



EPISODE 858

Burn More Fat This Year!

**With Guests Thomas DeLauer & Dr. Benjamin
Bikman**

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SHAWN STEVENSON: Welcome to the Model Health Show. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today. Let's do this! Can we make an agreement? Can we make an agreement together to get in the best shape of our lives this year? We have the power in our hands to make this happen. We've got to make ourselves a priority. Alright, so let's give ourselves permission to take good care of us. To love ourselves more. To take good care of our mental health. To take good care of our fitness. And most importantly, to know, and this is for people who feel like I feel. It can be sometimes difficult to make ourselves a priority because we care so much for everyone else.

We care so much for our friends and family. We want to show up for them. And so to understand that us taking good care of ourselves this year, getting into the best shape of our lives this year, it's going to help us to be of better service to show up as our best selves for everyone else. So to make ourselves a priority, it can change the game for everyone else too. All right. So let's give ourselves this permission and let's get into it. All right. What I decided to do was to give you some of the very best fat loss advice that we've had here on the model health show, and really digging in on. How this process of fat loss actually works, what's going on inside of our amazing bodies, and also what are some of the science backed proven.

We've got one of the most renowned research scientists in metabolism in the world lined up for you to share his insights. We've also got one of the most renowned. Nutrition and fitness experts on the planet who himself, Tris, he was almost tipping the scales around 300 pounds. Now he's one of the most fit guys walking around and impacting the lives of millions. So we've got some incredible insights for you lined up for today on this very, very special episode. Now, before we get to our first expert, I want you to remember that we can give ourselves permission to have more ease and grace in this process as well. We don't have to struggle. Now there's a difference between something being challenging and something being a struggle. All right, we can jump off the struggle bus. And understand, yes, this is going to require us to grow, to change. We're going to go through some challenges. Sometimes it's going to be hard, but we don't have to struggle.

Give ourselves permission to experience more ease and more grace in this process. And what I found is that part of that ease is literally making it easier for ourselves. Making it easier for ourselves. We have a whole slew of reasons why fitness can be difficult while working out can be difficult. Part of that can be access part of that can be time. There's so many reasons that we can go through and check off these different boxes. I know about them because i've experienced all of them and working with countless people who've experienced all of them. But making it easy is half the battle and shout out to gi joe, I guess. But making it easy and part of that is and something that I did today. I had a shorter time today to get my investment in myself, my fitness in, but again, I'm not going to put myself on the back burner this year.

No, I say no. And I command and demand that of myself. And I offer up that permission slip to you as well. And so one of my mantras this year is that you can't lift what you do not have. I'm not trying to get Star Wars Yoda like on this, but you can't lift what you do not have. And so having access to a couple of simple, but highly effective pieces of fitness equipment at our home helps to cut down that complexity. It helps to remove the obstacle of having access to something. And the tools that I use are incredibly simple for the most part. Most of the things that I use on a consistent basis are my primal bells from on it, right? So these are kettlebells that have these incredible designs. I use my steel clubs, my steel maces from Onnit.

And I often throw on a weighted vest and do a lot of different stuff as well. Whether it's pull ups, whether it's, you know, just going for a walk and making that more challenging, but these are the things that I use most of the time when I'm training at home. And these are pieces of equipment that I highly encourage you to have on hand as well. Go to Onnit.com/model and you can get 10 percent off all of their incredible fitness equipment. Plus they've got an amazing lineup of human nutrition and performance supplements, several of which have been put through randomized placebo controlled clinical trials to affirm their effectiveness. So they really are operating at a high level, highly recommend checking them out. Head over to Onnit.com/model for 10 percent off store wide. That's O N N I T. [com/model](https://Onnit.com/model).

And now let's get into the special compilation with some of the very best fat loss advice from some of the top experts in the world. First up we have a segment from Thomas DeLauer who's an expert in diet, nutrition, and mindset and who was motivated by his own health and fitness struggles. Being close to 300 pounds at one point and finally accessing the keys for transformation that were effective for him. And he's been able to impact the lives now of millions of people. He has over 3 million subscribers on YouTube, for example, and that's just one platform. Now in this segment, he's going to share a basic rundown of how the process of fat loss actually works. The difference between releasing stored fat and actually burning fat for fuel. And a plethora of tips to burn stored body fat once it's released. Let's dive into this segment from the amazing Thomas DeLauer.

THOMAS DELAUER: I'm going to give a background of how we burn fat in the first place that paints a picture, you know, we'll keep it simple, but we burn fat as a result. Typically of catecholamines, which are things like adrenaline, norepinephrine, even cortisol. What these are, are essentially catalysts that say, Hey, there's the right amount of stress that it's time to allow hormone sensitive lipase to snip off basically the glycerol backbone of a fat molecule. You've got triglyceride, which is fat in its storage form. When there is just enough stress, i. e. exercise. It's enough stress to say, Hey, we need to snip off the glycerol backbone. So triglyceride is three fatty acid molecules bound to a glycerol molecule. Okay, that's literally fat in storage form. Tri, three fatty acids, glyceride, glycerol backbone. What happens is when you burn fat, hormone sensitive lipase, which is an enzyme that is triggered by adrenaline or cortisol or epinephrine, It's job is to act like a pair of scissors and cut those fatty acid molecules off of the glycerol.

