

EPISODE 298

The Sleep & Fat Loss Masterclass

Shawn Stevenson: Welcome to *The Model Health Show*. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today.

This is a very important and special episode because we're talking about a topic that I've been working to impress upon culture for several years now, and this is the impact that your sleep quality has on your body composition, alright?

The impact that the quality of sleep you get has on your potential to lose weight, to burn fat, and all of those glamorous keywords that we're looking for, alright?

We get it today, and this is talked about so much. We're over-saturated with conversations about how your diet can impact your body composition, or how exercise can impact your body composition.

I guarantee you today, you're going to walk away understanding that your sleep quality is potentially more powerful than both of those things, and this is because- I think first of all we need to have a shift in our perspective.

We need to have a shift in our understanding of how sleep actually impacts our body, specifically in relationship to our kind of fat storing and fat burning hormones. Your sleep has a huge impact on your endocrine system.

So your HPA axis, your thyroid, all these things that we know are regulating our body's ability to burn fat. Your diet does not impact it as much as your sleep does. Your exercise does not impact it more than your sleep does.

When we're talking about fat loss, it's really all about the hormones. Your ability to burn fat and store fat is regulated by your endocrine system and your hormone function.

This is what these so-called experts are not talking about, they're not telling you this, and I want to make sure that we have a master class so that you have the information from here forward. You really understand just how valuable your sleep quality is in influencing your body composition.

Now with that said, we're also going to have some very tangible actionable things to walk away with from this episode so you can go and put these things in play for yourself today.

But again, it starts with a shift in our perspective because we bought in fully that our diet impacts our ability to burn fat. We bought in fully that our exercise impacts our ability to burn fat.

And you know why? And why sleep is not a part of the conversation? Because with your diet, you're doing something. Right? I'm active, I'm doing something, I'm doing my meal prep, I'm making smart choices, I'm active, I'm working hard.

With exercise, same thing. I'm sweating it out, I'm getting it in, I'm putting in work, alright? Grind time, alright. In the gym, same thing. I'm putting in work, I'm paying that sweat equity. Right? I'm grinding, alright? I'm becoming a soldier. Alright? Getting on my Forrest Pump, alright? I love running, and I love lifting, right? we're putting in that work.

Alright so we're being very active, very proactive, whereas sleep is something where you do nothing, alright? I'm working at these things, I must get results because we're programmed in our culture that we don't get something for nothing. We don't get something for nothing, so I have to be putting in work in order to get these results.

And we really lost track of how special sleep is, and we've lost track of understanding that sleep is still putting in work, alright? It's putting in work for these vital organs and organ systems that you have very little control over when you're up doing all this catabolic stuff.

Because exercise is catabolic, it's breaking you down. You need the recovery to come back better. All the stuff you're doing with your diet, all of this assimilation and elimination, a lot of these metabolic processes take place while you're sleeping.

You get the benefit when you're asleep, alright? This is where so many great things are taking place, but we have to flip that switch in our mind and understand sleep is- if anything, it is potentially a bigger responsibility than those other two today because you still have to take responsibility to step away and turn off the TV and go to bed.

It's still an action step. You still have to take responsibility to maybe leave the party or the get-together or the function a little bit early to get to bed at a decent time, you know?

There are these small decisions that you're still making on whether or not this is important. You know? And I think that there's also because we don't truly understand the value.

So you might have some of the knowledge of things that we're talking about today, or potential knowledge, alright? Because knowledge is not power. Alright? It's potential power. It's when it's applied that it becomes true power. And that's what we're going to be diving into today, alright?

So with that said, we can't have a conversation about improving sleep quality- and people would come into my clinic for years, people would come in like, "What can I take to help me sleep, Shawn? What can I take? What can I take for this? What can I take for that?"

Having this very allopathic approach, right? "I just have to take something and I can get this result." When the reality, I'd be doing them a disservice because it's a Bandaid solution.

However at the end of the day, there are several things that have a tremendous amount of clinically proven benefit that we're adding in either with our lifestyle or nutritionally that can support that extra one, two, three, four, five percent of benefit that we're looking for.

But we want to go for those things that have a serious amount of time of clinical use, or that have been studied, that have been around for awhile. Not Ambien. Ambien's been out for like two weeks in comparison to something that's been utilized for centuries, right?

And we know- I mean people are out here Ambien tweeting, right? We know that there are some significant side effects. It might not be that, but there are some significant side effects attached to this.

And I did an article for 'Men's Health Magazine' back in the day talking about this stuff, but the bottom line is if you're utilizing a drug for this methodology, or even taking over-the-counter stuff, this is what I was doing for many years when I was dealing with my own health problems.

And I was getting this kind of pseudo sleep, right? I wasn't actually going through my normal stages of sleep. I was unconscious and I was mistaking being unconscious for actually getting the sleep that my body needs and that's the big mistake because it's a Bandaid. It's a Bandaid solution.

But what if we look at something like rishi, right? Rishi has been utilized for literally thousands of years and it has a tremendous amount of clinical data to back it up without the side effects, alright?

It's something that encourages your body's natural endocrine system and endocrine function to do what it's designed to do.

A study published in the journal 'Pharmacology, Biochemistry and Behavior' found that the renowned medicinal mushroom rishi was able to number one, significantly sleep latency.

So by utilizing rishi, you fall asleep faster, but this is something that's natural. It's been utilized- it's an earth grown nutrient, it's been utilized for thousands of years. That's number one.

Number two, increased overall sleeping time. That's good. Number three, increased deep anabolic non-REM sleep. So this isn't pseudo sleep, it's encouraging your body to do what it's designed to do.

To get that high quality deep sleep, and it also increased overall light sleep time as well. So we've got some REM sleep benefit there too.

This is something I've been utilizing for I don't even know how long. A very long time, I'll have this cup of rishi. So even most days of the week now, I have a cup of rishi maybe about thirty minutes before bed.

It's a great little wind-down ritual, and for the last couple of years, the rishi that I use is from Four Sigmatic because they do a dual extraction.

When you hear studies like this, you don't know whether the extraction method they used for the study was the one that you're getting when you're buying these products.

Was it an alcohol extraction where you're utilizing some of the terpene compounds? Was it a hot water extraction where we're dealing with some of the beta glucans and antioxidants? Like what is it that's getting this result?

How about we get all of it? Alright? And that's what you get with Four Sigmatic.

I used to- years and years ago, ten years ago I would buy various products from different companies, two different products to try to get the same thing I'm looking for with Four Sigmatic in one little easy instant pack. You open it up, pour, add hot water. Right?

And they're sourcing from the very best places so you're not going to be consuming any pesticides and herbicides, rodenticides. It's all done the right way, alright? And it tastes pretty good.

What you can do, what I like to do, add a little bit of fat. I use a little bit of fat. So this could be some emulsified MCT oil, maybe a little grass-fed butter, a little coconut oil, hot water, your Four Sigmatic rishi, and if you want to get super fancy, you can add a couple drops of maybe some chocolate Stevia, some English toffee Stevia, make it real nice.

But it's a great wind-down kind of part of the ritual and it has this great impact for your sleep quality.

I travel with this. When I'm on the road, I bring this rishi. It really helps my body to adjust to that change, especially if I'm hopping time zones.

So I highly recommend, if you're not utilizing this rishi, it's something you definitely want to check out. So go over to www.FourSigmatic.com/model. That's www.FourSigmatic.com/model, alright? You get 15% off when you utilize www.FourSigmatic.com/model.

15% off everything; the rishi, the chaga, the mushroom coffees. I love the mushroom coffees, alright? Today I had the lion's mane, alright? It has a tremendous amount-

The University of Malaya found that this has benefits for something called neurogenesis. So this is literally the creation of new brain cells. What? Folgers can't do that. I promise you, alright?

The QT, when you go to Quick Trip, that coffee is probably going to kill some cells, alright? We've got this medicinal mushroom coffee with all the stuff you're looking for with the coffee plus the medicinal mushrooms.

