

Paleo Solution - 353

[0:00:00]

Robb: Hey, folks. Robb Wolf here with another edition of the Paleo Solution Podcast. I'm super excited for today's guest. She is Dr. Sylvia Tara. She holds a PhD in Biochemistry and she is the author of the book *The Secret Life of Fat*. Dr. Tara, welcome to the show.

Sylvia: Thanks so much. It's great to be here.

Robb: Your book is really fascinating. I tend to poke or use kind of an evolutionary biology systems type approach to dissecting as many problems as that approach lends itself. And I really had a big sense of that in the way that you would put together the book and looking at fat as an organ and a system and kind of an entity unto its own. I have a ton of questions to ask you. Clearly, you have a fantastic science background but it sounds like you had a bit of some health issues also that kind of oriented your research towards this book. Could you talk a little bit about that?

Sylvia: Yeah, sure. So, I'm a scientist by training. I have a PhD in Biochemistry. Part of the thing that drives scientists is this burning question you have that you want to have answered. And I remember when I was in graduate school, someone said that to me, if you have a burning question don't go into research. And for a while, I kind of didn't. And I went into the business side of biotech and I lived there for a while.

But then as I got older, my fat would just not leave me. And I started a job. I gained some weight. I had a couple of kids. I gained weight each time I had a kid. And my old tricks just weren't working anymore. And I finally got to this point where I had this burning question of what is fat? Why do some people gain it more than other people? Why is my fat so hard to lose? Why does my fat look different? My fat's softer. It's more ripple-y than other people.

I became all consumed about what is fat and why do some diets work for some and not for others. And I decided if someone can find the answer I can. I've got the training and I'm going to go investigate. And I spent five years just reading through the scientific literature. I read about a thousand articles about fat. I talked to probably around 50 researchers around the world about their cutting edge research on fat and what they were finding out.

And what was funny about fat was just so fascinating, so interesting. I said I'm going to put this in a book and *The Secret Life of Fat* is that book. And it's about

how fat really behaves in your body. It's not just a reserve of calories. It's actually a pretty sophisticated endocrine organ. And I think the more people know about their fat, learn about their fat, they'll be astounded of what they really got inside them.

Robb: Yeah, I cannot agree more. I clearly have not gone beyond this rabbit hole as far as you have but I think I was probably on the earlier edge of folks that was reading some research suggesting that fat was not an inner substance particularly like this raw fat and these deposits that seem to be around the internal organs have a really, really profound effect on the overall metabolism. And interestingly, it kind of takes on a life of its own. I think about it almost like a sponge or some sort of sea creature that's trying to modify its environment to perpetuate its existence. I think that that's a really perplexing or potentially enlightening perspective for folks to get.

Sylvia: Yeah, it's like fat has a mind of its own, is how I kept thinking about it. The more I kept learning about it I'm like, "Wow, this thing is, it can do all kinds of things we never thought." It can divert blood supply to itself to keep on thriving. So, when we get more fat, it actually sends out signals that cause veins to grow in its direction and that gives it oxygen. It gives it more nutrients. It becomes another pathway to get fat.

Fat releases hormones that control appetite and control metabolism. One of those hormones is leptin. So, it has a direct control on fat and actually our appetite and metabolism. When people lose weight, they lose fat, they lose some leptin. And what happens is our appetite goes through the roof and our metabolism gets slower. And fat almost uses that as a way to come back. So, as we're losing fat, it's hard. It's actually they're being very clever. It's changing how we think about food.

They've done fMRI analysis of people. They've done resonance imaging of their brains. People, when they've lost 10% of their fat or so, they show them images of food. And what they see is that they're much more excited about food than people who've not lost weight. They react much more strongly to it. At the same time their centers involving restraint and inhibition are weaker. They don't react as much.

People who are, have lost 10% of their weight, they have a higher appetite, they're hungrier, they're more excited about food at the same time they have a less ability to control their reaction to food. And the metabolism is lower. And so there's this whole comprehensive kind of plan your body has to try to put fat back when we try to lose it. And you have to know all these tricks that fat has up its sleeve if you really want to fight your fat and control your fat.

[0:05:01]

But it is much more wily than people think and I think knowledge is power in this case. Once you really understand it you know more about what's happening in your body. Funny enough, my editor, when he read my manuscript, he lost 15 pounds, he said, because he understood fat. He understood why he felt hungry at certain times of the day. He understands what that was doing, how he has this drive to put it back. And he was actually able to fight it off.

Robb: That's awesome. Funny side note, the guy running my book launch has lost 20 somewhat pounds after reading the book and he's like, "Wow, this thing kind of works."

Sylvia: Yeah.

