THE MODEL HEALTH SHOW

EPISODE 965

The Shocking Connection Between Stress and Belly Fat (And What You Can Do About It!)

With Guests: Dr. Sean O'Mara, Dr. Sara Gottfried, Kelly McGonigal & Dr. Sharon Bergquist

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SHAWN STEVENSON: Welcome to the Model Health Show. Today you're going to discover the most overlooked aspect of weight loss and fat loss in our world today. You can have a great diet exercise regularly and check all of the commonly discussed weight loss boxes. But there's a force that can absolutely sabotage your weight loss plans, and that force is the powerful and profound impact of stress. It's well established that stress has remarkable influence on our biology overall. A powerful peer-reviewed study published in the Journal of the American Medical Association has established that upwards of 80% of all physician visits today have a primary stress component. Stress can literally make us sick.

Whether we're talking about cardiovascular risk, risk to our brain and cognition, risk to our gut health. Every organ, organ system and every cell in our bodies are deeply influenced by the power of stress. But what the heck is stress? What is it really? And is stress really even bad for us? Are there different types of stress? How can we adapt and make ourselves better so that we are more resilient in the face of stress? And how can we adapt in a way that helps us to lose the weight that we want to lose? Because again, you can have your diet dialed in, exercise your face off. You can check all these conventional boxes. And I'm here today, I'm standing here before you to share that every single person needs to know this information today.

So many people today are struggling to lose the weight that they aspire to lose because of the stressors in their lives. But again, it's not just about the stressors, it's about our body stress response system and how our perception of the stress is affecting us. And today we have four of the leading experts in the world in this subject matter, to detail with you explicitly how the stress in your life can be the thing that is sabotaging your weight loss and fat loss plans. And not only that, of course, we're going to dive in deep on the solutions. And up first, you're going to hear from a medical doctor who's largely considered to be the leading authority in the world on visceral belly fat. Dr. Shawn O'Mara is going to share with you why stress is so impactful, specifically on belly fat. So, let's dive right in to this first segment with the incredible Dr. Shawn O'Mara.

DR. SEAN O'MARA: Number one is stress and stress is a killer. And people underestimate just how really bad stress is in their lives and they're not perceptive to it. And so we would see individuals that had higher levels of stress coming into the life they would have higher levels of visceral fat and higher levels of fat around the heart. And when the stress would be abated, the visceral fat would start to be eliminated. And we saw this repeatedly over seven years, that as they went in and outta stressful conditions, we could see the waxing and waning of visceral fat and fat around the heart and fat within the muscle.

And so people it's remarkable how little they're aware of stress in their life. So it's like this exposure that sneaks in that unless you're vigilant and you know how to check for it, and really actively trying to suppress it, this causes the direct accumulation visceral fat, which is structural disease. It is disease that has structure inside your body. It's much more than just a collection of cells floating through your body. It is a mass that is accumulating inside your abdomen, choking, surrounding your heart, surrounding your coronary artery. So stress, I would say, is probably the number one to start off with and talk about.

SHAWN STEVENSON: I can think about the person and people who are listening right now, who they're eating really well. They're minding their sleep and they're exercising in a, you know, in a smarter way. But they've got so much excess stress in their lives. And this could be, again, they're just because we're not taught about this, and I wanna ask why stress can impact our belly fat like this. But that is that box that they might not think about. And if they address that, address the stress in their lives, they could see that belly fat start to melt off. Why is it what's going on with stress? Why does stress lead to more belly fat?

DR. SEAN O'MARA: It's through the action of cortisol. And when you got stress in your life, it's like you become a prisoner of war. And so stress what happens to you as you get that, you develop this fat within you and cortisol from a hormonal perspective causes your, it is catabolic to muscle. So it metabolizes muscle, means it erodes muscle, consumes muscle, but it's anabolic to visceral fat. And so it is actually increasing the internal fat with inside of you while it's shrinking your muscles.

So you lose capability, you lose strength, and it leads to disease. Now, cortisol is a wonderful hormone, and people would wonder, well, why do we, why does, why do our bodies create cortisol? Well, cortisol is very useful, if you're involved in a fight for like, you know, conflict for one day you're hunting, then it's valuable. But if you are going to be hunting and a long campaign, you're gonna be involved in conflict for like, like a war or something for many, many days, then it becomes problematic for you. But ancestrally, we're designed to hunt and we have one fight and we're done. And that's important to point out because we have this idea that, you know, we should be going to work and we can tolerate like the fight every day, the grind, but that's not how we lived, ancestrally.

We would go and have a hunt occasionally where we'd have this a, you know, brief period of exertion where cortisol would go up or we would have a, you know, a fight with a, another challenger or, you know, we would have some sort of conflict, but it would be brief. But today, Shawn, we have people that have sustained conflict in their lives, in the forms of vocations, their jobs, their professions, and it's the silent killer. And not enough is being said about it. And you're exactly right. They could be dialed in completely to a healthy lifestyle. They're eating all the right foods.

