

EPISODE 350

The Secret Life of Fat – With Guest Dr. Sylvia Tara

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.

This episode, let me tell you, super, super powerful, and we're talking about public enemy number one. Alright? Public enemy number one right now, and is it justified that public enemy number one is fat?

Today we're talking about the secret life of fat. And I think that this is going to truly blow your mind and you're going to have a new association, and possibly even appreciation for what we consider to be public enemy number one when it comes to our health and well-being.

And we've got somebody who's an absolute superstar in this space, and who's done the research, and put together a wonderful compilation of the data so we can really learn about fat, and how to better associate with it, but also if we're looking to modulate and change our body composition, I think these are some really important things for us to understand, and to be able to add to that superhero utility belt.

So really excited about that, and also for me, in having conversations with my guests, one of the big things revolving around our body fat that isn't talked about, because we generally relate it to food.

When we're talking about body fat, and weight, and weight loss, the conversation is usually revolving around food, but it's really missing the mark because something that drives our nutrition and our desire to eat is heavily influenced by things like stress, and also by our sleep quality.

One of the first things that happens when we're sleep deprived is an increase in cortisol. Right?

This kind of glorified stress hormone that's not bad, but when it's in the wrong amounts and produced at the wrong time, it can be problematic for us for sure.

Because cortisol, this kind of stress response, can literally break down your valuable muscle tissue - it's a process called gluconeogenesis - and turn it into fuel. Right?

And so having that increase in glucose in your body is going to incite the role of insulin to do its job.

And potentially having this stress response of a blood sugar spike, we're eventually going to have that flip on its head, and we can even go hypoglycemic, and that's going to drive us to want to eat more.

That's a long story of how sleep deprivation can influence our appetite. A direct way is through- Stanford researchers have found that a short sleep debt, just one night of interrupted sleep, a short sleep debt can dramatically suppress your body's production of leptin, which is really noted as our body's major satiety hormone.

So we're directly going to want to eat more food, and also the choices of food, the researchers have found, are going to be lower quality when we're sleep deprived.

So we want to make sure that we're taking all of this into account, and putting some love and attention into getting the best sleep that we can, because it's really a big driver of all this other stuff that we're talking about in relationship to nutrition.

Alright? So with that said, obviously the lifestyle practices are huge here, for helping to improve our sleep quality; not just the quantity, but the quality of the sleep that we are getting.

So we definitely have that, we've done masterclass episodes talking about improving our sleep quality. Alright?

And we'll put a couple- I'll put two of my favorites for you in the show knows.

But for a lot of us, we're looking for that extra edge. Like what's going to give us that extra 5% when we're doing different things right.

Or maybe we just- we're in a tight spot, maybe we're stressed, maybe we are just- it's been a lot during the day.

What can we do to just give us that little bit of an edge when it comes to our sleep?

So I like to look towards Earth grown nutrition. I like to look towards foods that help. But there are some wonderful herbs, and supplements, and things of that nature that can be super helpful.

And the journal Pharmacology, Biochemistry and Behavior published some research finding that the medicinal mushroom reishi was found to, number one, improve sleep latency. So this means you fall asleep faster.

They also found that the test subjects who were utilizing reishi tended to sleep longer, and they had more efficient sleep cycles.

So they spent more time in the deepest, most anabolic stage of sleep, i.e. non-REM sleep.

So this is really that delta wave sleep where you're producing more human growth hormone, which helps with fat loss.

They also spent more time in REM sleep as well; rapid eye movement sleep. This is where a lot of reparative processes are taking place, and even something called memory processing where even what you're learning right now really gets solidified and stored in your short-term memory.

So all of this is important. These benefits come from reishi, which has been used for centuries.

We've got centuries of documented use, but today our new science and testing methods are able to see, 'Wow, this really does correlate to improved sleep.' Alright?

Not only that. That's the thing that you'll find with things that are natural, and that have all these benefits, these storied benefits.

It's not just good for one thing, it's not just good for your sleep. Reishi has also been found to have an incredible influence on the health of your immune system.

So reishi is in a category of compounds known as immunomodulators. Alright? Immunomodulators.

So most drugs and even a lot of supplements push our immune system in one direction. Right? It'll spike your immune system or they will suppress your immune system. Right?

There are drugs that suppress your immune system like chemotherapy. These immunomodulators, like reishi and these other medicinal mushrooms, have an intelligence that work with your body and your immune cells to lift your immune system up if you're in need of that, or to bring it down if it's hyperactive where we see with situations like autoimmune conditions, for example.

What else do you know that has that kind of power? When we're talking about food and nutrition, even some of the good stuff, to be immunomodulators it's truly, truly remarkable and just speaks a huge testament to medicinal mushrooms like reishi.

For me, I use the reishi from Four Sigmatic because it's dual extracted. Alright? This means they're using two extraction methods; an alcohol extract and a hot water extract to actually get all of these compounds.

We've talked about many different things that it's influencing, so the immune system stuff might not be the same as what's influencing sleep. Alright?

You get all of those benefits when it's dual extracted, and they make it super easy because it's in these simple little packets that you can travel with, and this is what I do.

I've got my bookbag, my Dora the Explorer backpack. Did you know Dora the Explorer live action movie is coming? I don't know if you're ready for this. Alright?

Boots, Diego, the whole gang's coming? Alright? And I think they've got a really interesting spin on it.

Shout-out to people who watch Dora the Explorer or you had kids who watch it. Alright? Shout-out to that.

I've got my backpack, and in it is my favorite medicinal mushrooms from Four Sigmatic. Alright? So definitely check out their reishi.

I have it. It's like my favorite nightcap, my nighttime wind down, and it's part of my routine. Right?

So maybe thirty minutes before bed I have a cup of reishi, chill, read a little book, maybe have a little conversation, you know?

Talk to my boo thing, talk to my wife, and just relax. It's a great way to unwind and go into that process of getting good sleep. Alright? So definitely check it out.

It's www.FourSigmatic.com/model, and you get 15% off everything they carry. Alright? That's www.FourSigmatic.com/model and you get 15% off.

So definitely pop over there and check them out. And on that note, let's get to the Apple Podcasts review of the week.

Apple Podcasts Review: Another five-star review titled, 'Shawn Stevenson is the Best,' by Liz Hartfield. "Shawn Stevenson is one of the most encouraging people on the planet.