So then you are left with three fatty acid molecules. And they're floating around and they go into the mitochondria and get burned. They go into the cell and get burned. So you've got fat mobilization and fat burning, which are two different things, right? So that's how that works. And then the glycerol backbone, in case people are wondering where that goes, that eventually just goes to the liver. That goes through what's called gluconeogenesis can get reconverted back into glucose. It can get broken down and excreted a number of different things. So, Now, the reason that I mentioned that is, remember earlier I talked about the influence of cortisol on fat in a negative way. Well, if we reverse that whole situation, what is

the best way that we can inflict just enough stress to get a high amount of concentrated stress so that our body burns more fat?

And in this particular case, we could even theorize or speculate that it would be more belly fat based on what we know with the glucocorticoid receptors. And there is some evidence to back this up. However, I can't go on record and say that hey, this is guaranteed gonna only burn belly fat. But the evidence is quite strong against like shorter bursts interval training that kind of fat loss means simply because you are inflicting quite a bit of stress. But you're doing it for a short amount of time that your body can actually recover from, the dose makes the poison. If you were to go out and you were to run 100 100 meter repeats, you would be toast and your cortisol levels might be elevated to such a degree that it's actually counterproductive, right?

Again, I can't say wholeheartedly, that's gonna make you gain fat. It's probably not because you burned a lot of calories doing that, but it's a lot of stress on your body. It's about finding, you know, the dose that makes the right poison in this case. And so it's like for high intensity interval training, the evidence has been suggesting that like, yeah, this is fairly, really effective, especially with visceral fat with these that have high glucocorticoid receptors. Now you get into territory that is, opens you up for scrutiny when you talk about this. So I'm careful with it. But there's also a lot of evidence that one of the reasons say fasting or intermittent fasting works for so many people is because when you go periods of time without eating, you're elevating those stress hormones.

But again, it's one of those things where you don't want to be doing it for too long. So there's a large body of evidence. And there's also, you know, counter bodies of evidence to this too, that suggests that, Hey, like when you do your training in a fasted state, perhaps you are increasing those catecholamines enough, just a little bit more that maybe you could squeak a little bit more fat reduction out of it that way. The reality of it is probably just the fact that you're in a deeper deficit at that point. So maybe it's just tapping into the fat a little bit more and that begs the question of like if you lose fat as a whole You're going to also lose belly fat. So it's hard to specifically spot reduce but in terms of exercise your best bet for spot reduction is going to be aiming towards maybe like 30 second intervals with like a one to two

minute recovery, than a 30 second interval. You know, high intensity and then recovery high intensity and then recovery.

SHAWN STEVENSON: Mm hmm. All right, you mentioned a couple of really great things there. One of them was a how our bodies release that energy, break down those stored fatty acids. And then you mentioned the potential because it's one thing to get released. It's another thing to get burned, right? So there can be a reabsorption in some ways. And one of the forms of exercise seen to actually displace some of that released energy, you just mentioned this with the apples examples is like, you better go for a walk. That can be really helpful. So let's talk a little bit about that We know high intensity interval training has been a popular term recently. Are we doing it? Maybe not. Maybe we haven't really got the memo But I'm glad that you're bringing this up in the context of like specifically targeting belly fat. But now there's the emergence even though it's been around a long time, but more, more really intelligent people in this field are talking about LIS. Let's talk about that.

THOMAS DELAUER: Heck yeah, man. I mean, that's, that's in my jam. I mean like just a low intensity, steady state, just going for a walk, you know, zone one zone two. I mean, you are in a category where as a percentage of the calories that you're burning, you're burning a heck of a lot more actual fat calories. Now, You got to be real here, like if you go out for a run in zone three or pushing into zone four, the absolute amount of calories you're going to burn is going to be more. There's no denying that. Nobody's saying that going for a run for 60 minutes versus walking for 60 minutes, that walking is going to burn more calories. But as a percentage of the fuel utilized, you're using much more fat, right? As a fuel source, the higher you start going up in the intensity. And this is coming from someone that loves my HIIT cardio, that is a runner.

I love my high intensity cardio, but I also keep it real because I know that like, if I go for an hour and a half walk and handle a bunch of, you know, work calls and zoom calls on a phone, the phone, when I'm. I know that, hey man, I just walked for 90 minutes or two hours and I might have burned 600 calories or so, but almost all those calories are coming from fat because I haven't been tapping into a state where I'm going out of what's called beta oxidation. And a good way to kind of put this into a perspective that people might see, like

caffeine, for example, caffeine mobilizes fat. That gets people excited because that thing's, Oh, if I drink some caffeine, I'm going to be burning fat. Well, caffeine mobilizes the fat. But now it is your responsibility to take that fat and burn it.

So the reason that caffeine is an effective fat loss aid is because it does part of the step for you, but it does not absolve you of your duties to still go burn the fat. It did mobilize it. But now it's available to be burned. So that's why I always say like, yeah, man, like go have a cup of coffee and then go for a walk, like utilize those lipids that you're circulating. And the reason that I mentioned that is just because it just illustrates this point, right? So it's like you go for a walk, like the fats are hopefully already somewhat liberated. One of the little hack that people might like to is like, there's some pretty solid evidence that sitting in a sauna, mobilizes fat very effectively.