Man, it's just so incredible. Great time to be alive, but if you don't know, you don't know. But now that you do, are you taking advantage? So head over, check them out, www.FourSigmatic.com/model.

Now let's get to the iTunes review of the week.

iTunes Review: Another five-star review titled, 'Many A-Ha Moments,' by YesWellnessMama.

"Listening to Shawn is like stringing together a-ha moments into life-changing physical, mental, spiritual, emotional awakenings. I find all the information and science to be so empowering and profound that I listen to each podcast over and over as there are so many layers to each segment.

I learn practical information that I can use and share in my role as a wife, daughter, sister, stepmom, yoga teacher, and friend. This show is literally saving my life and is creating a ripple effect in my community. I can't thank you enough.

Also, I'm energized and encouraged by listening to so much positive information. I am changing the harmful fight or flight patterns from listening to news and politics and positively affecting my health by listening to you and being in rest and digest more often.

My nervous system and my husband thank you. I have all my devices set, so when I walk into my house or I get into my car, you automatically start playing. Life is good."

Shawn Stevenson: Wow, I love that so much. Thank you so much for taking the time to share that. Really switching over and putting that positive media into your space, you know?

Because it's not just you are what you eat, it's you are what you eat, you are what you drink, read, think- it's also you are what you think. Our thoughts have chemistry. Every thought that we have has a correlating chemistry in our body.

And so the things that we're around really influence what's happening in our bodies, you know? So being so caught up in all of the negativity, of course it can weigh a lot on our spirit. You know?

But of course we can be informed, but we don't need to be inundated by it, you know? And having that proactive- like this incredible review, taking time and proactively putting great information into your space is definitely a really powerful profound thing that we can do to really shift the course of our lives.

So wow, thank you for sharing that, and everybody, thank you for leaving these reviews over on iTunes, Apple Podcasts. If you've yet to do so, please head over and leave me a review. I appreciate it so much.

And whatever medium you're listening on, whether it's YouTube- by the way, you can check out the video, you guys can come hang out in the studio with me, or Spotify, IHeartRadio, we're on all these different platforms.

So if you can leave a review, please do so. I appreciate it. And now let's get to our topic of the day.

So today's episode is a master class on fat loss and sleep quality; the connection between these two is absolutely profound.

Now I want to start this by saying when we're talking about fat loss, what is fat? Like the fat that we're targeting when we're trying to 'burn fat,' what is that actually?

There's two types of fat, and both of these are hormonally driven. We have subcutaneous fat, this is kind of the layer of fat below your skin. And then we also have this kind of visceral fat, also known as omentum fat. And the name omentum is derived from a word meaning apron.

So it's kind of like a fatty apron, alright? So this is the visceral fat that's more like organ fat, like fat around your organs, and it tends to hold up shop right around the waistline.

So both of these things are targets for us, but in particular this visceral fat is especially dangerous. So there's a joint publication of the Sleep Research Society and the American Academy of Sleep Medicine, and it shared remarkable findings

from a study that tracked visceral fat accumulation using a CT scan for a five-year period.

Now listen to this. The results found that subjects who slept less than six hours a night over the course of this five years had a 32% gain in visceral fat, and this is compared to those who slept for more than six hours per night, and they had 13% increase on average.

This is more than twice as much visceral fat accumulation due to sleep deprivation. Alright?

So when we're talking about burning fat, what does this look like? What does it look like really? We want to target this visceral fat because both are hormonally driven but visceral fat especially.

You're going to be having the tendency to produce more fat storing hormones in relationship to carrying more visceral fat, and it starts to become its own organ system in your body, alright? Functioning very much like an organ system, all of the fat accumulated.

And it can become a very difficult kind of viscous circle. And so you think people are looking at, "Let me sleep better or increase my sleep." Sometimes increasing the amount of sleep hours is important.

So in this study, they're looking at what happens when you have less than this particular amount, but my mission is to help people to sleep smarter, not necessarily sleep more.

There are people who sleep eight hours a night, but their sleep is terrible. They wake up feeling terrible, right? And they're not going through those sleep stages.

Because what is sleep when it really boils down to it? What does it actually mean? What we see, what we can monitor as far as sleep is concerned is a change in your brainwaves, and each of those shifts in your brainwaves is associated with transformative processes that take place in your body.

For example, we have- in the normal waking state, right now we're all in beta, alright? Beta, and potentially some gamma as well, as far as the brainwaves. Which is cool, alright? It sounds a little bit like the Incredible Hulk, right? Got the gamma waves going.

So we've got beta and gamma, this is the normal waking state. And then from there as we transition into relaxation and into sleep, we go from gamma and beta into alpha, and then there's correlating processes that start taking place.

Activation of your parasympathetic nervous system, shut off of the fight or flight sympathetic nervous system, and all the correlating things that take place.

Changes with your thyroid hormone, changes with your stress hormone levels, all of these start taking place as we go into alpha. Then we go to theta, and then we go ultimately into delta, which is the deep anabolic kind of dreamless sleep that we're really, really wanting to spend an ample amount of time in on all of these stages because all of them bring benefits.

So again, it's not just about sleeping more, right? For some of us, we do need to sleep a little more, but it's the quality of that sleep, and that's what we're going to be looking at today when we get to the walk away actionable strategies, the things we can implement can improve those sleep cycles.

So we're spending an optimal amount of time in each of those stages to truly recover and to transform our bodies.

Because that's just one. I'm going to lay it on thick, alright? I'm going to lay it on thick when we're looking at this research. That's just one study showing that how you over time, sleep depriving yourself is going to lead inherently to an increase in the amount of belly fat, the amount of visceral fat, the amount of omentum fat that you are carrying.

Facts only, alright? So keep this in mind. Alright let's look at this study. This was published in the journal 'Annals of Internal Medicine.' This was conducted by researchers at the University of Chicago.

Sleep loss was found to modify energy intake and energy expenditure, alright? Just to set the scene. Alright? So sleep loss impacted your body's ability to burn calories and you consuming more calories.

And so here's what they found. They took test subjects and they put the test subjects onto a calorie restricted diet, which is kind of common practice. This is what I was taught in the university setting to do for patients, right?

Put them on a calorie restricted diet if they want to lose weight. The reality is that's very, very cookie cutter. That's kind of like this idea that we talked about earlier.

So today we know that the quality of those calories matter a huge amount, alright? It's not just the quantity, it's the quality. Same thing with our sleep. It's not just the quantity of sleep, it's the quality of sleep.

Because 500 calories of Lucky Charms is going to impact your body way differently than 500 calories of wild caught salmon and kale, alright? Your body is going to do-it's going to have a very different response to those different intakes of the same amount of calories.

It's going to have a hugely different response on insulin, on glucagon, on thyroid hormone, on cortisol, on and on, and on, and on.

Your hormones, which fat loss is about hormones, are heavily affected by the quality of those calories.

And so they put people on this calorie restricted diet, again conventional stuff, but here's what's fascinating. In one phase of the study, they took these folks and they had them on this calorie restricted diet, and they sleep deprived them. Okay?

So they were allowing them to only get five and a half hours of sleep per night. They tracked all their metrics with their fat loss, and again what's so great about this study is they actually were measuring fat loss, not just weight loss.

Another phase of the study, same people, same exact calorie restricted diet, they allowed them to get sufficient sleep, which is eight and a half hours, which you're just going to have a tendency to spend more time in those stages of sleep you really need.

And here's what they found. After compiling all the data, when individuals were able to get an adequate amount of sleep, they lost 55% more body fat. Actual fat mass just by getting better sleep.

How? Right? That should be like- how is that even possible? Again, we can see it if we're doing the extra workout during the week, we're going to sign up for the class, we're doing the Zumba, we're doing the whole thing. We can understand that, we're working harder, we're cutting those calories.

They didn't cut away any more calories, they didn't exercise any more or any longer, they simply increased their sleep, and that was the result. It's pretty profound.

