THE MODEL HEALTH SHOW

EPISODE 646

The Truth About Body Fat, Calories, & Long-Term Weight Loss

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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 me today. Awareness is generally the first domino that we knock over in our process of transformation. It's very difficult to change something if we're not aware that the thing needs to be changed or if we're not aware of how the thing actually works. So often when it comes to our bodies, we're trying to change something that we simply don't understand. And the strange thing, is that we live in our bodies all the time. This is our place of residence and yet we are often lacking insight on how our bodies actually work. Worse than that, we're often inundated with a lot of wrong information or very low-quality information on how our bodies actually work.

As we're moving into a new year, I felt it would be a great gift to provide us some real powerful clinically backed evidence-based information on how to really transform our bodies. We're going to be looking at going into this new year with a more empowered mindset and more viable tools to really create that transformation we're looking for. Again, awareness is that first domino. Alright. On this episode, you're going to be hearing my answers to some of the most important questions when it comes to our metabolic health. And the person asking me these questions is none other than New York Times best-selling author Dr. Steven Gundry.

This is actually from a wonderful fireside chat that I had with Dr. Gundry. And if you're watching the YouTube version of this episode, you're going to be able to see some of the holiday decorations in the background and literally a fireplace crackling in the background. It's really, really cool vibe. And again, he's going to be asking me about a wide range of topics for improving metabolic health. We're going to be covering the science of calories and epicaloric controllers. We're going to be talking about fat bacteria. All right. Fat bacteria and how our microbiome influences our metabolism. We're also going to be talking about the most remarkable macronutrient when it comes to weight loss and so much more.

Again, I think you're really going to love this conversation and it's a perfect complement as we march towards a healthier more empowered New Year. Now, during the episode, we're also going to highlight how our brain impacts our metabolism downstream. And there's a hidden epidemic going on right now and it's regarding something called, neuroinflammation. All right, so inflammation in our brain's leading to all types of downstream impact. Now, another big contributor to neuroinflammation and our brain really operating kind of like an internal thermostat for our metabolic rate. Stress can really throw a monkey wrench into the whole machine.

We need stress obviously, it's a part of life to grow, to evolve, to heal, to get better, but chronic stress and our lack of ability to adapt to stressors can really have a tremendous impact on our metabolism. What are some of the things we could do nutritionally to support our nervous system? To support our brain? Well, one of my favorite things and I had it this morning is highlighted in a study. And this was published in Biomedical Research, and they had test subjects with a variety of health complaints including anxiety and poor sleep quality to utilize lion's mane medicinal mushroom or a placebo for a one-month study.

The participants who utilize the lion's mane after all the data was compiled, had significantly reduced levels of irritation and anxiety than the placebo group. Again, it's helping our nervous system become more resilient and not as easily triggered. All right. I had lion's mane combined with high quality organic coffee. And research at Stanford University deduced that the caffeine in coffee is able to defend against age-related inflammation. Another study published in the journal, Practical Neurology, details how regularly drinking coffee has been shown to prevent cognitive decline and reduce the risk of developing Alzheimer's and Parkinson's disease.

This is really important. Alzheimer's is right now, it's the sixth leading cause of death in the United States. Most people have no idea about this. It's creeping its way into the top five causes of death. And this is just one form of dementia that's become an epidemic in our culture. Now, there are certain things we can do that people are already doing but we can up level that to help to protect our brains and our nervous system from degradation. Unfortunately, when people get coffee, they're getting coffee that's littered with pesticides and herbicides and toxic molds and heavy metals and all of this garbage. And of course, the sugar, don't even forget about that and all the artificial this and that. That's not coffee. We're not talking about that coffee. All right.

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ITUNES REVIEW: Another five-star review titled, “love learning about your backstory” by Aligned 747. “Very cool to learn about how Shawn arrived to where he is now with this podcast. Congrats on all your successes. Your podcast is awesome. Such valuable content and love that you keep it real.”

SHAWN STEVENSON: Thank you so much for leaving that review over on Apple Podcast. I appreciate it so very much. And if you had to do so, please pop over to Apple Podcast and leave a review for The Model Health Show wherever you're listening. All right, if you can rate and review whatever platform you're checking out the show on, please do so it really does mean a lot. And on that note, let's get to our topic of the day.

On this episode we're going to be talking about nutrition and metabolic health in a really big way. This was an interview that I did for my friend, Dr. Steven Gundry and he asked me a variety of questions. And again, we're going to be really looking at how our metabolism actually works in regard to its association and assimilation of calories and expenditure of calories. Also, how our microbiome impacts our metabolism, specific foods we need to really start to proactively add into our diet to improve our metabolic health and so much more. So, check out this amazing fireside chat about improving your metabolic health.

DR. STEVEN GUNDRY: Shawn, so glad to have you back on the podcast.

SHAWN STEVENSON: I'm grateful to be here. I'm excited.

DR. STEVEN GUNDRY: So, let's... We've talked about your background growing up before and we've talked before about your degenerative disc diagnosis and recovery. But you write in the book the role that food played in all of this. Can you repeat that story for the listener? I think it's a great story.

SHAWN STEVENSON: Absolutely. I was an aspiring athlete. I was like the fast kid in the neighborhood, the guy you always picked first. And really just even in my environment, there was essentially two ways to success, and one was through athletics, the other way was through drugs. That's just kind of what was in my sphere. And I fortunately had great exposure from my grandmother kind of instilling in me the importance of education, but still sports was my thing. And at the age of 15, I ran a four 540 which is NFL time already at 15. But that same year at track practice doing a 200-meter time try with my coach, I broke my hip just from running as a 15-year-old kid. And obviously, you know this is usually something that's associated with folks who were in their elderly years. Oftentimes more so happening with women in some aspects. And so, it should be a sign that something's off. There's something going on with my body, maybe even with my hormones. But nobody stopped to ask this question, what made a

15-year-old kid break his hip from simply running? I went through what's called standard of care.

Here's some insets, stay off the leg. They actually gave me some ultrasound treatment, which is another little sidebar. How sound is a treatment? But I don't... We hear the name, but we don't really get how powerful it can be. But anyway, I got better sort of. I got back on the field, but a string of other injuries happened and really derailed my vision of being able to play professionally. And so, my identity was shattered. And ultimately when I was 20, I got diagnosed with this so-called incurable degenerative disc disease.

And my physician put the MRI up for me to see and he told me that I had the spine of an 80-year-old man. And not a healthy 80-year-old by the way just to be clear. But it was really obviously just earth-shattering for me to hear this. And he gave me a prescription, told me bed rest, and he said, "I'm sorry. There's nothing we could do. We can manage this." And I always encourage folks whenever they get a bad bill of goods, bad diagnosis, it's a good idea to seek out a second or third opinion before you take drastic action. And I did that, I saw three other physicians over the course of two years, and they all said the same thing. And each one gave me a new prescription. Now I got some Celebrex added to the mix and they also told me bed rest.