He has motivated me more than anyone else to not accept failure and to value health and longevity.

I love his platform so much and binge listen to his podcast. They're so good. Wish I could give more than five stars. Keep going."

Shawn Stevenson: Oh my goodness, so, so incredible. Thank you so much, Liz. I appreciate you so much, and thank you for leaving that review over on Apple Podcasts.

And listen, if you've yet to leave a review, you can pause this, leave a review for this show, and I'd appreciate that so very much.

And seriously speaking, these truly do mean the world to me to hear these stories, and these shares, and it just really warms my heart, and I appreciate that so much.

It just drives me to keep going and into giving more, so thank you so very much. And on that note, let's go ahead and get to our special guest and our topic of the day.

Our guest today is Dr. Sylvia Tara, and she holds a PhD in biochemistry from the University of California at San Diego, and an MBA from the Wharton School of the University of Pennsylvania.

She was a consultant with McKinsey and Company and has worked at the world's largest biotechnology companies.

So she knows her stuff and she's been in a lot of different fields, and she lives here in California, and she's made the drive up from Orange County to come and hang out with me here in LA, and I'd like to welcome to The Model Health Show, Dr. Sylvia Tara. How are you doing today?

Dr. Sylvia Tara: Good, thank you. Great to be here.

Shawn Stevenson: It's great to have you here. Thanks for making the trip up.

Dr. Sylvia Tara: Yeah, thanks.

Shawn Stevenson: It's my pleasure. My pleasure. Your book just knocked my socks off, which I've been telling you, and I've been telling everybody about it.

It's like an absolute masterclass on fat and this whole- like literally the title is, 'The Secret Life of Fat.'

Dr. Sylvia Tara: That's right.

Shawn Stevenson: And first before anything, I would love if you can just share what got you interested in this subject matter, because your story just really resonated as well.

Dr. Sylvia Tara: Yeah, no problem. Yeah, so I actually have a very hard time managing my own fat, and I gain weight very, very easily.

And I would go on diets, and I would lose some weight, gain it back, and watch everyone else around me on the similar diet lose a lot more fat than I would.

And I saw this happen so many times, I got really tired of it, and I thought, 'What is it about me that's different? Why do I have more of a problem than other people do?'

And so I read some of these books, and they just don't add up for me. And I'm a biochemist by training, and I thought, 'Well if anyone can understand fat, I can. I have the background to understand fat.'

So I went on a five-year endeavor to understand everything I could learn about fat. I think I pulled out about 1,000 research articles on fat.

I talked to around fifty scientists around the world about the research on fat, and what they were finding out.

And what I was finding out was so interesting, so novel. I thought, 'You know? Someone should write a book about this.' And so, that's what that book is, 'The Secret Life of Fat,' everything I learned about fat.

Shawn Stevenson: I love it. "Someone should write a book. Oh, it's me."

Dr. Sylvia Tara: Me. I guess it'll be me.

Shawn Stevenson: I love it. Well, one of the early things in the book that was just super fascinating, and something I literally think about from time to time, that fat has actually kind of gone in and out of popularity.

Fat in and of itself in our culture, like there was a time when it was like popular. People were like looking for ways to get some fat on them. Let's talk a little bit about the history of fat.

Dr. Sylvia Tara: Isn't that outrageous? Who would ever thought people were trying to be fat? And yet that's exactly what happened.

So yeah, there was a time after the Civil War where America was in adverse time, there was a lot of poverty, people didn't have food, and in that time, that's when having fat was a fashion statement. It was a sign of wealth.

And people were actually padding themselves to look heavier. Celebrities were celebrated for their heft. And it was fascinating.

And there was a fat man's club. I found that really interesting. You had to be fat enough to join.

It was a very prestigious club starting in Connecticut, and you had to have enough weight to join.

And as the economy got better, people started doing better, and they started eating more, and they started getting heavy.

And that's when a lot of politicians started warning about fat, religious leaders started warning about fat.

It became a big fear. So when a few rich people could be fat, and only them, it was okay. But when everyone started getting fatter, then it was seen as a bad thing.

And an industry spawned from that time, because people now had this fear about fat. It was written about in a negative way.

They heard it from their leaders that it's not good to be fat, and they started getting worried. And a lot of shysters, kind of entrepreneurs, huckster types came out of the woodwork trying to sell all these gadgets to lose fat.

There was a soap that was supposed to melt the fat under your skin; Fat Off Soap. They sold rubber suits to melt off your fat. You would wear these rubber suits, and sweat, and lose weight.

And people ate parasites. The parasitic tablets to get rid of- to have tapeworms that could siphon off the fat.

And then once they lost the weight, they would take some poison pills and get rid of the tapeworm. They did outrageous things. Poisons, dinitrophenol to get rid of their fat.

Shawn Stevenson: That's explosive stuff.

Dr. Sylvia Tara: Oh yes, in explosives, and apparently it raises your metabolism. And even as recently as five years ago, I think there was a death from dinitrophenol; people taking it to lose fat.

And so the business got out of control, and eventually it led to multi-billion dollar corporations that help us try to lose our fat.

But it's an echo chamber of, "Fat is bad, fat is bad," and makes people kind of neurotic.

And I don't know that anyone ever thinks about, "Well how much fat is really okay to have? And can you be fat and fit at the same time?"

But we live in an echo chamber, and I think fat gets a very bad rap, but it has changed throughout the years, and who knows, maybe at some point fat will be loved once again.

Shawn Stevenson: Oh yes, thank you for that. And like just the concept of consuming this explosive ingredient, it just reminds me of a cartoon of like Bugs Bunny level consciousness of like, "I'm going to swallow a stick of dynamite."

Dr. Sylvia Tara: Yeah.

Shawn Stevenson: Wow. But the crazy thing is, as you were saying this, and I didn't relate it. When I was reading the book, I was just kind of fascinated with the times.

The same stuff is going on, it's just different versions. Instead of the rubber suit, now we've got these different- we've got the body wrap. Right? Just wrap yourself up and you'll lose all this fat.

It makes no- it's just not real. You know, and instead of swallowing this thing now, you've got your skinny tea, or whatever the case is, which just makes you gas and blast your way to slimmer ways.