Now here's something else that I haven't mentioned before. They also found that there was also an increase in the loss of fat-free body mass increased by 60% when they were sleep deprived.

So their fat loss amount was not coming from fat. They were losing muscle, alright? So being in that state of sleep deprivation, you're losing weight, but are you losing actual fat? Or are you setting yourself up for some metabolic problems later because muscle is really your body's fat burning machinery, and we're losing muscle due to sleep deprivation.

And we're going to go through and talk about how, because at the end of the day, you hear information like this, but how is this happening? Right? We need that extra layer of understanding so we can really have this imbued into our spirit and know that this actually matters.

Now here's another study that again just puts on an extra layer, and this is data compiled by researchers at Harvard School of Health. What they found was that many issues associated with our sleep and obesity related habits begin during our childhood.

So childhood sleep habits may have a long-term effect on weight, and this is what the researchers said, well into adulthood. Researchers in New Zealand followed 1,037 children from birth until age thirty-two. That's got to be annoying, like just, "Why are you following me?"

That black van status. "I see you." Anyway, so they were following these folks from birth until age thirty-two, collecting information from the parents on average number of hours their children slept at ages five, seven, nine, and eleven.

And what they discovered after compiling all of the data is that each one hour reduction in sleep during childhood was associated with a 50% higher risk of obesity by age thirty-two.

That's just- that hurts, you know? That hurts. It's not just us, it's the culture in our household. It's the culture that we're creating and what we're passing down as far as our habits to our children. You know? So it's being more mindful of that.

And every situation is unique, of course, absolutely, but we need to come into this in a more empowered place. And by the way, I'm going to put in the show notes, I have an episode dedicated to sleep tips for parents, alright? Because I've done this multiple times with my kids, and seeing of course they can throw a curveball in your stuff. Alright?

They can absolutely- they can get on their Clint Eastwood, *Trouble with the Curve*. I've actually never seen that movie. If you have, let me know if you liked it, alright?

But here's the thing, we have to come in this more prepared and also more informed on what we can do as parents to facilitate the health and wellbeing of our children.

So often for the past few decades, we've been brushing off and passing over the responsibility of the healthcare of our children to people outside of our family, right?

And we do need coaches, we do need the support system of our healthcare practitioners, but ultimately our children are our responsibility, and so us coming into it- and this is why it hit me so hard.

This is a big thing- I'm very passionate about this. In order to raise healthy, sovereign, well-adapted children, we have to come into this situation with this kind of information that we have today, and understand how important it is.

It isn't okay for us to do some of the things that we're doing, not just with ourselves, but also with our future generations, you know? So it's about time to make a change. Michael Jackson song just hit me right in the head right there.

Alright now keep in mind, by the way, these are observational studies, so even though they suggest there's an association, this is not causation, but it's something that should definitely trigger that, "Wow, that's really, really interesting."

But the largest and longest study to date on adult sleep habits and weight is the Nurse's Health Study, and this was a huge massively popular, utilized for so many different things, which was following 68,000 middle-aged American women for up to sixteen years.

And what they discovered was that compared to women who slept for seven hours a night, women who slept five hours or less were 15% more likely to be obese. Not just overweight, because that's another big chunk there, but actually clinically obese over the course of the study.

Alright so this is a case where- and they also looked at markers for type II diabetes as well, and seeing how sleep deprivation starts to really throw off these metabolic systems, you know?

So I'm passionate about this as well because these healthcare providers are entrusted with taking care of us, but we're not doing a good job as a culture in the way that the system is set up taking care of them, and I want to see a big change happen.

And so let's dive in now, since we've got layers on layers of the impact that it's had, potentially even since childhood, and we also- looking at the science, looking at what's happening when we are sleep deprived versus when we're getting an adequate amount of sleep, all other factors the same as far as diet, we can lose 55% more body fat in the same amount of time if we're getting optimal sleep.

What are the mechanisms behind the scene? So let's dive in and talk about these because the first one that I want to discuss with you, and to really add as the top tier in this master class is the role that melatonin plays on your body composition, alright?

When you hear 'melatonin,' what do you think of? You think of sleep, right? It's the sleep hormone. It's the glorified sleep hormone, but it's really not exactly that.

Melatonin helps to modulate, helps to regulate your- I'm doing like the chef hands from South Park. Simmer down, children. I'm sorry.

So we're looking at a situation where melatonin is this glorified sleep hormone, but it's really something that helps to regulate your body's circadian timing system, right?

And this is more real than the clock on your smartphone or on your watch, alright? Your body is lined up in sync with nature. It just is. And when you get pulled away from that, if you could try and hide out like a hermit, we start to get sicker and sicker much faster.

And we're seeing that as a culture already because we're so kind of disconnected from nature, but you know, as the planet is going around the sun, as the moon is going around the planet, we have shifts in our hormones just from that stuff.

What time of day it is determines how much for example melatonin is getting produced. Melatonin requires two factors. It requires an environmental darkness, and it requires a cyclical pattern.

So it has to be about the same time every day, right? It has to get established and it's looking for a cycle for it to be produced optimally.

And so what does this have to do with fat loss? Well data published in the 'Journal of Pineal Research' revealed that melatonin increases the production and activity of something called brown adipose tissue, alright? Or you can call it BAT for short. Alright? Batman. That was my Batman, sorry.

So this brown adipose tissue is incredible, alright? This is a type of fat that actually burns fat. Well here's the thing, we don't really carry a lot of it on our frame. Most of it is kind of held up around the collarbone, shoulder blades a little bit, sternum.

We don't have a lot of this brown adipose tissue but the reason that it's brown versus white adipose tissue, the reason that it's brown is that it's so dense in energy creating mitochondria, alright?

So mitochondria are the energy powerplants in our cells, alright? And so it's producing this ATP, which is the body's energy currency. It's like starring the whole show. It's very dense in this mitochondria, and so that's why it's brown.

Melatonin increases your body's ratio of this fat burning fat, alright? Brown adipose tissue burns white adipose tissue. Please understand, like we're putting ourselves at a metabolic disadvantage if we're not getting sleep, if we're not allowing our body to produce melatonin, alright?

We have to go and fight and work harder instead of working smarter. Hard work is still involved, absolutely if we're going to be exceptional in today's culture. But also we need to be smart about this, alright?

Sometimes it's not a good idea to work out, we need to work in. Right? Sometimes it's not a good idea to get out and press more when we really need to take our foot off the brake, instead of going zero to 100 we go 100 to zero. Right?

So here's the thing, at the end of the day, we have to really have this- again this switch flipped in our mind to understand the value of something like melatonin.

It's not just something we go to the store and we take this drug, right? Or we take this supplement, right? This supplemental form available everywhere, you get melatonin. That's dangerous.

It is literally a hormone that you can get at Quick Trip. I mentioned Quick Trip earlier, I don't know if they have supplements. But Walgreens, your fancy health food store. That doesn't mean that it's okay. Alright?

Now let's be clear, it's great in spot cases to help your body to- if you've had a couple nights of rough sleep, or if you're changing time zones, that's appropriate.

But what you want to do, because it's something that's produced within your body and it regulates everything else, we don't want to make another Bandaid solution by taking it externally.

We want to make sure we're setting ourselves up to produce exogenous melatonin to help regulate our entire cycle of health, alright? So I hope that makes sense.

So melatonin, the reason that study- the results they got, melatonin is a part of that equation. So that's just number one.

Now another one of these critical hormones that is influencing fat loss due to our sleep quality specifically, and the reason they got those kinds of results, is because of human growth hormone, or HGH.

As much as 70% of your human growth hormone is released during sleep. Specifically anabolic delta wave sleep. This is when you're producing the vast majority of your human growth hormone.

We do produce some at cycles throughout the day, but it's just little squirts, alright? But when you actually are asleep and getting this deep anabolic stage, you're producing so much more.

Why does this matter and what does this have to do with fat loss? Human growth hormone is also known as the youth hormone, alright? Kids have a lot of human growth hormone. Like 100% more sometimes, just it's off the charts.