Robb: I definitely look a lot at the neuroregulation of appetite which I'm sure clearly you end up addressing that via leptin and ghrelin and some of these other chemical messages. But what else is fat doing? Again, folks kind of get in this, just thinking about it being an inner substance and if I was just better or stronger or what have you, then it would be easy to lose fat. But again, I kind of look at this stuff from an evolutionary biology perspective and that fat store was our hedge against scarcity in the past. It would make sense potentially that having a good fat mass was an important thing. But too much of it, and today's ubiquitous foods can be problematic. But what else is fat doing beyond just that caloric storage?

Sylvia: Yeah. So, fat in its totality functions like an organ. It releases a number of different hormones our body depends on. Our immune system is actually linked to fat. Fat through one of its hormones leptin actually strengthens T cells of the activity and a number of them. We have more of them, we have healthy fat. Our brain size is actually linked to fat. Mice that have a defective fat, they don't make all the hormones that fat is supposed to make.

They have smaller brains. In fact, researchers say they can tell when a mouse has defective fat just by looking at the size of his brain. Reproductive systems, especially in women, is very much linked to fat. Fat produces estrogen and it produces leptin, two hormones that our reproductive system depends on. Bones strength is depending on it. Even wound healing. People that have a defective fat or insufficient fat don't heal as quickly.

So, fat has multiple functions within our body that we never think about, we mostly don't know about this at all. And it is because it is an endocrine organ. It is releasing hormones that so many systems in our body actually depend on. It's an integral vital part of your body. And that's one reason why fat is hard to lose.

Because even though we don't value our fat, our body clearly does. It sees a great value in fat.

And so once you have it on you, fat kind of stays, fights to stay there. And so, as we said, through leptin, when you lose fat you lose leptin and that drives your appetite higher, your metabolism lower, your fat is wanting to come back. Fat can divert blood supply to itself. Once it's there, it's got all these systems in place just to stay on. And so that's things I have to think about. And I have the whole chapter of the interesting things fat does that are really important for us, why we should actually respect our fat in a way. It's actually doing much more than you think it is.

But at the same time if you are trying to manage your fat, you should know there's different types of fats in your body. It has a lot of different functions in your body. And you don't want to get rid of all your fat. You want to get rid of particularly the bad visceral fat that's correlated with diabetes and heart disease. And you want as much as possible store fat in your subcutaneous layer instead.

There's also brown fat where it's actually producing heat in your body and that's an important fat to have too. So, really educate yourself on fat. And the more you do I think you'll be able to navigate the diet industry better, ratchet up or down or tweak a diet to make it work for you. And just understand why you might have particularly stubborn fat. The other part about it is all these odd ways we get fat that no one ever talks about. Bacteria has a role in fatness. Viruses do. Gender, genetics, hormones, they all do. And understand every part of your fat and why you might have more than someone else.

Robb: Doc, talk a little bit about some of these other factors like bacteria and viruses. Like we clearly have become much better educated about the role of the gut microbiome. We're only now starting to get into the gut virome and thinking about the viruses that are in the gut. But there'd been some really fascinating studies where like lean population of mice, we'll get some fecal transfer between lean or obese populations of mice and we're able to kind of confer some of those characteristics by swapping the gut biome. What is going on with that?

Sylvia: Yeah, that's so interesting. We actually have more microbial cells in our body than we do human cells. And I find that fascinating. So, necessarily, all the bacteria, virus, fungus, different things we have in our body are going to have a role to play. They're going to have an influence because we have more of them than we do our own cells. And so a lot of bacteria that we have in our gut, great big population of them is in our lower gut in our body.

[0:10:05]

And bacteria in our gut can digest things that we as humans cannot. So, they can digest polysaccharides, tougher carbohydrates that our own body would not be able to. And they'll turn those into simpler sugars that can be absorbed readily. So, depending on the type of bacteria you have in your gut, you could be getting more or fewer calories out of your food. A label might say 100 calories for a bowl of Cheerios but depending on what you're harboring that might actually be a 120 calories or it could be 80 calories.

And so there are different types of distributions and they tend to run similarly in families interestingly enough. The other important thing to know is that it's not static. You can change the bacteria in your gut. Certain foods actually will help the growth of certain types of bacteria versus others. And so more fruits and vegetables actually tilt the microbiome towards that one associated with more lean body profile.

If you have a lot more fats and carbs you're actually tilting your bacteria towards more and more associated with heavier body profile. So not only are you changing the amount of calories if you eat more fruits and vegetables, it's lower calories you're probably passing more as waste, but you're also tilting your microbiome towards one that's associated with leaner body type profile. So, fat loss begets fat loss, if you will. It kind of spirals either in one direction or another. And so they are great experiments. They're very convincing on bacteria and I think you alluded to one.