It can also actually oxidize too because it's just your heart rate goes up. So sitting in a sauna, mobilizing fat, and then going for a walk right after you get out of the sauna, you've got fats mobilized. You've already got them circulating. It's a great time to go and oxidize them. And if people ask, well, what would happen if I just went for a run in that case? Well, you'd still burn fat, but the problem is that you also start tapping into your carbohydrate stores. You run the risk of breaking down muscle, which we're now seeing as one of the largest predictive indicators of longevity and also leanness. So you want to do what you can to preserve muscle. It doesn't mean that you never do higher intensity cardio, but the nice thing about walking is yeah, you're preserving muscle. You're very unlikely to break down a bunch of muscle going for a walk, unless you are in a very severe deficit. I say, uh, first and foremost, whenever you possibly can start your day with movement, just because that that's like, you're, you're checking so many boxes there.

Like when you start your day with movement, you are putting yourself in a spot where you've set the framework for the day. You've also gotten the hard part out of the way. You've also set and sent a message to your family that you are important. And that you are taking care of yourself and it sets the tone for them too. But it also triggers hormones and changes that happen throughout the day that might make you make better choices. So then it makes the second part, which is eating wholesome foods and shopping the perimeter and cooking at

home. It makes that part that much easier, right? So that's number two is eat at home. Like you've got an amazing cookbook and that's not just a plug for you, right? It's just, it's a real thing. Like whether they pick up your cookbook or another cookbook. Cook at home.

SHAWN STEVENSON: They should probably pick up.

THOMAS DELAUER: They should probably pick up yours. Probably just because he'll kick my ass on the way out if I say it like that. But the, the reality is that just eating at home, like it's, I went through a phase when our kids were young where like we started to eat out more. Granted, like we would poke around it and we'd kind of make it work. We'd had our select things, but we were just tired, right. And I felt the connection of our family, like break apart, right. But I also felt like it was like, my gosh, I'm like jumping over dollars to save nickels, like figuratively speaking with my health, like I'm like doing it and do all this stuff. It's so difficult. And when we brought it back to cooking in the house, it was so much easier to maintain my body composition. My thought clear. I just, everything just came easy. I slept better. You don't have the mystery things to say what you want, but you know, like MSG keeps me wide awake. Like if I go out to eat and I have MSG. I'm wired because it's, it's, yep.

It's an excitotoxin. It's designed to do that. So I feel amped. So that's a huge one there. You know, the other thing is just a simple grocery store trick, which a lot of people know, but that's just like, you know, shop the perimeter, right? The perimeter is where the magic happens. And the perimeter is where, the limited shelf space, but that's all you really need, right? The stuff on the aisles, it's the garbage. You don't really typically need the, you know, the processed stuff. The frozen section's fine because there can be some good stuff in the frozen section. You know, and then, you know, additionally with that, it's like, if you're going to prep, prep like one part the part that's most difficult for you. So this has been a trick of mine for a long time because meal prep is really difficult for people. They say I don't want a meal prep because it's just too much to take on. Well when you try to meal prep your carbs, your proteins, your fats, and you're thinking of it like a bodybuilder. It's daunting and it's depressing.

But when you say like, okay, what is the hardest thing for me to do? And typically for people, it's like, it's hardest for me to get the protein in. It's hardest for me to, okay, well then find your favorite cookbook, find whatever, and make up a bunch of just the protein part. Because that's the part, everything else you can fill in the gaps easy. Like you can, you can always microwave a sweet potato if you need to. You can always like, Cook up a bowl of rice. You can always grab an orange or an apple and get your carbs. You can always, it's easy to, it's easy to get those like ancillary things, but the protein is the toughest one. And if you can nail the protein, the rest kind of falls into place, at least from a meal perspective.

So, but you know, some people are like, I have no problem getting protein. It's hard for me to find good, healthy carbohydrate sources. Okay, then prep the carbs. So just prep the one thing that is the most difficult for you. It was an utter game changer for me because it's like, now I go home. I've got my, I can grab my protein. I've got it. Okay. Wife made delicious turkey burgers. Boom. I got 12 of them, so that's no problem. All I need to do is fill in the gaps, but my one most important piece, that protein is prepped and ready.

SHAWN STEVENSON: I love it. So, that's a game changer because a lot of times when we're obsessing about doing meal prep, it's like, it's the whole thing and it makes it more complicated. Just even making two proteins. What have we, what about that? You know, just throwing something in the crock pot, maybe something in the oven. Then you got your proteins for the week. You know, that's a great tip because it, like you said, it is generally much easier to like we could throw something in the rice cooker or whatever the case might be. But the protein is what tends to take more time in the preparation as well. So that's awesome. Start your day with movement. Eat at home. Is there anything else?

THOMAS DELAUER: Those are the basic ones, man. I mean, we could get into the particulars of, you know, specific, you know, working out and everything like that. I would say if you had to like make a spreadsheet of like how you can kind of like carve up your workouts, I would say four days per week of doing some kind of cardiovascular training and three days a week of resistance training and have maybe two of them overlap. So you have some rest days, right? It's just like, you don't need to do anything crazy and like find that minimum effective

dose cause everyone wants to like. Go hog wild. And like, they're like, I'm going to start a workout routine. And it's like, you can get by with two days a week of resistance training.

