so much for sharing that over on Apple Podcasts. If you're yet to do so, please pop over to Apple

Podcasts and leave a review for The Model Health Show. And on that note, let's get to this special edition of The Model Health Show. On this episode, New York Times best-selling author, Lewis Howes, and the host of one of the biggest, most incredible shows in the world, The School of Greatness, is interviewing me and we're diving into all things nutrition and human health. So, I really hope that you enjoy this. Let's jump into this incredible interview.

LEWIS HOWES: Welcome back everyone to The School of Greatness. I got my dear friend Shawn Stevenson in the house. My man.

SHAWN STEVENSON: What's up, brother?

LEWIS HOWES: Good to see you, brother. Very excited about this. You've got a new book called Eat Smarter: Use the Power of Food to Reboot Your Metabolism, Upgrade Your Brain, and Transform Your Life. And I want to jump in and ask you a question about something I've been insecure about my entire life. Belly fat. Never had a six-pack. Never. And no matter how hard I trained as an athlete in the past, no matter how hard I try to bio-hack, optimize sleep, which I did in your last book, to eating the right foods, to eating just chicken and broccoli all day, it seems like I've always got a little belly fat that I can never get rid of. I'm curious, is there a way you think I'll ever be able to burn belly fat for good through the things that I'm eating in a better way?

SHAWN STEVENSON: First of all, folks need to know that you are ridiculously masculine. Do you know what I mean? You've got a great frame.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: Just an incredible athlete. We've done a lot of stuff together too.

LEWIS HOWES: We've worked out here in St. Louis.

SHAWN STEVENSON: Yeah. Yeah... And...

LEWIS HOWES: Played basketball together.

SHAWN STEVENSON: Right, man. Dude, I've got a story about that I can tell everybody. But afterward driving home, because we were just going to shoot around a little bit, then we end up playing three games, and then lifting afterward.

LEWIS HOWES: Yes.

SHAWN STEVENSON: And on the way home, I've never felt like that. I had to pull over and take a nap.

LEWIS HOWES: Really?

SHAWN STEVENSON: I've never felt like that before.

LEWIS HOWES: You played hard.

SHAWN STEVENSON: Because you and me were both like, "No, I'm not going to let him win." But yeah, there's a component, of course, with genetics. Now, with that said, we know that the leading science right now, and what's really beginning to finally explode and become a popular part of the lexicon, is epigenetics, and things that are above genetic control. Now, with that said, I think the first thing is having an understanding and an association with what fat actually is, and most folks have no idea, unfortunately. We're like we're at war with something we don't even understand. And so, fat can be broken down into, essentially, five different categories, at minimum. And a couple of these, folks might have heard before, but we're going to go even deeper.

So, the first type is subcutaneous fat. And subcutaneous fat is a type of white adipose tissue. This is the fat that's just below your skin. And so, if you're trying to... If you think about fat on your arms, or your thighs, your butt, you can also have some subcutaneous fat on your belly, but that's the stuff you can pinch. Now, the other...

LEWIS HOWES: I can pinch a lot right here.

SHAWN STEVENSON: The other type of fat is visceral fat, and that's also... It's also known as omentum fat. And omentum fat is the kind of deeper recesses of your abdominal cavity. So, this is the fat that's really kind of around the organs, kind of putting... If you have a lot of visceral fat, putting stress on your pancreas, and on your kidneys, and just everything in your core.

LEWIS HOWES: This is the fat inside your... Not on the outside of your muscles, but inside your body?

SHAWN STEVENSON: Yeah. So, it's like your abdominal cavity.

LEWIS HOWES: Gotcha. Your visceral fat. And you want less of that.

SHAWN STEVENSON: Yeah. This is the most dangerous type of fat. This is the fat that's most correlated with heart disease, with Alzheimer's, with type 2 diabetes. It's just putting stress on your core, everything, which there's so much around there.

LEWIS HOWES: Digestive tract, your organs, your liver, your stomach, everything.

SHAWN STEVENSON: Yeah. And this is the stuff... It's a little bit more firm to the touch. It's a little bit harder to get your hands around. So, these are both still two types of white adipose tissue. These are storage fats. So, your body is storing energy. And before I go on, let me preface by saying this. Our fat is actually amazing. It's one of the most important things that have made us the humans that we are today, is our ability to store energy and to go back and utilize that energy. Our fat is programmed to do what we've taught it to do. It's just doing what it's programmed to do. It's very good at it, though. And it can be a little bit clingy. So, you have to give the right messages, and that's part of the issue. So, I just want to make that clear. And fat is also... It's not... We tend to think it's like scattered droplets of cells or unhappiness throughout our body, but it's really an organ itself.

LEWIS HOWES: Fat is an organ?

SHAWN STEVENSON: It's an organ. It's an organ that has this interconnected communication. And being that it's an organ, it produces its own hormones. So, it's making... Producing more hormones that encourage more fat storage, if it gets out of hand. So, I wanted to preface by saying that.

LEWIS HOWES: Wait, is it an organ, or is it like an organ?

SHAWN STEVENSON: It's an organ.

LEWIS HOWES: Fat is an organ in the...

SHAWN STEVENSON: Yes. Yeah. Just like, for example...

LEWIS HOWES: So, fat in our body is one organ, and it's all connected. From the brain in my...

SHAWN STEVENSON: It's all connected. Yeah.

LEWIS HOWES: From the fat in my brain to my belly, to my toe?

SHAWN STEVENSON: No, there's different types of fat communities.

LEWIS HOWES: Okay.

SHAWN STEVENSON: So, this is another conversation. I go through all of these; I literally call it "The Fat Communities" in Eat Smarter. I break this stuff down. So, there's another type of fat in the white adipose tissue camp that a lot of people don't know about, it's called intramuscular fat. Intramuscular fat.

LEWIS HOWES: Is this the third type of fat?

SHAWN STEVENSON: Yeah. And so, this type of fat really works on-site to provide energy to your muscles. Now, when I went to school, my conventional education, I really was indoctrinated with an idea that fat and muscle are kinds of... They have this dichotomy like they're two different things, they're separate, but they actually work together. And intramuscular fat really provides... And just to think about what it looks like if you think about the marbling of a steak.

LEWIS HOWES: It's beautiful.

SHAWN STEVENSON: That's your intramuscular fat. Now, that can get out of hand too, and you can get what we refer to as chubby muscles, with the intramuscular fat. So, there's too much white adipose tissue storage on that particular fat community. So, these three are white adipose tissue. These are storage fats. Now, here's what's really amazing, and a lot of folks might know about this next one. We also have body fat that burns fat. So, they're not storage fats, these are fats that contribute to the burning of energy. The first one that's becoming a lot more recognizable is brown adipose tissue or BAT. Brown adipose tissue or brown fat. Now, brown fat, the reason that it's brown is that it's so dense in mitochondria.

LEWIS HOWES: Mitochondria are good, right?

SHAWN STEVENSON: Yeah. Mitochondria are really the energy power plants of our cells, really producing the energy. When we talk about having energy, these are the power plants creating that energy, and mitochondria is where your fat actually gets burned. So, folks don't... We're taught these diet paradigms, like, "Where the... How does it work? Where does the fat go? How does it get burned?" Your mitochondria, actually, are the place where the triglycerides get shipped to actually burn them and use them as fat. So brown adipose tissue is brown because it's so dense in mitochondria.

LEWIS HOWES: Side note. How do I go to bed weighing a certain amount, and then I wake up and I lose two pounds? Where does that go? Is that just burnt through sweat? Is that just mitochondria burning and it's disintegrating in the air? What is happening?

SHAWN STEVENSON: This is such a great question. So, in Eat Smarter... This is the first time in book form we're walking people through how the process of fat loss actually happens. The question should be like, "Where the hell does fat go?"

LEWIS HOWES: Where'd it go?

SHAWN STEVENSON: Does it go to a freaking...

LEWIS HOWES: Do you just poop it out? Do you sweat it out? Does it...

SHAWN STEVENSON: You got that...

LEWIS HOWES: Do I breathe it in?

SHAWN STEVENSON: You've got that Thanos keychain. Does it go to another dimension, you know what I mean?

LEWIS HOWES: Exactly.

SHAWN STEVENSON: But what they did, and this was so fascinating, they actually tracked the path of fat getting burned throughout the body and tracked how it actually is eliminated. And so, what they discovered was that about 84% of the fat... Because, okay. We have to preface by saying this. For us, psychologically, in our culture, we tend to think of burning fat, if there's a visual of it, it's sweating. We're out there, we're at the gym, we're sweating it out. That's your fat cells crying, having a good breakup cry. That's what we think. But in actuality, about 84% of the fat that you lose or that you expel from your body is through breathing.

LEWIS HOWES: What?

SHAWN STEVENSON: Yeah, it's eliminated via your lungs. Yeah, as carbon dioxide.

LEWIS HOWES: So, it... No way. So fat burns in the body...

SHAWN STEVENSON: Yeah. About 84%.

LEWIS HOWES: And then it goes, what? Into your lungs? It's like transporting through the lung cavity, and then you breathe it out?

SHAWN STEVENSON: It's an eliminatory organ. And we don't think about that.

LEWIS HOWES: What?

SHAWN STEVENSON: We tend to think about our gastrointestinal track, our bladders as eliminatory organs. Your lungs. And so, you breathe... About 84% of the fat that you lose comes out via your breath, and about a third of that happens while you're sleeping at night.

LEWIS HOWES: So, you breathe fat out, that's how you burn it? How much...

SHAWN STEVENSON: Cesar Millan is the Dog Whisperer. You're the fat whisperer.

LEWIS HOWES: Yeah. I'll just whisper. Exactly. I burn it in my sleep. So, wait a minute. How much fat do we burn through our lungs?

SHAWN STEVENSON: About 84% of it.

LEWIS HOWES: So, all of our fat. So, if I'm 100 pounds...

SHAWN STEVENSON: But this is not the just... Your breathing, it's all the metabolic processes that take place to create the metabolic kind of offshoots or the metabolic waste.

LEWIS HOWES: It just comes through the lungs?

SHAWN STEVENSON: Right. Through the breathing. You also do eliminate some of body fat through fluids. So about somewhere around the ballpark of about 15%, 16%-14%, sweat, urine...

LEWIS HOWES: The bathroom.

SHAWN STEVENSON: Yeah. Tears. You can even... All of these things are eliminating...

LEWIS HOWES: Fat cells?

SHAWN STEVENSON: Products.

LEWIS HOWES: Fat cells.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: Is the fat... It looks coagulated when you look at it in your body, right? So how does it break down and then turn into just nothing that you can see? Looks like...

SHAWN STEVENSON: It's a very complex and beautiful process.

LEWIS HOWES: The body, is fascinating what it can do.

SHAWN STEVENSON: Yeah. It is, it is. And we go through... And it can be so overwhelming, but what I did was I made in an analogy in the book of a theater, making your body like a cellular movie theater, and there are particular ushers who are there to put fat into the seats. So, we tend to think that fat cells... We're trying to "kill fat or burn fat," but that's not really how it works, actually. Your fat cells are storage containers. And what they're getting filled with, the fat cells, basically, when you're born, you have a certain allotment of fat cells. You can't just indiscriminately kill them. They get filled with more and more energy. It makes the fat cell expand. So, what we're trying to do is to get the fat cell to let go of its contents, so it can be used as fuel.

LEWIS HOWES: Right.

SHAWN STEVENSON: And so, there are two enzymes that are really the head ushers that push fats... The fat contents or triglycerides into the fat cell, or they usher them out when it's time to leave. So, one of them is hormone-sensitive lipase, is the one that comes and gets folks out of the theater. Lipoprotein lipase takes the triglycerides and ushers them into the theater. And then there's organs that kind of dominate and regulate what those enzymes are doing, namely, your pancreas is like the mother of two brothers who have two different roles. One of them is insulin, and the other one, its brother, is glucagon. Insulin is so... Man... When you think of insulin, what do you think of, though?

LEWIS HOWES: Eating sugar?

SHAWN STEVENSON: Yeah? Right, right.

LEWIS HOWES: That's what I think of. And insulin spikes in the body when you eat sugar, right? Yeah.

SHAWN STEVENSON: And most folks think of diabetes, too. It's tied into that lexicon.

LEWIS HOWES: Right, right, of course.

SHAWN STEVENSON: Insulin is so important for our survival. It's super amazing.

LEWIS HOWES: We need it.

SHAWN STEVENSON: Yes. You absolutely have to have insulin. And if you're born... On a condition where you have type 1 diabetes and the beta cells in your pancreas aren't even making insulin, you can die. Your cells won't get energy. So now, here's the thing. Insulin's job is to store energy.

LEWIS HOWES: Fat.

SHAWN STEVENSON: Yeah, and to encourage all those enzymes to do their work as well. So, when it's out of hand, when insulin is too active, it can be a problem.

LEWIS HOWES: It's storing too much fat.

SHAWN STEVENSON: Yeah. And it can get to a point where there's so much activity with insulin, it's getting overrun and stressed out that it stops doing its job properly. That's where you get insulin resistance. And then you have something called... This kind of instant cell... Fat cell creation that can take place with the liver. It'll just start making its own fat as well. But we'll circle back to that a little bit later. But here's the thing, so you got insulin doing its job of fat storage or energy storage. Glucagon does the opposite. It encourages your cells to let go of their contents to be used as energy. But glucagon cannot do its job when... Unless its brother sits its ass down somewhere and stops...

LEWIS HOWES: Insulin?

SHAWN STEVENSON: Yes.

LEWIS HOWES: So how do you get insulin to stop doing its job?

SHAWN STEVENSON: That's what it's all about, man. That's what it's all about. But we don't want it to stop, we just want it to be efficient.

LEWIS HOWES: Efficient.

SHAWN STEVENSON: Now, here's another thing. We do know that, as you mentioned, sugar is a big driver of insulin, carbohydrates in general...

LEWIS HOWES: Breads, pastas, right?

SHAWN STEVENSON: Yeah. But protein does as well. It incites the activity of insulin at a lesser degree, for sure, and even fat, in a kind of backdoor way, does drive insulin function too or even contributes to, potentially, insulin sensitivity or insulin resistance. So, it's not just this one thing, but we do know that in our culture, on average, folks are eating like 150 pounds of sugar a year. So that abnormal amount of exposure is chronically creating this over-activity of insulin to the point that we have insulin resistance.