I mean, one was with mice definitely where they have mice that are raised in a germ free environment. So, they isolate them and they have as little bacteria as possible. And they compare them to mice grown conventionally in a regular environment. And they give them equal amounts of food. And they find that the germ free mice actually eat more of the food, about 30% more of the food than the conventionally raised mice. At the same time those germ free, bacteria free mice they're thinner by about 50%.

And I thought, well, maybe they just have a very high metabolism. But when they measured the metabolism it's actually lower than the metabolism of the conventionally raised mice. So, the regular mice with regular bacteria, they're eating less, having more fat, and having higher metabolism all at the same time. And when they take the bacteria from those conventionally raised mice and they put it into the germ free mice those germ free mice gained weight quickly, about 50% more fat quickly.

So, there's a very strong argument over the bacteria that we have. And, interesting, there's even some human studies where they take twins who are discordant for obesity. So, one twin is obese, the other one is not. It's thin. And they'll take fecal matter and they'll extract some of the bacteria and they'll put it

into germ free mice. They gave them the same amount of food. And they'll measure. The one who's got the transplant from the obese twin will get fat. The one who's gotten the transplant from the normal weight donor is actually will stay thin.

So, again, there's even some done with pregnant women, like depending on the phase of pregnancy they're in. Their microbiome changes to help them gain weight. So, some very interesting experiments that I think we can't really look away from it, I think there's still more work to be done as far as which bacteria are responsible for fatness or thinness. That is still evolving. But no doubt bacteria play a role for us.

Robb: Yeah. I was curious a little bit about -- So, some folks end up with some really wacky gut dysbiosis situations like small intestinal bacterial overgrowth and whatnot. And this is one of the things that I see people, even myself, kind of spiral out about. So, on the one hand, we have some great studies that suggest lots of fruits and vegetables and fermentable carbohydrate tends to be consistent with kind of a lean phenotype.

But then we have folks that for whatever reason, whether maybe it was vaginal birth or non-vaginal birth and lots of antibiotics, not breastfed, there's lots of epigenetic factors there, but these folks find that the only way that they're able to lose weight is on a lower carb diet, which by implicit kind of extension is a higher fat diet, which normally shifts the gut microbiome towards one that is better at harvesting energy in. So, this is one of those interesting paradoxes that I've seen clinically. Do you have any thoughts around that?

Yeah. I mean, it's not just one reason why we gain weight. Microbiome is one but hormones are another very big factor. It might even be a bigger factor than microbiome. So, insulin is something -- Lots of books are written about insulin and how high carb, high sugar diets are evoking insulin and that's helping us store fat away. And so when we take out sugars and fats, so we eat more evoke as much insulin, we're having less of that effect.

And fats will make us more satiated. And they're not releasing insulin. So, although it might be helping our microbiome, which actually might tilt more into, so that's the energy harvesting microbiome, at the same time we're reducing our amount of insulin. So, it's not just one factor. You have to look at everything in its totality.

[0:15:04]

The other thing to look at are genetics. There are certain genetic profiles that have a higher propensity to gain weight. They either have a higher draw towards

energy rich foods or they have a so-called thrifty genotype, a collection of genes where they're very efficient with energy. And so they might eat the same plate with someone else does but they'll get fatter on it. And the Pima Indians are one population I write about that have that thrifty genotype.

If they're on the same diet as westerners they can be three times the obesity rate as westerners. They have a thrifty genotype that's helped them through famine, helped them through tough times but now in the time of plenty it makes them obese. That's another one. I write all about women. We actually interact with our fat much differently than men do. Women metabolize fat differently. We use our fat more but we're very efficient at storing it back into our bodies as well. And that's one of the differences for fatness in women.

So, think of everything together, and I think people hopefully will find a good kind of balance of what's working for them or not. And that's another point to really bring up, is there's not one diet fits all. A diet has to work for you psychologically. You have to do something that you can stay on, you like being on. It has to work for you biologically, your body is responding to it and losing weight. And it has to work for your lifestyle.

There's plenty of diets that there's a lot of meal prep and a lot of exercise and this is not something everyone can do. They'll fail on it if they try to be on it. And so finding one that works for you, for your body type is really important. Some research coming out in Israel shows that some people can have some of these foods that are high in sugar like chocolates or ice cream and they actually don't get a sugar spike. And other people, they don't have that same response. They actually get, even for a small amount, will get a sugar spike and so, again, you are going to be different than your neighbor.