Like it's totally fine. That the minimum effective dose that leaves you feeling fresh that you can get down and play with the kids, do things like create your environment, right. We talked, you know, you were on my, my channel, not that long ago. And like, we were talking about just walking and stuff. There was a study in, I think it was in endocrine reviews that took a look at like walkable cities versus not walkable cities. Okay. Not even looking at the demographics or how much the people walked. It was the mere size of the blocks, were there sidewalks, things like that. It was purely like looking at that blueprint.

Walkable cities had a 43 percent obesity rate, which is still sad, but the non walkable cities had a 53 percent obesity rate. So 53 versus 43 and the non walkable cities had a 30 to 50 percent higher diabetes risk. Simply by creating the environment that encourages movement, right? So little things that you can do. Setting your gym shoes out in the morning. Having your clothes ready. All these things that would take willpower, right? Creating the environment that you establish new habits to walk more. Park further in the parking lot from the grocery store, you know, like, take your phone calls while you're on a walk.

You just, you got to create that environment because your environment dictates everything. Like you talk about the microculture in your home with food and stuff like that. What about the fitness microculture in your mind? Like people say, like when they move to houses that are like on highways where they can't go walk, like they're like, Oh, I used to be so healthy until I moved like to a place where I couldn't really walk. My wife and I just bought a different house and the reason we bought it outside of it being a great home was, oh my gosh, this is the most, the walkability is amazing. This is going to change our life because right now we're in a spot where we can walk, but can't really walk to anywhere. You know, and so just not saying everyone has to get up and move like literally move houses, but that environment is huge.

SHAWN STEVENSON: Yeah, and just to think through that lens as well. And I love that so much man.

All right. I hope that you enjoyed that first segment. We've got so much more for you just insight after insight. We're gonna keep stacking it and stacking conditions. And just to reiterate, one of the things that Thomas noted was the difference between mobilizing our stored fat and actually burning that fat for fuel. And one of those ways I love that he rattled off a couple of great strategies for mobilizing stored body fat. One of them was sauna, right? The sauna is great But a little fat loss boosting hack is to go for a walk after your time in the sauna, right? So it's going to mobilize some stored body fat, but this is a way for us to actually get it to the mitochondria to use it for fuel. So really, really great insights. He mentioned caffeine in the context of fat loss as well.

And caffeine is obviously used in a huge number of fitness related products, but more traditionally in things like coffee, tea and chocolate. And so if you're going to have that cup of coffee, it's going to mobilize some stored body fat. And how about go for a walk afterwards and put some of that mobilized fat to use and burn it off. So these are those little subtle things. Now, of course, some people are like, well, I drink seven cups of coffee a day and this fat isn't going nowhere. Well, yeah. Of course, if we're not utilizing the stored fat and just putting in all the additional energy into our bodies through the different foods we're eating and whatnot, it's going to get reabsorbed.

Because again, there's a difference between releasing and releasing. the stored fat and actually getting it to the mitochondria and using it for fuel. So if you don't use it for fuel, the majority will get reabsorbed, aka re esterified, and that's okay. In fact, a study published in Endocrinology and Metabolism uncovered that up to 70 percent of released fatty acids are re esterified. But walking after having caffeine definitely increases the amount of freed fat. that gets burned for fuel. How much? Well, a study cited in the American Journal of Clinical Nutrition found that the caffeine in coffee can temporarily increase our metabolic rate by three to 11%. And most of this increase in metabolism is caused directly by an increase in the release and the burning of fat for fuel.

All right. So again, this is something that's been utilized for thousands of years by humans. So the sourcing of where we're getting our coffees and teas and things like that absolutely matters because you can be grabbing yourself some coffee, but it's coming along with pesticides and other chemicals that are noted to be obesogens that do the opposite that can essentially block the ability of your body to utilize stored fat for fuel. So, getting organic coffee is just one of those barriers and that should be a given at this point. But for myself and what I made for myself and my wife today is organic coffee that's also infused with science backed medicinal mushrooms like chaga and lion's mane. And researchers at the University of Malaya have been studying the lion's mane and affirming how remarkable it is for cognitive function, for actually stimulating the growth of new brain tissue and traumatic brain injuries studying that in that context.

And so the data is still being collected, but it's really fascinating to see this resonance that lion's mane has with the human brain. But in particular, With the cognitive function side, there are several studies indicating how lion's mane can help to reduce levels of anxiety in particular when we're put under stressful conditions. So super fascinating stuff. And what I'm talking about today and what we had today was the Think Organic Coffee Blend from Four Sigmatic. Definitely head over there, check them out. It's [foursigmatic.com forward slash model](https://foursigmatic.com/forward-slash-model). And you're going to get 10 percent off of their incredible coffee blends. But also if you're not a fan of coffee, that's okay.

Everybody's invited to this party. They've got dual extracted medicinal mushroom teas as well. So they got Reishi, Lion's Mane, Chaga, whatever you're looking for. And also they got some incredible hot Cocos that you can utilize. And this is one of my youngest son's favorite things actually to this morning. I made my wife and I the Think Blend coffee, and I made my youngest son their incredible reishi hot cocoa. All right. And so Rishi is noted as a remarkable immunomodulator, great for relaxation, calm, and again, most notable in numerous studies for its benefits with our immune system. So again, head over to check them out is foursigmatic.com/model. That's F O U R S I G M A T I C.com/model. And now moving on in this powerful fat loss advice compilation.