LEWIS HOWES: 'Cause 100 years ago, we weren't eating as much sugar, I'm assuming, and processed food.

SHAWN STEVENSON: Yeah. Not much. It's not even close. It's not even close.

LEWIS HOWES: But what is with the... The life expectancy increases every year, it seems like. We're eating more and more bad things, but we're able to live longer, whereas before, we weren't.

SHAWN STEVENSON: That's the misnomer, though. We're not necessarily living longer, we're dying longer.

LEWIS HOWES: We're getting sick...

SHAWN STEVENSON: Sicker.

LEWIS HOWES: And being able to stay alive?

SHAWN STEVENSON: And being able to... Yes.

LEWIS HOWES: It's interesting.

SHAWN STEVENSON: Very different. And this is the first generation... We are the first generation right now that is going to not outlive our generations before us. This is the first time we're seeing this downtick. We're supposed to be seeing folks...

LEWIS HOWES: What do you mean?

SHAWN STEVENSON: Well, basically, the life expectancy is going down for the first time in recent history.

LEWIS HOWES: Really?

SHAWN STEVENSON: Yeah, yeah.

LEWIS HOWES: So, we're saying we're not supposed to outlive our parents, or what do you mean?

SHAWN STEVENSON: So, we'll just say the life expectancy of the past generation was 80 years old. Now it's 79.

LEWIS HOWES: Really?

SHAWN STEVENSON: So, it's just going down... Our life expectancy is going down for the first time in recent history.

LEWIS HOWES: Interesting. Previous generation. It's interesting, I was asking Dr. David Sinclair about this.

SHAWN STEVENSON: I love him.

LEWIS HOWES: He was like, "The goal is not to live as long as you can and be sick and miserable." He's like, "I've seen that in too many people. The goal is to live as long as you can, healthy, flexible, abundant, not with chronic pain and then die quickly."

SHAWN STEVENSON: Right.

LEWIS HOWES: It's to get sick and then die within a week.

SHAWN STEVENSON: That's not what we want.

LEWIS HOWES: Not get sick and die within 20 years of misery. He's like, "That's not a great life."

SHAWN STEVENSON: Yeah, we don't... Just want lifespan, we want health span. And it all really boils down... And this is the most beautiful part about this, and what I'm really hoping to impress upon culture. Because when we tend to think of food, we tend to think of it in relationship... In our culture, we think of diet in relationship to weight, it's just like what's connected. When in reality, food is one of the greatest, if not the greatest, determinants of what every single cell and organ system in your body is doing at all times. And this is what I really want to get across is, of course, I'm going to give you the best information possible on the metabolism connection with food, but also, how does food affect your cognitive performance, and it's shocking when you find this data out, how deeply food impacts your levels of empathy and your ability to connect with other people. I'll break that down as well.

LEWIS HOWES: What are the foods that cultivate more empathy and compassion, and what are the foods... Yes.

SHAWN STEVENSON: But before we get to that, the fat storage, there was one more.

LEWIS HOWES: Were you talking about brown fat?

SHAWN STEVENSON: Yeah, brown fat.

LEWIS HOWES: And there's another fat.

SHAWN STEVENSON: Yeah, so there's one other fat. And so brown adipose tissue is very dense in mitochondria, so these energy power plants, that's why it's brown. Babies have a lot of brown fat. It's kind of an evolutionary adaptation advantage to prevent hypothermia.

LEWIS HOWES: Keeping warm.

SHAWN STEVENSON: It's to keep thermogenesis going. As you become an adult, you have a lot less brown adipose tissue. It's mostly located around your collar bones, your shoulder blades, down your spine. And brown adipose tissue is remarkable in that it's really correlated, if you have enough brown adipose tissue, which you can create more and the mobilization activity of it is correlated with having a better body composition, so this type of fat is burning fat for you if you know what...

LEWIS HOWES: Brown Fat?

SHAWN STEVENSON: Yeah. Alright, so we got three storage fats and then we've got two other types of fat.

LEWIS HOWES: And that's body fat that burns fat?

SHAWN STEVENSON: Yes. And so, this other one, and this is what a lot of folks might not know a lot about yet, is beige fat.

LEWIS HOWES: Is this the fifth type of fat?

SHAWN STEVENSON: Yeah. So, this is beige fat.

LEWIS HOWES: Beige fat.

SHAWN STEVENSON: And so beige fat is really, really remarkable in that it can actually become brown fat or white fat. Based on your lifestyle inputs and your nutrition can determine whether it's going to becoming... Turning into a fat-storing type of fat or a fat-burning type of fat. And the browning of this fat... One of the things, and I'll just throw this out there for folks since you asked about specific food. When we go through so many different, but I'm going to throw one out that might sound a little bit crazy, a little controversial is coffee. Coffee has been found to encourage your beige fat cells to become brown fat cells. And in fact, one of the studies that I cited in Eat Smarter, they actually used FMRI, and they looked at what was happening in the body when somebody drank coffee, and they saw the brown fat areas of the body actually light up, signaling increased thermogenesis. And one of the studies found that there's about a 3-11% increase in metabolic rate from having the caffeine. Now, there's a U-shaped curve of benefits.

LEWIS HOWES: Right.

SHAWN STEVENSON: Some is good, once we get to a certain place...

LEWIS HOWES: Then it's bad.

SHAWN STEVENSON: We could mess ourselves up.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: And also, we get in the conversation of what is that coffee coming along with. Is it coffee or are you consuming coffee with...?

LEWIS HOWES: Doughnuts and... Crap.

SHAWN STEVENSON: And these coffee creamers with all these synthetic chemicals.

LEWIS HOWES: That is not good.

SHAWN STEVENSON: And even the coffee itself, are you getting a piping hot cup of coffee with pesticides and herbicides or rodenticides, and these toxicants that damage these hormones related to fat loss and fat storage and create a kind of dysbiosis in the gut. So, there's a big conversation there and we dive into all these pieces to see there's so many wonderful things that we have access to, but in our culture, we've been a little bit led astray, and it's not that coffee is inherently good or bad, it's been utilized by humans for centuries, but it's the quality and how you're going about it that can make all the difference.

LEWIS HOWES: And the quantity probably, and yeah.

SHAWN STEVENSON: Yeah. And so, just going back to your original question, where we were targeting that... The belly fat specifically, and this is something that is not talked about enough. It's really about encouraging and optimizing the hormones related to fat storage and fat burning. And this gets into the conversation of calories because we tend to be very calorie-focused in as far as we're trying to lose weight or we're trying to lose belly fat, and it's not that calories don't matter. I want to make that clear, I want to preface, but with this... But when I was in my nutritional science class in college, the king, the monarch, the warden of diet is calories. And I say warden intentionally because it's a little... It gets it to this kind of prisoner mentality.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: And diets are really revolving around this. And I'm always asking this question and I'm so grateful that I've kind of hard-wired myself to do this... Where did it come from? Where the hell did this idea start? And so, I went back and examined the entire history of calories, and it would actually... For me, it's just like, when we find Egyptian pyramids, they didn't have any about calories.

LEWIS HOWES: Yeah, right.

SHAWN STEVENSON: Nobody was even thinking about it or looking for it even when it was discovered, and it wasn't discovered and used for nutrition, it was discovered and utilized initially in physics and engineering. And it made...

LEWIS HOWES: Calorie?

SHAWN STEVENSON: Yeah, and this was in 1800s and then it made its transition into nutrition, thanks to a guy named Wilbur Atwater, but he's just kind of a little side note as well, and I basically, I go back and talk about all the people involved, but this is what changed America, this is what changed the world really, was a physician... She's a pioneer, for sure. Her name was Dr. Lulu Hunt Peters, and she's the one who popularized the term calorie, and she sold... And this was back in the early 1900s. She created a nutrition book, a diet book, and it sold two million copies back then, which is basically everybody and their mother had this book.

SHAWN STEVENSON: Alright now...

LEWIS HOWES: What's it called?

SHAWN STEVENSON: This was "Diet and Health and the Key to Calorie," something like that, The Key to Calories. But I went back and read this old-fangled writing. There's a lot of pieces of it online and this began the indoctrination of our culture and starting to look at food in terms of numbers. It's no longer this dynamic, multifaceted entity that affects all of our hormones and neurotransmitters and organ systems, now it's numbers. And she specifically said, "We will no longer call a slice of bread, a slice of bread." You won't say one slice of bread, you'll say 100 calories of bread. You will no longer say a slice of pie. You say 350 calories of pie. And so, we stopped looking at food as food. We started this evolution and started looking at it as numbers. And she asserted that a woman of her height could eat whatever she wanted as long as she maintained a 1200 calorie intake. And now let me also make this clear, Dr. Lulu Hunt Peters battled with her weight for her lifetime. And it's that term of teach what you want to learn kind of thing.

Now, this is also crucial, and some people, this might tug at their heartstrings a little bit. This was also the beginning of this indoctrination associating food with character, associating food with morality. And so, she basically asserted that it's a character defect if you're not able to manage your weight, there's something wrong with you, and started to use terms like sin and punishment in relationship to food. And this was also during the time of like World War I, so food rationing was a big thing happening. And she said one of her quotes I put in the book, and I'm paraphrasing that, "For every pang of hunger you feel, you should have a double joy knowing that you're saving the hunger pangs in a starving child or with soldiers."

So, she's basically saying, this is also a massive change in our perception that hunger is related to weight loss. If you're hungry, you're doing it right. And this started to really change the psychology of dieting. And so, calories began to become the king and the big focus. Now, I want to say this, calories matter for sure, it's a measurement of energy in food. Just like a meter is a measure of energy in distance, but that meter is consistent. If we measure this room consistently, it's going to be the same meters.

LEWIS HOWES: It's the same distance.

SHAWN STEVENSON: However, calories...

LEWIS HOWES: Are different.

SHAWN STEVENSON: Completely ignore... When you're talking about a measurement of energy, it ignores the complexity of human digestion and human hormones and neurotransmitters, and cellular function. It's going to be different every day, the calories that you consume and what effects it has on your body.

LEWIS HOWES: Because our hormones are changing, our bodies are changing, our timelines are changing. What we used to eat when we were 12 may not affect us now when we're 40 or 50.

SHAWN STEVENSON: Exactly. Let alone you versus another person, and this is where we get into situations where a diet works for one person, but it doesn't work for someone else, and I'm sick of it, man.

LEWIS HOWES: Wow.

SHAWN STEVENSON: Because people keep thinking that there's something wrong with them, and they're not getting these very fundamental principles. And so, folks can start to free themselves of this caloric prison. I can share, there's five really powerful metrics that are not examined. There's really five major things that control what calories do in your body.

LEWIS HOWES: What are those?

SHAWN STEVENSON: So, if we think about... I keep mentioning hormones, but just to give a good analogy of what hormones are. Hormones are really biochemical messengers that help your cells, this cellular community that you have, this amazing cellular community to communicate with each other. It's like metabolic DMs, it's like text messages, emails.

LEWIS HOWES: How many hormones do we have?

SHAWN STEVENSON: There's about 50.

LEWIS HOWES: 50 different hormones.

SHAWN STEVENSON: Yeah, about 50.

LEWIS HOWES: Are hormones... What is a hormone? Is it a cell? Is it an organ? Is it a connecting point? What is it?

SHAWN STEVENSON: The most important fundamental building block of our hormones are proteins. I want to really reiterate this; how important protein is because it's needed to build your freaking hormones.

LEWIS HOWES: Where are hormones stored?

SHAWN STEVENSON: All throughout your body. Even like that fat organ that we talked about is making its own hormones, but there are hormones that are being produced and secreted by your pituitary gland. Your hypothalamus is like a master regulator of your hormonal system, your endocrine system, it's in your brain. And so, one of the things we talk about in the book is this growing epidemic of neuroinflammation that is messing up people's hypothalamic function, that's screwing up what's happening downstream like your thyroid is on that HPA axis.

LEWIS HOWES: Is the thyroid here or something?

SHAWN STEVENSON: In your throat. So that's largely considered the metabolic regulator, like your master gland associated with fat loss or fat storage. And it definitely plays a role. So, these are all pieces in this web. Now, what's actually determining what these calories are doing... And so, I mentioned, I gave a little preface of what our hormones are. So, when we're talking about calories, these five things, and I'll give an analogy, I'll give like an acronym, THE DM. We're going to use that as our letter. So, it goes down in THE DM. You know what I'm talking about, Lewis. So, the first thing that's controlling what calories are doing, the T stands for the type of food itself determines what the calories are doing in your body, and this is highlighted in this crazy study. This was published in "Food and Nutrition Research." Listen to this, this is freaking crazy. They want to find out what would happen with the meal of the same calories that's either a meal of whole foods or processed food, same amount of calories.

LEWIS HOWES: So, a bowl of cereal and some fruits and vegetables.

SHAWN STEVENSON: So, what they did was they had sandwiches, and so one set of folks got the sandwich that was considered a whole food sandwich, which was a whole grain bread and cheddar cheese. The other folks received the processed food sandwich, which was white bread, and cheese products.

LEWIS HOWES: Oh, no.

SHAWN STEVENSON: And that's Kraft. Kraft slices.

LEWIS HOWES: That American cheese tastes so good, but...

SHAWN STEVENSON: They can't call it cheese. And so, here's what happened after... And I love this study because they tracked the pathway of calorie burn, their metabolic rate, and what happened when they ate these two respective sandwiches. After they compiled the data, the folks, even though the calories were the same, the folks who consumed the processed food sandwich had a 50% reduction in calorie burn after eating that damn sandwich.

LEWIS HOWES: What?

SHAWN STEVENSON: 50% reduction.

LEWIS HOWES: Why is that?

SHAWN STEVENSON: Because the body it... So, this gets into some of the other things we talk about. But that the processed nature of those foods created some metabolic dysfunction and some confusion for your endocrine system.

LEWIS HOWES: Oh, man.

SHAWN STEVENSON: And your nervous system and all these... The cellular community, that communication, so now the body is less apt to let go of that energy. It's confused, it's trying to hang onto it. Now, what are most folks eating?

LEWIS HOWES: Processed foods.