A 50-year old woman is going to be different than a 20-year old and so there's not one diet that fits all. Take all of the learning in *The Secret Life of Fat* and then take it and distil it and then try to just hone in on the diet you're at. There's tips in there for what you might ratchet up or down, what the issues might be. So, those are not diet books per se with meal plans. There's enough learning in there that hopefully it helps people to tweak their plan and understand why one diet is working for someone and not another.

Robb: Right. It's such a challenge these days because there's so much information so you want to have these simple stories, these heuristics, just some general guidelines to throw out to folks so that you don't blow them out of the water. But then inevitably you end up with a bunch of confirmation bias. The only people who succeed on a given plan are the ones that it just happens to work for them and then everybody else is kind of left wondering is there something wrong with me?

I feel like there's this constant challenge, almost like taking a microscope from very close up to backing out to higher level that is necessary. Get folks generally moving in like some sort of a whole foods direction and then as we auger in from there it's like, well, you might do better with a little less carbs or the variety of carbs. I'm actually wearing a continuous glucose monitor. I'm working with the research group in Israel right now. They just did my gut microbiome.

Sylvia: Excellent.

Robb: I'm going through that whole thing like on my cell phone that I can pull up here. I've got my food log and I'd been doing this for almost two weeks and then we'll wrap that up and then I'll get a report on all that stuff. For me, I've always suspected that white rice, white potatoes, dense carb sources were problematic for me and, man, they blow me out of the water. But interestingly, I did try some ice cream and it really didn't move the needle all that much.

I tried some dark chocolate, and I mean like a whole bar of 90% dark chocolate, and it barely budged. And it was fascinating. Whereas most people would say, "You need to eat some white rice or some pasta or something like that." Those types of things make me look pretty much diabetic, like 160, 170 blood glucose responses. And my wife, we just used a finger stick method for her but she's smaller than I am.

But despite the fact that she has less body mass she can eat more carbs and get a lower blood glucose level and I suspect her insulin is probably lower than mine as well. This is just something that we've observed kind of anecdotally. I'll ask her after a meal, "Hey, how do you feel?" She's like, "I'm fine. And I'm drooling on myself." Yeah, it's fascinating.

Sylvia: That is so interesting. I love that research. I find the same thing. Things that aren't supposed to work are working for me. So, I can eat small amounts of rice. I can have whole wheat bread and it's all fine. I don't gain weight. In fact, I'll continue losing weight. I can even have chocolate and I don't gain weight. But a chocolate cookie, I'll gain a pound almost overnight. So, there's something about white flour for me that that's really telling. But I can have small amounts of sugar.

If there's one trick I learned is that I actually do well with a little bit of sugar. So, if I have a salad and I put protein and fats on it, I'll make it very balanced. But I find I'm not satiated and I keep rummaging looking for food.

[0:20:05]

But if I have just a small amount of sugar right afterward I'm satiated for hours, replete. I don't want to eat. And what I learned is that insulin actually has some satiating effects as well. So not only is it clearing our blood and depositing our fats and sugars into our tissues, but it's also affecting our brain. And just like leptin it has a satiating response. And so I'm very careful. I don't overdo it. But I have like five gummy bears after my salad and I actually don't want to eat for hours after that.

Robb: That's hilarious. Wow.

Sylvia: It is. And for everyone it's really different and I'm so glad you bring up that point because I'm hoping this is where dieting is going, is that there's not one size that fits all. We're all so individual. Biologically based on our genetics, our microbiome, our hormone levels, our age, our gender, all of this. I think it's easy to sell simple diet books and that's where it gets down to, like doing my diet, simple as one, two, three, I'll lose lots of weight, I'll never be hungry.

And believe me, those books sell. The problem is, they don't work for everybody or they don't work for long and people will regain the weight. And I think looking at the hard facts and what is fat, how is our body dealing with fat and nothing gullible to something that sounds so simple. I really face hard facts in my book for myself. And some people find it depressing. So, talk about the effect of leptin, how we have to eat less after we've lost some weight compared to someone who hasn't lost weight.

And it's almost like they want to opt for a different diet book that says, "Well, it's easy. Just eat these herbs and you'll be fine." And it seems like people don't want to take the hard pill that they have to swallow. They would rather have fake news that's happy than to deal with the facts of science. I guess, I'm different. I will deal with it head on. I think more people are willing to do that. Take this. It's not easy. But you can do it. Even though it's hard, you can still get through it and you'll be happier for it. I think the more we educate ourselves and are really ready to accept the facts about fat the more we'll be able to manage it.

Robb: Oh, yeah, I completely agree. And it will be interesting how my second book goes because I take, I mean, the whole point is there's not a one size fits all diet and here's some orienting directions and now we need to go out and explore from there. Whereas the first book was this Paleo deal and it kind of detailed low carb for the most part and then play with carbohydrates but it stays within the Paleo sandbox.