SHAWN STEVENSON: Next up, we've got a professor and metabolic scientist who's in the lab doing biopsies of body fat, studying body fat, and uncovering the real factors that changes it. His work has been published in the most prestigious medical journals, and he's an excellent teacher who's giving us insights into mastering our metabolism and I'm talking about the one and only Dr. Ben Bickman. In this segment, he's going to share with you why you must address insulin and inflammation to effectively reduce body fat. He's gonna share four science backed principles for supporting fat loss, and much more. Check out this segment with the incredible Dr. Ben Bikman.

DR. BENJAMIN BIKMAN: First thing, and this will blow some minds, you cannot have a fat cell grow unless insulin is elevated. It is totally, completely, utterly impossible. Now, I know people want to say, Oh, well, calories matter too. They do matter. But if you just take out that one single variable, if you deprive a fat cell of insulin, it can not grow. 100 percent full stop. Take this as from a guy who literally grows fat cells in my lab all the time. In a human model, you even see this. If you have a person with type one diabetes. They can eat, they can eat 10,000 calories in a day. And all they do is skip an insulin injection and they will be as skinny as they want. In fact, this is so well known to that diabetic that it's a known eating disorder. It's more of a hormone disorder. But if they just skip their insulin injection, they'll be as skinny as they want. It's a condition called diabulimia. You only eliminate one single variable, the insulin. They cannot not only grow fat, they can't even hold onto it. So as much as calories matter and they do.

Insulin is an absolutely necessary signal to tell the fat cell to grow. And then the calories help fuel that growth. As the fat cell starts to get so big, it's like a water balloon that's getting to the point of maximum growth. And if you continue to put water in that balloon, it's going to pop. And so as insulin is high, and there's sufficient calories to fuel the growth that the insulin wants the fat cell to undergo. The fat cell starts to tell insulin, Insulin, you continue to make me grow. But I can't grow anymore. So I'm going to stop listening to you. And so the fat cell that's grown so much becomes insulin resistant to stop growing. So it's a survival mechanism. The poor fat cell is it literally, if it continues to grow, the membrane cannot hold it together and it will start to fragment and literally start to pop, which will be very unhealthy, cause a lot of inflammation and there'll be a messy process in that fat tissue to try to clean up.

Very unhealthy. So the fat cell becomes insulin resistant to stop further growth. At the same time as the number two, as the fat cell gets bigger and bigger, it starts to get pushed further and further away from the capillaries, which is the main blood vessel where the blood is giving up its oxygen and giving up its nutrition to a cell and taking all of the waste products away from a cell. So if a cell is getting pushed too far from a capillary, it starts to suffocate. The technical term at the level of the cell is it starts to experience hypoxia. It becomes hypoxic. And if the cell doesn't get sufficient oxygen, once again, it will die. It will be a very messy process and we don't want ourselves to die.

And the fat cell doesn't want to die. And so it starts leaking out these pro inflammatory cytokines, this word I mentioned earlier. Some of those cytokines kind of act like a trail of breadcrumbs where when the capillary senses those breadcrumbs, it can follow them back and start growing a new vessel to feed that suffocating fat cell. So the fat cell has another mechanism to ensure its own survival to correct its hypoxia in this case. But in the process, it is now leaking all of these pro inflammatory cytokines throughout the entire body, causing what we commonly call subclinical chronic inflammation. So it's not like their inflammation has reached the point of an autoimmune disease or a cold or flu, but it's higher than it should be in someone who's otherwise healthy. And it's all because of the hypertrophic fat cell.

And so we have the high insulin and the insulin resistance as the fat cell tries to stop growing. And then we have the inflammation as the fat cell tries to correct its hypoxia, both of which just contribute to insulin resistance throughout the body. So I generally say the fat cells, the first Domino to fall. And then when the fat cell becomes insulin resistant, it's promoting this insulin resistance to other tissues like the liver, like the muscle, like the brain. You know, causing fatty liver disease, causing sarcopenia or wasting of the muscle or causing Alzheimer's or migraines or depression in the case of the brain. The three, what I consider to be primary causes of insulin resistance. And I use the term primary very carefully and deliberately because there are other causes or other contributors of insulin resistance, but they don't meet my standards of being called primary. So there are secondary causes, which for the sake of time, we won't get into.

So the primary causes, which are by my standards, stimuli that are capable of causing insulin resistance on their own. So independent of any other signal and have also been shown to cause insulin resistance in every biomedical model used in science. So in isolated cells growing in a little Petri dish in laboratory rodents and in humans, you know, the top of all creation, we go all the way through this and we can see that these three things will cause insulin resistance. And you just mentioned all of them, stress, inflammation. And then insulin itself. So to the astute listener, they can already start to see a bit of a vicious cycle that can be created here. And in fact, I'll end on that one just as I kind of cover these briefly. So the first one I'd mentioned is stress. I define stress by an elevation in the prototypical stress hormones.

Those stress hormones are adrenaline and cortisol. In both instances, if you increase either of those hormones, they start to really want to push up blood glucose. That's the one thing they have in common. Cortisol and stress are very, cortisol and adrenaline rather are very, very different hormones. They have practically nothing in common. Except they really want to increase blood sugar levels. That puts them at odds with insulin, whose most famous job is to lower blood glucose levels. And so the more those stress hormones are creating an upward pressure on the glucose in the blood, well, the harder insulin has to work to bring it down.