SHAWN STEVENSON: Processed foods. So, it's literally changing the way their body even associates with calories, and they're trying to count these damn points and not understanding that the very nature of how their bodies operating is skewed, so that's just the T, that's the type of food. So, the H is how the food is prepared, has a massive impact on what the calories do in your body.

LEWIS HOWES: You mean whether it's cooked, whether it's raw, whether it's stir-fried?

SHAWN STEVENSON: All of that.

LEWIS HOWES: Really?

SHAWN STEVENSON: Exactly, yes. So, to give a good example, if you think about spinach. Spinach, a lot of folks, of course, consider it's a healthy food, Popeye was knocking it down in the can, I don't know if... Have you ever had spinach out of a can?

LEWIS HOWES: Nah.

SHAWN STEVENSON: It must have been tough times, but... So, spinach is a good... This is a good one because these green leafy vegetables, there's nutrition that's locked inside the cell wall, and you have to basically crack open the cell wall to extract the calories and some of the

nutrients, and as the spinach gets old, that's why we have... There's baby spinach, and as the spinach gets more mature, the cell walls become harder to break into. So just right off the bat, baby spinach versus the same quantity of mature spinach, you're going to get more calories out of the baby spinach.

LEWIS HOWES: Is that better for you or...

SHAWN STEVENSON: This is not about better or worse right now. This is just understanding there's some other stuff happening.

LEWIS HOWES: Interesting, okay.

SHAWN STEVENSON: Now, but here's another thing, cooking the spinach too breaks down the cell wall, so regardless of if it's a baby spinach, a mature spinach, and when this happens, it also the density of the spinach, you've seen it, you can...

LEWIS HOWES: It shrinks, a whole bag.

SHAWN STEVENSON: Comes this little, teeny baby teaspoon. And so this is one of the things, and I really start the book talking about this, that most experts will agree that it was our ability to cook that really created like a quantum leap in the evolution of the human brain, because we're now able to extract more nutrients and calories from our food, even though this term wasn't invented yet, not to say that it's good or bad or that raw food isn't good, it's just understanding how the food is prepared changes what calories do in your body.

LEWIS HOWES: Interesting. So, if you're cooking spinach, it has less calories in it?

SHAWN STEVENSON: If you're cooking spinach, calories become more available.

LEWIS HOWES: So, what does that mean? When you consume it, your body is consuming more calories?

SHAWN STEVENSON: Yeah, it's able to extract more of the calories when it's cooked.

LEWIS HOWES: So, if it's raw, it's got less calories, a little bit less.

SHAWN STEVENSON: Less that you can extract from it. In general, these are minutiae, these are small things, but they matter. So, this gets into the conversation of what food is. And so even when we talk about calories, the way that this was initially kind of brought to the forefront, they used something called a bomb calorimeter. A bomb calorimeter. And what they

do is they took the food and they put it into a box, and they put that box into another box that's filled with water, and then they would burn the food with electrical energy to find out all of the available calories that were in this food, that was used to heat the water up, and so once they did this, they were like, "Okay, there's 200 calories in this particular food product." The problem is... You might be the bomb, Lewis, but you're not a bomb calorimeter. Your body is very different. There are indigestible components of that food, for example, whereas the bomb calorimeter is basically saying all the calories that are here, when you don't absorb all the calories in the food that you eat, so this creates this schism. So those indigestible components could be... They're going to be more in raw spinach, you're not going to digest as much...

LEWIS HOWES: Yeah.

SHAWN STEVENSON: I hope that makes sense.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: So, you're not going to digest as much and you're not going to pull as many calories in, however, there's bioavailable micronutrients that you're going to get. It's not that raw spinach versus cooked spinach is good or bad, it's just there's different ways that it impacts your body, so that's how the food is prepared.

LEWIS HOWES: Types of food, how it's prepared.

SHAWN STEVENSON: Right. So, THE DM, it goes down in THE DM. The next one is the E, and the E stands for energy exchange. Now this one here, this is something folks might have learned about a little bit in school. I know I did in my university class. However, I don't think we really get this. It costs energy, it costs calories to digest calories. Your body uses calories to digest calories.

LEWIS HOWES: To burn or digest the calories.

SHAWN STEVENSON: To produce the...

LEWIS HOWES: Chew.

SHAWN STEVENSON: The saliva, to chew, to swallow.

LEWIS HOWES: Through the intestinal wall, everything, right?

SHAWN STEVENSON: To churn the stuff, to produce stomach acid, to take the food from your gastrointestinal tract through your small intestine and move it through into your bloodstream and move those cells, those nutrients to your brain, to your eyeballs, to your toes.

LEWIS HOWES: How much do we burn from one meal from eating, chewing, to eliminating? How long does that take typically? Is that a 12 or 24-hour window?

SHAWN STEVENSON: It depends.

LEWIS HOWES: From one meal?

SHAWN STEVENSON: That's such a very diverse question because it depends on the type of food, it depends on... Matter of fact, we'll get to that in a moment...

LEWIS HOWES: Okay, okay.

SHAWN STEVENSON: We'll get to that. So...

LEWIS HOWES: Energy exchange.

SHAWN STEVENSON: Yeah, energy exchange. Now, this energy exchange, how many calories or how much the caloric expense is in digesting food depends on the type of food, too. The macronutrients specifically is what people know about, but it's a little bit more diverse.

LEWIS HOWES: If it's processed food, it's going to be harder to digest. It's going to be more work or less work?

SHAWN STEVENSON: It depends on the type of food.

LEWIS HOWES: Got it.

SHAWN STEVENSON: But let's... We'll stick with the overarching 'cause we could do the whole show just on that one topic, but just on the macronutrient side, proteins are well noted to be more calorically expensive to digest. It costs you about 20%-30% of the protein that you eat is the calories in there are used to digest the protein. So, we'll just say if you consume 100 grams of protein, 20-30... I'm sorry. 100 calories of protein, 20-30 calories are used to digest that protein.

LEWIS HOWES: Wow, that's pretty good.

SHAWN STEVENSON: So, you get a net profit of calories of 70.

LEWIS HOWES: So, you can have more calories and realize that it's going to be less than you're actually...

SHAWN STEVENSON: Yeah, with protein.

LEWIS HOWES: Interesting.

SHAWN STEVENSON: With carbohydrates, it's going to cost you... It's about 10%-15% of that energy that you take in, caloric energy is used to digest it. For fats, it's about zero to somewhere in the ballpark about 5% to digest it.

LEWIS HOWES: So, more protein equals more burning of calories.

SHAWN STEVENSON: It's called the thermic effect of food. And protein is largely kept out of the conversation today. People are battling about carbs and fats. These are the big diet frameworks, and protein is like Rodney Dangerfield, he's like, "I get no respect." You know what I mean? So, it was so fascinating because I think too, in our culture, we believe that most Americans are just eating a ton of protein when the data actually shows something very different. There are populations that are eating a very high amount of protein, but the quality of their protein to is a problem. But there is a large portion of our society that's not eating enough protein, not even near...

LEWIS HOWES: What are they just eating sugar and carbs?

SHAWN STEVENSON: Yeah, because we've replaced so many things in food with more sugar. So, the thermic effect of food, this is not taken into consideration, this does not show up on your product label. And just to give people a food tip here, one of them is almonds. Almonds is really a great example, and there was actually a study that was done and they was looking at... Basically saying there's a discrepancy in the Atwater system of caloric... So, what you see on the back of a product label, companies are not using a bomb calorimeter anymore to measure calories in their food, they're just doing some math.

LEWIS HOWES: Right.

SHAWN STEVENSON: They're just like, "Okay, there's four calories per gram of protein," and they're just doing some math. So that's the Atwater system. But what they found was that even though it might be 170 calories of almonds you are consuming, that's on the product label, in actuality, you only get a net caloric intake of 129 of those calories.

LEWIS HOWES: Say it one more time.

SHAWN STEVENSON: 170 calories you're consuming of almonds, you're only netting... You're actually only getting 129.

LEWIS HOWES: 'Cause you're burning the other...

SHAWN STEVENSON: Yeah. There's energy being used as a thermic effect of food, so almonds are great.

LEWIS HOWES: Now, is that true for everyone, or is that based on your hormones and your metabolic rate?

SHAWN STEVENSON: That gets to the next one alright, so... The T-H-E, so it's going down in the DM, so the D is digestive efficiency. Digestive efficiency. And this leads us into the conversation of your unique metabolic fingerprint. Every single human being is incredibly unique in what their metabolism and their digestion is doing. There's never been a digestion like you before in human history, there will never be after it, and you are not even the same today as you'll be tomorrow.

LEWIS HOWES: Exactly. Yeah, it's crazy.

SHAWN STEVENSON: It is always fluid and changing, and the problem is we think that we put ourselves in this box, even a diet, a diet might work for us for a year, and then all of a sudden, we're doing the same things and it stops working, and we blame us. It's like, "No, I just need to paleo harder, I need a keto harder, I need to vegan harder."

LEWIS HOWES: Count calories more.

SHAWN STEVENSON: Yeah, and these are great frameworks, but we don't want them to imprison us because we change, our bodies are continuously changing and evolving. Not to say that any of those aren't wonderful, and Eat Smart is really a unifier of whatever diet framework you want to go with, I support that, but there are principles that apply for success in all of them. So digestive efficiency means your ability to produce stomach acid is one factor of that, your enzyme production, like folks that produce lactase, the enzyme that can break down lactose, milk sugar, about 75% of the population don't produce adequate amounts, if any, of lactase enzyme, so they're not digesting...

LEWIS HOWES: Breakdown. Yeah.

SHAWN STEVENSON: Right. And so, they're not extracting as many calories from it, not that that's a good thing though because your bacteria in your body are going to go crazy if you're not digesting it properly, thus the running's off to the bathroom because you don't know if you have to fart or whatever, you know what I mean? And you're not fun to be around if you're lactose intolerant. You have extreme case of that and you're like downing some milk, you're on the gallon-day diet. So, these are all factors that influence your digestive efficiency and also for you, for example, your gastrointestinal tract is probably longer than the average person.

LEWIS HOWES: 'Cause I'm bigger and taller.

SHAWN STEVENSON: Yeah, and there's more time for it to kind of stay in your body. That superhighway is just longer because it has to try to fuel this bigger vessel.

LEWIS HOWES: How long is our intestinal tract?

SHAWN STEVENSON: It depends on the person.

LEWIS HOWES: How long is...

SHAWN STEVENSON: Say, several feet. I'll just put it like that, yeah. It depends on the person, but it's also... We tend to think it's very uniform. We think these things are uniform across the board. Like this 5-foot 2 girls is supposed to be doing the same protocol as a 6 foot 4 Lewis Howes. You should drink the same amount of water, eight glasses of... Eight ounces a day. No, we have... Everything is unique. We got to get back to these principles. So digestive efficiency, that's the E. The D goes down in the DM, so I'm sorry.

LEWIS HOWES: That's the D.

SHAWN STEVENSON: Yeah, that's the D. The M goes down the DMs. This one right here, this is really... This one, man, this is like the final frontier when we're talking about nutrition and health and where we're at with science right now. And the M is your microbiome makeup, the makeup of your microbiome has a massive impact on your body's association with calories. This is part of the lexicon now. I know just about everybody listening has probably heard of the microbiome, this incredible ecology, this dynamic plethora of microbes that inhabit our bodies, that are in and on our bodies. Even right now, dude, you got like 400 trillion viruses...

LEWIS HOWES: Yeah, I know.

SHAWN STEVENSON: The viruses are on people's minds.

LEWIS HOWES: Bugs, all over the body.

SHAWN STEVENSON: Right, all over you.

LEWIS HOWES: Isn't that crazy?

SHAWN STEVENSON: 400 trillion and many of them are opportunistic. That means that when you're compromised, they can take control. But the thing is why are they around, they all play a role, it's not good or bad, it's about us being in a good state of health because viruses have actually help us to evolve as humans. As a matter of fact, when the human genome was decoded, they found that humans... The human gene itself is 8% virus.

LEWIS HOWES: It's like alien, right? It's like...

SHAWN STEVENSON: Dude, it's crazy. And we're at war with these things, we're at war with microbes. We want to kill viruses; we want to kill bacteria. Not to say that novel things or things that the body doesn't have an innate immunity towards, we shouldn't be careful about, but we also have an adaptive immune system, that this is how we got here. The greatest science that we have right now shows that our immune system itself was started by viruses that were defending itself against other viruses, and that's how we came to the kind of dynamic adaptive immune system that we have today. And so, this is the B-cells, T-cells, these interference, natural killer cells, all these things. So, we're going back to the microbiome and their association with calories. This is going to freak you out. Listen to this.

So, to start with, this was published in the journal, Cell. They found that there's specific bacteria in mice that actually block their intestines from absorbing as many calories. So, the bacteria in their gut blocked the absorption of calories. Now, some folks are like, "Well, we're not mice." I get that. Now we have human studies, and now we know that folks that start to lean into being overweight and obese, there's a very distinct shift in the microbiome cascade. We can literally just look at somebody's microbiome cascade, not even know what they look like, what their body composition is, and know that they're overweight based on their bacteria. And so, what they did was they took these human "fat bacteria" and implanted them into lean mice. And what happened was, the mice who had the fat bacteria put into their bodies began to gain weight, they became insulin-resistant, and gained body fat rapidly, versus taking human samples from healthy test subjects, lean test subjects, and putting them into mice and they stayed lean. I'm getting excited. This is the one... This study right here is the freakiest one to me. They took identical twins.

LEWIS HOWES: Humans?

SHAWN STEVENSON: Humans, yeah. They took identical twins and they looked at their microbiome cascade and they found that the... Again, these are identical twins, same caloric intake. The twin who had a higher ratio of bacteria associated with obesity gained more weight, had a tendency towards gaining more weight and body fat, even though they're eating the same diet and their identical freaking people. They're identical twins.

The calories became such a lower-tier thing. They're eating the same amount, yet one's gaining fat, and one isn't. So, this conversation is so much bigger than just managing calories and telling your patients that they need to be in a caloric deficit. We're way past that right now. These things matter, they absolutely matter, but there's so much more to the picture, and so many people are suffering because they keep doing calorie restricting and trying all these different diets and not understanding we need to get your microbiome healthy.