This is why kids have so much energy. They're just running around, they're just doing all this stuff, whereas the parents are just sitting back like just yelling at them, alright?

Kids are running all- one of the greatest workouts you can do is just do what your kids do, alright? Let me just throw that out to you. Alright? Just follow your kids around, they'll wipe you out, alright?

But HGH, the youth hormone. Now what does this have to do with fat loss? Energy is a huge component of the process- your body requires energy in order to do these metabolic processes of burning fat.

Your body making the decision within itself to actually go and break down stored fat and utilize it for energy, that's an arduous process. Energy's required in order to do this.

And so having more HGH increases this availability of the process. So that's kind of like a meta look at this, but if we kind of drill down what does HGH do? It's muscle sparing, so it helps to support your body's maintenance of lean muscle tissue.

When you hear HGH- I know when I do, I still think about Balco, alright? I still think about the Jose Canseco, Barry Bonds, Mark McGwire, right?

This was when I first started to see it in major media, being on SportsCenter. Another scandal, people taking HGH to try and get that edge.

HGH doesn't directly make you bigger, faster, stronger. It enables your body to recover faster, alright? Again, my six year old son could do the same workout as me. We'll go to the track and do sprints, he's good the next day.

The next day for me, I feel like I got hit by a Fiat, alright? Just a small car, not a big one, but a tiny car hit me, alright? But my son, he's good, right? He just has this extra layer of recovery because of all the human growth hormone, and several other factors as well.

But just keep that in mind, even my son Jordan who's a teenager, he's in high school, same thing. They recover faster because of HGH but right around the age of eighteen to twenty statistically speaking, we have a pretty sharp decline in the amount of HGH that we're producing on a daily basis.

And my argument is not that we're just automatically producing less, it's that what happens around age eighteen to twenty? We typically move out, we typically- for a lot of us, we go to college, we get out of the routine, we get out of the expectation, the structure that's involved in being part of a family household. You know?

And so we start to- "Mom can't tell me what to do, I'm staying up." Right? And you're staying up watching UFC on VHS. That's what happened for me, it was new when it came out, alright? This was like- it was new, still underground.

Gracie, you know? He was just beating everybody. It was like, "Who is this little guy with the white belt beating everybody?" You know? And it was just really interesting.

Of course that was going on, staying up watching *UFC*, *South Park*, and all these playing video games of course in the dorm rooms. It didn't matter. I wasn't thinking about sleep or that it even mattered.

But here's the thing I didn't know, is that you can 'get away' with that when you're younger. But when we're doing that, we know in looking at some of the science, and we had an incredible episode in talking about the telomere effect, and like this individual won a Nobel Prize for the discovery of telomerase.

So what are telomeres? Telomeres are our greatest biological marker that inform us how long we're going to live. And this is located- these are like the endcaps at the end of all of our chromosomes.

And as we age, like it gets clipped off more and more and more until our- basically our chromosomes unravel, you know? Our DNA unravels, which doesn't sound good, but there was enzyme discovered that can add length back onto those telomeres and effectively in many senses stop- halt the aging process, if not reverse it in some senses, which is really, really crazy and just fascinating stuff.

But what we discovered is that sleep deprivation is quite possibly the biggest epigenetic trigger on your aging process. It's quite possibly- sleep deprivation is quite possibly the biggest thing that will shorten your telomeres and age you faster, alright?

So wow, just profound stuff. Human growth hormone, again. So we hit melatonin, HGH, muscle sparing, energy, recovery.

Another big key here with that study in looking at how were individuals able to burn that much more fat by simply optimizing their sleep? Another big one that's influenced behind the scenes, this is why it happened, this is how it happened, is due to its impact on cortisol.

One of the very first things we see clinically when people are sleep deprived is elevated cortisol levels. Alright? And cortisol, again it's a glorified stress hormone, but it's so much more. It is so important and has really just been getting a bad rap.

Cortisol gets blamed for everything, alright? Cortisol is making me fat, cortisol is making me stressed and leading to anxiety, cortisol- cortisol is causing the issues with my ability to lose weight. Cortisol is causing this anxiety, it's my stress. It's my stress hormone, it's just off the charts.

Cortisol is causing me to break up with my boyfriend. I don't know if you guys saw that meme.

So here's the thing, cortisol is actually a really important and valuable hormone. This is why we produce it, this is why it's an option, but the problem arises when cortisol is produced in the wrong amount and at the wrong time.

Alright? For example, cortisol is needed in order for your thyroid hormone to work, right? And your thyroid is known as like the kind of governor of your entire metabolism in many ways. Alright?

It's the master regulator of your metabolism, this thyroid gland. And thyroid hormone cannot be mobilized and utilized properly without cortisol being present. So there's that, alright? Cortisol is not all bad.

But here's the problem. When cortisol- when these stress hormone levels elevate to a place that's dangerous, one of the first things we see is increase in fat storage.

This stress response is not new. Your body, your genetics, your DNA is ancient. It has these programs that are running. When stress is high, it's telling your body there's danger. "I need to stock up, I need to store this fat, this protection. I don't know if I'm going to have access to food, if I'm going to be kind of hiding out here in this cave."

Stress is around, but the thing is, we're not exposed to that kind of stuff. There isn't a saber-toothed tiger, there isn't a rival tribe oftentimes. Especially people that are able to listen to this, they're not dealing with that kind of fear and that kind of tension, you know?

But what we do- today more than ever, we can manufacture fear. We can manufacture worries and anxiety because the human mind is infinite, right?

You can get caught up and just start getting stressed out on like some Armageddon stuff of like, "Man I hope a comet doesn't come. Like I know there's going to be a comet at some point, we're going to need Bruce Willis. Is Bruce Willis still alive?"

You know, like you start going down this whole rabbit hole of fear and worrying like who's going to go and blow up the comet? Right? It's crazy stuff we can come up with, but we worry, and we stress, and we create more stress for ourselves.

But what we can get ourselves into is a chronic state of elevated stress, right? This state of chronic stress. That's what's dangerous.

So number one, fat storage, and this is because cortisol has this really interesting ability, it's a process called gluconeogenesis. Gluconeogenesis. Translates to mean creation of glucose or sugar, and when you're in this state of stress, your body is telling you that- your physiology that "I need to have more energy because this stress, it's dangerous."

And so it can literally take your muscle tissue- cortisol at these chronically elevated levels, take your valuable muscle tissue, that's the fat-burning machinery of your metabolism, it can take this muscle tissue and turn it into glucose.

Break your muscle down and turn it into fuel. Gluconeogenesis because of elevated cortisol.

Man, that's profound what our bodies can do to protect us, but we don't need that kind of protection. When really we're stressed and creating this elevated stress situation in our body because we're sleep deprived. That's really the key.

Again, one of the first things we see clinically is an increase in baseline cortisol levels when you're sleep deprived, alright? Please understand that.

So fat storage, muscle loss, and also more circulating glucose now. And so what does that do? Well we have more sugar in our system just there and this is dangerous because sugar just being free in your bloodstream for example, I liken it to little tiny shards of glass, alright?

When it's too much, it can start to break things down and like tear down little tiny capillaries. So this is why we see folks with insulin resistance and a lot of higher blood sugar, loss of vision, right? Loss of function of their extremities, you know? Fingers, toes, we see situations with folks needing things amputated because that circulation has been damaged so much because of sugar. Alright? Because of sugar.

We need insulin to do its job, but here's the problem, one of the other things- because when the bloodstream- when we have that increase in glucose in your bloodstream, insulin needs to be released in order to store it as fat.

Insulin is your body's major fat-storing hormone. Now here's another thing that we see with sleep deprivation, and why they saw these results, is that just even one night, twenty-four hours, which is a short sleep debt of sleep deprivation can make some folks as insulin resistant as a type II diabetic.

Alright? It really has some dysfunction with your insulin's function, and so we're seeing all of this extra circulating sugar in your blood which can more likely now wind up getting converted in the liver, and it's a processed called lipogenesis.