Thus, it's no surprise that they cause insulin resistance. I believe the most relevant variable then when it comes to stress is sleep, actually. Even one bad night of sleep can cause quantifiable, demonstrable insulin resistance the next day, very, very well established. So I focus on sleep as the most relevant variable when it comes to stress induced insulin resistance. And then just moving on to inflammation, any time immune signals are up in the body. And this is most obvious with things called cytokines. Cytokines are basically little pro inflammatory proteins. These, these little, well, almost like a pro inflammatory hormone coming from the white blood cells, you know, macrophages, for example, are releasing a lot of these cytokines, but a lot of other cells can too, like fat cells, when they get too big, they can contribute to this increased, uh, inflammation.

So anytime inflammation starts to go up, it directly causes insulin resistance throughout the body. And in most instances, I believe that's primarily relevant because of food sensitivity, as

well as fat cells that are too big. But then mentioning insulin brings me to the third point. And I end with this point because I do believe it's the most relevant, which is chronically elevated insulin is a cause of insulin resistance. It's in fact, the one that I believe is the most powerful and prominent of all of the variables. And, and this is why my approach generally to resolving insulin resistance starts with this heavy scrutiny of carbohydrates, because we have three macronutrients in our diet. I mean, just to put things in perspective for people so they can appreciate how relevant this is, because I could imagine someone listening, thinking, well, my insulin isn't elevated all the time.

Let me just sort of, I suggest to the audience just how wrong that view is, at a global level. So we have three macronutrients, the three things that we eat, proteins, fats, and carbohydrates. Fat has no effect on insulin. You know, if you and I were to eat a stick of butter and we measured our insulin for three hours, I've done this kind of study, not with butter, but with oil, with olive oil. There is no effect on insulin. It's an absolute flat line. If we did the same by eating pure protein, maybe we get a little bit of an effect. Some people have a higher effect. Some people have none. It's going to be, I guess we'll say little to no effect with pure protein. Then when we eat pure carbohydrate now, you know, buckle up, insulin is going to go up by 10 to 20 times, and it's going to be up for about three hours.

And this isn't a healthy insulin sensitive person. This is in a college aged male. Who's healthy. This is the most metabolically sound person among the entire population. Take a 20 year old man. That guy can handle all kinds of metabolic abuse and shrug it off. And yet, even in his body, give him about 50 to 70 grams of 75 grams of glucose. It's going to take him three hours to clear it. And his insulin would have gone up 10 to 20 times. Now, however, if we take the average adult, which is insulin resistant, it's going to take them up to five hours to clear that glucose and eating 50 grams of glucose. That's pretty easy. And you don't even have to, you don't have to bat an eyelash at that.

And you already found you've eaten it. Even still. If you take that young metabolically bulletproof 20 year old man and give him about three to four hundred grams of carbohydrate, of glucose, which again is not hard to do, it's very easy to drink or eat that much. Even in his body, his insulin is going to be elevated for 10 hours. 10 hours. So now let's

just take that information and put it in the context of a standard, I was going to say standard American diet, but the more accurate term is a global diet because globally, 71 percent of all calories come from starches and sugars. So they're carbohydrates. 71 percent of all the calories we eat at a global level. And when you look at, even sort of more microscopically, we've been told to eat six times a day. And so you take someone who's eating six times a day, including an evening snack and 71 percent ish of what they're eating is coming from carbohydrate. Everything starts to become clear where the moment a person wakes up, maybe finally when they've woken up, their insulin has finally come down, overnight.

It's been working hard overnight and they finally get to a kind of fasted level. And then what do they do? They immediately spike it by drinking and eating refined, starchy, sugary food. And then insulin has peaked within about 30, 45 minutes to an hour, right? As it wants to start coming down, maybe two hours in, they of course have a mid morning snack and they bump it back up and then their lunch and their afternoon snack, supper, evening snack. And so every waking moment is spent in a state of elevated insulin. And depending on what you eat before you go to bed, and let's face it, most people don't eat protein and fat. They want something salty and crunchy or sweet and gooey. So it's going to be some refined carbohydrate coming from a bag or a box with a barcode. And thus they go to bed having just dumped in a hundred or 200 more grams of glucose into their bloodstream.

And now insulin is elevated, for hours, while they're sleeping. And one final note on this, if you go to bed hyperglycemic, you activate your sympathetic nervous system. You're actually spiking your adrenaline right before you go to bed. So there are a lot of people who blame their insomnia on their anxiety. And they wonder why they're so hot. Their heart is pounding. They wonder what they're anxious about. You're not anxious about anything. You just spiked your blood sugar, which activates your sympathetic nervous system, so good luck sleeping well. Now you're going to have higher cortisol tomorrow because of your poor night of sleep. And you just keep feeding the metabolic beast and thus it's no, it's little wonder why insulin resistance has become the single most common health disorder worldwide. So, the nutrition plan, which absolutely matters most, as much as I'm an advocate of exercise, exercise cannot fully make up for a diet that is not up to, up to code.