They're not eating any bad foods. They're swimming, they're exercising, they're getting good sleep, they're insanely focused and dialed in on their health, but then they have this stress, and we would show them clients that come into our practice that they have this continuation, this persistence of this fat around their heart and within their abdomen until they could deal with that stress. So I think society has a responsibility to promote awareness of stress. I think we need to do a lot more within the workplace and, among each other to challenge and check each other out about stress levels that are going on. Because for the most part, it's not appreciated in the life of somebody that has it. They just kind of grow accustomed to it and meanwhile it's killing them.

SHAWN STEVENSON: Yeah. Belly fat can be like a reservoir, like a, like a container, a magnet. For that stress in our lives, the receptor sites themselves, you know, the sensitivity, you know, if we just wanna reframe it and think about belly fat as being more sensitive to the signals of stress than any other fat on our bodies.

DR. SEAN O'MARA: Really good point. It really does. And it breeds manifestation of disease, when we encounter stress. So I find it helpful to tell people to mitigate stress. And one of the things, I like to use the analogy that exists in nature. Antelopes are stressed out when the tigers and lions are milling around them getting ready to hunt. It just puts 'em on nerve and they're very stressed out. And so the tigers and lions in our modern existence are problems that we, that we're gonna have. So, what I tell my clients is, kill the lion and Tigers. Solve your problems. If you can't solve your problems, then you need to migrate to greener pastures where there are no lions and tigers, or fewer lions and tigers.

Not as much stress solve problems or get a new job, go somewhere else. But you need to solve the problems or get rid of 'em. But sometimes you can't either kill the lion or tiger and you can't migrate away. You can't get a new job, you're stuck. And other times maybe it's a sick child, maybe it's something that you don't have an option to just abandon and walk away from that problem.

SHAWN STEVENSON: Yeah.

DR. SEAN O'MARA: And so what do you do in that kind of a setting? Well, what nature, nature does is that lion or tiger will attack it, will rear its ugly head and chase after that antelope. But it's in the attack. The antelope actually mediates and mitigates that stress because it sprints very fast to get away from that threat. And either it gets killed and caught or it escapes. And through the adrenaline rush and the cortisol rush of, you know, that spike that happens when there's an attack, the antelope is actually able to mitigate the sustained stress it had before the attack. And so, the attack actually leads to action, biological action of the part of the antelope through sprinting that actually helps the animal adapt and, to lessen the effects of cortisol.

So I tell my clients to make sure that they engage in maximally intensive exercise, not jogging. Runners think, well, I'm gonna go out and jog. I had a bad day and I'm gonna go out, run for an hour. Well, when you run for an hour, you increase your cortisol. And here's what happens different from a sprint, you elevate that cortisol and it continues to be elevated after you finished that run. Now you might have endorphins and you might feel good, but that

cortisol stays up. Now contrast that to a sprint. When you sprint, cortisol goes up and then immediately goes down and it drops lower than it was before. So if you got stress in your life, you wanna sprint, you wanna do maximum intensity exercise, you want to engage in physical activity, that's gonna produce what's called myokines.

These messaging molecules that go out through your body and they tell your body to do two things, build muscle and burn fat. That's what we need to be doing. We need to be burning, burning this fat and building muscle. So myokines get produced and the way you do that is lifting weights, resistance training, sprinting, and not doing durational. Things like jogging, running, cycling, rowing a super long time. But really what engages your fight or flight response physiologically, you know, this has been with us. It's an adaptive response. The better you're at in fighting or flight, the longer you live and the better your quality of life. And it's been that way since Adam and Eve, since it all started.

So fighting and fighting is our adaptive response. It's our sweet spot. And when people are really good at that, they have low visceral fat and low heart fat, and low muscle fat. And when they aren't good at that and they don't do it. They have visceral fat, heart fat. They don't live as long and they don't live as well.

SHAWN STEVENSON: Alright, I hope that you enjoyed that first segment. We've got so much more in store with you and of course, some science-backed solutions to help our bodies to process and metabolize stress, and also to defend ourselves against abnormal stress, to support weight loss and fat loss. Now, as you know, stress is rampant in our world today. Everywhere you look, you're gonna find something to be stressed out about. And it is our responsibility. We didn't create it. It's not our fault, but it is our responsibility to do what is necessary for us to thrive in these emerging conditions. And a big part of that, as you're gonna discover more later on in this episode, is to address the very thing, the very system, and how our bodies are processing and metabolizing stress.

The experience of stress is largely related to our hormones and neurotransmitters and what's going on with our biology. Those feelings of stress, we can literally feel it in our bodies. And what is that? That's chemistry. It's chemistry. And chemistry is based on the nutrients that we

give our bodies to make our stress related hormones and neurotransmitters, our sleep related hormones and neurotransmitters, our muscle building related hormones and neurotransmitters.

It's made from the food that we eat. And when it comes to stress, there is a particular nutrient that is widely regarded as the number one stress buffer or stress reducing stress metabolizing nutrient. Now, not to isolate this one nutrient because we need a wide array of diverse array of nutrients, but I'm bringing this one up specifically because it is so widely available, we just have to be more intentional about getting it in our bodies because. Yes, it's widely available, but it also gets burned away or used very quickly in our bodies, especially when we're dealing with stress. And this nutrient is affirmed in a study that was published in the Journal of Nutrition and Food Sciences, and it noted that both emotional and physical stress can affect a person's vitamin C status.