LEWIS HOWES: How do we get the microbiome healthy? So that's the solution. The problem is on the microbiome, not the calorie deficit.

SHAWN STEVENSON: This is a big part of the book, too. We focus on these things.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: We can get into that. So, one of the most important things that the research is showing is that one of the most remarkable things in association with fat loss and weight loss is associated with having a higher diversity of microbes in your gut, specifically bacteria. The higher the diversity, the lower your body weight and body fat percentage, the correlation. The problem is, if you're in the western world, our diversity of our microbes is just... We've got a lot of endangered species and a lot of things are extinct, versus folks who are in more of a kind of an indigenous culture.

LEWIS HOWES: A plethora of fruits and vegetables and uniqueness.

SHAWN STEVENSON: Somewhere around four times as many different microbes. So, take yours, multiply it times four, the different species of microbes. In the Western world, our diversity is going down, and this is also associated with some of the problems we're seeing that we don't... We think it's just associated to... It's people, they don't have willpower, end of story. But here in the United States, and I want people to really get this, we have an epidemic and nobody's talking about this, and nobody's talking about this right now and associating it to the problems we're seeing, we have an epidemic of obesity. Over 200 million people here in this country right now are overweight or obese. This is...

LEWIS HOWES: What is the definition of obesity?

SHAWN STEVENSON: Obesity? This is...

LEWIS HOWES: How much body fat and percentage?

SHAWN STEVENSON: Unfortunately, this is tied to some questionable metrics, like with BMI, because somebody can have a lot of muscle on their frame, but we're not talking about that. We're talking about, we know what's happening here in the United States, and a recent study came out, its meta-analysis, that determined that about only 12% of United States citizens are metabolically healthy. You got over 200 million people who are overweight or obese.

LEWIS HOWES: How much body fat is overweight on a person? Or how much body fat percentage would that be?

SHAWN STEVENSON: It depends...

LEWIS HOWES: 20%? 30%? 40. What's the...

SHAWN STEVENSON: I mean, even these numbers, man, can be a little bit... Just, for example, it doesn't necessarily mean that you're healthier because your body fat percentage is low.

LEWIS HOWES: Right.

SHAWN STEVENSON: Like I had a 4.6% body fat at one point, I was not healthy. But just in general, guys can be somewhere in the ballpark of 12%, 15%, and that's still... But then it's just like the vanity aspect, I can't see my lines.

LEWIS HOWES: Yeah, exactly. Right now, I'm 16%, and I just checked last week.

SHAWN STEVENSON: But you're a healthy guy. This is what I'm saying. When I say that it depends on you, these numbers... We have a big problem with these numbers, but I'm using the numbers as a leverage as far as with statistics, to try to get our eyes open, but there's so much variance within that because again, some people would sell... They'd name their first-born child Rumpelstiltskin to have your body.

SHAWN STEVENSON: You know what I mean? We got to keep his stuff in context.

LEWIS HOWES: Sure, okay.

SHAWN STEVENSON: Now, 200 million people in the United States are obese or overweight. On top of that, over 130 million people in the United States have type two diabetes or pre-diabetes.

LEWIS HOWES: 130?

SHAWN STEVENSON: Yes.

LEWIS HOWES: Wow.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: That's crazy.

SHAWN STEVENSON: It's crazy. So, diabetes or pre-diabetes. And on top of that, about 60% of the United States population has some degree of heart disease, right now.

LEWIS HOWES: What does heart disease consist of? What are the types of heart disease in that category?

SHAWN STEVENSON: So, this is such a diverse topic too, because even our definition of these things is a little skewed. Hardening of the arteries, for example, how does all this stuff work? But I want to point back to a really important point 'cause I don't want this to go left unsaid. Some of my best friends are like the top cardiovascular surgeon in the world or the top gastroenterologist in the United States. These are my friends, colleagues, and they will tell you... So top gastroenterologist, just talked with him recently. He was in school for like 15 years. 15 years and he shared with me he got... And he specializes in the treatment of systems associated with digesting your food. The systems, the organs...

LEWIS HOWES: That's all he does.

SHAWN STEVENSON: But guess how much education he got on food?

LEWIS HOWES: One month?

SHAWN STEVENSON: Two weeks.

SHAWN STEVENSON: Even a month, versus 15 years of education, learning about food for two weeks. You treat organs that deal with food.

LEWIS HOWES: Right.

SHAWN STEVENSON: We have a big problem. So, in the cardiovascular domain, same thing. Elective, right? And your heart is made of the food that you eat. Your arteries are made of the food that you eat. Your blood is made of the food that you eat. How do we not have an education on these things? Our attention is so... The system itself... These are incredibly smart people. These are some of the best and brightest. But if you take a really smart person and you miss-educate them or you teach them the wrong thing, they become world-class at doing the wrong thing. And we keep trying to treat symptoms. We're treating the symptoms of not knowing how food creates all these things. So it is that deep. This is how powerful food is, it becomes everything about you. The things you see in the mirror, how you feel, it's all based on food. It's so powerful.

LEWIS HOWES: Talking about how to optimize the microbiome, and I'm hearing you say it's the diversity of the whole foods that we should be eating, and in America specifically, we have very limited diversity of these whole foods, these vegetables, these fruits, these healthy fats, and meats and nuts, I'm assuming. Is that what it is?

SHAWN STEVENSON: Yes.

LEWIS HOWES: It's having diversity and the more diverse we can have, the better our microbiome makeup will become.

SHAWN STEVENSON: Yeah, and in the book, I cite a brand-new study that found that increasing your diversity in your fruits and vegetables inherently increases the diversity of your microbes. So, this is a very simple thing we can do. Even if we're eating healthy, we tend to get caught in our little food meal prep gone awry. You know what I mean? Like chicken, rice...

LEWIS HOWES: Yeah, same thing every day.

SHAWN STEVENSON: Broccoli, chicken, rice, broccoli. But I'm eating healthier compared to the... But what are you doing for your microbes? They need a diversity, and really the heart of the matter is... I've been talking about probiotics for 15 years.

LEWIS HOWES: Taking probiotics.

SHAWN STEVENSON: Yeah. Not taking, but just the science of probiotics. And of course, that's one input, but you could take all the probiotics you want, they're not going to colonize if they don't have the food that they want. It's kind of like going to a party and you're hungry and they

don't have snacks that you want, you're going to have to leave there soon and hit Del Taco, whatever.

LEWIS HOWES: That Taco Bell life. I haven't been to Taco Bell in about 10 years.

SHAWN STEVENSON: Dude, I would get the 10 pack.

LEWIS HOWES: Oh, man. Back in St. Louis...

SHAWN STEVENSON: Yes.

LEWIS HOWES: Getting the Taco Bell.

SHAWN STEVENSON: We've come a long way.

LEWIS HOWES: That Steak 'n Shake, oh man.

SHAWN STEVENSON: That's if you want to get fancy. So, here's the thing.

LEWIS HOWES: Oh, man.

SHAWN STEVENSON: And it's so wonderful because when we get into these principles and how all of this stuff fits together, this is a simple input, is increasing the diversity of the fruits and vegetables helps to create the preferred food choice or the prebiotics. So, there's probiotics, prebiotics. Prebiotics are the food that the microbes want in order for them to stick around. So, we're losing all of these species because they don't have their preferred food in our system anymore. And then we have post-biotics. So, we have pre, pro, and post.

The post-biotics are basically the vitamins, minerals, SCFAs these short-chain fatty acids, all the nutrients your bacteria create in you for you. It's a symbiotic relationship, and that's really the front line right now. It's like I said, the final frontier that we're studying.

LEWIS HOWES: Let me ask you a hypothetical question. Obviously, this would never happen, but I've asked this to different nutritionists and doctors, and scientists who've come on. Hypothetically, you're only able to eat five foods for the rest of your life.

Just say hypothetical, you're allowed, there's only five food groups there or you're only able to choose five every day for the rest of your life, if you had to choose, what would those five foods be to try to optimize your hormones, your mitochondria, your microbiome, everything to optimize? Obviously, it would be very limited, but if you can only choose five, and you get to

choose five vitamins and supplements if you wanted to, so five foods, five vitamins, obviously this is a hypothetical, but what would you say?

SHAWN STEVENSON: Lewis, I don't know if anybody's ever done this on your show before, but I'm going to have to plead the fifth. I can't answer that question. It goes against everything. And there are... Even that, if I had to choose my five favorite or whatever, I could do that, but it's really getting away from the urgency of us increasing our diversity of food. It's an urgent situation right now.

LEWIS HOWES: Really?

SHAWN STEVENSON: And on top of that, I got to share this too. We go to the grocery store, it looks like there's all these different stuff to choose from, but the majority of foods that the average American eats are from the same 12 foods, just packaged up differently. Most of those wheat, corn, soy, sugar. Oranges made the top of the list too, largely orange juice. But we're just eating the same stuff packaged up differently.

LEWIS HOWES: Over and over in different ways.

SHAWN STEVENSON: Wondering why our gastrointestinal tract and our microbiome... So many species are becoming extinct. We're eating the same stuff.

LEWIS HOWES: It's becoming extinct because we're not eating more diversity?

SHAWN STEVENSON: Yes. Diversity. That's the...

LEWIS HOWES: So, it's why grow it? Why plant it? Why develop it if we're not eating it? Essentially, right?

SHAWN STEVENSON: It's the way that this... This gets into the most important part of the book for me, which is the systems behind why we're eating the way that we're eating, and how do we fix those systems. Our government's... Unfortunately, a lot of our food policies are controlled by lobbyists who work for these major food companies. And our government, and I shared one of the studies in the book, which is this should be really eye-opening for folks, provide government subsidies for processed food creation. Like billions, hundreds of billions of dollars. And there was... And the thing is it's like, "Okay, does that actually correlate with worse health?" And there was actually a study done looking at the people who consume the highest amount of these government-subsidized foods had about a 40% greater incidence of being obese. So, there's a direct link between what's being provided to our citizens... And it started off with good intentions, providing government subsidies to farmers, but now it's

these big agricultural businesses that are growing the same genetically altered food crops that become the very basis of the human diet.

LEWIS HOWES: The foundation of our food, yeah.

SHAWN STEVENSON: And the fruits and vegetables aren't getting anything. And so, this also leads to the reason it's so damn cheap for us to go to Taco Bell and get a whole damn taco. Like it's so...

LEWIS HOWES: For 99 cents.

SHAWN STEVENSON: Right. Not just one, but you get two for 99 cents.

LEWIS HOWES: I know. It's crazy, man.

SHAWN STEVENSON: Right? Two for 99 cent tacos and an avocado costs four bucks, or \$3, and it falls off a damn tree.

LEWIS HOWES: Right.

SHAWN STEVENSON: How is that possible? And it gets into how the money is managed and where money is being funneled, and it's being funneled into the processed food system.

LEWIS HOWES: So, what would you say, on a weekly basis, are the types of foods you're eating in your house? What do you eat, then? What's the diversity of foods? If you're not eating five if you're eating 50, what are those foods? Those main foods, for you?

SHAWN STEVENSON: Okay. So, keyword here: Diversity.

LEWIS HOWES: Okay.

SHAWN STEVENSON: Diversity. And I'm hesitant to say because I don't want people to base on what I'm doing because they need to do what's best for them. And what we do is we go through all of the stuff that has some clinical efficacy, like actual peer-reviewed evidence to support how this food is effective in blank thing. So, whether it's helping the diversity of your gut, whether it's helping to...

LEWIS HOWES: Mental performance.

SHAWN STEVENSON: Yeah. That and also, since we're on the subject of metabolism still, I'll give you one of my favorite food groups and what I do on a regular basis. And this is highlighted in an incredible peer-reviewed study. They've found that the consumption of green leafy vegetables... Everybody hears it, "Eat your veggies. Eat your veggies." Why? Now we know why. So, what they found was that the consumption of non-starchy green leafy vegetables led to a direct increase in the production of our body's major satiety hormones, like GLP-1, leptin. So, the things that control our satiety because that's one of the issues with any diet framework is you need to make sure that you're avoiding the thing... Like I call these these kinds of three amigos of body fat growth, and one of them is hunger and managing your hunger hormones and neurotransmitters related to that. That's one of the things. So green leafy vegetables. And another study found that...

LEWIS HOWES: To help with your metabolism.

SHAWN STEVENSON: Yeah. So, they found that for every serving of vegetables that you have in a day correlated with a one-third reduction in waist circumference.

LEWIS HOWES: What's that mean?

SHAWN STEVENSON: So, every serving of vegetable led to about a third less fat being on your waist.

LEWIS HOWES: Really?

SHAWN STEVENSON: Yeah. Yeah. Really fascinating. And then if we want to make the jump to the cognitive side...

LEWIS HOWES: What would be the top veggies, leafy greens?

SHAWN STEVENSON: There's so many. Diversity, man. Spinach, kale, bok choy...

LEWIS HOWES: All of it. Just get all of it.

SHAWN STEVENSON: All of it. Diverse.

LEWIS HOWES: Now, is it cooked, raw in a salad? What's...

SHAWN STEVENSON: Both.

LEWIS HOWES: Really?

SHAWN STEVENSON: Diverse.

LEWIS HOWES: Doesn't matter.

SHAWN STEVENSON: And it also keeps things fresh and fun.

LEWIS HOWES: Interesting.

SHAWN STEVENSON: And also, let me be clear about this, too, when I'm talking about green leafy vegetables. You know this, man. Well, you might not remember. I didn't eat a salad until I was 25.

LEWIS HOWES: Yeah. Took me to... About 25, 30.

SHAWN STEVENSON: Right. We had this conversation.

LEWIS HOWES: I remember maybe I was 30 when I got sweet greens. It was 30 in New York City.

SHAWN STEVENSON: Yeah, the greatness bowl.

LEWIS HOWES: Yeah, exactly. Exactly.