You're more likely to get it stored as fat on your belly. The classic sign of insulin resistance is carrying around more omentum fat. Alright? So we start to really screw up the function of insulin when we're sleep deprived, so that's another layer, right?

So again, this is a master class on this subject matter. What are the things going on behind the scenes that sleep is doing to our physiology that nothing else can compare to? Alright?

You can get up and eat the picture perfect keto diet while you're awake, but then you're sleep deprived, and your blood glucose is all over the place anyways. So congratulations, you've played yourself, alright? That's DJ Khaled. It wasn't me, alright?

So being more mindful of this and bringing in an overall strategy and putting more attention and love and simple action steps, and that's of course what we're going to go through today, to set ourselves up so that we're not dealing with any of these problems in the first place.

Alright another layer here, thyroid hormone. Research published in the journal 'Neuroscience Letters' found that a short sleep debt has an immediate impact on thyroid hormones. In essence, they see a significant stress response.

Research conducted at the Department of Psychiatry at the University of Pennsylvania Medical School found that a larger sleep debt 'demonstrated significant inhibitory effects on thyroid hormone measures.'

The thyroid is your body's master regulator of your metabolism. We're dealing with thyroid hormone. We've got TSH, we've got T3, T4; these things start to get discombobulated, they start to get screwed up when we're sleep deprived, alright? So again, another layer.

When we think about fat loss, building muscle, being more fit, a lot of folks would have come to my- if we're thinking about hormones involved, it's testosterone. And I really worked to kind of take the sex connection out of testosterone in a way because testosterone is important for all of us.

It's important for women have testosterone and men, but it's about the ratio, right? And so as our testosterone goes down, our propensity to store fat goes up.

Testosterone is kind of the driver, it's an anabolic hormone, it's a driver of utilization of fat. And so there's a study that was published in the 'Asian Journal of Andrology' found that testosterone is not subject to circadian variation in the same way that cortisol is.

Alright? So cortisol, even through the day, you have a cortisol rhythm, alright? You have a cortisol rhythm. It should be elevated at a peak in the morning, so between maybe the hours of 8:00 AM and 10:00 AM, and then gradually decline as the day goes on.

There's a cortisol rhythm, alright? And you can influence that rhythm as well heavily. But with testosterone, this is not the case in that the researchers found that there is a heavy sleep dependent factor in producing testosterone.

Testosterone remains elevated for the duration of sleep. The subsequent decrease in testosterone depends on the duration of wakefulness.

So as you're up, testosterone is just steadily going down because you're awake. It's sleep dependent and as soon as you go to sleep and you're getting these normal natural stages of sleep; your testosterone is going up.

It's like filling the tank. It's like plugging into the electric car charger, alright? It's just increasing the testosterone while you're sleeping. When you're awake, again it starts that decline down.

Researchers found heavily sleep dependent factor in producing testosterone.

There was another study in 2011, and this was in the 'Journal of the American Medical Association,' confirmed that even young men who are sleep deprived over just one week of getting five hours of sleep per night saw their testosterone levels drop by up to 15%. Alright?

Now you might say, "15%? That's not that bad." Here's what that translates to. It might not sound like a lot, but that equals- their testosterone levels dropping as if they were suddenly fifteen years older, alright? Ten to fifteen years older as far as their average level of testosterone because they were sleep deprived for one week.

Profound stuff, you know? And so again, this is another factor that plays into that body fat loss for men and women, alright? We need testosterone. We need it to be at optimal levels for us and sleep is the number one thing to regulate that.

Not another exercise, not doing more squats, not eating certain types of food, not cryotherapy. Those things are great, sleep is the key. If you want these results, we have to again, flip that switch in our mind and put some intention and some energy into making sure we're getting optimal sleep.

Now moving on, looking at what is going on behind the scenes that's causing such a profound impact on our body composition when we're getting an optimal amount of sleep or when we're sleep deprived is the impact that our sleep has on leptin, alright? Leptin.

So leptin is our body's major satiety hormone, alright? This causes us to feel satiated, satisfied, and so we're not- we're going to have a tendency when leptin levels are at an optimum place to not have cravings, to not make poor food choices, and research indicates this across the board.

When leptin levels are dysregulated, we will in fact have much more inclination to winding up in the Krispy Kreme drive-thru, alright? It's just it is what it is.

And so here's research published in the 'Annals of Internal Medicine' found that sleep restriction, so having this sleep deprived state, reduced leptin levels by 18%. Alright? Immediately, alright?

And also they saw elevations in the hunger hormone- so we've got a satiety hormone, we also have a hunger hormone, alright? So again, we're talking about having this so-called willpower. What? Willpower versus your biology.

When it comes down to it, your experience with willpower has to do with what your hormones and your neurotransmitters are doing, and we set ourselves up, and then we blame ourselves.

We get into this learned helplessness because we literally are having a biochemistry that we're fighting against mentally trying to tell ourselves not to do this, not to eat this food, not to- and it's this fight that we just don't have to go through, and a big part of that is because we're sleep deprived.

So the hunger hormone ghrelin in this study was increased by 28%. They also found increased hunger, 24%. Appetite increase, 23%. So how much you're actually eating when you start eating.

And also, here's the craziest part of this study, they found that appetite increased and hunger increased especially for calorie dense foods with high carbohydrate content were chosen 33% to 45% more often.

These hormones, because of sleep deprivation, people were choosing worse food. It's right there in black and white, and again we're setting ourselves up for a lot of struggle, and so many people wonder why, and they think that something is wrong with them.

There's nothing wrong with you, it's just addressing this thing that has been so misunderstood and so put on the back burner and not cared about for a couple of centuries now where we're really being programmed- well first of all, we've got this infinite access to stuff to do, but also just programmed to believe that you have to do more in order to get more.

You have to do more in order to get the results you want.

Now there is some doing that has to be done, but at the end of the day, unplugging and getting sleep is going to set your body up and your metabolism for getting the results that you truly deserve.

And by the way, this is just some of the research. There is so- I mean we've got piles and piles of this data coming in, but I don't want you to be in a place where you hear about this later, right? When it becomes common public knowledge.

Because I know it will. At some point, it's just going to be a part of our paradigm in how valuable our sleep quality is, and I think we're getting close to it. But right now, this is why you need to know this.

By the way, so again just one other study here with ghrelin. This was in the 'Journal of Sleep Research' found that a single night of sleep deprivation increased ghrelin levels by over 15%. Alright? This is hunger hormone is increased, guess what? You're going to make poorer food choices.

This hunger hormone just drives us to make those decisions. And going back and saying calorie dense food, high carbohydrate content, I know this from experience, alright?

What comes to mind for me is when my wife had our son, my son Braden, and so he's six, and so it was like 2:00 in the morning. You know, I'm doing *The Model Health* thing, you know?

Like this is before it existed, the show itself, but I'm doing this clinical, and I'm working with all these patients, and I'm eating really healthy.

When 2:00 rolled around, I'm standing in the doorway eating some chocolate covered raisins, right? These were my wife's, and she's like in between contractions, she looks over at me, she's like, "What are you doing?" Because she'd never seen such a sight. Alright?

I'm over there, I didn't even know, my hand was in the bag of chocolate covered raisins, alright?

So anybody can fall victim to what's going on with these various hormones, alright? It's going to drive our decisions because you'd better believe I had other options there to grab in the kitchen. Chocolate covered raisins were the order of the day.

Alright now here's a Captain Obvious part of this whole thing. Even just not looking at what's happening with our hormones and our neurotransmitters, but we're going to have a tendency to eat more when we're sleep deprived because we're awake more. Alright?

Your butt is just up and you're like a little raptor just walking around the house, you're going to get into stuff. You just are. It's the nature of the beast.

Research published in 2009 in the 'American Journal of Clinical Nutrition' took healthy test subjects and had them stay in a sleep lab for two different fourteen-day periods with access to tasty meals and treats just at their disposal.