It can increase the requirement for vitamin C to maintain normal blood levels, and when stress can and does deplete vitamin C levels in the body, it reduces our body's resistance to infection disease and increases the likelihood of further stress. And the researchers noted that when vitamin C intake is increased, the negative effects of excess stress hormones are reduced, and the body's ability to cope with stress improves.

So powerful. You want more proof? Vitamin C is also noted to be a powerful stress buster and reduces stress by supporting the adrenal glands and allows a person to bounce back more quickly. In a randomized, double-blind, placebo controlled trial published in the journal Psychopharmacology, looking at the stress of public speaking and other stressors, the scientists found that those who received vitamin C supplements experienced less stage fright, maintained more balanced blood pressure, and had a faster recovery of their cortisol levels.

I hope that you get the picture on how important vitamin C is in the stress equation. Alright, we know about vitamin C. It's widely known about the influence that it has on the immune system. Yes. But there's a deeper story there. And vitamin C is more essential for so many other things, including our skin health, including our metabolic health, and also our body's

response to stress. So please be proactive in eating plenty of vitamin C rich foods. Plenty of whole food fruits and vegetables are gonna be a great source, and this is a place for many of us to supplement, especially in our conditions today. And also when we know that we're going to be proactively, when we know we're gonna be in a more stressful condition, whether that is something that we're dealing with, with work or family or travel, things like that.

I have been turning to for years, making sure that I'm getting a high quality food based, vitamin C supplement. Now this is key most vitamin C supplements on the market. The vast majority we're talking 99% are from genetically modified corn starch or genetically modified corn syrup. They trash versions of vitamin C and the data has affirmed that they simply do not change our biology in much the same way as these whole food concentrates that I'm gonna share with you, one of them being camu camu berry.

A study published in the Journal of Cardiology had test subjects to undergo a stressful condition and found that taking conventional vitamin C supplements made no changes in the markers with lowering oxidative stress and inflammation. But camu camu absolutely did remarkable defense against stress. And camu camu berry is widely regarded as the most vitamin C dense superfruit ever discovered, and it's just one of the key ingredients in the essential C Complex from Paleo Valley. Go to paleovalley.com/model right now and you're going to receive 15% off their essential C complex and storewide. There's no binders, no fillers, no nefarious ingredients, only the very best organic, super dense vitamin C sources ever discovered, including camu camu berry, amble berry, and AC cherry. Again, go to paleovalley.com/model. That's P-A-L-E-O-V-A-L-L-E y.com/model right now for 15% off. Again, I wanna reiterate, we want to eat a diversity of whole food, nutrients and nutrition, but this is definitely one of the best supplements if we're talking about specifically helping our bodies to adapt to and metabolize stress.

Now, moving on with this powerful compilation, with these experts regarding stress and the impact on our metabolic health. The next question is, what the heck does stress really mean? And is it the stressors that happen in our day-to-day lives, or is it something deeper? Well, our next expert is one of the world's foremost authorities on hormones and overall metabolic health.

Dr. Sara Gottfried, also known as Dr. Sarah Zal, is going to be sharing with you, it's not just the stressor, but your stress response system that can be making things harder when it comes to weight loss, and our stress response system can be programmed in our childhood long before we are aware of any of this and still causing us major problems today. Plus, she's gonna share why belly fat is especially sensitive to stress and much more. Let's dive into this next segment with the incredible Dr. Sara Gottfried.

SHAWN STEVENSON: Can you talk about how excess stress and stress related hormones like cortisol can lead to more weight gain and even block our ability to lose weight?

DR. SARA GOTTFRIED: It's such a critical point. I feel like this was my story when I was in my thirties. So I had a couple of kids, I was trying to lose the baby weight and nothing seemed to be working. Like all the things I used to try in my twenties just wouldn't pass muster anymore. And what I realized was that I was a total stress case. I had what I would call now high perceived stress. So even if you looked at my life and you looked at, okay, I was a practicing physician and I was working long hours and I had two kids at home, and all those things. But there were a few pieces that I think are really relevant for our listeners.

One is that I have a history of trauma and I think that changes your stress response system, not just, I think it, I know it. And I think that's really critical. Like we know this from the research that's been done by Rachel Yehuda at Mount Sinai, where she looked at the offspring of Holocaust survivors and also people who are in the nine 11 terrorist bombings, and she's shown how soul wounds can be passed on. So it may not even be you. It could be that it's your parents or your grandparents or someone else in your lineage who's passed on this tendency toward metabolic dysfunction. And we can talk more about the research if you want to, but the, the two groups of genes that get affected in terms of how they talk to the rest of the body when you've got toxic stress, are your metabolism and your immune system. Really critical.

And we know that from a study called Project Ice Storm, so maybe we could link to that in the show notes and talk about it if you want. But more, you know, this garden variety stressor experience that people have. I think of it in two different categories. I think of, you know, kind

of the capital T trauma, the things that all of us would agree are really traumatic, you know, like surviving nine 11, or being in a car crash. And then there's these small t traumas that some of us, myself included, can get a somewhat bent outta shape over. And that could be, you know, a breakup with a partner. It could be an email that you receive that upsets you. There's so many different things that fit into that small T trauma. And then the question is, what's the downstream consequence of that?