SHAWN STEVENSON: But I think part of why I'm so good at this is that I was really, really messed up. And I just grew up in a culture where this just wasn't a part of my reality. There's no way that I would eat a salad. And so, please understand, a big part of that is association and culture and environment, and we talk about that in the book. But also, if food tastes good, it makes it a whole lot easier. What if we make those vegetables taste phenomenal? And that's the thing that's missing oftentimes. And we also have this thing in our minds that if it tastes good, it's not healthy. There's like this little thing, like, "This can't be good for me." But it's actually why do you think food tastes good? It tastes good for you to eat it. It encourages... We're hard-wired to seek tasty things, but food manufacturers have leveraged that desire to eat tasty things, to our detriment. And so, I talk about that food science and the science of flavor because even flavors in foods are indicators of nutritional content if we were living in a natural way. So, we develop these flavor preferences based on... We might be deficient in selenium and omega-3s. So, we have these flavor associations. We know like, "Okay, I need to go and eat blank food. I need to go and catch some fish because my body is wanting this thing." Now, we just go to 7-Eleven.

LEWIS HOWES: Right.

SHAWN STEVENSON: You know what I mean? But we can take back control of these systems and recalibrate them. And I was going to share earlier... One of the things that I wanted to do was stack conditions. So, when I give you this food, it's not just one thing it's good for. There's another side with the cognitive function side, and this was conducted by researchers at Rush University in Chicago. And what they did was they looked at folks who were beginning... Into their senior years. And actually, looked at their brains and looked at their diets, and they found that folks who ate two or more servings of green leafy vegetables each day had brains that were about 11 years younger on average.

LEWIS HOWES: Shut up.

SHAWN STEVENSON: Yes. Yes.

LEWIS HOWES: This was why I was so stupid in school 'cause I just ate sugar all day. I never ate any vegetables.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: Man.

SHAWN STEVENSON: Me too. Me too, man. I would get that personal pizza.

LEWIS HOWES: Oh, man.

SHAWN STEVENSON: And get the pretzel with cheese, and I'd dip the...

LEWIS HOWES: Oh, that sounds amazing.

SHAWN STEVENSON: I'd dip the pretzel into the cheese and then dip the pizza into the cheese.

LEWIS HOWES: Oh, that sounds like my life.

SHAWN STEVENSON: Yeah. So, I'm over there, game day, like the muscle chili dinner.

LEWIS HOWES: Eating big bowls of pasta.

SHAWN STEVENSON: When the offense is in, I'm doing a lot of things. Defense, I'm yawning, I'm tired.

LEWIS HOWES: I was so tired all the time, working out, practice, always yawning. I never ate anything healthy, 'cause I think I told you this when I went to Principia, the boarding school. There was a milk dispenser in our dorm. I was 13 years old, a five-gallon milk dispenser.

SHAWN STEVENSON: What? A milk dispenser?

LEWIS HOWES: Milk dispenser, not 2%, whole milk.

SHAWN STEVENSON: That whole milk, yeah.

LEWIS HOWES: This is the cafeteria milk dispenser. You know what I'm talking about? That you pour...

SHAWN STEVENSON: Oh yeah, for the cereal.

LEWIS HOWES: They put the big bag in there, a big five-gallon bag that you put in there, they cut it open and then you open it up. I got them to move it into my room. And I swear to you...

SHAWN STEVENSON: No, Lewis.

LEWIS HOWES: I swear to you, I would go through five gallons every week.

SHAWN STEVENSON: No, this is crazy. Are you serious?

LEWIS HOWES: Swear to you, drink it throughout the morning, drink it at night when I'm studying, drinking it all day. 'Cause this is how I was conditioned as a kid; my dad would give me a glass of milk every night. It was just like, drink more milk. Commercials, all this stuff. I had a five-gallon dispenser for a year in my dorm, just drinking it all day. And I was like, "Man, why am I always tired?" I can only imagine the quality of athlete I could have been had I learned nutrition when I was a teenager, 'cause I didn't eat anything quality, never!

SHAWN STEVENSON: Yeah, that's crazy. Man, that's literally blowing my mind. You got them to move it into your room?

LEWIS HOWES: My room.

SHAWN STEVENSON: You're a freak.

LEWIS HOWES: Right next to my bed, just drinking it all day.

SHAWN STEVENSON: Wow, dude, that's crazy. And like you said, what could have been.

LEWIS HOWES: What could have been.

SHAWN STEVENSON: Same thing for me. I ran a 45, 40 when I was 15.

LEWIS HOWES: Imagine eating healthy.

SHAWN STEVENSON: Dude, but it was that same season...

LEWIS HOWES: You could be 6 feet tall if you ate healthy.

SHAWN STEVENSON: In the same season, I was doing track practice, 200-meter time trial, and as I was coming off the curve into the straight away, you know this story, my hip broke and my bones were so brittle. Dude, I was 5'9" in eighth grade. I was towering. You know how you're in the back row, and then everything just started to break down, my bones. And it wasn't until I was 20 when I got diagnosed with this degenerative bone disease, degenerative disc disease, so my spine was just deteriorating and nobody stopped to ask like, "How could this happen to a 20-year-old kid or a 15-year-old kid just breaking his hip at track practice?" And from there, my dreams of college football, everything started to become vanquished. I've got game films where I break away like 39 sweeps, I'm gone. I'm five yards from the end zone, nobody's behind me, and then I start to fall, breaking down, tearing muscles. Yeah, I've got it on game films and I'm like limping into the end zone and falling down.

It was a nightmare, man, and I couldn't stay on the field anymore because my body was just breaking down. And what I was exposed to is what's called standard of care, which standard of care means they gave me some NSAIDS, gave me some crutches, like, "You'll heal up." I did, but nobody asked how is his bones breaking from running? And when this diagnosis happened, man, it was earth-shattering because I was always this fit guy, capable, and now I can't even really walk right because of this pain from my spine that's going into my leg.

And my physician at the time, he put the MRI up and I was just like, "Okay, how do we fix this?" Just working with the trainers, they're like, "Okay, what do we do to get back on the field." And he's just basically like, "Pump your brakes. Slow down, son. This is bad. This is incurable." And he told me that I had the spine of an 80-year-old man.

LEWIS HOWES: Wow!

SHAWN STEVENSON: When I was 20, and not a healthy 80-year-old either. Shout out to Mark Sisson.

LEWIS HOWES: Wow. Is he 80?

SHAWN STEVENSON: I think he's 70 or 72 now maybe.

LEWIS HOWES: No, no, no, he's 60...

SHAWN STEVENSON: He's got to be. No, no, I think he's in his 70s.

LEWIS HOWES: I think he's late 50s or 60s.

SHAWN STEVENSON: But it doesn't matter. He's definitely not in his 50s.

LEWIS HOWES: Is he 70?

SHAWN STEVENSON: He's definitely at least in his 60s. I think he's 70.

LEWIS HOWES: I don't think he's 70. That's amazing if he looks that great at 70.

SHAWN STEVENSON: Yeah, but this is what's also possible, even wherever he is, it's possible.

LEWIS HOWES: He's a freak. He has a six-pack at 60 something or 70, whatever it is, yeah.

SHAWN STEVENSON: Yeah. But I was the opposite. I was what you would think about with the 80-year-old person breaking down and a lot of chronic pain. And he sent me on my way and that was that. He gave me some medication, prescribed bed rest. Now, I want to encourage anybody, if you ever get a diagnosis with something life-altering like this, do your best to get a second and/or third opinion before taking any dramatic action. And I did. Unfortunately, it was the same thing, and it was until two... And by the way, for the next two years, every doctor that I saw told me, bed rest, so I just kept doing nothing.

LEWIS HOWES: Sleeping, yeah.

SHAWN STEVENSON: Just sitting around playing video games.

LEWIS HOWES: Isn't that the worst thing you can do for yourself?

SHAWN STEVENSON: Not only was my spine beginning to atrophy and my hips and my bones, but now everything else is.

LEWIS HOWES: Muscles, everything. Your organs are not producing, they're not... Yeah.

SHAWN STEVENSON: Your body works on this use it or loses it basis, so I'm literally just decaying.

LEWIS HOWES: You're dying at 22.

SHAWN STEVENSON: Yeah, accelerating that process. And two years later, man, it was a little over two years... Man, it's tough to talk about it. Incredibly, I was in fear. I got into a place where I was scared to stand up because the pain... I would have to walk very gingerly because I know the sciatic nerve has to hit, and then I could walk normally like a normal gait. And so, I just decided not to get up because I was scared to.

LEWIS HOWES: Wow!

SHAWN STEVENSON: And being that I'm eating the food that I was eating at the time, what I call the TUF diet, typical university food, I was made out of this... My body was made of this, and I'm not moving now, so I gained so much weight.

LEWIS HOWES: Pretzels and cheese dip.

SHAWN STEVENSON: Yeah. Dude, I ate fast food every day. Every day, not a day went by because it's cheap and tasty.

LEWIS HOWES: It tastes amazing.

SHAWN STEVENSON: Yeah, but everything changed, and it was... I don't remember if it was that day or the day after, but I went to see the last physician because I had hope, and I had this chronic question going on in my mind all the time, why me? Why won't somebody help me? But I didn't realize it. And our brains are really run on the questions that we ask. Is this...

It's a reflexive thing, it's called instinctive elaboration because our brains are like a serial mechanism. Even right now, we're exposed to trillions, hundreds, and hundreds of trillions of bits of data and information that our brain has to filter and only present to us, consciously, the thing that we hold most important. Because even now, you'd be focused on your toes and probably you've thought about your toes a little bit, for people that are listening, but were your toes not existing before? They're there, but it's not a top priority. And so that serial

mechanism is guided by the questions you ask, and so if I'm asking all the time, "Why me? Why did this happen to me? Why won't anybody help me?" My brain is just looking for a reason to affirm why my life sucks. And after I got that last diagnosis, he gave me a new prescription, told me bed rest, two years later...

LEWIS HOWES: Wow.

SHAWN STEVENSON: And sent me on my way. And he meant well, he meant well, but I realized... It was either that night or the next night that I'm by myself, they're not thinking about me. Even though they mean well, they are not walking in my shoes and dealing with the suffering. And it was the first time that I asked a different question, I asked, "What can I do to feel better? What can I do to get healthy?" It was the first time I ever looked at like, "What can I actually do?" Because I'd been like, "Why won't somebody else help me?" And it changed everything, man. That was the first night I slept through the night in two years without drugs, and I woke up with just a renewed sense of purpose because I went to school, I was in the auditory nutrition class, but I got out of it because I hated it. I hated science, ironically, which...

LEWIS HOWES: Now, you love it.

SHAWN STEVENSON: Science is my boo now; you know what I mean? But it's the way that I was taught. It didn't really have an association; it didn't have that connective tissue.

LEWIS HOWES: Wow.

SHAWN STEVENSON: And I began to dive back into my training because I always did good in school. I had straight A's, but I would get into trouble. I didn't enjoy the process of learning science because it just didn't stick, and so asking a different question, I did the low-hanging fruit first, which was exercise. I just went and started going on a cycle, just got on a stationary bike at the gym, just started pedaling. It was hard. The next week, I started doing a little walking and just built up from there. The first thing I did, was I did Slim Fast first because that's the commercial. I'm like, "I got to lose weight," a shake for breakfast, a shake for lunch, a sensible dinner, but thank goodness, I quickly transitioned out of that. And because of that question, somebody that I knew for two years... No, three years at that time, she was somebody I had hung out with for a while, just hung out with. Anyway, she was a chiropractor. She was older. She was like 10 years older, and she took me to Wild Oats. I've known her this whole time, we never went to Wild Oats. We went to Wild Oats, I walk into this entirely different dimension, I'm like, "Why is there grass sitting up there on the counter?"

LEWIS HOWES: You're like, "People buy this!" and you did.

SHAWN STEVENSON: But there was this nutrition prescription book, it was this massive nutritional Bible there, and I began to look at all this peer-reviewed evidence on this nutrient working for this thing. And I was shocked that this stuff existed, I had no idea, and this goes to the conversation of exposure. So many people, we're born into these conditions. When I was growing up, man, we were on WIC, food stamp, Christmas would come around, the first and 15th, and we even got food from shelters and these food pantries. And we didn't know that there was a difference with food. It's just stuff that you eat. And I just wanted stuff that tastes good and that was the end of the story. I didn't know that it mattered. I thought that if you want to be healthy, you exercise because I looked fit, but my body was made out of straight crap.

LEWIS HOWES: Sugar, crap processed food.

SHAWN STEVENSON: But going there, I started to this... Then I went from Slim-Fast to becoming a natural pill popper. Because now it's like all these isolated nutrients, but I quickly, thank goodness again, transitioned out of that.

LEWIS HOWES: You mean supplements.

SHAWN STEVENSON: Yeah. Because... And not to say that supplements aren't helpful especially the right ones, but it's still looking at food through this allopathic lens that I was taught in school, which is a pill for this, a pill for every ill.

LEWIS HOWES: Do you take supplements now?

SHAWN STEVENSON: Definitely not as many. And there's a reason why, too, that we talk about in Eat Smarter, which it went from about 7% of all liver damage to about 20% in recent years, being associated with supplements.

LEWIS HOWES: Shut up.

SHAWN STEVENSON: Overconsumption, yeah. Yeah. It's real because your liver has to handle the process of these isolated nutrients oftentimes, it's not a very regulated system either. Not to say supplements aren't good, but some people are taking like 20, 30 different supplements a day.

LEWIS HOWES: So, what happens when we take that many supplements a day, consistently over time? It affects our liver.

SHAWN STEVENSON: So, your liver is responsible for number one, like drug metabolism. We have over... Somewhere around 70% of the United States population is on prescription drugs. Your liver is handling that first and foremost, and also, your liver is responsible for food metabolism, that interaction as well. The name live-er, it's responsible for you being alive, like massively. We can't survive without your liver.

LEWIS HOWES: There's only one liver, right? There's two kidneys, one liver.

SHAWN STEVENSON: Yeah. You got two eyes. There's some pirates out there...

LEWIS HOWES: You can have one kidney and survive, but there's only one liver.

SHAWN STEVENSON: Even with your liver, you can lose portion of your liver and grow it back.

LEWIS HOWES: No way. That's pretty cool.

SHAWN STEVENSON: It's regenerative, magical... Seemingly magical.

LEWIS HOWES: How big is the liver?

SHAWN STEVENSON: It's pretty big as far as the internal organs. But here's the crazy thing, is that with it... Again, I want to reiterate, it's not that supplements are bad, especially the right food-based supplements, especially, but synthetic, isolated synthetic chemicals... So about 20% of hospitalizations from liver problems is associated with supplement consumption now.