I could walk, Dr. Gundry. I could walk. I was in pain. But they kept telling me to do nothing. And the worst thing you could do in some instances is to do nothing. It wasn't just my bones atrophying now my spine everything else was. And also, just gained a tremendous amount of weight doing nothing, eating what I call the typical university diet, typical university food or TUF diet. And this game-changing moment happened two years later when after seeing the final doctor I realized, I had this habitual question going on in my head. Why won't somebody help me? Why won't somebody help me? Why me? And that night I asked, what can I do to get better? It was the first time I asked a more empowering proactive thing for myself. And the brain is really wired up to answer questions that you pose it. It's called instinctive elaboration. A brain is just driven by questions. Oftentimes are unconscious or subconscious but it helps us to filter out all the stuff coming at us. There's trillions of bits of data even right now as we're sitting here and everybody listening, there's even data coming into your toes right now and maybe we just thought about our toes a little bit.

DR. STEVEN GUNDRY: I noticed that.

SHAWN STEVENSON: Right. There wasn't there before, or your brain just didn't see it as a top priority and your attention was somewhere else. But anyway, that sent me on a pathway of discovery simply by asking this question. My filter started to zoom in on different things. And one of the things that really changed everything. I asked, okay, my bones are degenerating

rapidly, what are my bones actually made of? And the marketing would tell me calcium. You see the milk mustache, that's the one I need, and I was guzzling milk like crazy every day. It was part of my tough diet. It was coming along with my cereal. I was getting buttloads of milk. Why are my bones still degenerating?

And asking that question, I searched, and I was in college at the time still. And so, it's not that it guaranteed access but I had the ability to just ask questions and to search. And I found there was 20 other things, some of them more important than calcium in increasing your bone density. Even omega-3s were important. And I was like, "I'm not getting any of this in my McDonald's hotcakes and sausage, in my Hawaiian punch. I'm not getting any of these nutrients." And it struck me for the first time that my tissues, I wasn't giving my body the very basic raw materials it needed to regenerate me, to build my body.

I was made out of the stuff that I was eating, and this is an overarching thing for everybody today is that, every single thing about us, as we're sitting here, I'm seeing the food that you've eaten. Our brain cells, the axons the dendrites, the neurons themselves are made from the food that we eat. This is what allows us to have thought and feeling and emotion. It's made from food. Even people hearing us, the tiny bones in the ears are made from the food that you eat sending those electrical signals to your brain. I can go on and on. Your heart is made from the food that you eat. It's so important, but it's not a part of the conversation, the popular conversation yet.

And so, to put a kind of ball in the story. It's a happy ending. Once I got this that food mattered so much in creating a better, basically a better printout of me, because food nutrigenomics and nutrigenetics some of the things I cover in the book, it literally decides what your genes are doing. And I started to just provide my body with all these powerful raw materials. And it didn't just change my body, it also changed my mind because food isn't just food, it's information. And so making my brain out of better stuff, I just had a higher quality of thought process.

I felt better. And once I turn my own health around, that feeling, I was so self-centered in the beginning, early in my life because of the environment I was in. I had to protect myself. I shifted so far to the other end of the spectrum. I became so other focused. I wanted to help as many people as I could to feel like I did. Just to highlight this story in a nutshell, food really does make us up at a very foundational level. And if we can get the food right, so much else becomes easier.

DR. STEVEN GUNDRY: No, you're so right about that. We were talking off-camera and I got to share this 'cause it's pretty good. I grew up in Omaha, Nebraska and my best friend's father was actually head of what's now Conagra. It was Consolidated Mills back then. And his mother

made great chocolate chip cookies and particularly chocolate chip cookie dough. And so, my friend and I would go there after school, and we'd sit there and eat raw chocolate chip cookie dough. And one day his dad comes in early from work and we're sitting there throwing down the chocolate chip cookie dough and he goes, "Don't eat that stuff. There's bugs in there." And we dropped the spoon and go, "What bugs? There aren't any bugs in there." And he says, "Yeah, there's actually lots of insect eggs in the flour that that's made out of." And we're going, "What? I've never seen an insect in flour." The little boll weevils. He says, "That's because the eggs are in there, but they can't grow because there's nothing in that flour that can sustain them." And it was... If I thought back, I'd go, "Holy cow! That's one of the smartest things I ever heard anybody ever said." If a bug can't live on this stuff, what in the ding-dong are you putting it in your mouth for?

SHAWN STEVENSON: That's powerful. 'Cause when you first hear this story, I'm like, "Okay. We want to avoid the bugs." But the bigger overarching meta-perspective is that the bugs can't even live off of this stuff.

DR. STEVEN GUNDRY: Yeah. We lost our home in Montecito a couple of years ago to the mudslide and we bought a new home. And it came on the kitchen counter with a big jar of Oreo cookies that were beautifully arranged, and it was artwork. And we decided... I haven't had an Oreo cookie in 20 years, but we decided, that's kind of cool. Let's just Leave it there. 'Cause it's so... People walk in and go, "Oh, what are the Oreo cookies doing in your house?" That thing has been there for two and a half years. Nothing has changed. There's not a mold growing. There isn't a bug. It hasn't shifted. It's exactly the same two and a half years later. And to think that nothing can live on that and yet we think we can live on that.

SHAWN STEVENSON: That's not food folks. That's not food.

DR. STEVEN GUNDRY: That's not food.

SHAWN STEVENSON: That reminds me of seeing, when I was a kid, I would randomly find like a French fry in my mom's car. This would be months later, and the fry looks the same. Looks like you pick it up and toss it down. Why isn't it breaking down? It's not food. It's...

DR. STEVEN GUNDRY: Perfectly preserved.

SHAWN STEVENSON: Right. It's mummified food.

DR. STEVEN GUNDRY: That's right. Yeah, it mummifies us.

SHAWN STEVENSON: Right, oh yeah.

DR. STEVEN GUNDRY: All right, speaking of mummifying. You write in your book that our fat's number one concern is keeping us alive. Oh, come on. Now, everybody knows that fat is going to kill us. And why do we have to change our thought about fat? It's not trying to kill us; it's trying to keep us alive.

SHAWN STEVENSON: Yeah, it's...

DR. STEVEN GUNDRY: Are you sure?

SHAWN STEVENSON: This is the same kind of thinking about targeting, trying to destroy all the microbes. It's the same kind of premise. It's a self-fulfilling prophecy in how we're hurting ourselves. Because our body fat is one of the greatest evolutionary advantages that we have as humans is what enabled us to get here and it's simply doing the job it was designed to do but it's existing in conditions that have never existed before. Without our body fat, it allowed us during times when we didn't have access to food to store energy and to keep us going to fight another day. And our body fat is just very, very good at doing this job. And what I wanted to do was to help to kind of demystify and to create a more of a kindred friendship, kindred spirit relationship with our body fat. Because we're trying to kill something we don't even understand, and we don't understand its benefit.