And it's got a lot of downstream consequences. I mean, it affects the microbiome. It can give you increased intestinal permeability, leaky gut. It can stimulate the cortisol receptors in your abdomen. So abdominal fat has four times the cortisol receptors as fat elsewhere. So if you're like me and you're in your thirties and you're, you're so stressed out and you're, you've got so much cortisol kind of floating through your, your blood vessels, it really stimulates that belly fat.

And then it can block the production, a lot of, a lot of the sex hormones that help you with metabolism. Things like testosterone and progesterone, which in women is really important for sleep and for soothing, but it's important men too. Then there's the effect on insulin, which you and I have talked about before. And a lot of people don't appreciate that. You know, it's not just what you're eating that affects your dance with insulin and then downstream what's happening with your glucose levels, which is probably the best way to really assess your metabolic health. But stress has a huge impact. You know, whenever I wear a continuous glucose monitor, I could eat like an ideal hormonal specimen, but if I'm stressed, my glucose is gonna be 10, 20, 30 points higher than it should be. And so really understanding the role of cortisol, I think is critical.

S : Now, this is another thing we don't think about in regards to our blood sugar even, you know, when we think of that, we generally put that in a pithy box of like, food is gonna influence that, but your thoughts and your perceived stress as well. And I noticed that too, wearing a CGM that my blood sugar is pretty adaptable, you know, as far as like when I eat different things. But one day when I was definitely running a little bit hot. I was, had more stress than usual. That's when it went bonkers. Yeah. You know, the first time I really noticed that.

DR. SARA GOTTFRIED: You run hot, Shawn? I don't, I don't think I've seen you run hot.

SHAWN STEVENSON: I mean, I've worked till, you know, be able to channel my aggression, you know? But Yeah, of course that happens to me too.

DR. SARA GOTTFRIED: Yeah.

SHAWN STEVENSON: So I just, yesterday was looking at this really interesting paper, and first and foremost, when you're talking about these events, childhood experiences or events, you know these ACEs.

DR. SARA GOTTFRIED: Yes.

SHAWN STEVENSON: And there's a lot of phenomenal research on this. And this particular paper, this was just published in 2019 and it was titled Adverse Childhood Experiences in the Onset of Chronic Disease in Young Adulthood. And finding that these traumatic experiences that. Also can get passed down, by the way, transgenerationally, and there's another paper on that as well. Basically there's alterations in our genes, but also non genomic aspects of how our cells are functioning. Basically, our sex cells in particular are getting altered, passing that information down to our kids.

DR. SARA GOTTFRIED: Yes.

SHAWN STEVENSON: Possibly making them more adaptable or more suited to live in a hostile environment. Right? So more propensity towards being reclusive, more propensity towards being aggressive more propent propensity towards holding onto more belly fat and fat in general, because you might need to hide, right? These are all evolutionary adaptations that in a way help us to survive, but not necessarily to thrive.

And so my question is obviously, well, first and foremost it's what are hormones and how does cortisol in particular said there's more up to four times more receptors. And our belly fat for cortisols bananas. Number one on one side of the equation, what if it's elevated? And also what if it's too low? All right.

DR. SARA GOTTFRIED: Yes.

SHAWN STEVENSON: So that's a lot there to unpack. But first, what are hormones?

DR. SARA GOTTFRIED: So hormones are like text messages in the body. They're these, these proteins that get released usually in one part of the body, and they go to another part of the body to tell it what to do. They drive what we're interested in, and that's classic endocrinology. The study of hormones, you know, the one I can think of in particular is you produce thyroid hormone in this butterfly shaped gland in your neck. You've got thyroid hormone receptors on almost every cell in your body, and it's kinda like the gas pedal in a car where the thyroid hormone then tells your cells like how fast or slow to be in metabolism.

So it's, it's a way of, kind of tracking the way that you burn calories and it's so critical for many different functions, growth, repair, et cetera. We also know that there's this thing called intra chronology, and that's as opposed to classic endocrinology, and that's where you produce hormones inside of a cell as needed, usually from DHEA. So we've got those two different systems, but I think for our purposes, think of it as a text message that's being sent, you know, throughout the body. And with cortisol, you asked about, you know, what's going on with cortisol? Cortisol, I think of as the highest priority in terms of hormones in the body.

So there's hormones that you might think of, things like estrogen, testosterone, DHEA. Progesterone, those are not necessarily needed to live, so you can get away without them. So a lot of women who go through menopause, men who go through andropause, nalo, testosterone, you can still function. You may not function as well, but you can still function. They're not necessary for life. Cortisol is necessary for life 'cause it controls your blood sugar, as we talked about. It also modulates to your immune system. And it's one of those hormones, it's, it's the chief hormone of your stress response. And so it's designed to help you if you encounter a threat.

You know, like a tiger to run or to fight or to, in the case more so for women. 'cause women have a different stress response, freeze or fawn. So cortisol is the main actor behind the stress response. And what I see in my practice is that probably 97 to 98% of people have a

problem with their cortisol and they don't know it. So it could be high cortisol, which was my story in my thirties. That was kind of the central problem that I had with belly fat and weight loss resistance. So when I measured my blood level of cortisol, it was about three times what it should have been. And I remember talking to a psychiatrist friend at the time, and I was like, Luann, Luann, brisendine.