LEWIS HOWES: No, come on.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: From supplements, not prescription pills, but actually over-the-counter supplements.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: 20% of liver challenges in the hospitals are due to this? How do they know it's based on supplements and not...?

SHAWN STEVENSON: They just do an intake and look at what the person is consuming. So again, this type of science is still very... There's nuance there. But just for us to be aware that this exists that, "Hey, wait a minute, maybe I want to pump the brakes a little bit on taking all

these pills." So, this was game-changing for me, man. I asked the question, okay, so I've got a degenerative disc disease, my spinal disc have degenerated, I have two herniated discs that cause me all this pain, what are they made of? I asked the simple question.

LEWIS HOWES: What are my discs made of?

SHAWN STEVENSON: What are they made of? What is my... What are my bones made of...? My bones...what it's made of, we think of...

LEWIS HOWES: Calcium is what we think of.

SHAWN STEVENSON: Calcium because of the marketing, but there was 20 other things that were as important, if not more important for the formation of bones in our bone density.

LEWIS HOWES: Really?

SHAWN STEVENSON: That I had no idea about... Magnesium, even omega-3s that we think about associating to brain health, omega-3s are needed for bone formation as well. So, I wasn't getting any of that stuff in my diet, so I started taking pills first, but then I was like.

LEWIS HOWES: Supplements or...

SHAWN STEVENSON: Supplements.

LEWIS HOWES: Supplements.

SHAWN STEVENSON: So, I asked what foods are these things found in, and then I understood the seemingly magical aspect of food, which there are all these other things that are there too, these co-factors and bio-potentiators, and the game-changing insight was that what have we been consuming the longest. This supplement is new, this drug is new. Humans, we have millions of years of evolution in relationship with eating foods that have supported our development, what do my genes expect me to eat? Where is it expected to come from?

LEWIS HOWES: From a concentrated pill supplement or from food.

SHAWN STEVENSON: Yeah, so I started to... My mandate then, 20 years ago, was food first, and that was a game-changer. So, once I did that, man, six weeks after that moment of decision, like revelation, the pain that I've been experiencing every day that had me in fear standing up was gone...

LEWIS HOWES: Wow.

SHAWN STEVENSON: And I was scared. I was even more scared then because I felt like I'm going to do something that's going to happen. So, I'm freaking out, but I'm also like, let me just keep going with this. Let me keep going. And I was feeling so good, I lost about 18 pounds at that point, which is not typical, but I was the skinny kid in my family for a while, and now it just... Those co-fat genes, these epigenetic influences turned on, so the weight just came off of me. And the most wonderful part and why I'm sitting here today with my... With my man, Lewis Howes, is my professor, students at the school, they started... They saw me, and it wasn't like I looked like somebody who just lost weight, I looked like somebody who was really...

LEWIS HOWES: Alive.

SHAWN STEVENSON: Healthy and alive. Because when I see my pictures of myself then, I looked like freaking Casper the ghost, I look like a shell of myself... There's something missing, the light is not there. And so, people started coming up to me, and the first person who specifically asked me for help, she was somebody I went to high school with who ended up going to the college I was at. And she saw this transformation. She was like, "Can you help me to do... To do what you did?" And I was like, "Absolutely." And so, I was just going to schedule time to meet up with her, and then she was like, "How much should I pay you?" And time froze.

LEWIS HOWES: You're like, "Wait a minute, I can make money helping people?"

SHAWN STEVENSON: I had no idea it was a thing... And I was like, "\$7."

SHAWN STEVENSON: And that was the beginning, man, so then I went on to certification for personal training, strength conditioning coach, then graduating, shifting all my course work like the biology and those things, and then opening my clinical practice and working as a nutritionist for over a decade, man, and just seeing some amazing transformations. We specifically work with a lot of folks with chronic diseases, diabetes, heart disease. People coming in, they got... Blood sugar is like 300, 400, they're on Metformin, sometimes insulin, oftentimes, somewhere around 80% of the time, we're able to normalize their blood sugar without medication, working alongside with their physicians and just... But we did that by education because that's the thing that's not given to them. Nobody's telling them why. They're just like, sugar's bad, okay? But I would reverse engineer it, I would literally walk them through, here's how your body actually does this thing, here's how diabetes is created, here's how insulin resistance happens, and you could see the light come on in their eyes and...

LEWIS HOWES: It's a proper education.

SHAWN STEVENSON: Got a quick break coming up, we'll be right back. Few people know that regularly drinking coffee has been shown to help prevent cognitive decline and reduce the risk of developing Alzheimer's and Parkinson's disease. This attribute referenced in the journal Practical Neurology is yet another reason why intelligent coffee consumption makes the list of best neuro-nutritious beverages. Another study featured in the journal Psychopharmacology uncovered that drinking coffee has some remarkable benefits on mental performance. The research has found that intelligent coffee intake leads to improvements in alertness, improved reaction times, and enhanced performance on cognitive vigilance tasks and tasks that involve deep concentration. Now, why am I stressing intelligent coffee intake? This means acknowledging the true U-shaped curve of benefits and not going ham on caffeine. The data clearly shows that some coffee, a cup or two a day, and the accompanied caffeine is a great adjunct for improved mental performance but going too far starts to lead to diminishing returns, so we want to make sure that we're getting an optimal intake of coffee, and again, not going over-board, but also coffee is best if it's not coming along with pesticides, herbicides, rodenticides, fungicides.

These chemical elements are clinically proven to destroy our microbiome terrain, so destroying the very microbiome that helps to regulate our metabolism, regulate our immune system, the list goes on and on. Obviously, you want to make sure that those things are not coming along with the high-quality coffee that we're trying to get these benefits from. And also, what if we can up-level the longevity and neurological benefits of the coffee by combining it with another clinically proven nutrient source? Well, that's what I do every day when I have the organic coffee combined with the dual extracted medicinal mushrooms from Foursigmatic. And if we're talking about optimal cognitive performance and the health of our brain, the protection of our brain, there are a few nutrient sources like lion's mane medicinal mushroom that pack these kinds of benefits. Researchers at the University of Malaya found that lion's mane has neuroprotective effects, literally being able to help to defend the brain against even traumatic brain injuries. It just makes the brain more healthy and robust.

So again, this combination of medicinal mushrooms plus organic high-quality coffee is a match made in nutrient heaven. Go to foursigmatic.com/model. That's F-O-U-R-S-I-G-M-A-T-I-C.com/model to get 10% off their incredible mushroom elixirs, mushroom hot cocoas, and mushroom coffees. Again, that's foursigmatic.com/model. And now, back to the show.

LEWIS HOWES: What's your thoughts then on fasting in general? Because I don't know if you've seen Dr. Jason Fung's work, "The Obesity Code," "The Cancer Code," where he's talking about fasting a lot to reverse type 2 diabetes in a lot of his patients as part of the process or part of the treatment plan, I guess, is adding fasting into your life. How does that apply to things, to the hormones when we fast, whether it's a one-day fast, three-day fast, how does it apply to

our metabolism? Does it slow down our metabolism when we fast again, whether it's intermittent or three days? What does that do to the body?

SHAWN STEVENSON: Oh man, this is in... I could not put this in there because the data exists and it's just... And I want to make this clear, I also have a protocol for if you don't want to fast. So, you just want to have your three-square meals a day, but for all of us, if we can put our nutrition even into a 12-hour window, in that 12-hour of fasting of not eating, which is just... That even includes your sleep time. Twelve-hour window of not eating eight-hour window of eating.

Just say you finish your last meal at 8 o'clock and then you sleep, you get a good night's sleep, you wake up the next day, you have your first meal at 8:00 AM, wow. Let me tell you some of the things that can happen. Number one, we see a substantial increase in the production of human growth hormone, which is largely... It's considered the "youth hormone." It's associated with healthy body composition, but also cognitive development and especially in recovery, protection from illnesses and speed of recovery from injury, and things like that. It just goes on and on and on. That's why kids have so much energy too. It's really tied to energy, HGH. But I know we talked about this before, I think of Barry Bonds, Jason Giambi, from St. Louis, Mark McGwire, Big Mac. They named a highway after him, Highway 70. They took it back though.

LEWIS HOWES: They took it back down?

SHAWN STEVENSON: But yeah, so by having a little bit of fasting, that process is elicited, and you produce more HGH, but also improvement in insulin sensitivity. We see marked results with that too. And one of the studies that I put into the book was so shocking for me that I could not talk about it. They had folks to consume essentially same amount of calories, but once they partitioned it, all they did, they gave them this one restriction of like, okay, let's take this consumption of caloric availability that we're giving you and put it into this 12-hour window, and they saw increased weight loss. Simply by having the same amount of calories, but in this window, instead... Same amount of calories, they also saw increased production of satiety hormones or normalization of leptin and ghrelin. They saw biomarkers associated with longevity as well. And I can go on and on, just by putting your nutrition into a window... And then there are so many different types of fasting too.

LEWIS HOWES: Yeah, yeah.

SHAWN STEVENSON: And I can't talk about anything with efficacy or ethically without me doing it. So, man, that's part of what happened to me too, of going too far. I've tried all of them, whatever diet framework you know, I've done it, raw food.

LEWIS HOWES: Yeah, everything. Vegan.

SHAWN STEVENSON: But I'll do it for like a year, two years, three years, and that change, and I didn't know at the time of my microbiome in taking away certain foods that really for myself, personally, were associated with good health, by removing those prebiotics sources, that can cause gut dysbiosis. And so, I was dealing with that for a couple of years, and I started to become... Have all these food sensitivities that were rooted in this change in my microbiome. And so even my story of what did I do to fix this, because it's like one of the biggest things growing right now is dysbiosis of gut bacteria, and you might not have stomach problems or digestive problems, but it might show up with migraines, it might show up as issues with your thyroid, it might show up with arthritis.

LEWIS HOWES: Interesting.

SHAWN STEVENSON: This is important because even our methods of testing... Look man, I'm just going to say the thing nobody else is willing to say. Dude, honestly, man, we've gone through a lot of stuff today, but we don't know. We don't know anything, man. Even the top virologists in the world know less than a fraction of a percent about all the viruses there are and how they function. We don't know anything, but we act like we do. And it gives us a sense of certainty. We know so much more than we did, but... And that's the beautiful part too, even our innovations in the last couple of decades have been amazing, but what have we done as a result? We are not getting any healthier. The data exists, and part of this problem is that on average when we have a peer-reviewed... Even if it's a placebo-controlled double-blind, everything, gold standard of study, we get a result finding that says, curcumin, active component in turmeric, has anti-angiogenesis properties, meaning it helps to cut off the blood supply to cancer cells and fat cells selectively that's in...

LEWIS HOWES: Curcumin?

SHAWN STEVENSON: Yeah, alright. We'll circle back to that. But we find that it has... It's been proven, it takes on average from proof to being in clinical practice in medicine for 17 years.

LEWIS HOWES: Wow.

SHAWN STEVENSON: We don't get that kind of time, Lewis.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: And that's part of the problem, is that these studies are often designed and speaking to in this language of academia to sound smart to other people, instead of how

can people take this information and use it in their lives, because I don't have to wait 17 years to find out that this thing can help me. So, we don't know anything, but that gatekeeper system and also the level of information getting to people is changing, thanks to the work that you're doing, what I'm doing, taking this information and making it available to everybody, but making it make sense because it doesn't have to be...

Food is complex, but it's also incredibly simple. You just put it in your mouth and chew, your body handles the fine print, but it's very complex in that it affects so much. There's so many different factors. And that's one of the things I move towards in my clinical practice, is that personalization and also looking at where do people come from? What's their lineage? Maybe we can eat what your ancestors ate, a little bit more like that, and I would find great effects with that too. There are so many different things to consider, but the basics are often not addressed for most folks in our society, and we again, we tend to try to treat a symptom, but at the end of the day, we have to cover the basics and make sure that we are getting the nutrition that our body needs right now, which can be different next week.

Let me give you an example here. Right now, as we're recording this, we're at a... Probably the most stressful time in human history... And the number one mineral that's really associated with the modulation of stress, like our body stress systems, is in magnesium, and prior to this experience we're having right now as a culture, 56% of the United States population was chronically deficient in magnesium, and it's responsible for over 350 biochemical processes in the body, so that means like 350 things your body can't do or can't do properly without it, so that one, getting that one nutrient addressed can help to elicit the parasympathetic nervous system response, turn off that fight or flight and start that healing to deal with stress, because what I was going to say is the nutrition side, stress, it seems invisible. That's the thing. You can't see stress, but it is very real, and it can kill you. One of the most interesting reports, and this was in my first book, about over 90% of all physician visits today are for stress-related illnesses, they have a stress component, yeah.

LEWIS HOWES: What? I'm stressed, I'm anxious, I'm overwhelmed...

SHAWN STEVENSON: Because what does that mean? What is it doing? Is this related your hormones, your neurotransmitters, the things that are determining what your liver is doing, what your heart's doing, what your body fat's doing? You could overeat your way fat, you can under sleep your way fat, you can under exercise your way fat, and you can overstress yourself fat as well. And now, most people have issues with all of these things because 115 million Americans are regularly sleep-deprived. What are we doing? Again, we're looking for another drug to solve our problems right now. We are the sickest nation in the history of the world, self-inflicted. Let me be clear, self-inflicted. That's the root and the system that's governing all of this is sick in and of itself, and unfortunately, again, we have a great medical system,

especially for emergency care, but as far as the treatment of our biggest killers, sucks. Everything continues to get worse. Heart disease, cancer, diabetes, Alzheimer's, obesity, nothing is getting solved because we continue to treat symptoms.

LEWIS HOWES: Not the root.

SHAWN STEVENSON: With pharmacology and not addressing the issues that cause these things. How many people go in that have Alzheimer's...? Early-onset, how many people go in and get counseling on sleep, because now we know that sleep deprivation is correlated with all Alzheimer's, and this is the stuff that's going to continue... Even Alzheimer's also is... In many aspects, is being called type 3 diabetes, so the relationship with insulin in the brain, you have receptors in your brain too, and your body's ability because your brain runs largely on glucose and it needs to be able to do that process right, but what happens when insulin resistance happens in your brain? Man, so how often are we getting this kind of education? We're not, we're not, but we can change it. That's the beautiful part about it right now, is that so much is fluxed up. So much is in flux and it's so malleable now that it can be changed. It's getting shaken. Before, the systems were very sturdy. And I'm just like out there... Promote, like don't go to McDonald's no.