But we're looking for these solutions because fat is really seen as an enemy, and in your book you really highlight how our relationship to fat is skewed.

And there's so much to know and to relate to, and I think it'll help us better heal and to manage our relationship, and so I want to talk about that.

Let's talk about first biochemically speaking, like what the heck is fat? And what is it kind of responsible for? Just like the basic.

Dr. Sylvia Tara: Yeah. So it turns out fat is actually an organ. I think most people think of fat as a tissue, and in small bits it's a tissue.

So it's like your skin. If you just take a piece of skin, it's a piece of tissue, but your skin in its entirety functions like an organ, and fat is the same way.

So fat in its entirety in your body actually produces hormones that your body depends on, and one of those very important hormones is called leptin.

Leptin has a function all over your body, it's correlated to brain size. So people who are anorexic, their brains actually start shrinking because they don't have enough fat, they don't have enough leptin to maintain brain mass.

Their bones become more porous. Our bones are dependent on leptin. Our reproductive system dependent on leptin.

So there are people in the world who have deficient fat, meaning their fat is not functioning well.

They have plenty of fat, but they're missing some genes in their fat, and their fat is not producing leptin, and those people can't reproduce.

They don't have- the women don't have regular periods, the men don't even mature into fully grown men because leptin has a strong role in maturity and reproduction.

So our bodies depend on fat for leptin, and so when we lose fat, we lose leptin. And once that happens, our bodies really react to that, and it increases our appetite.

Our appetites go through the roof, and you might notice if you even lose five pounds, ten pounds, you get really hungry, and it's our brains responding to, "I'm not sensing leptin anywhere," and it wants you to eat more, and it wants it to bring it back.

So fat has enormous functions in our body. It's not just a reserve of calories, although that is one of its roles. It actually functions in so many other ways.

Shawn Stevenson: And that was the first time that leptin was discovered. And I loved this story that you shared, because as it was getting towards the end, I was like, "Is this leptin? Is it leptin she's talking about?"

And it was in relationship- they were utilizing these- they called OB mice?

Dr. Sylvia Tara: Oh, OB and DB mice. Yes, that's right.

Shawn Stevenson: Yeah, so OB and DB. And I think it was like OB, OB.

Dr. Sylvia Tara: Yes.

Shawn Stevenson: Then you shortened it, because we were trying to find out like what is- and this is in humans as well.

Now we know that some folks, literally they have the mutation where they cannot control their hunger.

Dr. Sylvia Tara: That's right.

Shawn Stevenson: And we look at people and just point the finger and just say, "You don't have discipline."

And sometimes it actually- if they're not producing leptin, you are ravenously hungry.

Dr. Sylvia Tara: Yes.

Shawn Stevenson: And the discovery of leptin is- and what we talk about- and even I've talked about many times is in relationship to us being a society hormone.

But thank you for sharing that, because it also is involved in your bones, it's involved in your reproductive system, and people that have this mutation, or even these mice, smaller brain size.

Dr. Sylvia Tara: It's right.

Shawn Stevenson: It's one of those things so that's why- just one of the reasons fat is so important, is fat can talk. Right?

Dr. Sylvia Tara: It can talk. Right. It talks to your brain, and it's good you brought that up, because there's a direct link to your hypothalamus.

It talks to your hypothalamus and it says, "Okay, we're good here. We have nutrition, we have enough fat, all is good."

And so when you start to lose fat, or you have defective fat like the character I talked about in the book, the patient I talked about the book, if you're not getting that signal to your brain, you get ravenously hungry.

And Layla was the patient I talked about where she had defective fat. Her fat wasn't producing leptin, so her brain was never getting a signal that she was satiated.

This poor little girl. Tough story.

And she actually- yeah, poor little girl, right? She was going through the trash looking for food because her parents were trying to restrict it.

And she would break into a locked freezer, break into cupboards, go through trash. She could not stop eating.

Shawn Stevenson: She was eating frozen raw fish like Gollum from Lord Of The Rings.

Dr. Sylvia Tara: That's right. It's not even what you eat, it doesn't even have to taste good, they just need to keep on eating.

Once they figured out- this was the discovery of leptin, right? Once they figured out that she was leptin deficient and she had a gene mutation, they could inject leptin into her, and she stopped eating. It was that magical, that quick, and she was now a normal young lady.

Shawn Stevenson: And also a change behavior. It brought forth a maturity as well of the brain.

Dr. Sylvia Tara: That's right.

Shawn Stevenson: Wow, leptin is super important.

Dr. Sylvia Tara: Yeah.

Shawn Stevenson: And your fat is super important because that's where leptin is coming from.

Dr. Sylvia Tara: Yeah. So I think 'The Secret Life of Fat,' it helps you respect your fat. Your fat has a role. Like I said, it's not just calorie reserve.

It actually has a very important role in your body, and so when we try to lose it, your body fights back. It wants to keep it on. It doesn't want you to lose it.

And so you have to really understand your fat to control your fat. Otherwise, you won't understand the changes you're facing in behavior, your hunger, it feels like why your body's wanting this back.

And I think what the book helped me do was I didn't become so much of a yo-yo dieter anymore. I've been able to keep it off because I understand why I'm having this feeling, why I have this urge to eat more.

And it led to a number of different strategies for our behavioral strategy, just seeing it through to the end. I think I got very determined once I finally figured out what fat was doing to me.

Shawn Stevenson: Yes, and we'll talk about some of the- like what do we do, here in a minute. But I want to really- I want to go back a little bit and talk about the basic.

Like and this is similar to what I was taught in the university setting about the role of fat. But I love how you talk about it in terms of currency.

And this is something I would relate to other things as well when I talk about things like insulin, and things like that.

But I love how looking at- we've got glucose, glycogen, and fat. So can you talk about that relationship as far as thinking about it in terms of currency?

Dr. Sylvia Tara: Yeah, sure. There's different ways your body gets energy when it needs it. I mean, one is when you eat, right away you get some glucose in your blood.

That's cash, right? It's quick, it's in your blood, you can use it very quickly. After that, it gets stored into glycogen, that's another storage, and it can also get stored into fat.

Now glycogen is in your muscle cells, it's in your liver. It's like a checking account, right? So it's not right there, right? It's not cash in your pocket but you can easily write a check and you can give it out.