I was like, why is my cortisol so high? And she said, girl, every female physician I know has a cortisol. That's two to three times what it should be. It's just the nature of being in a stressful system and then there are people who have low cortisol. They've gone through a phase of producing overproducing cortisol in response to their environment, and now they're in a state where they don't make enough. And so there's this gap that they feel like they wake up in the morning and instead of jumping out of bed like I imagine you do and start dancing with Anne. They put their feet on the floor and they're like, oh, I don't feel restored. I need Shawn's book. Sleep smarter. So it's, and even for, you know, some folks they have high and low cortisol within the same day.

So it's not just your level of cortisol, which is supposed to peak within 30 minutes of when you wake up and then gradually decline. It's also what does the shape look like? What's the cortisol, a wakening response? What's your cortisol when you first wake up 30 minutes later, 60 minutes later? What's your diurnal cortisol? 'Cause cortisol is kind of like a flower, like a lasagna that opens in the morning and then slowly closes. And a lot of people lose those patterns, which lead to more immune dysfunction, more of those chronic diseases that you mentioned associated with the ACE study. And I'm so glad you brought up the ACE study because you reach so many millions of people and a lot of folks don't realize that some of those challenges that you and I had in our childhood, even if we're quite resilient now as adults, they then map to 40 different chronic diseases as you get older. Whether that's mental health, depression, anxiety, post-traumatic stress disorder, or physical health like immune dysfunction, autoimmune disease, cardiovascular disease, all the, you know, most of the main killers in the U.S.

SHAWN STEVENSON: Welcome back. Now that we've established why stress is so impactful for our metabolism, let's dive into some solutions. Up next, you're gonna hear from world

renowned health psychologist Kelly McGonigal. She's gonna be sharing with you how changing your perception of stress can transform your health, and amazing ways that exercise and movement can protect you from the impact of chronic stress. Enjoy this next segment from the one and only kelly McGonal.

KELLY MCGONIGAL: So stress can have positive and negative effects, and often it has both at the same time. It's not the case that stress is always toxic, and every time you're in a stressed out state, it's like your body betraying you and you're destroying brain cells. I mean, we have a lot of false ideas about stress and the main one is that it's always a negative state to be in and it only has negative consequences for your health and your happiness.

So the stress mindset effect is all of this research that shows that people can be protected from a lot of what we think of as the inevitable consequences of chronic stress or severe stress. If they hold certain beliefs about what it means to be stressed and their capacity to deal with that stress. So there are a few key beliefs that seem to make people really good at stress. One of the first beliefs that can make people better at stress is the idea that stress is energy you can harness. And that when you feel these symptoms of stress, maybe your heart is pounding or your breathing faster, or you feel butterflies in your stomach or even muscle tension, that it's a sign that your body is getting ready to rise to the challenge.

And this is, it's actually true, but what's interesting is as soon as people decide to embrace their stress and harness the energy, it actually changes what's happening in your immune system and your cardiovascular system and in your brain that makes the stress response both healthier and more skillful so that you actually are more likely to perform well under pressure. You're more likely to be able to connect with others. So the idea kind of allows that, that natural capacity to emerge. So that's one idea. Another idea is to understand that you don't have to do stress by yourself. So many of us feel like stress is a do it yourself project. Everything in life is a do it yourself project.

I alone can deal with this. I don't wanna be a burden on others. Nobody understands what this is like. All those different ways we can feel alone in our stress. And people who have a bigger than self mindset and understand that stress is often a signal that you need to reach out,

that you're feeling stressed because you need help or because you're not the only one. And sometimes your, your body and your brain will make you feel lonely or anxious or overwhelmed in order to nudge you to connect with other people who are going through the same thing or who have resources to support you. And so people have that mindset. Again, they tend to be much more effective at dealing with the big stress, and also they tend to have a stress response that's healthier, that's good for the heart and good for the immune system.

And the third key idea, is the belief that even if you're going through a stress, you would never have chosen for yourself, that it is possible that it can bring out something good in you. So maybe there's nothing good about the situation, like the situation sucks. And also we know that situations that are traumatic and stressful can bring out our strengths, can help us reprioritize, understand our values, strengthen relationships, point us in a new direction. That that capacity to learn and grow from stress is part of our, it's in our DNA. And people who believe that, again, are more likely to access it. So when you have those mindsets that stress is energy you can use that you don't have to do it all by yourself, and that it's possible to learn and grow from any situation.

People who have that stress mindset, they, they just are better at stress. And it doesn't mean it's gonna protect you from everything that you don't want in life, but man, it just, it makes people healthier and happier and better able to experience the meaning even in their stress. I wanted to give people another way to think about movement that, you know, if you're motivated by weight loss. And it's working for you. It's like that's probably already happening. I don't think people need more information or encouragement about that. Yeah. I feel like so many people don't understand the effect that exercise has on mental health and on belonging and on resilience and that it's so profound. I mean, you said it's what our genes expect from us, that when we move on a regular basis, when we are active, we are able to access the parts of our human nature that help us thrive and that literally produce joy and allow us to experience joy and meaning.