For a lot of people, it works great. And for some other folks, it really wasn't the brochure experience. And in the last six, seven years of working with folks, I think clinically I've figured out a much better system for helping people move

through that process. But what will be interesting is does anybody care to dig into the nuance? Do they just want that black or white deal? I guess, in that case, then you just have to keep fishing around for the person that is selling the particular flavor of the thing that you need and then it will miraculously work or you can use something more like what you do in your book which is a systematic process where anybody could get in, assess critically where they are, and then start moving in a testing direction to figure out how to do things.

Sylvia: Yeah. It also depends on how much do you want it. Fat loss isn't easy. Especially once you've gained a significant amount, it's not easy. But people, research shows us that people who are successful dieters, they become really successful dieters that managed to keep weight off for a year or more, there's something that happened that really motivated them. Like they had a diagnosis, some health issue caused by their weight.

Or they saw a picture of themselves in an all time high weight and they were really shocked. There's some kind of emotional event that motivates them. And those same people who are buying all the junk food then at the store are now motivated and determined to not buy that. They go into that same grocery store and buy totally different foods and act differently. How bad do you want it? Are you just kind of playing with it? Like, yeah, I'll try this diet and see what happens. Or you're really, really serious that you're going to lose weight this time?

For me, it became a point where I was really serious. I was just tired of it. I felt like I'd yoyo-ed all the time and I just got to this point that I had to understand it. And once I did, I went on the path that was so easy. I used intermittent fasting to get rid of some really stubborn fat. I do high intensity interval training on a fasted state which is not easy. But it got easier with time. But to get through that period of a few weeks where I was really getting into that mode, it took a lot of motivation for me.

I guess, that's another thing is people have to really decide how much do they want it and if you really want it, it's there. You can have it. It might not be easy but it will be worth it in the end and it will get easier with time. And so I hear what you're saying completely. There are some people who they just keep looking. And even when I talk about this book and the findings, I can tell there's some people who don't really want to do this. They don't want to take the hard way and they're still really looking for something easier. You could be heavy. That's another conscious decision you can make.

[0:24:59]

I don't really want to go on a diet. I just want to be healthy. And you can be fit but fat. I tell the story of sumo wrestlers who managed to do that. But do make a

conscious decision just where you are on the spectrum. Educate yourself on fat. Know what you're up against and then decide where you want to be.

Robb: Where do you feel like -- We have some, I guess, societal pressure from the media and whatnot that probably puts everybody's body fat level probably about five or ten points below what is really optimum or sane. But where do you see that -- And clearly there's some genetic differences, some sex based differences. But what's a pretty healthy body fat level? If we didn't have a world of processed foods and 24/7 entertainment so we're dysregulating our circadian clock and all that type of stuff and everybody was kind of finding a pretty good pathway. What's a pretty good body fat level for both men and women for kind of optimum health good energy mitigating the risk of things like type II diabetes and whatnot?

Sylvia: Yeah. Again, that really depends. It depends on where your fat is. Do you have more on your subcutaneous layer? Do you have more in your visceral layer? I do tell the story of sumo wrestlers in the book and they're an interesting book because fat also releases a hormone called adiponectin. And adiponectin actually helps guide fats from your bloodstream into your subcutaneous fat and it keeps it away from your visceral fat.

And so sumo wrestlers, even though they're 400 pounds, they eat 5,000 to 7,000 calories a day, clearly they're obese, they're actually metabolically healthy. And it's because most of their fat is stored in the subcutaneous layer. And so this is where fat is your friend. Their fat is actually their friend. That adiponectin that fat is releasing is actually keeping their body healthy in a way. And exercise promotes the release of adiponectin. If you are heavy, as long as you're reducing your visceral fat, keeping it clear, your subcutaneous layer is the healthier place to store your fat.

So, although best not to be too fat overall, if you're going to be heavy, it's possible to be fit but fat. BMI has been a measure for a lot of people and, I think, that's a really good measurement. That's just a ratio of height and weight. And so a body builder with 10% fat will have the same BMI as someone who's obese. And it's not a very good measure at all. And then discovering there's even people who have a normal BMI and they actually have a much higher fat layer. And so like Caliper test, the weight to height ratio is a little bit better than that.

And it does really varies. But again, it really greatly depends on where is your fat. And so I don't want to throw out just a strict number because I'm not sure that's the way to go about this anymore, BMI measurements and then straight numbers. It really depends on where your fat is.