So your body does a little bit of work to get it out the cell, and it produces glucose. Now fat is like a certificate of deposit, right?

So fat is when all the glucose is now going to get converted into a fat molecule and stored away for later use. And that fat is harder to get to, and that source of energy is harder to get to.

It's like it's not always there right away when you need it. Your body will go for glucose first, it'll go for glycogen also, and then if you really need it, it's going to go for your fat.

And so when we try to lose that fat, you can imagine it's hard, because your body is first using the glucose and glycogen, and only when it really needs it is it going to get into that fat and help you lose it.

Shawn Stevenson: I love that so much. The body is so sophisticated to have those currency systems, and so it's just logical as well, having that cash on hand to do instant processes.

But when there's too much on hand, we don't want to just walk around with this stacks of cash. We're not the Migos for people out there who know.

You know, some of these entertainers that just carry this insane amount of money around. But for a lot of us, we're going to store it as safekeeping and use it as needed.

And then we got fat, which is harder to get to. Like your body's going to use the glucose, glycogen, and then like go through that effort to get there.

And so we want to- first of all, one of the basic thing is like let's not get to a place where we're storing too much in these certificates of deposit.

But we'll get to that in a moment. And so in thinking about this differently, and how we're consuming food, and storing energy, and then using energy later, but it's just a really interesting mosaic of the body's capacity.

Dr. Sylvia Tara: And it's also really good that we're storing fat, because if you have too much glucose hanging around, or too much glycogen, or too many lipids hanging

around, and they have no place to go, they start to store in places they shouldn't be. Right?

Like your heart, like your liver, like other places. And so actually, the fact that our body is putting these away and storing them, sequestering them into our fat, is very healthy for us.

In fact, there are some people who don't store fat very well, and these extra nutrients float around quite a bit.

And I wrote about one patient named Christina Vina who had this problem. She couldn't properly make fat, and her liver was about multiple times the size it should have been because things were getting stored into her liver because she couldn't store it into her fa.

And so our fat is really important. Be thankful you have it. And even when you're getting fatter, be thankful you are, because if you weren't, it'd be floating around in your heart, and your liver, and your blood, and other places where it shouldn't be.

Shawn Stevenson: Yeah, yeah. The body is so amazing. And with that, in bringing up the liver, there was a time when experts, physicians, researchers thought that the liver was like the primary- if not the place making fat.

Dr. Sylvia Tara: Yeah.

Shawn Stevenson: And since then, obviously new data and thoughts have evolved to know that fat can actually make itself.

Dr. Sylvia Tara: It can. I think still there's a lot made by the liver, and some of the fat in your diet is deposited right into your fat cells.

And yes, the third element is that. So we're learning about fat. And you know, really the obesity epidemic in a way helps because more NIH money went into fat research and understanding what to do with it.

And so I think the more it's a health problem, the more research goes into it, and it's becoming very interesting on what we're learning about fat, what it really is, and how to manage it.

And I think most interestingly is that everyone's fat is not the same. Right? People have different metabolic profiles, different genetic profiles, and you have to really understand your fat. Right?

My fat is not the same as yours, I have a very stubborn form of fat that takes a lot to get it off. But gender will make a difference as well.

The bacterial distribution we have in our gut will make a difference as well as viruses. So important thing is to understand your fat, and your body, and how you best can manage your weight.

Shawn Stevenson: So this brings me to understand there's different types of fat, even in our bodies. So we've got subcutaneous and also visceral fat. Can you talk about those a little bit?

Dr. Sylvia Tara: So those are two types of fat, there's also brown fat that we'll talk about later. But the subcutaneous fat is that fat right under your skin.

So like in your arms, in your legs, that's under your skin fat stored underneath. There's also visceral fat, which is that fat that can be stored under your stomach wall. Right?

So two types of stomach fat. One type of stomach fat is that under the skin subcutaneous stomach fat, and then there's visceral fat, and some people get this underneath the stomach wall.

Now visceral fat can be very unhealthy because it gets close to your pancreas, it can cause inflammation, and so that's the kind of fat you definitely want to lose.

People can be fat but fit if they mostly have subcutaneous fat. Once it starts hitting in your gut, that's when it's correlated with diabetes, it's correlated with heart disease, and I do talk about cancer. That's right.

And I do talk about sumo wrestlers in the book also, because they're a fascinating case of fat but fit.

So sumo wrestlers exercise for six to eight hours a day. They're actually very, very fit. And believe it or not, they don't have visceral fat.

All that fat you see on a sumo wrestler is right under the skin; it's subcutaneous. And interestingly, when they get off the sumo regime when they retire, they get metabolically unhealthy very quickly, although throughout their sumo career, they were healthy. They didn't have metabolic disease.

And it turns out that exercise is associated with a hormone called adiponectin that actually controls how much visceral fat you get versus subcutaneous fat.

And because they exercise so much, sumo wrestlers, they have high levels adiponectin and they don't have visceral fat.

And so that's how you can be- it's always best not to have too much fat. But if you are going to have extra fat, better to store it in your subcutaneous area rather than the visceral area.

Shawn Stevenson: Awesome. So, so insightful. And so you mentioned- so we've got the visceral fat. And the first time I heard about visceral fat was- it was called omentum fat, which I think it might be Greek meaning something like fatty apron.

Dr. Sylvia Tara: Yes.

Shawn Stevenson: And now just understanding- so we've got that, but now we know about brown fat. Right? Brown adipose tissue, or BAT for short. Let's talk a little bit about that.

Dr. Sylvia Tara: And BAT is- it's actually good fat to have. So BAT actually has a dual role. It does store some energy, but it's also responsible for producing heat. Right?

So most of our white fat - and there's two types of white fat - that's visceral fat and subcutaneous fat that we talked about.

But then there's brown fat that exists around your clavicle, around your back, and your heart, and it actually burns energy.

So instead of just storing energy, it's burning energy to produce heat. And there are some interesting experiments now to look at injecting brown fat into white fat to help people lose weight, because it's actually burning off energy.

And there's ways to get brown fat, and one way to swim in cold water. And interestingly when I wrote this book and did this research, I told my husband about it, and he started swimming in a nearby pool, a freezing cold pool, every morning.

He's already a skinny guy, but he got almost emaciated, just because I think he was burning so much calorie from the swim, and I think he was increasing his brown fat, and he ended up eating like just tons of calories while this was going on.