And so, the first thing is understanding there's different types of body fat, and also there's different types of fat cell communities, and these cells are communicating with each other literally as an organ. Your body fat, these body fat communities I'm going to share are organs, meaning they produce their own hormones, the neurotransmitters, the communication is like instantaneous. And again, it's a highly intelligent system, but we can definitely gum it up. And the first type of body fat is what we generally think when we're targeting trying to kill body fat is storage fats. And these are again a category of white adipose tissue and there's three.

The first one is subcutaneous fat. And so, this is the stuff that's just below your skin and this can be the fat on the back of your arms or on your butt. You can even have some on your belly as well, but this is stuff you can pinch. The other type of storage fat is visceral fat and it's also known as omentum fat, which is, the etymology it's basically means fatty apron. And so, this is the deep organ fat, abdominal fat, that's like kind of surrounding and putting pressure on your internal organs. This is more hard. It's a little bit more difficult to get your grip on and we know that this storage fat is also the most dangerous. It's most associated with insulin resistance, with hypertension, the list goes on and on. But it still serves the purpose.

Having a little bit of visceral fat, the reason that we can develop it is the evolutionary adaptation, but the way that is getting fed today is abnormal. The third type and this one might

be new to a lot of folks is called intramuscular fat. And when I was in my typical university classes I was taught that muscle and fat were really dichotomous like these two things had nothing to do with each other. You want to get more muscle lose the fat. But intramuscular fat actually functions as on-site energy for your muscles. So, when you're going out for a jog or when you're lifting weights, it's got its energy bank right there coming from your fat. And if you want to think about what it looks like, it's sort of like the marbling of a steak. All right? Now the catch is this can get overburdened too. And so, you could have excess Intramuscular fat storage and get chubby muscles, is what I call it. And so, these are all in the category of storage fats.

Now, the other type of fat, these fats are more in energy usage, potentially. One of them definitely is and this is brown adipose tissue, a lot of folks have heard of at this point, hopefully. So brown fat is a type of fat that burns fat and the reason that it's brown is it's so dense in mitochondria. And mitochondria are really an end point, when we're talking about burning fat, we're talking about emptying those cell contents from the storage fats, getting them over to the mitochondria to be used as fuel because they can actually get released and get absorbed somewhere else, so we want to get it to the mitochondria. This tissue is so dense in mitochondria that it's actually brown, you know brown adipose tissue. Babies have a lot of it, and this is, it's kind of again an evolutionary adaptation to protect against hypothermia.

But as we get older our percentage, our ratio of brown adipose tissue goes down dramatically, but we do carry some largely around our clavicles, shoulder blades, down your spine. And the other type of fat that can potentially burn fat is called beige fat. Alright? Now beige fat is really interesting. It has its own precursors, and it can actually become white adipose tissue, or it can become brown adipose tissue, depending on what you eat and your environmental exposures, right? So, we want to nudge it to get a tan, we want to nudge it into that brown adipose tissue range, and I'll just throw this out there. One of the ways to do that that a lot of folks are doing today is like cold thermogenesis, can potentially stimulate this.

But there are some things with your nutrition too we can talk about today. Lastly, and I'll share this one really quickly, and if we have time, we might get into it a little bit. We hear this all the time that your brain is mostly fat. All right? First of all, of course, it's mostly water. It's almost 80% water. But if we say the dry weight of the brain is about 11% fat, 8% protein, it's not that far behind, protein matters a lot. And then a little mix of some trace minerals and minerals things like that.

But your brain is a different type of fat. And again, it's thinking that dietarily eating fat is going to make you fat. That's like thinking a blueberry is going to make you blue. It doesn't work like that biochemically. The same thing for your brain just because you eat fat doesn't mean it gets directly to your brain. Your brain is made of something called Structural fats. We got storage

fats; we have structural fats. If your brain was made of any storage fats during times of famine, theoretically your brain would eat itself like homemade zombie food.

DR. STEVEN GUNDRY: Wow.

SHAWN STEVENSON: And we wouldn't be here today. So, this is why our body has made these different fat cell communities and I want to create more admiration and love and respect for our fat communities so that we can optimize them and get them in the right ratios.

DR. STEVEN GUNDRY: So, you're saying we can actually show our fat communities love?

SHAWN STEVENSON: This is the thing too, we're in a very PC culture, of course where we don't want to shame anyone, we don't want to shame and have any kind of distaste towards ourselves, but we can love ourselves into health. Once we get to a place where, I love... We can be thick. But when we're in a place where we are compromising our health because here in the United States about 400,000 people every year die associated with obesity, whether it's from heart disease or diabetes whatever the case might be, 400,000 people every year. So, we want to be aware of that aspect and making sure that we are healthy regardless of our body composition.

But I think a big part of this transformation is understanding how the process works, understanding what's actually happening in our bodies that we live with all the time and empowering people. Because I think once we do this, it makes the job so much easier. And that's the first time in book form, taking people behind the scenes and showing them how their metabolism actually works. The hormones involved, the process of fat loss, how does it work? Where does the fat go when we "burn it?" Does it just go to a different dimension, a quantum jumps or something? So, we go through all of that stuff.

DR. STEVEN GUNDRY: So, we always talk about calories, and we got to count calories to lose weight and calories in calories out, is a calorie ever really a calorie?

SHAWN STEVENSON: This in my nutritional science class big auditorium class, of course this was back in the day we were taught the food pyramid, we need to get folks that we work with to eat seven to leavening servings of whole grains.

DR. STEVEN GUNDRY: Yep.

SHAWN STEVENSON: If it's brown, it's going down. If it's white it's not right, we were taught these premises. And Day one, I was taught that truly the most important metric is calorie management. That was the monarch, the emperor, the king of nutrition was the calorie. And

for this project I wanted to go back and look at the history of the calorie, and I love this about you too. Just when I talk to you and you start sharing stories from these historical events, it's so fascinating to me. And I do that same thing, I want to know where something came from. And when the calorie was discovered, if you think about, we just talked about this earlier, Hippocrates. He didn't put people on a calorie management program.

DR. STEVEN GUNDRY: No.

SHAWN STEVENSON: It wasn't a thing. This was a time people just ate food, the same thing, the ancient Romans and Greeks, the ancient Egyptians. There's nothing on the pyramids about calorie management. And when it was actually discovered because it's used as a measurement of energy in food, but it wasn't what it was, when it was discovered, it was using engineering and physics. And it made its jump into the nutritional realm thanks to Wilbur Atwater, but he's a little bit of a sidenote, even though we use the Atwater system of labeling on food, which is basically just doing math. They're not actually...

DR. STEVEN GUNDRY: It's actually not accurate.