Robb: I love it. I love it. That's great. I love it. Could you help folks understand once they work through kind of the why part of the book, what is fat, what are its implications, here's all these nifty stuffs that it does that would never really consider, then you have really detailed plan to help folks get started in affecting some body composition changes. Can you walk folks through that process?

Sylvia: Yeah. And so this isn't really a diet book per se. like I said, there's not meal plans in here. It's not like what do you do every day? What is it is a lot of education on fat and why a certain diet might not be working, why you're gaining weight a little bit more. So, I think, things that people can really think about. What are we eating? Foods are the first things to look at. So, we can eat for our hormones. We talk about insulin right, not provoking too much insulin, not having too many sugars, not having too many carbs.

Because insulin is a very big correlator of fatness and not only that but diabetes and heart disease too. So, I think, keeping that down is very important. I think eating for your microbiome, leafy greens, these really tough foods, they're really good to eat. And so replacing a meal with something like a big salad add fats to it, add proteins to it and you do all those things but really think about your hormones when you eat.

It's not just caloric intake, not just fat has so many calories when you think about how you're provoking your different hormones. The other thing that helps too is that not eating at all. So, intermittent fasting is something I do. And again, that's for your hormones. Growth hormones peaks at night. And when you extend that overnight fast you can prolong the release of growth hormone. And that actually may bust through extraordinarily stubborn fat. It came right off with enough intermittent fasting. That was a good one.

So, there's the food aspect to it. There's activity as well. Again, I'm thinking hormones. So like there are certain exercises we do that prolong growth hormone release afterward. Strength building exercises like eight sets or four sets of eight squats and then leg presses have been seen to actually promote the release of growth hormone and testosterone, both great fat burning hormones.

Aerobic exercise for long bell, like a two-hour bell. I think there was one study where it extended growth hormone for 20 hours afterward. High intensity interval training actually is correlated to adiponectin release. And so I do that at least four times a week or so, hit.

[0:30:05]

And so, again, think of it not just in simple math, calorie in and calorie out. Think about your hormones, what it's doing. Those hormones add with time. You want

to increase the release of them. You can officially intervene. I know people who've done hormone replacement therapy and I write about that. But if you want a natural way of doing it, which is what I opted for, I write about that too. So, it's between foods, what you eat, when you fast, what kind of exercise you do that can help. And so there's food, activity.

Another important thing to think about here, it's really you have to train your brain for this because whatever diet you're on you have to stay on it for the long haul. So that whole leptin effect when we lose fat, we lose leptin, drives your appetite up, lowers metabolism, that effect has been studied for up to six years and they're not sure it really goes away. So, the diet you're on, you got to stay on this for years. It's not just a six months endeavor. Find something you really want to be on for the long haul.

And then train your brain to stay on it. Any change you make in your life whether it's just stopping swearing or being more punctual for deadlines, whatever it is, it requires an application of willpower and effort. And you got to train that muscle too, the willpower muscle, to stay on something for the long run. I actually did a whole chapter on the science of willpower just for that reason, because you can't come off of it. You're on this for years at a time. And it's like a muscle which means that you can try with small acts of self control and they actually help you build up to bigger ones.

So like people who stop swearing for two weeks, what they find is that they're able to deal with physical discomfort better after that two-week period. People who they studied, they have one group go to the gym and they paid them to go to the gym eight times in a month. Another group, they didn't pay them. They paid them to go only once, actually. And the group that was paid to go eight times just started going to the gym gullibly after that. It became habit.

And so there's all kinds of things we can do to build up our willpower, build up our habits that make it pretty, much easier to stay on a diet. And the other interesting part to know is that you have to take a break once in a while. Don't feel guilty if you come off your diet here and there. It's actually normal and you actually need to. Will power can be depleted and study shows that, say, health care workers, they're supposed to wash their hands all day.

Towards the end of the day they stop washing their hands as much. They just get really tired. But if you give them longer breaks in between shifts they'll continue to wash their hands in a more uniformed fashion. So, they need that break. And the same thing, there's another less experimental talk. But hand exercise. They have a group of people who hold the hand exerciser for a long time and then they split them in two.

The group that watches, they send one group to watch a happy movie, another group to watch the sad movie and then they come back and resume this exercise. And the people that watch the happy movie, they're all gung ho to go, this is exercise again and they'll stay on it better. But people watch the sad movie, have a lot of trouble with the exercise afterward. So, do give yourself a break once in a while, rechargeable power, muscle if you will. Just be sure to not fall down that slippery slope that once you come off you can't not be off. You're just like eating ice cream every day and i'll get right back on once you make the break from the diet. And that will help too.

Robb: I love it.

Sylvia: Yeah, so there's an easy acronym. It's like food, activity, training your brain is the FAT acronym. If I have to take everything I distill in the book and try to make it easy, that's the one thing I've come up with that I hope that makes it memorable.