So I just, I decided to leave the whole conversation about weight aside, and, and say like, it doesn't matter what your size is or what your health goals are, or what your physical goals

are, you don't even need to have physical goals. You don't need to have weight loss goals, to want to embrace movement as something that is going to truly enhance every aspect of your life.

SHAWN STEVENSON: Absolutely profound. I hope that you enjoyed that segment with Kelly McGonigal, just to be aware of the bigger picture when it comes to exercise. Yes, we know that exercise and movement can help to reduce the symptoms of depression and reduce stress, but to be aware that exercise and movement can literally change our brains and our nervous system and sensitize us to more pleasure. Whereas the stressors that we're inundated with today can sensitize us to more stress. Have you felt that way? Looking for the next problem, what's the next thing? What's gonna go wrong next? And we're just on the lookout. We got the periscope up. Just looking around for stress. Something to be stressed out about the next problem.

We don't wanna get too comfortable because we've trained ourself to be sensitive to stress and to look for stress. Exercise and movement sensitizes us to more pleasure. We're on the lookout for it, and we feel it more. We feel it deeper. So powerful. Use it to your advantage. Now what about in between the exercise and movement? What about when you're chillaxing hanging out? For many people today, and also throughout history, when humans found a way to make alcohol to make some spirits. Stuff got fermented, became a way like this is relaxing, right? Take the edge off. Today the science is emerging. You already know this. I'm not gonna beat a dead horse.

And who beats dead horses is crazy work. But we know that intoxicated, right? It's toxic to the body and we're not gonna get into the details. We've covered it here on the show where it's not about anti-alcohol, but it's about, let's be aware and let's also look to other things that we can do when we are relaxing and hang out with friends and family, right? Having coffee together, that is a very powerful thing in our culture. But also there are many cultures around the world that have tea together. It's a part of relaxation and bonding and stress relief as well. And there's something powerful about specifically green tea when it comes to reducing body fat.

A study published in the Journal of Health Science uncovered that antioxidants and green tea called catechins are able to increase the rate at which body fat gets burned for fuel. Another study reported in the American Journal of Clinical Nutrition found that participants who had green tea before exercise burned 17% more fat than those who didn't. The researchers noted a greater improvement in insulin sensitivity as well. Now, these weight loss effects aren't just due to these compounds influence influencing fat burning related hormones and neurotransmitters and that kind of chemistry. It's also to do with how it influences our body's response to stress.

This is one of the most noted things when it comes to the science around green tea. Green Tea contains a unique amino acid called L-Theanine. It's one of the rare nutrients that can actually wat its way across our blood-brain barrier and directly influence our brain. L-Theanine is able to increase the activity of the neurotransmitter gaba, which helps to reduce anxiety and makes us feel more centered and relaxed and less stressed. Now, there's one form of green tea that is head and shoulders above the rest, and that is matcha green tea. Matcha is having a huge moment in culture right now. There's matcha girlies out there, matcha boys, and matcha is getting frankensteined up a little bit, but it's been utilized for centuries, and the only matcha that I drink is the sun goddess matcha from Pique life.

It's quadruple toxin, screened for purity and is 35% higher in L-theanine than these other matcha and green teas that are out here, and it's crafted by a Japanese tea master. There's less than 15. Japanese Tea Masters in the world, and there's nothing added, no preservatives, no weird sweeteners, just the very best matcha in the world.

And you can get your hands on the Sun Goddess Matcha green tea by going to piquelife.com/model. And right now you're going get up to 20% off of their incredible teas and tea bundles, plus some limited time free bonuses. And in the spirit of the alcoholic beverages that I brought up earlier, peak actually has a new little mocktail called Vesper that you might wanna check out as well. But again, go to piquelife.com/model. That's P-I-Q-U-E-L-I-F e.com/model for up to 20% off, plus some other goodies. Now moving on to our final expert in this powerful masterclass dedicated to the impact of stress and our metabolic health. I'm so grateful to be able to share this with you.

This expert is largely considered the world's leading authority on stress and metabolism. Dr. Sharon Bergquist is going to be sharing with you how to differentiate between the different types of stress and science-backed ways to use stress to make you healthier, fitter, more resilient. Let's dive into this final segment with the one and only Dr. Sharon Bergquist.

DR. SHARON BERGQUIST: What we associate with stress is what we associate with the chronic forms, the continuous stress, that's the predominant type in our life, and there's no question our bodies aren't made for chronic stress. The financial hard, bad relationships, difficult work situations, we just weren't made for that. And for sure it harms. And truthfully, I spent the first half of my career talking about the harms of stress. And it really was about a decade ago that a lot of the literature that had started to come out about how stress can benefit us, is what I started reading. And there is a type of stress called hormesis.

It's the science of good stress. And it's a different type in that it is brief and it's controlled. This type of stress can enrich us and help us grow. And the counterintuitive part is that we actually need these brief controlled stressors to build resilience against the chronic stressors that we can't control.

SHAWN STEVENSON: Hmm.

DR. SHARON BERGQUIST: So we're really entering this era of stress 2.0. It's a new stress management where the goal isn't to get rid of stress in our lives, we need to optimize stress.