SHAWN STEVENSON: They're not accurate at all. And it completely negates the complexity of human digestion. That's the most important part, but the woman who really pioneered and made the calorie such an integral part of our culture, we've really been inundated with it, is a woman named Dr. Lulu Hunt Peters, and she had a nutritional bestseller at the earlier part of the 1900s, and part of it was the key to calories and she relented that from here forward we would not eat food we will eat calories of food and we took and I shared this a little bit earlier, food is one of the most dynamic, multifaceted things in our universe, it makes up everything about us, our hormones, neurotransmitters, our brain cells, our heart cells, the blood running through our veins is made from the food that we eat. It is incredibly powerful, but now it's numbers.

And she said, and I'm taking this directly from her book, these old fangled writings I went and read, "From now on you will not eat bread. You will eat 100 calories of bread. You will no longer eat a slice of pie you will eat 350 calories of pie." And that's one thing looking at food as numbers. Another thing she impressed upon culture which was really detrimental we're still experiencing so much today is associating food with morality. And if you can't manage your weight, it's a character defect. There's nothing wrong with this diet framework it's something wrong with you. And she related words like punishment and sin and the sidenote, just like my university professor, my nutritional science class, she battled with her weight her entire life trying to do the thing that she was promoting. My nutritional science teacher was bordering on obesity, and I know he was a great guy, he was smart.

He was doing the thing that he was teaching us, but it wasn't working. And he just had the psychological thing it's something wrong with him. "I'm just not doing it right. I need to brown rice harder." I need more whole grains to make this work. And so those were some really dangerous ideas that we still carry today. And one more that I'll share. She also associated hunger with diet success. If you're hungry you're doing it right. And she said that for, this was during a time of food rationing.

DR. STEVEN GUNDRY: Yeah.

SHAWN STEVENSON: She said, "For every hunger pang you feel you should have a double joy knowing you're saving the hunger pangs in another person." And it's one of the most dangerous ideas, and people will come into my office, my clinical practice for years just thinking like if they're hungry, they're doing it right, it's a subconscious belief. And the truth is we can all have a natural modicum of hunger, but when we get into chronic hunger, when we get into abnormal cravings, these are signs that something is wrong. And this is what we get into in the book and there's six factors, and we can go through them really quickly, that I'm putting into culture, I'm going to make this a part of our lexicon, epicaloric influences. These are things that control what calories do in your body.

Calories are, yes, they can be used as a unit of measurement, like a unit of measurement of distance is a meter. But the distance is going to be the same whenever we measure it. The calorie is going to be different what it does in your body versus somebody else versus even your body next week and that's the difference is that the human digestion is so complex and if you want, we can go through and hit six of them really quickly, but two of them are the most important.

DR. STEVEN GUNDRY: Yeah, let's do that. Yeah, let's do that.

SHAWN STEVENSON: Okay, number one the type of food matters. And people have been saying this for years. It's not just the calories, it's the quality of the calorie, now we know for certain. And this was highlighted in a study, this was published in Food and Nutrition Research. And they wanted to find out when folks eat a meal of whole foods versus a meal of processed foods what happens with their body's interaction with calories, and this blew my mind. These are one of those moments when you're by yourself in your office writing and you're just like, "Oh my god." So, here's what happened. The meal they deemed to be whole foods; it was a whole food sandwich. So, it's multi-grain bread and cheddar cheese, so this was the whole food meal.

Then the process of food meal was a processed food sandwich, white bread, and cheese product. And some folks might be, "Well, I don't need cheese product. What is that?" That's

Kraft. They can't legally call it cheese, there's not enough cheese in the cheese. So on paper, they're the same amount of calories, both sandwiches, same amount of proteins, fats and carbohydrates, it should have the same impact but here's what happened. The folks who ate the processed food sandwich had about a 50% reduction in calorie burn after eating that sandwich versus the folks who ate the whole food sandwich.

Now I want folks to really get that, 50% reduction in their body's expenditure, their body decided to hang on and get stingy with those calories. It created some hormonal clogs and dysfunction to the metabolism, and this isn't accounted for on product labels. This isn't accounted for in your caloric deficit diet that this weight loss doctor is telling you to do, and we need to talk about this. The type of food matters and we know this for certain. So that's one. Second thing, the way that the food is prepared, I won't spend much time, all of these are detailed in Eat Smarter. The way the food is prepared affects the amount of calories that you can absorb from the food.

DR. STEVEN GUNDRY: Right.

SHAWN STEVENSON: And also using spinach for example, the cell wall when it's a baby spinach you can get more energy from it versus the cell wall getting sturdier as the spinach becomes more mature. But cooking it breaks the cell wall down making the nutrients more bioavailable. Is it a good or bad thing? Neither. It's taking this into consideration because one of the greatest things for the development of the human brain was the advent of fire and cooking, we can now suddenly get more from our food. But this isn't taken into consideration on the product label. Another thing is the basic energy exchange which it cost calories to absorb calories. This is the thermic effect of food. I was taught this in school, but not in a way that actually made sense.

Protein is the most powerful and we'll talk more about protein in a moment, but protein it's expensive for your body to break down, but it is incredibly important. Protein is the building blocks for so many things. And so, your body's going to take those complex protein structures and break them down into amino acids. And just say you consume 100 calories of protein, you're going to use about 30 of those calories to break that protein down so you're getting a net gain of 70 calories, not accounted for on a product label. And for carbohydrates, you're going to use about 10% to 15% of the caloric energy from the carbohydrates to digest the carbohydrates 0 to 5% from the fats. We're really good at digesting dietary fats, which should tell you it's not the body, we made a flaw, it should tell you how important fats are. And so that's the thermic effect of food.

Another thing is the digestive efficiency, and this gets into the conversation, one of the biggest takeaways your unique metabolic fingerprint, every single human being right now, your

metabolism is unlike anybody that's ever existed before in human history and anybody that will come after you, no one will ever be the same.

DR. STEVEN GUNDRY: I knew I was special.

SHAWN STEVENSON: You are.

DR. STEVEN GUNDRY: Thank you. Thank you.

SHAWN STEVENSON: You are special. You're a diamond in the rough. And now here's the craziest part, your metabolism next week is different from the metabolism you have right now. It's constantly changing, constantly in flux. It's dynamic, it's fluid, but again, this is negated in conversation. So, your ability... How much stomach acid you produce, the enzymes you produce in your saliva, your ability to churn the food, the length of your digestive tract, you could have a couple extra feet in there that other folks don't, truly. And you've got that long track, and so you're going to inherently absorb more food, but these are...

DR. STEVEN GUNDRY: I knew that was my problem. I've just got more room to absorb all this stuff.

SHAWN STEVENSON: You've got that long track. Dr. G. So, here's the thing, all of these things create our unique metabolic profile. But the fifth thing and one of the most remarkable, and this is something that I've learned so much from you and just grateful for you sharing this work is the makeup of our microbiome. And this was published in the Journal Cell. They found a particular strain of bacteria that blocked mice from absorbing as many calories from their food. And what allopathic thought process, that tunnel vision was like we just need to bottle up whatever the bacteria is and sell it, but not looking at maybe that bacteria is helping you to absorb B12 or to make SCFAS, like it's not... It's looking at health through a vacuum, that's how we tend to do.