I'm not going to get very far doing that, but right now when things are so shaken up, I'm so grateful to be alive right now, I really feel that Eat Smarter coming out right now is not an accident. And I even share with you, we have a national campaign, we're going to be in essentially every Target store in the United States. I used to work at Target. I was a floater, I'm out there pushing the carts, now my book is going to be in Target, and not just in the book section, special 2021 wellness initiative.

LEWIS HOWES: That's pretty sweet.

SHAWN STEVENSON: I'm not playing man.

LEWIS HOWES: That's pretty sweet.

SHAWN STEVENSON: We were born for this moment. This is the time right now. All the stuff that we've done to prepare ourselves, this is the time to do it, and we really have to work to get our communities healthier. At the end of the day, that's our greatest defense, that's our greatest defense because unfortunately, this isn't being talked about enough. A CDC report came out, which I've been talking about this stuff since April, and also in March, looking at the numbers coming out of Italy and finding that about 88% of the folks who passed away with this virus had pre-existing chronic diseases and comorbidities, somewhere around two to three on average comorbidities.

LEWIS HOWES: What's that?

SHAWN STEVENSON: So, these are additional causes of death.

LEWIS HOWES: Additional causes of death.

SHAWN STEVENSON: Right. And/or pre-existing chronic diseases, so heart disease... The main three were heart disease, diabetes, and obesity, and I was like, "Oh, we're in trouble."

LEWIS HOWES: So, they were a co-cause of death with COVID. They got COVID, but because they had these other elements, it's what also caused the death.

SHAWN STEVENSON: So, this and... What tends to happen right now is people get skewed because everything is so polarizing right now.

LEWIS HOWES: So, the thing about recently, there was 250,000 deaths in USA related to COVID, is that...

SHAWN STEVENSON: So, let's be clear because we get so skewed on what this means. This does not mean that COVID-19 was not a factor, and some folks can lean so heavy into this just like, well, these people would have been alive, or these people died because they were going to die anyway because they had a heart disease, I'm not saying that. Let's be clear. What I am saying and what the data now shows, even here in the United States, because when I saw the numbers, I was like, we're in trouble here, we're the sickest nation in history. And so, the CDC report found that 94% of the folks who lost their lives with this virus had an average of 2.6 pre-existing chronic diseases. Only 6% of people didn't "have a health problem," which... Even that...

LEWIS HOWES: They might have had some health problem, but not...

SHAWN STEVENSON: Even that, because these are opportunistic viruses that I talked about earlier. You can be compromised being sleep-deprived and being over-stressed. But 94% of these folks and nobody is scratching their head, and nobody is saying a thing on major media and our health leaders... We have to get our people healthier. We see the number one risk factor is being sick, having pre-existing lifestyle-related chronic diseases, and I'm not saying this because it sounds good. "The Journal of the American Medical Association," one of the most prestigious journals, 2018, published a report, massive meta-analysis. They concluded diet, poor diet, is the number one cause of our chronic diseases in America.

LEWIS HOWES: Wow.

SHAWN STEVENSON: Number one. It's right there.

LEWIS HOWES: It's the root that causes so many things: Obesity, heart, diabetes, all these other things. Alzheimer's.

SHAWN STEVENSON: But we're not talking about that. We're not talking about it.

LEWIS HOWES: It's the root.

SHAWN STEVENSON: We're talking about, "Let's get another drug to treat a symptom," when we really need to be talking about how do we get our citizens healthier? And so, in truth, our chronic diseases loaded the gun and COVID pulled the trigger. That's really a good way to look at it. It was setting us up for trouble, and this isn't the last time. This isn't the last time.

LEWIS HOWES: There's going to be more.

SHAWN STEVENSON: Yes, absolutely. This is just... Especially if you look at the trend. We've got SARS, we've got MERS. All this stuff is just happening in the last couple of decades. People keep talking about the flu from back in...

LEWIS HOWES: 19, whatever, yeah, yeah.

SHAWN STEVENSON: But it's been pretty quiet. Now, all of a sudden, why? We are more susceptible than we've ever been before, and humans are tinkering with stuff that we've never tinkered with before, messing with our food system, all these genetically modified crops, and we're of course in the lab tinkering with viruses and not really understanding like... We keep carrying this level of arrogance like we can outsmart a virus. What? How's that working out for us? Just look at the numbers and we keep blaming... We keep blaming people, and not the systems that are governing all of this stuff. There is absolutely a degree of personal responsibility, but I grew up in a situation... I didn't know that there was a choice, I didn't know there was a difference, and I want to make sure we have access. That's one of the things that changed my life, is just getting access, getting exposure, and we can provide that for everyone, truly.

LEWIS HOWES: Yeah. There's so many things I could go down there, but what I'm hearing you say is going back to the basics with nutrition, and if we could go back to the basics, if we give people one prescription today around types of foods and/or types of supplements they should be adding to give themselves the best chance to have a strong immune system, burn the unnecessary fats they don't need, optimize the metabolism, what would you say we should be

eating and taking in general? Obviously, each person's unique in different stages of life, but I'm hearing leafy greens, a mixture of diversity. Is this a mixture of diversity of meats, fruits, nuts, oils as well?

SHAWN STEVENSON: Okay.

LEWIS HOWES: Or is it more on the leafy green category?

SHAWN STEVENSON: So that's one facet, for sure. Another thing, it's so funny. I've been talking about this stuff for years, but now we've got really cutting-edge data on this stuff. Another major thing I want everybody to focus on from today forward is their omega-3 fatty acids. A lot of folks have heard of this, now we have a wonderful study that was just released, and it's highlighted in Eat Smarter where they're looking at the ratio of omega-3 fatty acids to omega-6 fatty acids in humans tissue. The ratio as we evolve was about 3:1, omega-6 to omega-3s, and omega-6 are known to be the kind of more pro-inflammatory of the omega family. Omega-3s are more of anti-inflammatory, but omega-6 are important.

They're important for many processes in the body, but when that ratio gets skewed, we see increased inflammation, which inflammation is tied with every hormonal problem you can name, and I talk about that as well, and also inflammation in the brain. And so now that ratio is 20:1, 30:1 for some people, omega-6s to omega-3s, and what they found in this particular study was that as folks improved their omega-6 to omega-3 ratio, is directly correlated with decreased body fat. This is a major regulator of what your fat is doing. Your fat communicates with each other, the fats you consume... Part of the problem is, I know I was indoctrinated with the idea that eating fat makes you fat. I thought we were past this, but we're not, 'cause it keeps coming up in the media every now and then, like saturated fat, saturated fat is going to kill you... And I've got studies that show the opposite. Not to say... But they're not taking into account where does it come from?

LEWIS HOWES: The types of fat, yeah.

SHAWN STEVENSON: Yes.

LEWIS HOWES: The quality of the fat.

SHAWN STEVENSON: The quality, yes. And so, one thing you can do immediately is improve your omega-3 ratio. So, avoid consuming things that are extremely high in this inflammatory omega-6s, which for most of us, we primarily get that through these highly processed seed oils, so corn oil, so-called vegetable oil, which is not a damn broccoli oil. These are highly processed seed oils and dude, what happens, like canola oil. Canola, even at Whole Foods, if

you go to a health food bar if it was open, a lot of its cooked in canola oil, like it's organic canola oil healthy? No, canola oil is... What it takes to make these oils, they smell and taste disgusting, they would, but they have to be deodorized, highly processed, and refined. And then, can you... Just even that in and of itself should tell you because these oils are very delicate, they're very delicate. It makes them rancid and increases their... The capacity of oxidative stress for your body.

LEWIS HOWES: What are the top oils we should be eating then? Olive oil is the number one, right?

SHAWN STEVENSON: I wouldn't say number one. Very important.

LEWIS HOWES: Important one?

SHAWN STEVENSON: Very important.

LEWIS HOWES: So, it's a lot of calories, right?

SHAWN STEVENSON: Yeah, but there's some really cool studies that I put into the book showing this direct correlation with increased olive oil consumption and weight loss.

LEWIS HOWES: Wow...

SHAWN STEVENSON: So, yeah, something special there, but here's the thing, olive oil is not highly processed.

LEWIS HOWES: Right.

SHAWN STEVENSON: Right. It's often... It can be cold-pressed and is bottled in dark glass bottles because it's sensitive to light so don't get your olive oil in clear plastic bottles.

LEWIS HOWES: You can see it, don't buy it.

SHAWN STEVENSON: Yeah. It's already is denaturing.

LEWIS HOWES: Extra virgin olive oil. Is that better?

SHAWN STEVENSON: Yeah. Extra virgin, organic or if you know the farm, they're not using like pesticides.

LEWIS HOWES: So, olive oil is good?

SHAWN STEVENSON: Yeah, but with the omega-3s, the number one source is through fish.

LEWIS HOWES: Fish.

SHAWN STEVENSON: Coldwater fish. Now, some people is like, "Oh, I can't do it. I don't want to mess with the fish," and some people, I've heard this so many times in my years of clinical work, that they're vegetarian. I'm sorry, they say they're vegetarian, but I only eat fish.

LEWIS HOWES: They're a pescatarian.

SHAWN STEVENSON: But they wouldn't say it like the term. It's more like, I don't eat meat. I don't eat meat, but I'm pretty sure...

LEWIS HOWES: Fish is meat.

SHAWN STEVENSON: Yeah. Just say I don't eat land meat.

LEWIS HOWES: Yeah, exactly.

SHAWN STEVENSON: But if you don't eat fish or... That's okay, we have... There's other ways, however, this is the most dense source that humans have been eating the longest. If we're talking about real whole food sources, which we want food first. And so specifically, I'm saying this because of the DHA and EPA. These are the omega-3s that are clinically proven to have all the benefits I've been talking about where there's cognitive performance and/or stuff with the metabolism. There are omega-3s in plants, but they're in the form of ALA. ALA is very different. Your body can convert some of your ALA into EPA and DHA, but you lose about 95% of it in the process, conversion process, so you got to eat, clinically speaking, a butt load of chia seeds.

LEWIS HOWES: Wow.

SHAWN STEVENSON: Daily, you got to be shoveling it.

LEWIS HOWES: Whereas wild-caught Alaskan salmon might be just like a higher source.

SHAWN STEVENSON: Over the top. So again... But what do we do? Algae oil. Look for a high-quality algae oil.

LEWIS HOWES: Algae oil?

SHAWN STEVENSON: Yeah.

LEWIS HOWES: It's good for you?

SHAWN STEVENSON: Yeah.

LEWIS HOWES: Cook it or you just drink it?

SHAWN STEVENSON: So, algae oil comes in capsules, very concentrated sources of algae or krill oil. So, krill is like a microscopic shrimp, so maybe that on your ethics, maybe that is like a more viable source, a super high astaxanthin which is correlated with longevity and reductions of heart disease and all this stuff. So that's really cool. So, krill oil or algae oil. Now, to be clear, 99.9 of the studies on the effectiveness of omega-3s, they're done on fish and fish oil, not these other things. The compounds are there, but we just don't know if they have the same effect. So just be aware of all that stuff. Green leafy vegetables, we covered omega-3s. One of the things I want to make sure everybody walks away with today, because we talked a little bit about the macronutrients, but there's not just three. So, in school, again, we're taught fats, proteins, carbohydrates. There's actually six. The other ones, alcohol, is a macronutrient, and we talk about that all the ins and outs of that as well, which we can't even get it to that, but you got to read it. The data is bananas.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: Not to say good or bad, but you need to know.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: Also, the sixth man coming off the bench for the macronutrients is fiber, but that fifth player that doesn't get a lot of attention is water. Water is probably the most profound of all these macronutrients.

LEWIS HOWES: So, here's a question. How much water a day should we be drinking?

SHAWN STEVENSON: Alright. So, this is... I'm going to give you the answer.

LEWIS HOWES: Okay.

SHAWN STEVENSON: But it doesn't matter if I tell you what to do unless you really have a connection why to do it. Water, everything about you is based on water. We hear this stuff,

you're mostly made of water, what the hell does that mean? In the book, I cite a study that had folks who drink 17 ounces of water.

LEWIS HOWES: A day?

SHAWN STEVENSON: Just within a couple of minutes. And what happened is something called water-induced thermogenesis. They ended up burning about 25 calories from drinking water.

LEWIS HOWES: Now, is the quality of water a matter?

SHAWN STEVENSON: Yes.

LEWIS HOWES: Is the temperature a matter? Hot or cold?

SHAWN STEVENSON: Not as much.

LEWIS HOWES: Okay.

SHAWN STEVENSON: That's a personal preference. There are the Ayurveda principle. I know about all this stuff here. Okay so here's the cool thing.

LEWIS HOWES: So, wait, they burned... Say that again.

SHAWN STEVENSON: They burned 25 calories from drinking water, Lewis, just one little serving.

LEWIS HOWES: In 10-15 minutes or something?

SHAWN STEVENSON: No, if you do that four, five times a day, you're burning 100, 200 calories just from drinking water.

LEWIS HOWES: 17 ounces of water.

SHAWN STEVENSON: That's what was used in the study, okay.

LEWIS HOWES: That's like a tall cup, right?

SHAWN STEVENSON: But the question is why?

LEWIS HOWES: Why?

SHAWN STEVENSON: How can you burn calories like that? I thought you had to go exercise your face off, not just drink water. It's because water makes everything work better. Every single hormone we talked about is operating in a water medium. Your mitochondria is based on water, all your neurotransmitters are based on water and move throughout your body in this water superhighway, and when you become deficient, which most people are just habitually through the day, all these systems start to basically... These wide superhighways start to become these dark back alleys where like Batman's parents got killed, you know what I mean?

LEWIS HOWES: Yeah, yeah, yeah.

SHAWN STEVENSON: And so how do we fix this? Drink the water, but like you said, the type of water matters, and we go through all of that too, but just to give some simple principles... There was one study, this was done from testing houses from southern California all the way to New Jersey, and they found that tap water contained dozens of pharmaceutical chemicals, metabolic waste from people taking chemotherapy medications.