So it's good fat to have, and there are ways of getting more of it.

Shawn Stevenson: Yeah. I love that example of he's eating a lot. You hear stories of people like Michael Phelps who's eating like 12,000 calories a day.

It's because- and if you just compared the movements that he's doing to somebody who's not in a pool, he's not burning that much.

It's because the pool itself is adding that X factor. And so yeah, the cryotherapy, and the cold thermogenesis, and all that stuff.

And we'll put a link in the show notes for everybody. I did a masterclass on this a while back.

But another way we talked about before the show, potentially is helping to support your body's production of melatonin.

Which it's been found- this was in a journal Obesity Reviews that melatonin- first of all, there's 400 times more melatonin in your gut than in your pineal gland, which I was taught this in school. It's in your pineal gland, end of story. It's not.

But they found that melatonin increases the production and mobility of this brown fat, which is really cool.

And the reason it's brown is that it has so much more mitochondria. It's like super dense in this energy power plant in our cells. It's nuts.

But you talk about beige fat as well. So please talk about that because it's the first time I've seen it in a book.

Dr. Sylvia Tara: Yeah that's a newly discovered type of fat, and that's fat that's capable of turning brown. Isn't that interesting?

So it's hanging around, and our body often has these kind of sleeper cells, like stem cells that are waiting to see what the needs are at the moment, and they're capable of turning into things as they need to.

And beige fat can turn brown, and one of the triggers that makes them turn brown is actually exercise, right?

They have a protein called risen in them, and when we exercise, they can turn into brown fat.

And so it's being research that's pretty new, but just know you can increase your levels of brown fat by exposure to cold, by cold swims, and by exercising as well.

So exercise- I write about it and I think it's a good tool. So most of weight management is about what you eat, but there is a part that where exercise can be very, very helpful.

Just make sure not to trigger a huge hunger reflex, which we'll get into.

Shawn Stevenson: And I think that comes with stressful exercise. You know? Just like chronically stress. Exercising in and of itself is a hormetic stressor.

But when it just becomes chronic, like you're trying to out-exercise your other issues, and then we miss out on these benefits because we've just become so sympathetic dominant.

So totally nuts. I'd love to talk a little bit about- and this was just so beautiful. Again, this is stuff that's out there, but to put it in this book altogether in one place was so refreshing and so good in how fat literally holds us together.

It holds our cells together. So please talk about that.

Dr. Sylvia Tara: Yeah, I mean fat- we always think about fat is just the fat in our thighs, or butt, or stomach, but it's actually integrated throughout your whole body. Right?

So every cell has a membrane, and in the membrane it's made of fat and that's what holds your cells together.

Our nerves have fat around them, myelin. You know, it's mostly fat, and that's what helps our nerves conduct.

Fat is used as a messenger. There's like [Inaudible 00:31:03] are fat molecules that are used for short-term messaging within our body.

So there's so many different types of fat in your body, and we get fixated on the white fat that makes us look not good.

And again, a lot of that is because the dieting industry we live around. Putting such a laser focus on our fat, and why we should be worried, and why we shouldn't have it, and why we need to buy ten different products to get rid of it, or different books or programs, and it makes us fixate on one type of fat only.

But it's critical, as we talked about earlier. It produces hormones, leptin, it produces estrogen as well; fat.

Shawn Stevenson: I was just going to ask you about that.

Dr. Sylvia Tara: And as women get older, and their ovaries stop producing estrogen, they actually depend on their fat for estrogen. You know?

It's a messenger, it holds our cells together, and helps our brain conduct signals. So love your fats. That's one of the lessons us researchers love to have.

Shawn Stevenson: I'm sure that was just a huge revelation for you going through the process.

Dr. Sylvia Tara: It was.

Shawn Stevenson: Wow. So I want to talk about- you've got these really cool sections in how- it's like good girl gone bad, but it's like when good fat goes bad.

Dr. Sylvia Tara: Yeah.

Shawn Stevenson: And this is something that we can start to pay attention to, and to influence, because we're hearing all of these benefits and great things about fat, but there is this dark side.

So we're going to get into that right after this quick break. So sit tight, we'll be right back.

Alright, we're back and we're talking with Dr. Sylvia Tara, and she's just blowing my mind left and right, and I love her new book.

It's been out for a little bit, but it is like super taking off right now. You need to get yourself a copy. It's 'The Secret Life of Fat.'

And we're really just understanding how valuable and important fat is, and we just tend to have this very black and white opinion of it.

And for the most part, it's bad. We have this battle with fat, and really understanding that having too little fat is absolutely dangerous.

This affects the size of our brains, this affects our ability to have good sleep, it affects our hormones, and our ability to even have kind of regulation over our emotions.

There's so much that fat is involved in, and we're just talking about a little bit of it today.

But again, it's a masterclass in the book 'The Secret Life of Fat.'

Before the break I asked you about and wanted to talk about when good fat goes bad. Because there is this other side and it's justified, and so let's talk a little bit about that.

Dr. Sylvia Tara: Yeah, sure. I mean fat in excess, massive amounts of excess is not good. So fat that turns into visceral fat, that starts to deposit in your visceral area. That is not good.

That is a fat that causes inflammation signals to be emitted, it's the fat that is correlated with diabetes type 2, and it is also the fat that's correlated with heart disease.

So a normal amount of fat is good. Fat subcutaneous if it's stored in your arms, and legs, and under your skin can be quite healthy.

We need our fat for all the reasons you just mentioned; the brain size, our immune systems rely on fat, our reproductive systems, to our happiness and our emotional state relies on fat as well.

But then when you get too much, it starts to deposit in places where it shouldn't. Then that becomes a problem and that is good fat gone bad.

So we want the good level, we don't want it being excessive, and we don't want it underneath our stomach wall. We want to keep it at a healthy amount.

Shawn Stevenson: Yes. And another thing that you talk about, and just kind of introduced the subject matter, which is something that we're probably going to hear more about is aromatization which is basically when we have higher levels of blood sugar and even higher levels of fat, your body can potentially do this kind of a steal, and it can take some DHEA, which can get converted.

It can take these two different pathways; go to testosterone, which everybody needs some testosterone, or get converted to estrogen.