So, it's not good or bad, but we know this happens. And this is one of things we talked about a couple years ago, you and I, and this was done by the Wiseman Institute, and I know this as well, like I can have a patient send out for a stool sample and I can get the report back I can look at their bacteria makeup and know if they're obese or not before I even see them.

DR. STEVEN GUNDRY: Yeah.

SHAWN STEVENSON: And so, these researchers took this "fat bacteria" that you call, that you put a good name on, that's associated with insulin resistance and obesity, from folks who are obese, and implanted them into mice. And then they took samples from lean human subjects

and implanted them into lean mice. The mice who received the samples from the lean human subjects nothing happened. They didn't gain weight. They stayed the same, but the mice who received the fecal matter from the obese test subjects became insulin resistant, gained more weight and gained more body fat just by changing their bacteria.

And now we stretch this out into human studies that we... So, cool this is all coming out now, identical twins. They take identical twins, they're from the same egg. They're literally matching humans really in so many different aspects, but what they found as a prerequisite is when they didn't have matching microbiomes, we can see what happens and say, looked, they found twins where one had more of a microbiome associated with obesity and insulin resistance eating the same diet one twin, identical twin gain weight while the other one didn't. So, the makeup of the microbiome, the last one that's epicaloric controller is your hypothalamus or just your brain, period. Your hypothalamus is really marrying your endocrine system and your nervous system and it's a big major regular really known as the master gland regulating your metabolism, your HPA axis, your thyroid is along that axis.

One of the biggest crisis is we were facing right now is hypothalamic inflammation, neuroinflammation, period. And nobody's talking about this. When you're going on this cookie cutter diet plan, nobody's telling you, "We need to address the inflammation in your brain." Because it's the epidemic that's happening right now. And one of the things I highlight in the book, hypothalamic inflammation can reduce your rate of calorie burn by hundreds of calories a day. Just because of that factor and how your body, how your brain is regulating things. So that's six different points and we dive in deep into each of them. And also, of course, we talk about things we can do to help to fix these things.

DR. STEVEN GUNDRY: All right. Yeah, now I'm really depressed 'cause now I have six new things to worry about. So, let's talk about one of your and my favorite subjects on this line, food diversity is very important. Is that one of the things that we can do to help fix all this?

SHAWN STEVENSON: Yeah, and this is the... I love talking with you because we know that there's no need to get depressed because fixing one thing often makes everything else work better and it's actually really simple. And so, the microbiome makeup as I mentioned, our microbiome is really the front line determining what your body's going to do with those calories, the energy expenditure and the list goes on and on. They're the first thing to really interact with the food internally inside your body. And so, what we found in the data is that as microbiome diversity goes down, obesity goes up. As diversity goes down, insulin resistance goes up. All manner of chronic diseases goes up as that diversity goes down.

And so, they looked at hunter-gatherer tribes, folks eating more of an indigenous kind of diet, and they found that they have upwards of four times, five times, eight times more diversity of

their microbes than the average person here in the western world in the United States. And it's shocking because I love the analogy of looking at it as like a rainforest. We have a lot of endangered species and a lot of things have gone extinct and some researchers believe that some of these things we can't get back just like in nature.

And I don't like to be an extremist. One of the things that is most important is providing the food for those microbes to come back and proliferate. We can take probiotics until we become a probiotic. You're walking down the street and somebody's like, "Look at that strain over there." But these probiotics will not proliferate, and I've been talking about probiotics for 15 years. They will not proliferate if they don't have their food source.

DR. STEVEN GUNDRY: Correct.

SHAWN STEVENSON: The prebiotics. So, we have prebiotics, probiotics and postbiotics, that symbiotic relationship, the things they make in you for you. And so, what do we need to do to increase our diversity now? This is so simple. Increase the diversity of foods that you eat. That's the thing that we know for certain and different strains of bacteria prefer different foods and so we want to look at first of all... And by the way, when I say increase the diversity of foods, real food, every type of real food functions as some type of a probiotic or prebiotic. Now we want to be mindful of what they're feeding. What kind of bacteria they're actually feeding because we do have opportunistic bacteria as well, but they all play a part. If everything is in balance, is one of the things you talk about too, then we're going to be okay. They're probably doing a role there. They might be assisting in that B12 production or creating scaffolds for us, but when they get out of balance is when things can happen. So, everybody can go to google and look up a list of prebiotic foods. That's a cookie cutter thing. That's great, Jerusalem artichoke, asparagus, garlic, and onions, but truly, every real food functions as a prebiotic.

And so, my one step I want folks to take today is to be more mindful. Even if we're eating healthy, we tend to get in like healthy eating in a rut. We're eating the same types of food over and over and over again. And one of the things we also know for certain, and I highlight this a little bit in the book, is that when we're looking at folks eating more of an indigenous diet. There's a changing of our bacteria based on the seasons.

DR. STEVEN GUNDRY: Correct.

SHAWN STEVENSON: It's amazing and these different bacteria looking for different foods at different times of the year as well. And so I want everybody to be mindful to add in, I don't want to talk about taking away, add in two new foods each week. Two new foods that are Dr. G. Approved, each week to help to provide a different source of prebiotics for the healthy flora.

DR. STEVEN GUNDRY: So, you're not implying that next week I should add in Wendy's to my repertoire instead of the...

SHAWN STEVENSON: Just Square Burger.

DR. STEVEN GUNDRY: Yeah, instead of just McDonald's. That's not diversity, right?

SHAWN STEVENSON: No, that's not it.

DR. STEVEN GUNDRY: Yeah, and it's fascinating. When you actually study people's eating patterns, and I learned this actually in my first book. Most people will for dinner get down to about five different choices that they have for dinner. And they repeat that over and over and over again. And even my best organic eaters, they may actually only eat 20 different organic foods. And when you look at hunter-gatherers like the Hadza in Tanzania, they're eating 250 different plant species on a rotating basis. And it's just amazing how even the best of us and including me, we just pale compared to hunter-gatherers. So, you're right. You have lists of food, I have lists of food, challenge yourself in the next year. You're right, even one new one a week, you'll have 52 different new foods by the end of the year.

SHAWN STEVENSON: That's so powerful. And again, this is very simple. It's simple, but it's just getting our awareness there to knowing that this is important and knowing all the downstream effects that we can get from this. It's going to improve our body composition; it's going to improve our... Kind of give us a buffer against insulin resistance by increasing the diversity of our foods and increasing the diversity of those microbes.

DR. STEVEN GUNDRY: All right. Let's go on to one of our favorite subjects, protein intake. Now, you write in the book that Americans are either eating too much or too little protein. What do you mean by that?

SHAWN STEVENSON: This is a really important topic and just going back to how important protein as a building block for just about everything about us. In the conversation about hormones, and we're talking about insulin or glucagon or whatever the case might be, we need proteins, we need amino acids for many of these things to be built and to do their jobs. It's that important. And we believe, there's an overarching belief in our culture, which so many things we believe to be true or not true that, especially Americans, we're overeating protein and I went and looked at the data and it was very different from what the popular narrative is.