Robb: That's fantastic. I talk with folks a lot about decision fatigue. And there's lots of things that pop up and just simply sleeping adequately really tops off that bottle of decisions that we have and like a short slept night, you start your day almost empty on that. And then if you have to make a decision about am I going to eat well today or am I going to grab the easiest thing that comes across my plate then you're going to opt for the easy stuff.

Because literally you just have no more decision making capacity at all. I'm a dad of two girls, couple of businesses, have some personal activity goals doing jujitsu and whatnot. So most of my day is built around decision making and by the end of the day I'm just smoked, absolutely done. But what I tend to do is on the food side is I have all that stuff kind of automated in what I have on hand and how we tend to cook in batches. So, at least on that side, it's kind of like, well, here's the food I have in front of me and this is easy and it happens to be reasonably good so I'm able to plug that gap and I don't need to make a decision when I'm in that really vulnerable state.

Sylvia: Yeah. That's great. Make life as easy for yourself as possible. I do very much the same things. The other thing about sleep is insufficient sleep will hurt your leptin levels. And we don't have lots of it. We have higher ghrelin levels. We have more hunger hormone. And they show this with shift workers quite a bit, people who have abnormal sleep. They tend to be obese.

[0:35:02]

And so sleep is great for decision making power and it's great for your overall health and it's one of the tools we have to work with. Sometimes, I think people,

after they read all this research they're looking for a silver bullet, like, well, didn't I come up with some great herb or some magical thing to kind of help people. The truth is there are things on the horizon that might help us in the end. I think there's some researchers looking at leptin replacement.

So, when people lose weight and lose leptin, if you actually inject some leptin back into them they do better. Their metabolism is a little higher. They're less hungry. We just don't have it yet. It's not approved for usage yet. There's some research around injecting brown fat to white fat, to help people burn off energy. That looks promising too. But again, it's not here. So, the things that we have here, those gastric bypass, if you're a candidate for that. There are drugs for appetite suppressant and there's a hormone replacement therapy.

But again, all of those have massive risk benefit profiles. What we do have here and now, it is diet and exercise. I know that sounds mundane but unless you're willing to take one of those leaps of a medical intervention or you're willing to wait for that magic thing down the pipe, work with the diet and exercise. Just be very intelligent about it. Do it not only calorie in calorie out. Think about your hormones. Think about your microbiome. Think about genetics. There are some genes that actually drive us towards us higher calorie food.

Viruses do too. And you just have to be aware of all these things that you can modulate your behavior, you're aware of what's happening in your body. And I know knowledge is power here. I interviewed a number of dieters for the book too and the more they understand what's going on themselves, the better they're able to fight the urge to eat and maintain their weight.

Robb: I love it. I guess, for me, trying to help people in that education process, at a minimum, my hope is that the guilt and the sense of failure and just kind of their throwing their up and saying, "Well, why me? Why is it hard with me?" And it's like, "It's not hard with you. It's hard for everybody." Our genetics are largely wired for completely different time frame and landscape and sleep and exercise and food and although our genetics have changed over time they haven't really kept pace with the rate of change of our environment and our culture.

You would be silly to assume that it would be hard to turn down everything in the snack aisle of the supermarket. That would have been a bonanza in the not so distant past when people didn't really know when the next meal was going to be found. I think really helping folks understand how they're kind of wired up to eat. Then at least then hopefully we can get beyond the shame and the guilt and we still have a lot of hard work to do. But if we're drowning under shame and guilt, we're just not going to get anywhere.

Sylvia: Yeah, it is harder for some and others. I mean, there are certain gene variants like FTO that drives towards appetite. People who have that, they are actually driven for higher energy foods, they have more fat cell creation. Another gene I write about is IRS1. And people who have that variant they actually create more fat cells. So, for some people it will be harder. I think that's okay. You just have to recognize if you're one of them and you have to decide that you're going to actually make the extra effort. And if you do, you'll succeed. It might be hard on the beginning, but personal trainers, I've interested a bunch and I know you work along those lines as well. And people are just not all the same.

So don't think that the picture of food you see in a diet book, you're supposed to eat that. It might be you have to eat less than that. Or it might be that you can get away with eating more. Everyone is really individual and so don't despair. Don't think that, "Well, I am failing. This diet is not working for me. There's something about it that isn't working for you but you can modulate or you can find a diet that's working for you, but you might have a harder time on it than someone else.