And being imbalanced in our body fat and also blood sugar can cause this aromatization where more of it's getting shuttled over and becoming estrogen, and we get to a state where we're estrogen dominant, and this is just another place that this can be dangerous.

But I want to talk to you a little bit about- because fat can be- because we've deemed it being so bad, it becomes a battle for some of us.

And so we're fighting fat, but fat fights back. So let's talk a little bit about how fat can fight to stay on you.

Dr. Sylvia Tara: Yeah. No, and that's an excellent point, and that was my biggest learning is that my fat is actually trying to come back as I'm dieting.

So when we lose some fat, we lose leptin, because remember fat produces leptin. Leptin is a hormone that binds with our brain and tells us we're full, we're satiated, all is good in the world.

And so when we lose some fat, we lose an amount of leptin, and our brains overreact to that, and it makes us more hungry.

And so we get more obsessive about food. In fact, MRI images of people who've lost some weight, when they're shown pictures of food, their brains light up by far more than people who haven't lost any weight. Right?

So we react a lot to food, and there's a caloric penalty as well. Our bodies start to change. They start to get very good at making more fat.

So our metabolism actually changes once we lose some fat, say 10% of our weight or so, to where we get very efficient at storing fat. And again, it's because our leptin has dropped and our bodies are now changing.

So somebody who's lost say 10% or 20% of their body weight will have to eat 22% fewer calories, compared to someone who's never had to lose weight to be at their weight.

So say someone who was 150 pounds gained 25 pounds to be 175, they lose that 25, get back to 150 pounds. They're now having to eat 22% fewer calories than someone who was at 150 pounds naturally to begin with and never gained the weight and came back.

Right? So there's a caloric penalty to getting heavier and losing it, and it lasts a long time.

Our muscles become more efficient during that time, they burn less calories, so even at rest we burn about 15% fewer calories once we've had that change in leptin.

During exercise, that's around 25% less calories that we burn after we've yo-yo dieted like this.

And the effect can last- it's been studied for up to six years, and it might last longer, so it's an effect that might happen for a long time.

So I think dieters just have to be aware, you probably won't be able to go back and eat the way you did before.

Once you've yo-yo'd diet, you've gained weight and lost it, you will be at this caloric penalty for years. And this is what happens when people regain weight.

They think that they can go back and eat, and you really- for years at least afterward, you have to maintain that lower calorie diet.

Shawn Stevenson: Yeah. Thank you for sharing that. This is why we need to really strive to have a- kind of a multipronged approach to losing fat, and being mindful of our sleep quality, and stress, and things like that.

Because you talk about in the book that food is the only thing that causes this issue with fat really fighting to stay on you.

So let's talk about some of the other stuff that can cause body fat to just like be so, so difficult to relate with.

Dr. Sylvia Tara: Yeah. So the other ways we get fat? Is that what you mean?

Shawn Stevenson: Yes.

Dr. Sylvia Tara: Yeah, there's a bunch of ways. So food is one. Certainly if we overeat we get fat.

Our bacterial distribution can affect our fat and how much we have. So there's certain types of bacteria that are very good at extracting calories out of food and putting it into our fat.

And interestingly, what we eat can tilt our microbiome in our gut. So if we have a lot of starchy high-calorie fatty foods, we get a certain distribution that's very good at extracting out those calories.

When we eat more fibrous foods, we actually tilt our microbiome to that type, that actually lets a lot more pass.

So we get more fiber which helps more of our calories pass, but those bacteria that accumulate around eating more fibrous foods also don't try to extract as much calories out of the food.

So in a way, fat loss begets fat loss. If you eat healthy, you eat fibrous foods, a lot of lettuce, and cabbage, and things like that, naturally it's less calories, you're getting more waste.

But then again, the bacteria you're fostering in your gut is that type of bacteria that does not extract as many calories out of the food.

And so that's very interesting. So our microbiome is one way that we gain all fat. Gender is another, and I had to read about this because I write about this in the book.

I have a very skinny husband who eats everything he wants, and I think he still fits into his college jeans, and it's very frustrating for me.

And women's bodies are very different is what I learned. Women partition more nutrients into fat than men.

And this happens at the time they're born, probably even before they're born, girl babies, girl infants are fatter than boy babies.

And it's the way that were designed, and nature likes to keep fat on women as well. When we exercise, we tend to get hungrier than men do after exercise.

We have more ghrelin, which is a hunger producing hormone. Women produce more of it after a good bout exercise than men. It's how their bodies are designed.

Shawn Stevenson: It's kind of like the counter; the counter of leptin.

Dr. Sylvia Tara: That's right. So ghrelin is a hormone produced by our stomach, and it produces a sensation of hunger. And after we have a good bout of exercise, say we burn off 400 to 600 calories or so, we produce more ghrelin, and ghrelin makes us hungry.

And interestingly enough, women produce about 33% more ghrelin than men after exercise.

Shawn Stevenson: Wow.

Dr. Sylvia Tara: And when they do experiments and they let them go and eat off a buffet after they exercise, women will eat more.

And so women are driven to have more fat, and when they start to lose fat or utilize their fat for energy, their bodies are driven to put it back on.

And so yeah, for women it's a unique issue. One good thing is that women tend to have more subcutaneous fat, less visceral fat.

So although they tend to be fatter, they tend to have healthier fat than men. So it's a very different fat profile for women.

Shawn Stevenson: And there's good reason for this that you highlight as well for women to have this drive to maintain more body fat is- literally it's for life.

Dr. Sylvia Tara: Yes.

Shawn Stevenson: It's literally for life itself.

Dr. Sylvia Tara: Yes, that's right. For reproduction, their fat is associated with estrogen, with leptin levels, and leptin is critical for your reproductive system.

And so nature pretty much knows what it's doing is what I've learned from all of this, and of course our good fat can go bad and you have to be careful there, but our fat has a really critical role, and I think we're only starting to understand all the roles that fat has in our body.

This is just the beginning of the research awakening, and I'm looking forward to what comes out in the next ten years about fat.

Shawn Stevenson: For sure, and you're super at the forefront of this, and putting this out for everybody, and you even shared a couple of studies in the book in regards to- and I know some women listening have experienced this where they're

really heavy into their particular exercise, and they're working, they're getting their body fat down, and they start to have irregularities with their cycle.