And so, the RDA for protein is really just above what can prevent a protein deficiency and it's not really necessarily what can help you to thrive. And so, one of the studies and I just pulled this up so I could tell you directly. This is right out of Eat Smarter, University of Kansas Medical

Center used FMRIs and discovered that adding in more protein specifically for the first meal of the day literally decreases the signals in the brain that stimulate appetite and lead to overeating. What? Just by including more protein for that first meal in which your first meal doesn't have to be at 7:00 AM, this could be at 10:00 AM.

DR. STEVEN GUNDRY: You're right.

SHAWN STEVENSON: But getting more protein in that first meal, and this just stretched out to another study that I talk about where they looked at protein for the first meal versus carbohydrates for the first meal and so they used eggs versus bagel and you earlier you shared a bagel story with me and I was so fascinated by it because that bagel is a carbohydrate dominant food, very strongly so. And so of course, you can just be from the perspective of something closer to whole food versus something more processed, but we're just looking at the macronutrient makeup. And here's what they found. And this was a... They put them into a caloric deficit, slight caloric deficit. Let's be clear about that. But that first meal everybody's eating the same amount of calories. It's the same amount of calories for breakfast, the eggs and the bagel. Here's what happened.

After the course of the multi-week study, the folks who had the protein dominant breakfast lost over 50% more weight. They had about a 17 decrease in their body fat, their production of their major satiety hormones went up, hunger hormones went down. BMI, it's like 59% more reduction in their Body Mass Index, the list goes on and on. It's remarkable. It makes no sense because they're eating the same amount of calories.

DR. STEVEN GUNDRY: Calories. Right.

SHAWN STEVENSON: And yet they're getting these heightened results because of the macronutrient that they're bringing in. And this should speak volumes about... Because for again, we think we're eating so much protein for a lot of us here in America. We start our day with carbohydrates. I know I did every day especially cereal, muffins, pancakes, bagel from trying to be healthy. But what are these things? If I came to your office, if any of us went to see Dr. G. And he's like, "Okay, so tell me about your breakfast." And we're like, "Well, I have cake for breakfast." Dr. G, he'd probably be a little shocked but most of us have had cake for breakfast many times. What's a muffin? It's just cake.

DR. STEVEN GUNDRY: Just cake.

SHAWN STEVENSON: Cake without a hat. And same thing, pancakes. They're just flat and so it's changing the dimensions is like "Oh, it's not cake anymore." Not to say we can't have any of these things and they can't even upgrade the quality of those things, it's just understanding

that the way that we approach eating here in America is definitely skewed. So, one other thing I want to share about protein here is this aspect of how much, like eating too much protein is going to, like this is associated with cardio metabolic risk.

And so, this was published In the Peer Review Journal of Nutrition, uncovered that despite the generally accepted belief that protein intake above the RDA increases cardiometabolic risk, higher protein diets are associated with lower BMI, lower levels of visceral fat and improved cholesterol profile compared to protein intakes at the RDA levels. And data, this looked into other factors that they accounted for sex, age, carbohydrate intake, physical activity, the scientists found surprisingly the higher ratio of protein can actually lower your risk of developing cardiometabolic disease. Wow. Well, well, well. But this gets in the conversation of the quality of that protein as well, that definitely matters.

DR. STEVEN GUNDRY: Yeah.

SHAWN STEVENSON: So, a KFC stacker or snack or whatever where you got the fried chicken bun versus some whole eggs or some wild-caught fish, very different in the impacts that they have on your system.

DR. STEVEN GUNDRY: Yeah, and I see this particularly in my autoimmune patients. So, chicken that's fed corn and soybeans, that chicken breast is basically a ear of corn with feathers, as I say, and it's not the same as our great grandparents ran around and caught a chicken out in the yard that had been eating bugs and chopped its head off and ate it. It's a totally... It may look like a chicken, but it's totally different. And most of our commercial meat is no longer a cow anymore.

SHAWN STEVENSON: We've got a quick break coming up. We'll, be right back. As you learned about this episode, protein is a master regulator of your metabolism when it comes to our macronutrients. Now, unfortunately, life can get a little bit busy from time to time and we're not meeting our protein needs and so we're often turning to protein snacks specifically glorified "protein bars" that are actually full of processed sugars. Or today we've had a revolution where there are a bunch of low sugar protein bars that are actually just a compilation of ultra-processed ingredients masquerading as healthy. There's got to be a better way and for myself, my family, my team, what we're doing, when we're getting our protein snacks, we're making sure that we're getting it from the highest quality proteins available. So real food forms. One of those protein sources that dates back thousands of years is something that we call today jerky. Beef jerky in particular and meat steaks. Now, I'm not talking about snapping into a slim jim.

I'm not talking about the low-quality stuff because that's made from low quality grain fed beef and grass-fed beef is really where it's at. A joint study between the USDA and researchers at Clemson University concluded that grass-fed beef is better for human health than grain fed beef in many ways. It's higher in vitamins A, D, E, K, and B vitamins. Higher in minerals including calcium, magnesium, potassium. Higher in total omega-3s, higher in CLA which assists in the process of burning fat. The list goes on and on and on. So where can you get 100 grass-fed beef steaks with pure organic ingredients? As a matter of fact, taking it to another level, regeneratively raised farming practices. This is what you're getting from Paleovalley. Go to paleovalley.com/model. That's P-A-L-E-O-V-A-L-L-E-Y.com/model. You get 15% off their grass-fed meat steaks and they just introduced just recently their pasture-raised pork steaks, and these are out of this world. They've got a cranberry, jalapeno, and a maple bacon. Again, 100% pasture-raised organic spices and they're doing things the right way. Also utilizing natural fermentation processes and not using low quality ingredients to try to superficially create that same kind of quality and texture they're doing stuff the right way.

And to do this, it's taking slow small batches and again, the process is taking five times longer. But they believe that it's creating a healthier, gut friendly, delicious product that is better than anything else on the market and I totally agree. My family agrees, my friends, anybody that stops by the studio. We always have Paleovalley snacks. Their food bars, but again, real food though. Real food ingredients, all organic and they're grass-fed, pasture-raised meat steaks. Go to paleovalley.com/model for 15% off. And now, let's get to this second part of the conversation. This fireside chat with the amazing. Dr. Steven Gundry.

DR. STEVEN GUNDRY: It's actually the same way with farm fish. Originally, farm fish were fed ground up fish and that's not bad, but now it's too expensive to farm fish with ground up fish, so they're fed ground up corn and ground up soybeans. And fascinatingly, the omega-3s in farm-raised fish are totally not only not there, but they take the omega-6s in these corn and soybeans and now they manufacture long chain omega-6s instead of long chain omega-3s in farm-raised fish. So, "Oh, I farm-raised salmon Atlantic salmon or organic salmon to get the omega-3s." And they're actually not there anymore. Yeah. So, buyer beware.