One stay where they were allowed to get eight and a half hours of sleep, and the other fourteen-day stay was where they were allowed only five and a half hours of sleep.

At the end of the study, the researchers found that during times of sleep deprivation, the test subjects did in fact consume significantly more calories.

Although meal intake remained similar, the sleep restriction was accompanied by increased consumption of high calorie snacks. So you start snacking more just because you're up, alright?

Especially carbs and especially at night, and this is what the researchers found. Especially carbs and especially at night.

And so again, we've got layers on layers of understanding, and just taking a look at what's happening with our own physiology, what's happening with our bodies, what's happening with our minds.

Really getting this dialed in can be completely transformative for us. And so one other area that I wanted to talk about in relationship to the impact that our sleep cycle has on our metabolism has to do with what's going on in our gut, alright? It's time to get up in the guts. Alright?

Listen, listen here. Melatonin is something we talked about earlier, and when I went to college, I went to a traditional university, I was told by my professor that melatonin is produced in the pineal gland of the brain. End of story, that was it.

But that wasn't it. Come to find out, we have upwards of 400 times more melatonin in our gut than in our brain. Alright? I'm going to say it again.

We have upwards of 400 times more melatonin located in our gut than in our brain, and we're running around not understanding how important our microbiome is, and this environment in our gut matters with our health overall, but also with our sleep, and I want to really break that paradigm.

And so here's the thing. Researchers at Cal Tech, and also UCLA as well, but Cal Tech found that there are certain bacteria in our gut that communicate with the cells that make these sleep related hormones and neurotransmitters. Like serotonin is another one.

We have over 80% of our serotonin is located in our gut. Why does this matter? Serotonin is the precursor to make melatonin, alright? Again, like we think that sleep is in our head, but a big part of the experience of high quality sleep happens in our gut.

And so I'm bringing this up to share with you- and this is from my book 'Sleep Smarter,' I'm going to read to you directly from 'Sleep Smarter,' this international bestselling book. If you don't have a copy of 'Sleep Smarter' yet, what are you doing? Let's go, make sure you have a copy of 'Sleep Smarter.'

You can get it at Barnes & Noble, Amazon, all that good stuff. And it's translated- I think it's in like twenty different countries now, so you can probably- there's a good chance that you can find a copy. Of course you can get it on audiobook as well, alright?

So it's been an international bestseller, and number one bestseller in all of those different arenas, and I'm very- wow man, that is just- I'm very, very blown away to be able to say that. But I think it's because of the quality of the content and the message and also how it's communicated.

So I'm just going to read a piece for you right now in regards to what's happening with our gut, our sleep, and our fat loss.

"A study on what happens to your intestinal flora due to irregular sleep patterns was published in the journal 'Cell.' Researchers discovered that your circadian timing system influences your bacteria balance.

Common experiences like jetlag were enough to create bacterial dysbiosis in the gut which in turn leads to metabolic disorders.

In the study, researchers analyzed fecal samples from people before, during, and after bouts of jetlag from a ten-hour flight spanning multiple time zones.

They found that the jetlagged participants showed an increase in a type of bacteria known to be more prevalent in people with obesity and diabetes.

Then the levels of these microbes dropped back to normal once the travelers got back on a regular sleep cycle.

It has been found that your gut bacteria also have a circadian timing system and there's a virtual 'changing of the guard' that happens every night to help keep the good guys in control of your vessel. If you don't sleep, or don't sleep well, then this gives the opportunistic bacteria a chance to take over your gut, and thus your brain."

Alright so that's from 'Sleep Smarter,' chapter seven, which is one of my favorite chapters in the book. Can I even say that? They're all my favorite. That's like picking one of your kids. "Billy, you are my favorite though." No, I'm just kidding.

So just be aware that this is something that's just not talked about. And I was blown away, when I dove into this research, this was like half a decade ago, and looking at-

I had no idea that your gut health mattered so much in the context of improving your sleep quality.

And sleep deprivation in this study- again spanning a couple of time zones, seeing your gut bacteria change in its cascade to be more identical to the gut microbiome of somebody who is experiencing diabetes and/or obesity. Because your gut microbiome is a reflection of that, and also it influences that because whether you know it or not, or understand it or not, you are ten times more bacteria cells than you are human cells, and they have a tremendous influence on what your physiology is doing at any given time.

Alright so in seeing this change, this correlation in being sleep deprived and this changeover in what's happening with the microbiome, and understanding how those microbes impact your sleep-related hormones and neurotransmitters, it goes both ways.

So we have to take care of our microbiome in order to make sure that we are creating an optimal state in our body for high quality sleep.

And so with that, that leads into the four walkaway tactics for today, the four action steps, the four things to utilize so we can start to optimize our sleep in order to optimize our fat loss.

We can start right there where we left off, which is fixing your gut to fix your sleep. Alright? Making sure that we're creating a healthy microbiome.

So the microbiome, you hear that and you might think- well first of all, I'm going to put an episode in the show notes talking to one of the foremost experts in the world in this subject matter, and her name is Dr. Robynne Chutkan. She literally wrote the book on the microbiome.

And so the microbiome is this array of bacteria, some good, some not so good, but there's an array. We all have good and not so good bacteria in our gut because everything plays a role.

But today more than ever, we're seeing- if you think about a biome, or a microbiome in this case, think of it like a rainforest, and you have all these different species, and these different colonies, but then we have the situation today where we have 'endangered species.'

Same thing with our bacteria. We have some extinct species that we're not even seeing anymore in the average person, but we still are seeing in indigenous cultures, right?

Good news is it can be fixed, alright? That's the good news, and the action step here is making sure we're taking care and supporting this microbiome.

Number one, avoiding things that kill the good stuff in your microbiome. So ideally if you can take steps to avoid pesticides, fungicides, rodenticides. The suffix 'cide' means to kill. Alright? And specifically to kill small things like bacteria, alright?

And with that step that says we can ideally choose organic more often. This doesn't have to be a 100% thing, but when you can choose, choose and avoid this potential microbiome damager.

Avoiding processed- heavily processed food, especially that's concentrated in starch and sugar, because those things feed opportunistic pathogenic bacteria. They love sugar. Love it. Alright? They love it.

So if you pull back on that stuff, you're not giving them their food, and they're going to be like, "You know what? I don't even like this party," and they're going to leave. You're going to see some changeover.

Also haphazard in repeated antibiotic use. Antibiotic, that literally means against life. Alright? And so this is a call to action that we need to be much more judicious and sparing in whether or not we're utilizing antibiotics.

I remember growing up, like you'd get antibiotics for everything, right? For a cold, even if it's a virus, and antibiotics don't even kill viruses. It just kills bacteria. We're just popping these, and we know so much documentation today, it's creating more antibiotic resistant strains of these 'superbugs.'

It is bananas because of our overuse of these things. Antibiotic doesn't care if it's a friendly bacteria or not, it's going to kill a lot of everything. It's like a little bomb getting dropped in that biome, in that rainforest, and so just be more conscientious of that as we're working with our healthcare practitioners to do things that we can do to not take antibiotics, but if they are needed, they are needed. Everything has its place, alright? But I want you to keep that in mind.

Alright so those are just a couple of things. I've got some more in 'Sleep Smarter,' some more strategies, but in also supporting the gut microbiome, we need to get in more of these friendly flora.

So today more than ever, folks are starting to really wake up- as far as this unconventional knowledge and pop culture, understanding the benefit of 'probiotics.' Right? For life, right? Probiotics.

And so what do we want to do? Food first, always. Food first. So fermented foods, right? Every culture- working at a university, I worked with people from literally all over the world, and I got to ask them about, "What fermented food do you guys have?"

And sometimes it wasn't a fermented food, it was a fermented beverage. So sauerkrauts and kimchis, pickles, pickled- you can pickle just about everything. Kefirs, yogurts, right? There are so many different things that we can utilize today, and we have access to- there's kombucha everywhere now. It's like kombucha on tap.