Dr. Sylvia Tara: Yes, that's right.

Shawn Stevenson: Or this one study you talked about had young girls not even beginning their cycle until a year plus later than their peers because of being involved in things like ballet and other athletics that are really strenuous.

Dr. Sylvia Tara: Yeah, if you have a low fat level, and you're energy deficient, once your leptin level gets low, you don't develop. Right?

So what it does typically is it offsets development by a couple of years for those women. And you know, people who aren't menstruating yet, the young girls who aren't menstruating yet, they start later. It won't start until years later.

If they are menstruating when they're doing ballet or when they go into running, their periods will become intermittent or they'll just stop.

And interestingly, if they have an injury and they're on the bench for a while, and they start eating and gaining some fat, it comes right back. Their periods come back.

And some athletes, when they're trying to reproduce or trying to conceive at that point, their doctors will tell them to sit it out for a while and just get a little bit more normal of fat level and the amount of food that they're eating.

And that's how that research- some of the leptin research came to be. Someone noticed in Pakistan, they were doing a study about world populations.

This was Rose Frisch back at Harvard, and she noticed in Pakistan, some of the girls in poorer neighborhoods menstruated later than the ones in the more well-to-do neighborhoods.

And that's the first time we had that correlation around nutrition, fat, and reproduction. So yeah, very important for our brains, reproductive systems, and for girls and their bones.

It actually has more of an effect on female bones than male bones, the amount of fat that you have.

Shawn Stevenson: So fascinating. Super fascinating stuff. So before we get to some solutions, some things to think about, I also want to talk about this kind of glorified fat gene. Right? This FTO gene. Let's talk a little bit about that.

Dr. Sylvia Tara: Yeah, so the FTA gene, a certain mutation of it drives people to want to eat more fatty foods, oddly enough. Right?

And so they did some experiments in Britain where they gave everyone- all the kids could go off to a buffet, and they could eat whatever they wanted to.

And they noticed certain kids with an aberration in their FTO gene, they went after the fattier foods more.

And you know, obviously they were more fat because of it. And so our genes have a certain role in it.

There's another gene called IRS1, and men with a certain variation of it tend to store more fat. They just get fatter.

And then with a different variation, they tend to not get so fat, but they have more fats hanging around in their blood.

So it's as if their body is not sequestering it into fat tissue, and so in that case, the men who have that certain variant virus one and store more fat, they're healthier.

They're fatter but healthier in those cases. So our genes, they have an effect on our behavior, and they have an effect in how our body is metabolizing. So your genetic profile is another big factor into how much fat you're going to have.

Shawn Stevenson: Alright, what do we do? What are like two or three things for us to start to be more mindful of to relate to fat better, and to have a better kind of fat ratio.

Dr. Sylvia Tara: Yeah. So I think one thing that helps people is understand what kind of fat you have.

I mean, if you're a 22-year-old male who's gained twenty pounds but you're otherwise healthy, you can have a much easier time losing fat than a 55-year-old woman who's now become menopausal, has had a couple of kids. There's just a whole different profile to that. Women in general tend to be more fat.

And I think for personal trainers who work with people, it's really important also to diagnose the type of fat your client has.

You know, where is their hormone level right now? Are they declining in testosterone? As we age, our hormones decrease. Right?

It becomes much harder to lose fat. Testosterone, estrogen; they're fat-burning hormones, so older people have a harder time losing weight than younger people.

You know, also the genetic component. Look around your history. Like what was your family like? Did they have a certain challenge with fat?

Did they try very hard, diet a lot, and still weren't able to lose that much?

I think once you know if you have easy fat or difficult fat, you know how to up the ante on your diet. And this is what helped me, is that I understood everything now.

So I have a number these issues. You know, I'm a middle-aged female, I've had a couple of kids, my hormones are on decline. I just have to try harder.

And what it helped me do was be less frustrated with diets. Not every diet is going to work for everybody.

If you have more stubborn fat like I do, what I found that worked phenomenally well was intermittent fasting.

You just- if you stop eating for a good sixteen to eighteen hours a day, so like say stop eating at 3:00, don't eat until the next morning, 3:00 or 4:00, and don't eat until the next morning.

It does a number of things. One is it increases glucagon, which is going to burn through fat.

Your growth hormone peaks at night, and so the more you are able to extend the fasting window, it helps that because when we eat, we mitigate growth hormone effect in our body, and growth hormone will really help us through fat.

That's another great thing about it. And then also ghrelin and growth hormone go together. So when we're hungry overnight, it's actually promoting growth hormone and busting through that as well.

And amazingly, intermittent fasting helps control appetite. You're not as hungry after about five days of intermittent fasting as you are in the beginning.

But you don't have to take that measure. Again, if you're a young male who's otherwise healthy, you could probably just exercise more and it'll come off faster.

And so I think that understanding the range helps coaches and helps people just know how hard you have to work at it, how to not be frustrated if you don't lose anything for the first six weeks.

Right? That could be very normal if you've got very stubborn fat. You might have to work harder at it than some other people, you might have to eat less, you might have to be more careful about what you eat compared to other people, and you might have to exercise just a bit more.

So there's a range. There's a range for all of us, and there's just so much variability, and one diet just does not fit all. You really have to customize it for yourself.

Shawn Stevenson: So true, and you did such a wonderful job of helping us to better relate to fat. And one of the last things you talked about is mind over fat.

Dr. Sylvia Tara: That's right.

Shawn Stevenson: And I'd love- it's the last thing I would like to talk with you about. There are so many things I want to ask you about, but let's talk a little bit about that.

Dr. Sylvia Tara: Yes, so mind over fat. You know, our psychology is such a big part of dieting, right? How strong we feel, how confident we feel, and to know about certain ways that our minds give up on an effort, and to be able to control that is really an important component of it.

And you know, a lot of this has to do with willpower. People don't like to hear it. They think it's trite, it's old fashioned, never say that.

But honestly, if I gave you a diet where I told you to eat cake every day, cake and candy and potato chips and that was your diet, you'd actually have trouble staying on it because after five days you would want other things. Right?

So even in the most luxurious diet, you need self-control to not just go and do whatever it is you have an urge to do at that moment.

And so there are ways to build that up, and there's some very good research actually done on kind of willpower, and restraint, and decision making.