SHAWN STEVENSON: Yeah, this is definitely a big concern right now that like you just mentioned, it's not that omega-6s are bad, it's the ratio.

DR. STEVEN GUNDRY: Correct.

SHAWN STEVENSON: They're more associated being the kind of pro-inflammatory omega 6, but we need... Inflammation is critical to so many processes in our body. But the way that our diet has been constructed and the ratio of omega-3s to omega-6, if you look at the data, as we evolve, we were somewhere in the ballpark of three to one omega-6 to omega-3. And now it

can be 17 to 1 on a good day, 20 to 1, 50 to 1 omega-6 pro-inflammatory to anti-inflammatory. And again, I talked about that inflammation happening in our brain. A lot has to do with our omega intake and one of those things we talk about this in Eat Smarter is in the section focused on cognitive performance.

Omega-3s, but DHA and EPA specifically have the ability to... It's like an express pass past the blood-brain barrier to feed your brain cells essentially, create those structural fats to provide stability and plasticity and transduction. They're so important and the American Journal of Clinical Nutrition did this fascinating study and found that simply increasing your intake of DHA, these anti-inflammatory omega-3s, within a matter of days, improves your memory, improves your ability to focus. Also improves your ability to focus when you're under stress and wouldn't that be helpful right now? But here's the most shocking thing. They found that the folks who had the lowest intake of DHA and EPA had the highest rate of accelerated brain shrinkage.

DR. STEVEN GUNDRY: Yep.

SHAWN STEVENSON: And this isn't the kind of shrinkage like when it's cold outside Dr. G. This is the shrinkage that is very, very bad, and it doesn't come back potentially. I, of course, I'm... Again, I don't like to talk in extremes, but when you start losing the mass of your brain, this is a serious, serious issue. And here's the barometer. It was just under a teaspoon, if folks are getting under a teaspoon a day, they have that accelerated brain shrinkage. 1.2 teaspoons was that barrier that protects your brain from shrinkage of DHA. Food First, I'm a big advocate of Food First, does it show up in the data? Yes. The Journal of Neurology found that folks who ate just one seafood meal per week did, in fact, perform significantly better on cognitive skills tests than folks who ate less than one seafood meal per week. So, mackerel, wild-caught salmon, sardines, but also fish eggs. And in talking with one of my really good neuroscience friends who's like... Again, she's actually looking at what happens in the brain when you consume these things. She found that caviar and salmon roe it'll be three times more DHA than you'll find in the fish itself.

But I know some folks if they're subscribed to different framework... And by the way, Eat Smarter is a unifier of the different diet frameworks that many people have found success with. So, if you're doing a vegan protocol, vegetarian protocol, please understand we have to get DHA to your brain. We have to get EPA to your brain to protect your brain. And the omega-3s in plants are not the same. Alright? This is ALA. It is so important for your body. It can convert some of the ALA into DHA and EPA, but you can lose upwards of 80% to 90% in the conversion process. So, to get the amount of DHA you need from chia seeds and hemp seeds, you literally might as well put a beer bong on and like just funnel in chia seeds all day. It's just not doable.

And so, what do you do? The next step... And what has the most clinical evidence when we're talking about omega-3s is fish oil. That's what's studied the most.

But from there... And there's again, that's 99% of the studies, but krill oil is starting to get a lot of research behind it as well, which is a microscopic shrimp. And when you say "shrimp" there will be people like, "I can't do it," but I think it's a microscopic, microscopic shrimp. If you just lick the air, you'll probably kill more sentient organisms than which you'll find in a capsule. But for some people, it might be on their ethics list, but it's a great source of astaxanthin. The list goes on and on. Now we have algae oils. So, I highly... At least get that but it doesn't have a lot of clinical evidence, but we know the DHA is there, so it's probably able to do something good. And I'm always erring on the side of whatever data we can get to the public. Because on average when we have a randomized controlled trial, finding efficacy to krill oil, for example, it can take on average upwards of like 17 years for it to go from proven and randomized controlled trials, to actually being implemented in clinical practice.

Even today at the age of the internet, I'm really sick of it. I think that this is why I'm so grateful for the work that you do, is getting this information directly to the public. Once we get the data... And the funny thing is, a lot of this information is just affirming things that our ancestors knew already.

DR. STEVEN GUNDRY: True.

SHAWN STEVENSON: Just using science to disclose these things. So, make sure regardless of your nutritional approach, you must make it a mandate to get in your DHA and EPA as often as possible.

DR. STEVEN GUNDRY: Yeah, no, my mother has always said, "Fish is brain food." They didn't know why, but now we know that that's why. Yeah, and there are now really good algae-based DHA, EPA, and DPA products as well, the third omega... Long-chain omega-3. Alright, I want to shift gears in the time remaining. A big article in New York Times a few months ago, that more and more people are retreating into comfort foods during the pandemic. And you write in the book about the importance of food on our emotional state. So how come people are going for comfort foods?

SHAWN STEVENSON: This conversation is so important. And I wanted to leave no stone unturned in this book because food is so multifaceted, but we put it in this pithy little box. And a lot of us just relate nutrition and diet to weight unfortunately. But we've already talked about some things with cognitive performance, and literally just making your brain work better. But food is a major controller of our EQ, our emotional intelligence. And this was highlighted in a study conducted by the Ohio State University. They found that if we can just get a little bit of

dysfunction in your blood sugar, we can make you more aggressive and less likely to perspective-take with people you love, let alone people you don't like or don't know. And so, they took couples. And it's easy to have blood sugar dysregulation, eat one of these crazy processed foods, you get a blood sugar spike, and you get the correlating crash. And when that crash happens, your body takes that very seriously when your blood sugar is too low. This is like a survival mechanism kicks in place will produce these catecholamines, adrenaline, cortisol. The side effect is, they can make you irritable.

And this term "hungry," this is real. And so, what they found was that, when they had dysfunction or dysregulation with the couple's blood sugar, they were far less likely to resolve their conflicts in their relationship, less likely to perspective-take, and they became more aggressive towards their partner. And if we stretch this out into the realm of even violent behavior, and this was done by researchers at Oxford University. They took prison inmates, and they wanted to see what would happen if they improved their nutrition. And so, they gave a group of inmates more vitamins, minerals, omega-3 fatty acids supplements, and then they gave another group placebos. And after the four-month study, they found that the folks who received the increased nutrition had a 40% reduction in behavioral offenses. And what really stuck out to me the most, there was a 37% reduction in violent offenses simply by improving their nutrition.

And so that emotional stability, our ability to manage ourselves goes down, because it literally is affecting what's happening in our brain. That prefrontal cortex, the more evolved part of our brain responsible for social control, distinguishing between right and wrong, decision making. I'm not going to go and crush those Oreos that have been sitting on the counter for two years, even though they're still "fresh." That part of the brain starts to go cold. And the more primitive aspects of our brain really start to take over. And this is not a joke. This is a very real thing that happens when, number one, we're nutrient-deficient. When we're nutrient-deficient, nutrient deficiency leads to chronic overeating.