I interviewed one patient named Randy who actually was a -- He had a virus that actually helps him gain weight. And people have the 80, 36 almost double the risk of obesity, people who don't. And once he figured that out it's like he was enlightened and he realized that he's just not someone who can eat like everyone else. And he calls himself not part of the eating world. He's about 6 foot 2. He's 63 years old now or so but he works out a lot and he's in great shape. But it took that realization to understand that his body was different, that he can't eat what everyone eats. And once he figured that out, he really modulated. He's in great shape now.

So, again, don't despair. You might have to work harder at it but you can do it. People are capable of a lot more than they think, and I think knowledge is the first step. Their knowledge is power. Educate yourself on fat. Figure out what you have to do. It might be harder than you thought but you'll get through it. It gets easier with time.

Robb: Well, and I always like making the point that if you get to the end of this process and you've lost all those weight and you're just kind of like, "Well, I just like eating that food and that was a better life for me," then you can always go back. It doesn't mean you can't go back to doing that. But at least you can look at that from an informed decision and decide if this new way of eating and living, if the return on investment is worthwhile.

[0:40:04]

That's not too greasy abused car salesman pitch. Give it a shot and see how it works and then you can always change what you were doing somewhere down the road.

Sylvia: That's right. What I found too is I lost weight, and I've kept it off for years now, is that I can go off my diet once in a while. It's a set point. Just like your body doesn't like to lose weight or wants to stay at the same weight, it also doesn't like to gain weight. And so now the set point which I hated when I was trying to lose weight has now become my friend. Because unless I overeat for two weeks at a time I don't gain weight so easily either anymore.

And so take that to heart too. Once you finally do reach your target weight, after a certain amount of time, you can go off. You don't have to forsake those foods forever. Unless you're on a very strict ketogenic diet then I think it's harder to go off that diet. But on most you can get some flexibility. The thing to be wary of is dichotomous thinking and that's for people. They see things in black and white, either they failed or they succeeded.

And women are actually more prone to this than men. I write about this in *The Secret Life of Fat*, is that don't think because you've gone off your diet one day that you failed and now you might as well have ice cream the second day, the third day, the fourth day. Get right back on. In fact, one of the doctors I write about in the book, Michael Dansinger of Tufts University, who runs a very successful obesity program. It's one of the best value adds that he brings to this program.

I interviewed some of his patients too, is that when they go off they feel like they're failing and they're almost ready to give up. He coaches them back on their diet really quickly. He makes them stay on. And they feel empowered and they feel it's okay, I can have an ice cream once in a while and it's not the end of the world. And they go on to lose more weight than people who really just can't get over. They can't stand that they failed at something.

And so forgive yourself once in a while. In fact, he says that he really just needs 80% to 90% compliance on a diet. He doesn't expect 100% compliance. And it's one of the things that gets him results when he helps people lose weight, Dr. Dansinger. I think the more we look at that, don't feel a failure. Don't feel like you're meant to be fat. Don't feel like it's all a lost cause. We all go off sometimes. Get back on the very next day.

Robb: Well, you're one meal away from being back on track, so yeah, yeah. I love it. Dr. Tara, I really, really enjoyed the book, *The Secret Life of Fat*. Can you let folks know where they can track you down on the interwebs and also where -- The book is available everywhere, right, Amazon, Barnes and Noble?

Sylvia: Yeah. So, you can find me--

Robb: Where? Do you have a website or twitter, Facebook, all that type of stuff?

Sylvia: Yeah, sure. So, my website is thesecretlifeoffat.com. Twitter is Sylvia Tara, PhD and Facebook is also Sylvia Tara PhD. And you can either message me on Facebook or you can even email me. I think there's an email address on the website as well. People are getting in touch. I think a lot of people. And I'm so happy that they feel empowered. I've heard from people saying that they feel ready to take on the battle again after reading the book. And so that was my whole purpose, just to let people know what fat is doing. Appreciate your fat. It is very important. But at the same time understand why it's hard to lose. And hopefully, everyone finds the determination to really get in there and stay persistent in the battle of fat.

Robb: That's awesome. Well, again, I really enjoyed the book and definitely enjoyed having you on the show. Best of success with this. I think you just did an amazing job with the book.

Sylvia: Thank you so much. Yeah.

Robb: Very exciting.

Sylvia: Thank you. And it was great to be here. I really enjoyed our talk.

Robb: Well, thank you. Maybe somewhere down the road here, we'll let a couple of months go by and then we'll see if folks are fired up for a Q&A session, maybe we can pull you back on and do some direct reader questions for you.

Sylvia: I'd love that, yeah. Let's know what people think. All right, great.

Robb: It will be far more interesting than having me jab about you. That will be a lot of fun. Awesome. Thank you, Dr. Tara. We'll talk to you soon.

Sylvia: Thanks.

[0:44:01] End of Audio