And you could think of willpower as a muscle. You know, the more you do it, the stronger you get at it, and you can just build it slowly.

I mean, you can start by just a small task of making your bed every day. Right? Now you're using willpower, and that helps actually build it up.

And there's a number of exercises and examples I talk about in the book about how to build up willpower, and those are some of them.

People use tricks also to help themselves. If a person has an audio book they like, and they only leave it at the gym and they have to go the gym to listen to it, they will actually go to the gym by far more frequently than someone who's not checked it in and put it into the gym. Right?

And then the more frequently they go, what they learned in this research, is when they took the audio books away, those people still went to the gym more because it's now become a habit.

There's things like temptation coupling where you pair an unpleasant activity with a pleasant one. So you know, something like an audio book at the gym. Like you get to hear this kind of whatever juicy novel you have while you're exercising.

Shawn Stevenson: Fifty Shades of Gray.

Dr. Sylvia Tara: That's right, but you can only listen to it if you exercise, so that helps as well. And then some of the more important things are the negative emotions we have.

So dichotomous thinking is one that I think is really important, and that's where if I've made a mistake, there's no point in trying anymore, I might as well just give up.

And people do this a lot with dieting, and women are more prone to this than men are. So you know, I had ice cream, I may as well have it again tomorrow because I had it yesterday, and now I've had it two days in a row, and now it's all over, and I can't lose weight, and I'm just going to binge for the next five days, and this is really typical.

And so that slippery slope kind of thinking, it's not just bad for your weight, it actually leads to more depression and anxiety.

And the more you're able to forgive yourself when you're dieting, the better your diet is going to be, the more effective you're going to be.

And some of the doctors I know that run obesity clinics, this is a big part of what they coach people.

This a big part of their success actually, is that they're able to talk to a patient and say, "Okay, you had ice cream, no big deal. Get back on. You don't want to gain the five pounds you had back."

And interestingly, just that authority figure telling them that, giving them the ability to forgive themselves actually helps them stay on their diet.

So there has to be a component of self-love as you go about this very serious and difficult endeavor of trying to lose say twenty pounds or so.

It will be a long haul, it won't be perfect, you'll go off sometimes, and you have to love yourself and forgive yourself enough to know that you're still fine if you come off.

And so anyway, I thought that was a really good one because I know I've been prone to that in the past where around Christmastime like, "What's the point? I'm just going to eat more tomorrow."

But I think knowing that you can just go on, come off, and still be okay, and still be on your path, was really good to know.

Shawn Stevenson: I love it so much. Listen, I've shared this with you already, but I think that this book is phenomenal.

It is the book on the subject matter, and I just appreciate you taking the time and putting your insight, and your passion, and your work into making this possible for all of us to enjoy.

Dr. Sylvia Tara: Yeah. Thank you. Yeah, it's very full. Very full of information, so I'm glad you liked it. Thank you.

Shawn Stevenson: Yeah. So can you let everybody know where they can pick up your book and also where they can connect with you online?

Dr. Sylvia Tara: Yeah, sounds good. So the book is available on Amazon. It's available at Barnes and Noble as well, available in paperback and hardback. And so that's great, still available and out there, and also in Audible and for Kindle.

You can connect to me, people get to me on Facebook. It's @SylviaTaraPhD, on Twitter as well, and you can go to www.SecretLifeOfFat.com and I think there's an email and the rest how you can get to me.

So yeah, and I do respond. Give me a few days, but I usually get back to people.

Shawn Stevenson: Awesome. Thank you again for coming to have out with us.

Dr. Sylvia Tara: Thank you. Nice to be here.

Shawn Stevenson: Everybody, thank you for tuning into the show today. I hope you got a lot of value out of this.

This book is so good, so insightful, and this was just- again, just a smidgen of what she's captured here, and it's such an interesting topic because again, like we talked about in the beginning, fat has just become like public enemy number one.

And we really just don't have the whole story. And so it's really helped with that, and in breaking down those kind of walls.

And one of the things that we didn't really get to talk about today is how having a healthy amount of body fat, even a little bit more than you think, is associated with a longer lifespan.

This is something that we get into that conversation about how much body fat is actually healthy versus what is idealistic.

And for some of us, we're looking at these ideas out there as far as like what's pushed to us through media, which is changing, which is so beautiful, and understanding having a little something to pull on, to hang on, to squeeze and pinch, it's not all that bad.

As a matter of fact, it's pretty beautiful. And not just as far as our appearance and looking like somebody who's healthy, because that's what we've really got to work on, but literally for your health and well-being.

And we talked just a little bit about the impact of leptin has on so many different aspects of your health from the size of your brain to your bones, and the list goes on and on.

But leptin is made by fat- by body fat. And so when you hear the stories about, "He doesn't have any fat on him, he's got 2% body fat," that's not cool. That's not healthy, it's not sustainable, and something negative is going to result.

You know? And I've been that guy. Like I was literally 4% body fat at one point, and I was not the best version of myself. Alright?

Again, it's a thing, it's a thing that we can accomplish, we can see what the human body can do, but we really need to begin to approach health in a more holistic fashion, because there's a difference between fitness and health.

I was very, very fit but I was not very healthy. I was close to healthy with some of the lifestyle factors I was doing.

But so us changing our idea about fat is just such an important thing, and I'm just very grateful to have her on today.

And so hope you enjoyed this, and one other quick thing when she mentioned about having the diet of ice cream and candy for a few days; that's the Macaulay Culkin diet. Alright?

Like I dreamed about that. When I was a kid and I saw Home Alone, I was like, "I want to do that." And once I became an adult, I was the guy who did it. Alright?

I just went- once I got out of the house, I'm doing fast food all the time, getting all this Mike & Ikes, all this stuff.

And after a few days, like my body just wanted broccoli, you know? There's an intelligence there that we can fight against.

But the reality is your body is constantly giving us signals and information to diversify things and to really take care of ourselves.

So I hope you got a lot of value out of this episode, and if you did, please share it out with your friends and family on social media. And of course, you could tag me.

And listen, this is just the beginning. We're just get it started here with what's coming for you, so make sure to tune in to the next episode, because I've got something really, really powerful coming up.

We've got some incredible guests and show topics that you're absolutely going to love, so make sure to stay tuned. I appreciate you so much for tuning in. 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 www.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.

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And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.