LEWIS HOWES: Oh, no.

SHAWN STEVENSON: Antidepressants, lisinopril, stuff for heart disease. This was showing up in our water supply. It's like, what the hell, why? How is that possible? We're really, we're in this earth bubble, and this stuff is getting recycled, there is toilet to tap water, there's new projects that are taking... Yeah, and taking water from our bathrooms and putting it back to the faucet, but it's one of the things trying to solve our problem with water here on the planet, but oftentimes, it's not due to that. It's just the hydrological cycle and stuff that we're as humans put into the environment now that never existed before, and we don't have filtering processes that can get... And these are microscopic amounts, let me be clear, but they're there, nonetheless. Just understand, if you don't get a water filter, you are the filter. You become the filter. I highly recommend getting a water filter, but ideally, this would be something like reverse osmosis, but that makes it blank water.

LEWIS HOWES: There's no vitamins and minerals in the water. It's dead water.

SHAWN STEVENSON: Exactly, dude.

LEWIS HOWES: We need rich vitamins and minerals in our water, correct?

SHAWN STEVENSON: This goes back to nature. When I was in school, we were taught water's H₂O.

LEWIS HOWES: Yeah.

SHAWN STEVENSON: But there is no H₂O anywhere in nature by itself. There is no plain H₂O anywhere in nature. It's called the universal solvent. Water's always combining with other things and that's what gives water this character and structure, is the minerals that's in that water.

LEWIS HOWES: When you take all the minerals out, what is that doing to our body, when we're just drinking dead water?

SHAWN STEVENSON: One of the things that I was even battling with the publisher on, was putting this full story of water and how our cells actually get hydrated. To put it simply, it affects the hydration levels of your cells and your extracellular fluid. And it can cause some serious problems, but what if water has too many minerals, like ocean water? It'll kill you, right?

LEWIS HOWES: Right, right.

SHAWN STEVENSON: It's a basic...

LEWIS HOWES: Where do you get your water from? I want to drink your water.

SHAWN STEVENSON: What we evolved drinking in recent history...

LEWIS HOWES: Is bottled water.

SHAWN STEVENSON: No.

LEWIS HOWES: Is what we've been drinking...

SHAWN STEVENSON: Right, but throughout the recent centuries, is people...

LEWIS HOWES: Is tap water.

SHAWN STEVENSON: No, no. People go to where the springs are at and the wells.

LEWIS HOWES: Gotcha. I'm talking about recently.

SHAWN STEVENSON: Super recent? Yes, but...

LEWIS HOWES: We used to go to wells.

SHAWN STEVENSON: We would... Humans would set up shop and civilization where the water was at.

LEWIS HOWES: And dig a well.

SHAWN STEVENSON: Yeah, if they could. If they had the technology for that. That's what would determine what we're doing. That's ideal human water, is spring water...

LEWIS HOWES: From the Earth.

SHAWN STEVENSON: Yes.

LEWIS HOWES: But now, we're getting it from bottled sources or bottling it, and...

SHAWN STEVENSON: Yeah. There are great sources that may be bottling glass. We get into a conversation about BPA and all that kind of stuff.

LEWIS HOWES: Where do you drink your water from?

SHAWN STEVENSON: When you came to my house in St. Louis, we lived on a well, we had well water.

LEWIS HOWES: That's crazy.

SHAWN STEVENSON: Right?

LEWIS HOWES: That's exciting.

SHAWN STEVENSON: When we moved here, very different. We get spring water delivered, bottled in glass, got a water dispenser.

LEWIS HOWES: What's it called?

SHAWN STEVENSON: Mountain Valley. Everybody knows about Mountain Valley now.

LEWIS HOWES: Mountain Valley?

SHAWN STEVENSON: But again, I've been on this for 20 years, waking up every day, I'll drink about 20-30 ounces of water to start the day.

LEWIS HOWES: How much do we drink throughout the whole day?

SHAWN STEVENSON: To give people the simple barometer...

LEWIS HOWES: Yes.

SHAWN STEVENSON: The number one marker for you to know how much water to drink is listening to your body. Unfortunately, we're largely disconnected from what our bodies are telling us. To give people a barometer as just a starting point, take your weight and divide that number in half, and just say if you're 150 pounds, you divide it in a half, that's 75. That's the number of ounces that I want you to drink as a baseline.

LEWIS HOWES: So, half your weight?

SHAWN STEVENSON: Yeah. Now once you get to the 200 pounds and up, just 100 ounces, that's solid.

LEWIS HOWES: 'Cause I'm at 230 right now. So, a 100 ounces a day.

SHAWN STEVENSON: Yeah, that would be the ideal target.

LEWIS HOWES: Is that a...

SHAWN STEVENSON: It's not that much. It's really not that much.

LEWIS HOWES: Is that a gallon? How much is in a gallon?

SHAWN STEVENSON: How much is in a gallon? Are that 64 ounces?

SHAWN STEVENSON: See, you remember man. You went to school.

LEWIS HOWES: I'm not trying to remember stuff.

SHAWN STEVENSON: Yeah, so it's...

LEWIS HOWES: Okay, so 100 ounces a day for me?

SHAWN STEVENSON: Yeah.

LEWIS HOWES: Wow, that's a lot of water.

SHAWN STEVENSON: I know, but this is... If you're active...

LEWIS HOWES: If you're running, you're working out...

SHAWN STEVENSON: Yeah. Even giving that barometer, it's going to depend on your lifestyle.

LEWIS HOWES: Yeah of course.

SHAWN STEVENSON: That's why I don't even like giving these numbers.

LEWIS HOWES: Right. It all depends. It all depends.

SHAWN STEVENSON: Because it's all so individual.

LEWIS HOWES: Okay, let me ask you a few things on better relationships. What are the foods we should be eating to have better moods and a higher chance of quality intimate relationships?

SHAWN STEVENSON: This is the most important part for me personally of this work, because...

LEWIS HOWES: 'Cause relationships are a big factor of stress for people, which causes a lot of bad habits and obesity and all these things.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: It's the level of stress.

SHAWN STEVENSON: Yeah, absolutely.

LEWIS HOWES: If we can have better relationships with everyone, our lives would be better. What are those foods that can support that?

SHAWN STEVENSON: Have you ever seen as many people fighting, arguing, and... It's so much polarization and people being separate, that's the major epidemic because we can't solve our greatest problems with everybody fighting and nobody's willing to listen. And what the data shows, clearly and that I really brought forward for the first time in book form and just getting

this out to everyday folks, is how much our food affects our ability to perspective take and have patience and to have empathy. And this is highlighted... One of them is a study... This is from the Ohio State University.

LEWIS HOWES: Yeah, the Ohio State.

SHAWN STEVENSON: And what they did was they had couples. They just looked at their blood sugar, which largely what they found was that these blood sugar spikes and crashes we consider hypoglycemia in your blood sugar going low, which is largely related to what you eat, when the study participants, these couples, when their blood sugar would go low, they found that they were more aggressive and irritable towards their partners and less likely to perspective take and to resolve their conflicts because of their blood sugar being disturbed.

LEWIS HOWES: Too low. Do we want the blood sugar to be high or just...?

SHAWN STEVENSON: Not high, just normal.

LEWIS HOWES: Medium level.

SHAWN STEVENSON: Normal. And the reason that it could go so low... But here's the thing, when your blood sugar goes low, it will normalize, but it usually does that because it's like a survival response. It increases your production of stress hormones to get it back up. So, cortisol, your body can literally... It's a process called gluconeogenesis. It can break your muscle tissue down and use it for fuel to get your blood sugar back up. There's so many different ways your body does to figure out the problem, but it makes you more irritable and aggressive, and so many times in relationships, people are not fighting the other person, they're fighting their biology.

LEWIS HOWES: Dang!

SHAWN STEVENSON: People are not fighting a real actual issue, they're creating... Often create issues. How many times do you get into it when you're tired? How many times you get into it when you're actually just hungry? You're hangry. This term is used now, it's cute, but it's real, we've got science on this. And how many times do you get into it when you're just stressed out about stuff. And you get into an argument about some damn like I don't know house shoes or something like, "Why did you put my house shoes here?" It's like some of the stupidest things, and it's just because you're not showing up as your best self because our biological needs or our biological thermostats are off. So, we have to address these things, so that's number one. One of the most shocking things, and this is more so than ever right now, we're seeing these... We're seeing violence displayed. Social unrest due to violent incidents, and

there was... This is kind of messed up, what I'm about to say, but it's a great community to study because it is a controlled environment, but they took prison inmates and they wanted to see how nutrition would affect their behavior.

LEWIS HOWES: Interesting.

SHAWN STEVENSON: And so, this was Oxford University researchers, and because it's a ward study, it's a controlled environment, they wanted to see if they gave these inmates increased nutrition, so vitamins, minerals, omega-3 fatty acids...

LEWIS HOWES: Not the crap they're getting every day.

SHAWN STEVENSON: They didn't change their food. That's another study, where they changed their food and the results were even bigger than what I'm about to share with you, but I want to give you the baseline stuff.

LEWIS HOWES: Sure.

SHAWN STEVENSON: So, they had a controlled group who didn't get these additional nutrients and they had the study group. After they compiled all the data, they found that the prisoners who were getting increased nutrition had a 30% reduction in overall behavioral offenses, and they had almost a 40% reduction in violent offenses.

LEWIS HOWES: Wow. Now, was that because they were just happier, they were getting good food?

SHAWN STEVENSON: No, this was not the food.

LEWIS HOWES: Affecting the mood.

SHAWN STEVENSON: They had a placebo group, everybody's taking pills, they don't even know what they're taking.

LEWIS HOWES: It's just supplements.

SHAWN STEVENSON: That's it. That's why I wanted to share this study first.

LEWIS HOWES: Not food. Supplements only.

SHAWN STEVENSON: Right. And just getting the nutrition.

LEWIS HOWES: Everyone's taking the same supplement, but one are told... Wow.

SHAWN STEVENSON: Yeah. 40%, almost a 40% reduction in violent offenses.

LEWIS HOWES: Wow.

SHAWN STEVENSON: By improving the nutrition available in their body.

LEWIS HOWES: Wow, so food... The nutritional value really affects our mood, and it can affect our relationships.

SHAWN STEVENSON: This study was so profound, another set of researchers saw this, and it was like, "This can't be possible. 40% reduction in violence? No way." So, they repeated the study with another set of prisoners, and this was published in the journal "Aggressive Behavior," which there's journals for everything, but they found almost the exact same thing happened. We can increase our propensity towards violence by improving our nutrition, and then so, studies that were done actually implementing more whole foods saw even better results because food...

LEWIS HOWES: Wow.

SHAWN STEVENSON: Does something else. It does something really special. So, with that said, right now, in communities that are in conflict were oftentimes, your likelihood, you... Let's be clear, you can have empathy and compassion and patience for someone else when you're not well. It's just harder.

LEWIS HOWES: It's so much harder, and when you're stacking all the stresses and sleep deprivation and not working out and you're lacking community and you're doing all these things and stacking it, you're going to explode.

SHAWN STEVENSON: Yeah.

LEWIS HOWES: At some point.

SHAWN STEVENSON: Yeah, it's just a matter of time. And just your ability to have patience, your ability to see the other person's point of view, your ability to have compassion and understanding, it's harder to elicit those things, but it's not impossible. What we're experiencing right now because we know that we are the sickest nation in human history, self-inflicted... A nation of sick people are arguing against other sick people and wondering why

nobody's listening. If we can get folks healthier, we can start to have healthier conversations. It's not that it's impossible if you're not well, it's just harder. And I know some folks who are listening, they think, you know, "I might not be that healthy, but I know that I'm compassionate and I have empathy..." Absolutely, but please understand, it's not just about your perception of who you are. When you're not well, your biology starts to act very different, and we start to see shifts in your brain activity, and your pre-frontal cortex that's responsible for decision-making and social control, and distinguishing between right and wrong starts to go cold, and your amygdala... These more primitive parts of our brains start to take over and we're just not our best selves. So, this is my big mission that I might not say that often, but this is imbued into the pages of a book is, "Let's get our citizens healthier. Let's make this a mission because just imagine what we can do once we start to feel better."

LEWIS HOWES: Absolutely, man. Man, this is powerful. Make sure you guys get this book *Eat Smarter: Use The Power of Food To Reboot Your Metabolism, Upgrade Your Brain And Transform Your Life*. This is going to be extremely helpful for you guys. Definitely check it out, some amazing research, lots of studies in here, and a 30-day smart plan of action at the end, which you're going to really want to take on, which breaks down everything on what foods to eat, how much, when to eat... So, if you need some sauces, dips, dressings, everything that is the best stuff for you, make sure you check this out. It can be very powerful. Check out Shawn, eatsmarterbook.com. Also, gets "Sleep Smarter," while you're at it, because sleep is such important to our overall health and wellness, and when I started to alter my sleep from your teachings, it really helped my overall well-being. So, just getting quality sleep, and it's not just the amount of time, it's also the environment, everything, so get *Sleep Smarter*. Make sure you follow Shawn on *The Model Health Show* podcast, one of the top fitness nutrition podcasts in the country. Check him out on Instagram, [shawnmodel](https://www.instagram.com/shawnmodel), Twitter, Facebook, YouTube, which we're going to get you up on YouTube more. I want you to get more videos out there, so... Man, this is powerful. *Eat Smarter*.

SHAWN STEVENSON: Thank you, man.

LEWIS HOWES: Thank you so much for being here, brother, appreciate you.

SHAWN STEVENSON: It's my pleasure, man. Love you, bro.

LEWIS HOWES: Love you too, man.

SHAWN STEVENSON: I hope that you enjoyed this special episode of *The Model Health Show*, and definitely check out my really good friend, Lewis Howes, and the *School of Greatness*, one of the best podcasts on the planet, and just one of the best humans. Again, really good friend. And listen, we are just getting warmed up, we're just scratching the surface. Right now, the

world needs more empowerment, needs more health and wellness education, and again, we are not stopping any time soon. We've got some incredible guests coming your way and some powerful masterclasses. So, make sure to stay tuned.

I appreciate you so much for tuning in to the show today, take care, have an amazing day, 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 can find transcriptions, videos for each episode, and if you've 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 this 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.