If your diet is really lagging, exercise is only going to help so much. So, it's based on the principles that I mentioned earlier, but to kind of wrap all of them up, it's, it's focused on control carbs. So it's a heavy focus on the starches that the carbohydrates that have the least impact on glucose and insulin. That is the primary motivator here. How can we keep, how can we nourish the body, but keep glucose and insulin in check? So it's focusing on, you know, smart sources of carbohydrate, namely fruits and vegetables. So that's the control carb part of it. And then the prioritize protein, and I would say that don't fear fat principles, they really should come together. In our fear of fat, we have pulled the two apart because in nature you never see that. There is no such thing as a protein that exists in nature, comes absent fat. In other words, every protein in nature has fat with it. And that is how we should eat it.

If you eat protein in isolation, you don't digest it as well. You minimize the anabolic effect of that protein at muscle. This is all evidenced in human studies. When protein comes with fat, we both digested better, and it has a stronger anabolic signal than the protein alone. So muscle protein synthesis is stronger when protein is consumed with fat. That's how I advocate people eating it. Whether you want to invoke a divine authority or just nature and evolution, if nature says all proteins come with fat, it stands to reason that the human body is built to bring it in that way. So who are we to defy evolution or God and pull those two things apart.

Keep them together. Protein and fat come together. That's how we should eat them. So prioritize protein and don't fear fat. I could say, don't fear the fact that comes with that protein and it's going to have little to no effect on insulin. And speaking of nourishment, that is the nourishment that matters most. I'm not an enemy to carbohydrates, but there is no such thing as an essential carbohydrate. Literally does not exist. There are such things as essential amino acids. Thankfully, you'll get them all from any animal source protein. There are such things as essential fats. Thankfully, you'll get them all and more from every fat source, every animal source fat.

So I'm an advocate of animal sources in those instances, just to ensure you get them all. But again, no essential carbs. That doesn't mean don't eat any of them. But it means don't make it the main part of your diet. Why would we make the main part of our diet? The very one thing

that we don't need focus on the things we need. And then the fourth and final principle is fasting frequently fast, find a way to incorporate fasting into your daily plan. But my only Point on that is how you end your fast matters more than how long you fast. So the food you eat when your fast is over matters much, much more than how long you fast.

And I say that born from abundant experience of seeing people who will go on a 24 or 36, 48 hour fast, and then binge, whatever they can shove in their mouth, they shove in their mouth. And then they end up feeling sick. They feel ashamed. They hate to admit this kind of addiction that they're trying to fight with food. And it ends up becoming kind of a form of fasting bulimia where they're binging and purging, but in a sense of fasting. So they only eat one time a day, but man, it's a bunch of garbage. It's gummy bears. It's candy. It's cakes. It's cookies. No, it'd be better to have a shorter fast and keep those macronutrient rules in mind then have a longer fast and throw the macronutrient rules out the window.

SHAWN STEVENSON: All right I hope that you enjoyed this segment with the amazing, dr Ben Bickman. One of the things that really jumped out for me is that a metabolic scientist doubling, tripling, quadrupling down on how powerful sleep is in changing our metabolism. He alluded to this and how for him, based on his research, sleep is the most powerful controller of Your metabolism. In both directions, by the way, this means if you are sleep deprived this can mess your metabolism up faster than anything. And if you're investing in high quality sleep, it can heal and support your metabolism faster than anything. And so the final segment that I have for you today is from this expert who listen. When it comes to health and fitness and nutrition. Yes He's incredible. But the thing that really makes him stand out is that he's freaking handsome.

I'm just kidding. The next person is me. This is a segment that we did that was a masterclass on fat loss and gaining muscle. And I did a special segment really focusing on the power of sleep and shared some really jaw dropping data on this that everybody needs to know because it's one thing to hear how important sleep is for our metabolism. It's another thing to see through a clinical trial just how impactful it can truly be. And so in this segment, you're going to learn the shocking impact that sleep has on fat loss. You're going to learn how sleep deprivation impacts muscle, with keeping in mind, our muscle is a primary driver of our

metabolism of our metabolic rate. Plus, you're going to learn some simple science backed tips to begin sleeping better starting tonight. Check out this segment on the power of sleep on metabolism.

SHAWN STEVENSON: Fat loss is sleep dependent. Please hear me. This is one of the biggest takeaways of the day and of your lifetime. Fat loss is sleep dependent. A randomized crossover study conducted by scientists at the University of Chicago found that when test subjects were placed on the same diet in the same controlled conditions, the amount of sleep they got dramatically affected fat loss. In one condition, the test subjects were allowed to get eight and a half hours of sleep nightly for two weeks. In another condition, they were sleep deprived and restricted to just five and a half hours of sleep nightly for two weeks. Now, keep in mind, they're all on the same calorie restricted diet in the same conditions. And after compiling the data, at the end of the study, the participants lost 55 percent more body fat when they were able to get eight and a half hours of sleep.

I just want you to think about how remarkable that is. When they increased the amount of sleep that they're getting, we're not talking about activity. We're not talking about eating. We're talking about sleep. They lost 55 percent more body fat. And not only that, the study published in the annals of internal medicine reveals something shocking to do with muscle. When the participants were sleep deprived, their bodies began burning off their muscle for fuel at a faster rate. The participants loss of fat free mass, including their muscle, increased by 60 percent when they were sleep deprived. This was accompanied by what the researchers called neuroendocrine adaptation that shifted their body away from burning fat for fuel and turning it towards burning their muscle for fuel.