SHAWN STEVENSON: Hmm. That's so powerful because I think our instinct today in our modern culture, and maybe not an instinct, programming, is to run from stress.

DR. SHARON BERGQUIST: Yes.

SHAWN STEVENSON: And we've created a culture that has taken a lot of our natural stressors that we evolve with out of the equation.

DR. SHARON BERGQUIST: A hundred percent and that has a cost. So as you said, too much stress is harmful, but not enough stress, which is termed sutres is just as harmful as too

much, and even though I believe a lot of the work around curbing stress is very well intentioned. What we are not really realizing is that when we swing that pendulum too far towards su stress or inadequate stress, we are handicapping our innate ability to be our strongest self and to really serve with our highest potential.

When we endorse stress, we don't ever go quote back to normal. We are somehow changed from every exposure. When the stress is harmful, we net at a set point that makes us weaker, right? That's the depleting, exhausting burnout type of stress. When we have a stressor, that's a good stress, we net resilience.

We emerge at a higher set point. And what's really happening is that any stressor is a challenge to us, whether it's physical or mental. And it disrupts an certain balance in our body that we call homeostasis. Our body has a wisdom that it tries to maintain health, and it's trying so hard to reestablish that homeostasis, but when it does, it resets at a different set point. And when we are exposed to a good stress, you know, we think of the stress response as being the simple fight or flight, right? Everyone is running from a saber tooth tiger, right? It's like all we think about when we think of stress, and that's a very immediate alarm system type of response. But our stress response is so much more complicated than that.

What's happening down at the level of ourselves is really the story that hasn't been told. Okay, we have cellular stress responses. The goal of our stress response is not to harm us, it's to benefit us. It's to help us adapt so we emerge more resilient and able to handle future stressors at the level of ourselves. We have seven cellular stress responses, and what they do is what I call the four Rs, okay? They resist damage, they repair existing damage, they recycle ourselves, and they recharge the energy within our cells. And that is happening on a timescale that's very different than the alarm system fight or flight.

Hours to days, even a lifetime after the stress exposure, we are becoming stronger. We are reconfiguring our body to this more resilient state. When we expose ourselves to these hormetic or the stressors that we're designed for. Our body, again, it's all about repair, right? And we can repair our proteins. And this becomes critical because when you look at what is happening inside our cells that is leading to chronic disease and symptoms. Our proteins not

being formed and functioning properly is huge. Proteins are the workhorse In our cells. We have 20,000 to a hundred thousand types of proteins, and if they are not functioning or they're clumping together, that is one of the early processes leading to neurodegenerative diseases like Alzheimer's.

Heat shock proteins are like molecular chaperones, right? Proteins are that important that when they are damaged, we literally have a mechanism where they can be chaperoned outside our body or outside our cells and, essentially either destroyed or recycled, right? So heat shock proteins help us repair the proteins we have, and they work together with another protein response, which is one of the seven cellular stress responses called the Unfolded protein response.

So proteins also have to be formed in a certain shape to work properly. So if you, if you remember when you're in grade school and you make those fortune tellers, and if they aren't folded just right, you can't open them to read the fortune, well, that's how proteins work. If they're not formed just right, they can't function. So we have this unfolded protein response that helps you get the right balance of the folded proteins and, helps you get them in the right proportion. And again, it speaks to how important these proteins are. All of these parts of our cells are so critical because it is cellular dysfunction that is at the very root of everything that you are seeing in modern day in medicine.

You know, I believe so strongly that we need to be going to the root cause, and I've spent now three decades really understanding the pathways of what that truly means. But the furthest upstream you can go is the level of ourselves that is the most basic building block in our body. We have 30 trillion cells. Our cells make up our tissues in our body systems. When we make our cells healthy, when the cellular components are healthy, the symptoms that we are experiencing, the brain and fog, the digestive issues, the exhaustion, the diseases, all these chronic diseases, the accelerated aging, they all come back to the cell. And when we are making our cells healthy by activating the cellular stress responses, this is a systems biology, whole level, holistic way of helping not just one disease, but all of the diseases.

SHAWN STEVENSON: Wow. So why is this specifically when I hear heat shock proteins, does that mean that I need to get hot in order to get them?

DR. SHARON BERGQUIST: Well, you can get hot, you know, when you're exposed to heat, like sauna or even a hot bath. And, I say that because people sometimes associate some of the mechanisms for being something that only wealthy people have access to. But there are so many DIY ways where everything that I'm encouraging is affordable and accessible. But heat can raise heat shock proteins by about 50%, right? And, you know, it's, again, brief exposure. So within a half hour, 50% elevation, two hours later it goes back down. But cold can do it. Exercise can do it. Eating these plant phytochemicals can do it. This is the beauty of how these cellular stress responses work, right?

There's such synergy in the pathways that are activated. You can start with any of the stressors. And I know we are starting to talk about some and we can round out and mention all the others as well. But the synergy is what makes them incredible because our body works through this process called cross adaptation, which is fascinating, where you can take any one of these stressors that, for example, target, like psychological stress for brain health.