Alright? But we want to make sure again we're being mindful of this for our own physiology, because some of this stuff is going to carry maybe a little bit too much sugar, maybe a little bit too much of this or that.

So just finding something that works for you, but food first ideally, and specifically I would recommend getting in some fermented veggies as the ideal kind of top thing.

And from there we can go into- for some folks, I do recommend them taking a probiotic specifically. You know? Because some folks, they're in such a state of dysbiosis, but the thing is for a lot of people, the probiotic isn't going to work and kind of take over the kind of control in the body with the beneficial flora if the opportunistic bacteria are not being dealt with.

And oftentimes, that means eliminating their food supply, alright? So just keep that in mind. But for a lot of folks coming into my clinic, a nice percentage but not even the majority, I would recommend a probiotic.

Now also as far as the sleep gut connection, I recommend people eat several servings - so four to five servings a day - of these good sleep nutrients- what I call good sleep nutrients.

I have a whole list in 'Sleep Smarter,' but I'll share a couple with you really quickly here. So vitamin C, for example. We think about vitamin C for our immune system, but it's a huge player in our sleep quality as well.

A study published in the 'Public Library of Science' revealed that people with low blood levels of vitamin C had more sleep issues and were more prone to waking up during the night.

Great sources would be just the general- again, food first. Green leafy vegetables, bell peppers, strawberries, kiwi. But I also recommend these 'superfoods' like super dense sources of vitamin C like camu camu, amla berry, acerola cherry. Those are also awesome as well.

Another one is calcium. The journal 'European Neurology' published a study showing that disturbances in REM sleep were linked to a calcium deficiency. Alright?

So we think about calcium in terms of our bones. It has a role to play in the building of these sleep-related hormones and neurotransmitters as well.

This is like epigenetic influence, tagging our genes also, but the quality matters. We think about in our culture still, milk. Not the best source. Not at all. Not even close.

The best sources of calcium are green leafy vegetables, kale, collard, mustard greens. Also things like sardines, sea veggies, sesame seeds. There are so many great sources, and you don't have to deal with any kind of allergies or intolerances with dairy.

So again, those are just a couple. Whole list of those in 'Sleep Smarter.'

Now the next tip has to do with making sure that we're producing optimal melatonin at night. So again, we have two conditions that have to be met. We have to have a biological night and we also have to- which is the cycle, right? Having a biological night, so we have a cycle of night each day.

And also light levels need to be low. We need darkness. We need- specifically certain types of light impact our melatonin production.

And researchers at Harvard University found that exposure to our tech devices, the blue and white light radiating from our tech devices at night, suppresses melatonin substantially.

What they found was that every hour you're on your device at night suppresses your melatonin for thirty minutes. Alright? So again, you could stay up, it's 11:00, 12:00, 1:00 in the morning watching *The Handmaid's Tale*. It's hot on the streets. Whatever it is, alright? You're watching whatever. *Luke Cage*, *Scandal*, whatever you're into.

Again, this is not about perfection. Sometimes that's the order of the day. But if we're consistently- like we're not taking responsibility to take our behind to bed, we're putting ourselves three hours at night, you go to sleep, melatonin isn't even being produced for an hour and a half.

And so you're not going through- because it's a regulator of your sleep cycles, of your circadian rhythm. You're not going into those stages to actually recover. And plus we're missing the benefit that melatonin has with that brown adipose tissue we talked about earlier.

So what do we do? Number one, I do recommend having a screen curfew, alright? Setting up a time, like you just get off your device. Maybe it's thirty minutes before bed, an hour before bed.

I've talked about this many times because this is the hardest thing to do. We've done shows talking about how addicted we are to our devices. And I'm not excluded from this. You know?

There's a connection because it really runs on dopamine, serotonin; all of these hormones that create a draw- like it makes you feel good in your brain. You don't know this, it's happening behind the scenes. Opioid system, we talked about that with Dr. Robert Lustig, so I'll put that in the show notes for you if you happened to miss it.

But bottom line is it's not an easy task because- here's the solution though. Because Instagram, Facebook, social media, YouTube searching, all of that plays on dopamine, which is your- it's a hormone that drives us to seek, to find things, right? It's based on some pleasure, like we're looking for pleasure.

But here's the thing, whenever you- like you have infinite stuff to look for on the Internet. But when you find something, you get a little hit from the opioid system. And so it creates this little kind of vicious feedback loop where every time you seek something, you find something.

Seek and find. Seek and find. And the Internet is perfect for that.

And so to step away from that, you can't just sit there and be like, "I said I was going to get off my device thirty minutes," and you just sit there and punish yourself, alright?

Because you're going to get like withdrawal symptoms. Alright? I call them the Internet jitters, alright? You're going to think in your mind like, "Let me just check one post." It's called a just check. You just check. You just check one post on Instagram.

Next thing you know, you're scrolling, right? You're scrolling. You're watching- you're doing everything. So you have to take time to fill that space with something of greater or equal value. That's the key. Greater or equal value, alright?

So if this is spending time with your family, if this is playing some games, listening to a podcast. You don't have to stare at a screen to listen to a podcast.

All of these things are going to help to set you up for success and allow your body to produce the optimal amount of melatonin that it needs to regulate your sleep cycle and get you fit. Alright? Fitter than ever.

Get that fitter hitter, alright? You be that fitter hitter.

Alright so now, let's be real. We're not always going to do this. I know I don't. You know? Again sometimes it's the order of the day. Sometimes you have work to do. Sometimes you just want to stay up and check out a movie or a new show.

But you ideally want to make this the exception and not the rule, alright? But here's what I do. And for folks, I've been recommending this for years to use screen kind of protective devices that work to pull out the most troublesome spectrum of light from your screens.

So computers, tablets, smartphones. Apple has built into their products now in their smartphones and tablets a tool called Night Shift. You just go to your screens, you set it and forget it. Alright? It kind of cools your screen off.

For your desktops, laptops, an app called F.LUX that I've been using for many, many years. So it's F.LUX. You can download that, it's super easy, and it's free. Alright?

Androids, you're like, "What about me?" Android, you can go to your app store, there's tools like Twilight.

But here's the thing, data is not conclusive on whether or not these work. Alright? I think they do have some effect, there's a lot of anecdotal evidence, but I want to know the science. I want to know that this actually does work.

What I have found to work, and what I've been doing for several years, I mean I'm talking years ago I got onto this, and I realized about this whole thing with what we're calling 'night pollution' at night, and so I was buying like these weird orange tinted hardware store glasses and wearing these at night around my house.

I for sure- if you knocked on my door, you'd be like, "Are you building a bird house? Like what are you doing, bro? You building a stool? Huh?" No, I wasn't building a stool, I was just trying to protect my melatonin and my cortisol.

Because by the way, the researchers found that not only did it suppress melatonin, but it also elevated cortisol, and cortisol is a daytime hormone. Right?

So light exposure increases cortisol, and cortisol is like the Joker of melatonin's Batman. Alright? These two things are at odds. Maybe the Joker is not a good- because cortisol is not all bad. Maybe it's the Hulk, right? Hulk, he can be a problem, alright? He's kind of misunderstood, if he's regulated, things are alright. Alright?

So these things are at odds. So when cortisol is elevated, melatonin has a tendency to be suppressed, alright?

So here's what I found, and I found some glasses that actually look cool and they actually work, alright? Some blue light blocking glasses. And when the sun goes down, these glasses go on. This is just what I do, I've been doing this for years.

And the ones that I use are- they're called Swannies. And again, these have such a cool look to them so it doesn't look like I'm building a bird house. They're cool frames but they work. They work incredibly well.

Like you could see it just bouncing off- as a matter of fact, I have some right here. In my little box, I've got a couple pairs, and apparently my son put a rock in the box as well. There's a rock in here.

But I have these frames, and this is the tortoise shell frame, and I don't know if you guys can see in TV land, but the guys in the studio can see the blue light is just bouncing right off of it. It's going to block out over 99% of the blue light.