This is what's happening when we're depriving ourselves of sleep. And this should be well known. If our goal is to burn fat and build muscle, the fastest way to do the opposite, to not do those things is to sleep deprive ourselves. And so truly fat loss is sleep dependent, and so is building and protecting our muscle. And I really want to emphasize that today. And so we've got to keep all of these things in perspective for ourselves. Be gentle with ourselves. Look at how we can add these things into our life without overstressing, overdoing it. But we

need to have a life that is built around giving ourselves healthy movement inputs and allowing ourselves to rest.

Today, more than ever, we've got so much stuff that is siphoning our energy and our attention. But thinking about how much time we waste with all these television apps, with all the social media and things like that. We can construct a life where to where we're getting in an hour of movement a day. We can do that. There's so many paths to that goal and allotting adequate time for us to sleep. And in this domain, unfortunately, something that we just as a species, every other species sleeps. Like they, it's not a thing, you know, there isn't like, a hyena walking around. Like, you know what? I'm just, I got insomnia, bruh.

All right. It's us. It's us. And this is because we have a society that is constructed to fight against us sleeping. And so this is why I Focus, my first major book and I'm very grateful to say that it is an international bestseller. It is now translated in, it's getting close to 30 different countries and languages. And that book is called Sleep Smarter and there's 21 clinically proven strategies all backed by science to improve sleep. Your sleep, not just your sleep duration, but the quality of your sleep because it's really sleep smarter, not sleep more for some people. They do need more, but it's really optimizing the minutes that we're getting.

And so we've talked many times here on the model health show about improving your sleep quality. And we'll definitely put a couple of links to some of those episodes for you here to dive into if sleep if you really today you just like really got it and they click like I really need to focus on improving my sleep quality. I'm messing myself up making my life harder I'm making my fitness harder because i'm not getting the sleep that my body needs. And so I really want you to keep this in mind that fat loss is sleep dependent. A couple of quick tips. Number one, we want to be mindful of the number one sleep deterrent today in our modern world, which is our technology. Our technology is sucking the sleep right out of us. All right. And we've got to keep that in mind because researchers have affirmed again and again, one of the most recent studies on this, that being on our devices in the evening, that light spectrum beaming into our eyes is affecting every cell in our bodies.

Our vision is a place of data input, but it's not just our eyes. By the way, our skin picks up data. We, our skin has photoreceptors is picking up information. Our body is constantly trying to figure out what time of day it is so that it knows. The appropriate hormones and neurotransmitters and cellular activity overall to do. So we know that number one, the light coming from our devices suppresses our melatonin production and increases our body's production of cortisol, specifically when we're on them in the evening. It's not the same response when, when we're on them in the daytime, because again, our bodies are synced up with a 24 hour solar day.

We're connected to all of life. Here in this universe, we're a part of it, but this stuff is new. We have not adapted to this exposure and it really disrupts what's happening with our hormones. In particular, what's happening with melatonin, which is a huge driver of our sleep quality. All right, so give yourself a screen curfew to the best of your ability. If you're going right from your device to bed every night, it's probably not, it's probably not a good idea. So. Start with a 30 minute sleep curfew. Give yourself a little bit of time. Of course, you've got blue light blocking glasses and all those cool things, but some screen free time period is ideal. 30 minutes, an hour if you want to get crazy.

All right, but you got to fill that time with something that you really value and enjoy as well. You know, this could be, you know, reading a book. They still exist. This could be listening to a podcast or an audio book. You don't got to stare into a screen to do those things. This could be talking to your significant other. This could be a little, you know, mobility work, a little massage, you know, working on some, with some mobility tools. My friend, Dr. Kelly Starrett, this is one of his favorite things to do in the evening, you know, do a little rolling, the lacrosse ball, a little foam rolling, and you get kind of parasympathetic activation there as well.

This could be not just self massage, but massaging or getting a massage from somebody else, all right, which could lead into some Now, it doesn't have to. Sometimes a massage is just a massage, all right, for the lovers out there. But You know, but human touch, we need that. We need that. All right. And so another tip is to optimize that sleep environment. And so, again, we've talked a lot about this on multiple episodes of the show. This light, especially it's being dubbed the light pollution. And so if you've got a lot of external lights out there outside your

window, make sure you get in some blackout curtains. And if you're still, for your own psychological feeling of safety and comfort.

And you want something that is, you know, a light in the, in the room itself, something that is a hue or a spectrum of light that we evolved with, right. So something of the more orangish reddish hue, lower light is going to be ideal. All right. And get the environment cool as well. We sleep better when the environment is cool. We've got a lot of science on that.

All right. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. Let's make this commitment. Let's make this agreement to ourselves that we are going to take great care of us this year. That we are going to get in the best shape of our lives this year. Because we're making ourselves a priority. The natural outcome will be radiant health. The natural outcome will be more impact on the people we love and more impact on the world around us. But let's make this agreement to take good care of us this year. If you got a lot of value out of this, please share this out with your friends and family. You can send this directly from the podcast app that you're listening on. You can share it out on social media, whatever way you want to share, please share it out. We've got some amazing masterclasses and I'm talking some of the most amazing guests ever coming for you this year. So make sure to stay tuned, take care, have an amazing day.

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