But what it's really doing is it helps you physically and you can take any physical stressor and it helps you mentally, right? At the end of the day, our spiritual self, our emotional self and the actions, our physical health converge at the level of our cells, and it's through any one of these stressors that you can activate all these stress responses. So of course, with the heat shock protein, it is heat, but all these others are doing the same.

SHAWN STEVENSON: Now what about exercise? How does that come into the fold? Obviously we are existing in the most sedentary society in human history, but we, and we know these inputs are important, but we tend to think about it in terms of looking a certain way, right? But the exercise input is far more valuable in different ways. So what are the recommendations around that?

DR. SHARON BERGQUIST: Yeah, and exercise is probably, I think, the most potent of all these hortens, because so much of our physiology is tied to exercise and energy expenditure. When

we exercise, that is the most potent way to upregulate our cellular engines, our mitochondria. And our mitochondria and our energy play this outsized role in this bigger process of creating cellular health. When we exercise, we rapidly deplete. And that sends an alarm signal. We have sensors, we mentioned the sirtuins. We have another energy sensor called A-M-P-K-A-M-P kinase.

And these energy sensors send the signal to our brain that there's a stressor. Our bodies respond by increasing the number of mitochondria that we have. So back in biology class, the way I was taught, probably maybe the way you were even taught, but I'm older, is that every cell has one mitochondria. But the reality is that it's crazy. We can have thousands of mitochondria and we can ramp up that capacity. Mitochondria in our cellular energy base ultimately controls how much energy our body is capable of making. Right. So our mitochondria have this vital role where they take chemical energy from food and they convert it to cellular energy in the form of ATP.

And if our mitochondria are impaired, our cells cannot make the energy we need for basic functions within the cell. All the repair that we're talking about requires energy. We don't have the energy to think clearly, to digest properly. Right. And over time, that leads to disease. So mitochondrial impairment is probably one of the most under talked about components of health in modern medicine right now. And exercise is the most potent way to increase the volume because every time we stress our energy system, our body responds by making more mitochondria and by starting that process of mitophagy that we talked about of making healthier mitochondria. And the fascinating part is that when we do high intensity, we send the body this stronger signal of rapid energy depletion and that signals a stronger adaptation, right?

So when you look at clinical studies, about 40% of people can do not significantly improve their cardio respiratory fitness measured by VO two max, which is really in very indirect way of measuring mitochondrial health. 40% don't achieve improvement with moderate intensity, right. And we have this need for the vigorous to really push the needle on our cardiorespiratory fitness and mitochondrial health.

And the reason that matters so much is that is the single. Biggest predictor of mortality and disease, right? Our cardio respiratory fitness, whether you're a man, a woman, a child, an older adult, cardio respiratory fitness is the strongest predictor, right? And we need healthy mitochondria. We also need a s strong heart. We need strong lungs to have good cardio, respiratory fitness. But exercising with those bursts of intensity is really the pathway to improving our longevity at the greatest potential we can. So what that looks like in a week is roughly an 80 20 blend of some moderate intensity with about 20% of high intensity.

A little bit more would probably be better, like maybe a 70 30 mix with high intensity. For people who are more casual athletes for really elite athletes. I think 80 20 gives you enough of the high intensity. So, trying to get one workout a week maybe of a high interval intensity workout. And again, I don't want the term to be daunting to people. It's what's intense to you, okay? If you are a sedentary person, what may be intense to you? What gets you out of that comfort zone? Maybe just walking fast to the mailbox, right? But for an elite athlete, obviously it's gonna be hitting very high ability to generate power, right? So focus on these nudges of what's intense to you. Recover.

You expand capacity. It's a process of continual stress recovery until you build that resilience. So don't let this sound daunting. We have this as a gift in our DNA. Every one of us has the human capability to be doing this. This is the gift that has been handed down over 2 million years. Our body is made to do hard things.

SHAWN STEVENSON: I hope that you enjoyed this incredible compilation dedicated to the impact of stress on our metabolism and some science backed solutions. If something jumped out for you, please share your voice. You could share it in the comment sections below. If you're watching on YouTube or Spotify. We have Spotify video now as well. Share your biggest aha moment. Anything that you're doing to help to metabolize and to insulate yourself against stress. What healthy stressors are you utilizing that you found to make you more resilient against the stressors in your life. And also, if you think that this can be helpful for somebody, please share the information sharing is truly caring today.

And again, we're inundated in stress and we don't even know how it's impacting us, let alone the impact on our cardiovascular health, our brain health, but truly the impact that it has when it comes to our body composition. Most people simply do not know this, and so please share the information, share your voice. You could send this directly to somebody that you care about. You could text them this episode, or you could share it on social media. But the most important thing is to make this information normalized. Let's popularize empowerment. There is so much craziness and, and I'm not gonna say trashy stuff, but you know Jerry Springer times a billion.

There's like so much of it. All right, that is about manipulation and stress and just acting a fool and losing yourself. I want you to find yourself. I want you to take back your mind. I want you to be empowered and we could have a little of the trash stuff in it, but we need to invest ourselves in empowerment and education more than ever. So again, I truly do appreciate you sharing your time with me today. We've got some incredible masterclasses and world-class guests coming your way very, very soon. So make sure to stay tuned. Take care, have an amazing day, and I'll talk with you soon.