Same thing, these are the black frames, alright? Maybe the rock might have scratched this up a little bit. But- and then they've got some really cool ones that have not been released yet that I have right here. I'm not even going to open it. No, I'm not even going to open it.

But these are what I use. So I use the Swannies, and here's what the data shows. So they actually have research to back up their effectiveness.

So there were dozens of study participants utilized in a study tracking the benefits of wearing Swannies at night, and they tracked over 600 nights of sleep collectively, and here's what they found.

Objective testing found that the study participants who wore Swannies blue light blocking glasses at night had statistically significant improvements in metrics related to deep sleep.

They had more time in deep sleep by wearing Swannies at night. That is amazing. Like we've got some evidence that wearing these glasses at night and blocking out this ambient light, the blue light exposure, can help you to get more deep sleep.

And then we've got subjective testing from all the different people in the study, and all these nights they accumulated this data. On average they saw an increase in sleepiness at bedtime, increase bumped up by 33%.

They found that there was eleven minutes less time to fall asleep on average, reduced amount of time spent awake during the night by twenty-four minutes. So they were up awake during the night twenty-four minutes less on average.

Improved ability to sleep through the night by 34%. That's amazing, man. That's amazing. Improved overall sleep quality by 36%. And improvement in feeling rested in the morning increased by about 37%.

Swannies, get some Swannies. I absolutely love these, I've been wearing them for years. And everything I do has a purpose, you know? And they've got some really cool frames. Again, they're the best in the business.

Head over to www.TheModelHealthShow.com/glasses and they've got a code for you. Use the code at checkout, 'SLEEPSMARTER,' together as one word. Use the code 'SLEEPSMARTER,' you get \$5 off all their frames. Alright?

So you're welcome, alright? So take advantage, utilize these Swannies, they really do work. And so about 80% of the study participants saw some pretty incredible results. Alright? So this is just something to add into your repertoire, you know?

Because again, you don't have to turn your entire world upside down to get some of these results, but you've got to utilize something that works, and the Swannies are something that I really do personally utilize on a daily basis. Or should I say nightly basis.

Sun goes down, Swannies come on. Alright? So www.TheModelHealthShow.com/glasses, alright? So that's tip number two.

And so we're looking at number one, making sure we're getting plenty of good sleep nutrients, taking care of our microbiome. Number two, avoiding the light at night. Alright? The screens, if at all possible, having a screen curfew but also utilizing blue light blocking tech that we have available today, especially rocking the Swannies. Alright so those are two tips.

Number three. A study published in 'Innovations in Clinical Neuroscience' found that getting more light exposure in the morning- so during the day, getting more specifically sunlight exposure, significantly decreases cortisol levels later in the evening.

So what the researchers have found here is that light at night, not so good. Light during the day, so good. Alright? So we want to be aware of this stuff because our brains, our physiology has evolved having these very distinct day and night cycles. Alright? So we need to honor those.

Get more access to natural sunlight. And so particularly what the researchers discovered was between the hours of right around 10:00 AM and 8:00 AM, so in that block of time, getting some sun exposure even if it's just coming into the room that you're in, really helps to set your circadian timing system.

Alright? So also sun exposure specifically if you can get it on your skin increases serotonin production, which that's the precursor to melatonin, and also it elevates cortisol which is not bad during the day because it helps to reset that cortisol rhythm.

This is what the researchers found. Cortisol goes up during the day, like it should, and it's actually lower at night if based on folks who didn't get access to that sunlight, alright? Their cortisol levels are high.

Alright, so that's the other action step for you, is to make sure you're proactively- during the first couple of hours of the day, get some time, ideally if you can outside if the weather permits, and if anything, make sure that you have some natural light exposure coming into the room that you're hanging out in working, because it really is something that humans- that our genes require of us to have great sleep.

And finally here with optimizing our sleep to optimize our fat loss is to create an evening routine that includes the basics. Alright? Stuff we've talked about multiple times on *The Model Health Show*, that's throughout 'Sleep Smarter,' which has twenty-one clinically proven strategies to optimize your sleep.

To sleep your way to a better body, better health, bigger success. Twenty-one, and this includes in that evening routine getting it cooler in your environment.

Research shows that folks that have clinical sleep issues, so insomnia, fitting them with these cooling caps that cools them down just one degree was enough to put them in position where they essentially reversed their symptoms.

They fell asleep as fast as folks without insomnia, slept almost as long, and woke up less often, just the same as somebody who doesn't have insomnia, simply by cooling them off.

And so what the research shows is that having the environment in your bedroom to be somewhere in the ballpark of sixty-eight to sixty-two degrees is ideal, but just cool it off as much as you can.

Because we all know what it's like to sleep when we're hot. It just feels gross, right? It just doesn't feel good. And I remember when I was a kid, my mother would not turn on the AC.

Like the summers here in St. Louis, obnoxious. Alright so it's like you could have 100-degree weather in Arizona, that's different 100-degree weather here is like 120 with humidity that has an attitude problem.

It's like you walk outside, like the sun will choke you lightly. It's like an annoying choke. And so I'd walk up the stairs to my bedroom, and I'd literally see heat waves coming off of like the furniture, and I'm just like, "Mom, can we please?" She's like, "No, not yet."

What are you waiting for? Are you waiting for me to be in the ambulance? And so I would sleep- like I'd get butt-naked, and I would like spray myself with water, and I would lay there in my bed with the fan. Because you'd get the fan, right? The box fan.

She'd be like, "Put a fan in the window." It just blows hot air on me, Mom. You know? I'm choking more.

But I would spray myself and then I'd put like maybe a little toga sheet or something so my brother doesn't walk in and change his life seeing this naked young man there. You know?

And so I know what it's like. Sleeping cool really does work, alright? So one of those things, cool off the environment. Make sure that your environment is dark, because we want to produce melatonin, alright?

And also if there is like some kind of a situation where a nightlight is required, I had scientists that literally are providing bulbs for folks in space programs, like NASA, and these bulbs- we have some because the circadian timing system they found is really thrown off in space obviously. Right?

And so certain bulbs are for the day, certain bulbs for the night. In general, a red bulb is going to be helpful in the evening. Alright?
So get it dark.

Cornell University researchers found that having the light even the size of a quarter behind the test subject's knee during sleep in a dark room was enough to throw off their sleep cycle. Just that tiny bit. Just that tiny bit of light.

Alright? So get yourself some blackout curtains if you've got like street lights, and your neighbor's porch light, that kind of thing. But if you're in more of a rural setting, or suburban setting where you don't have that kind of stuff; moonlight, starlight, that's not the issue. Alright? Humans have evolved with that.

The other thing is artificial light, light pollution, it's much stronger luminous or lux. Alright? So these are basics, and they're covered in 'Sleep Smarter.'

We've talked about them here on the show, but we need to have an evening routine that incorporates these things.

Alright so those are your four tips to walk away with and to put into action for yourself, and I hope you got a lot of value out of this. Again, this is a master class on this subject matter.

Truly understanding what's happening behind the scenes that makes sleep such a powerful implement or such a powerful requirement in order for our body to optimally burn fat. Alright?

It's such a huge advantage and I just want you to make sure that you have access to this information, and that you're utilizing it to your advantage because it's so important as we move forward here, because it's not just for us, it's how we're sharing this information and creating the culture in our families, and then that spreading out to our communities and the world at large.

Alright so I appreciate you so much for tuning into the show today. If you got a lot of value out of this, please share this out with your friends and family. You can share it right there in the app that you're listening on and shoot it over. You can send it on Facebook, Instagram, Twitter, any of that good stuff, email.

Just make sure that you share it out. Sharing is caring so we can start to make some more shifts in our culture. Alright? So I appreciate you so much. We've got some incredible episodes and powerhouse guests coming up for you very soon.

So take care, have an amazing day, and I'll talk with you soon.

And for more after the show, make sure to head over to www.TheModelHealthShow.com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode, and if you've got a comment you can leave me a comment there as well.

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.