So, going back to Lulu Hunt Peters, she advocated hunger. She wanted you to get hungry. Then you know the diet's working, but it's the complete opposite. We want to be nourished and in control, so we can better manage our emotion and our brains. Because these are things that we own those things. It's the one thing we do own in this life is us, our bodies, our emotions, what's happening with our minds. But many of us, we don't get the owner's manual with these things, and once you become aware of this... And, number one, improving the nutrition specifically fundamentally for managing your emotions and your cognitive performance, magnesium is critical.

DR. STEVEN GUNDRY: Yep.

SHAWN STEVENSON: Magnesium is one of the most critical things. It functions as an electrolyte in the brain, and it functions with repair and also neuroplasticity. And one of the studies that I highlighted in the book found that folks who increased their intake of magnesium in this particular study, reversed their brain aging by upwards of nine years. It didn't make sense to me that this could be possible, but when you understand it's responsible for over 650 biochemical processes, we know about, it's just remarkable. So, Magnesium-rich foods, this is going to help to buffer that emotional stress, and also help to reduce the ravenous kind of cravings. What are those foods? Green leafy vegetables are a great source of magnesium. Anything green is going to be a good source.

And that's another thing. We talked about colors; flavors indicate certain nutrients as well. But this was by researchers at Rush University Medical Center. They found that folks who had just two servings of green leafy vegetables a day had on average brains that were 11 years younger. All right? So just something to consider, increasing our magnesium as we talked about DHA, but right now... So, our nutrition affects our activity, but the environment also affects our nutrition and our levels of stress. And so, this is another thing we talked about is, how your environment and who you're eating with can affect your food.

DR. STEVEN GUNDRY: Wow, two servings a day and 11 years younger. So, I've got the brain of a two-year-old. I knew it. My wife has accused me of that many times. No, it's all the greens I eat.

SHAWN STEVENSON: Me too. We're babies.

DR. STEVEN GUNDRY: Yeah, all right. I always ask my guests; tell me one thing you were surprised to learn when you were writing Eat Smarter?

SHAWN STEVENSON: I was surprised to learn how our psychology, how our thoughts affect... How food affects us. And what I mean by that was... This was Dr. Alia Crum and some other researchers. They found that just your belief about the food you were eating affected how that food affected your body. And this was demonstrated in a study. They made up a batch of milkshakes, and the milkshakes would just say there's somewhere around 380 calories, but they labeled a batch of the milkshakes as low-calorie sense-a-shake, and they put that they were like 180 calories sensible milkshake and that some folks got that shake. And then there was another group of folks where they labeled the milkshake as a high calorie indulgence milkshake which was 600 calories. And so folks believed that they were consuming different things even though they were consuming the exact same amount of calories. And here's what happened. The folks consuming the indulgent milkshake... Well, was actually the same milkshake, but just believing it was the indulgent milkshake, had a dramatic decrease in their body's production of ghrelin. And ghrelin is that kind of team captain of the hunger hormone.

DR. STEVEN GUNDRY: Hunger hormone, yeah.

SHAWN STEVENSON: So, they were more satisfied and less likely to engage in overeating, and also to be hungry again soon after because of that dramatic decline in ghrelin. Now, the folks who had the Sensi-milkshake, there was barely a nudge, barely a change in their ghrelin levels. They still stayed elevated. So, what does that do? It makes you drink more of the milkshake, make you hungry again soon after because of your belief about what you were eating. And if we can leverage this... This is where my thought process went, if we can placebo ourselves and leverage our own psychology instead of the world just doing it to us and starting to cultivate attitudes of like when they take on a new diet protocol and begin and bring in new foods and things like that, just to recognize and talk about how good they feel, how satisfied they are, how much of a great process this is, instead of it being deprivation, restriction, "I can't," and that framing, that literally frames your brain up to be deprived and to have less enjoyment and less satisfaction. So that was one of the things that definitely jumped out at me that is remarkable that we simply don't think about.

DR. STEVEN GUNDRY: So, what you're saying is now I can go home tonight and have my half-gallon of Ben and Jerry's and as long as I say, "That's a really decadent thing," I will lose weight having my half-gallon of Ben and Jerry's? That's not what you're saying, I think.

SHAWN STEVENSON: You just have to believe. You just have to believe that the Ben and Jerry's... That when you eat it, it's not going to go to your butt, it's going to go to the ethers.

DR. STEVEN GUNDRY: Believe your way thin. I can see your next book already.

SHAWN STEVENSON: That's the... That's... You should write that.

DR. STEVEN GUNDRY: I'm going to write that book now. All right. Shawn, it's always good to have you back on the show. Where can... It's obvious. Where can they pick up Eat Smarter?

SHAWN STEVENSON: Yeah.

DR. STEVEN GUNDRY: Anywhere?

SHAWN STEVENSON: Yes, anywhere books are sold, Barnes & Noble, Amazon, all that good stuff, but also, we have a national campaign going with Target stores, so you can go and pick it up.

DR. STEVEN GUNDRY: Oh, fantastic. And where do people find you and your work as if they've never heard of you? Well, maybe somebody hasn't.

SHAWN STEVENSON: Well, folks can find me wherever they're listening to this amazing podcast, my show is called The Model Health Show. And just grateful to be many times over the years, the number one health podcast in the country. And this is coming out of we're both from the Midwest, so making some amazing things happen.

DR. STEVEN GUNDRY: Yeah, that's right.

SHAWN STEVENSON: We just have a good time. We do master classes on different subjects, and I think you guys would enjoy it a lot. And you can find me at themodelhealthshow.com, all my social media and stuff is there. But definitely run out and grab a copy of Eat Smarter, and this is definitely one to get for somebody that you love as well. And it helped to shift the conversation of health and wellness.

Thank you so much for tuning in to the show today. I hope you got a lot of value out of this. We've got so many incredible things coming up for you in the new year. And also, specifically jump over to our YouTube channel because we're going to be releasing exclusive content on the YouTube channel each and every week, and you don't want to miss a thing. So, check us out The Model Health Show on YouTube. And also, of course, every day I'm sharing incredible insights, new studies out on social media, whether it's on Instagram or Twitter. I don't do everything every day. But generally, I'm sharing some messages on one platform or another every day, so to stay up to date with me and stay connected, I'm at ShawnModel S-H-A-W-N-M-O-D-E-L on Instagram and on Twitter. So, follow me on those places. Let's stay connected. And like I said, we've got some incredible guests, epic master classes, coming your way very, very soon. So, make sure to stay tuned. Take care. Have an amazing day. And I'll talk with you soon.

And for more after the show, make sure to head over to themodelhealthshow.com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode. And if you got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much. And take care. I promise to keep giving you more powerful, empowering great content to help you transform your life. Thanks for tuning in.