

THE MODEL HEALTH SHOW

EPISODE 734

How Food Reduces and Causes Stress

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SHAWN STEVENSON: Welcome to The Model Health Show. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today. Today we're gonna be covering how a potato chip experiment won the Nobel Prize. And how the results of that study can make healthy food more enjoyable for us every day. We're also gonna be diving into the science of how food can actually help us to reduce stress and how certain things about food can cause more stress. Plus, we're going to unpack the science of Gastrophysics and how our perception of our food impacts our experience with what we're eating. All this and much more on this episode of The Model Health Show. Now, first things first, I just got back from an incredible trip to New York City for the release of my new book, the Eat Smarter Family Cookbook. I did a segment on Good Morning America, and the most incredible experience, however, was on Sway In The Morning.

SHAWN STEVENSON: It's an iconic show. I'm talking about legends of the game, LL Cool J, Kanye West, when he said How Sway, that happened in the same seat that I was sitting in. And so to be invited onto that platform was just truly remarkable. And we talked about all manner of health and wellness and empowerment, and education around getting our citizens healthier. And when Sway met my sons, I brought my sons along with me on this trip, along with my wife as well, but Sway just dapped up and met my oldest son, Jordan. He whispered in Sway's ear, "my dad can freestyle". All right. I had no idea that he did that. And then we did the interview. It was incredible. I thought the show was over, and then Sway was sitting to my right, and he just started getting really hype and he turned the music on, and he was just saying, I'm just like, "oh, that's incredible. All right, all right". Great way to end the show. And then he passed the mic to me. He opened up the floor for me to drop some bars. And though I was not expecting that to happen, I stay ready. All right. So, I did a freestyle just right off the top of my head. It was fun. It was an incredible experience. The room was going bananas. And it was definitely one of the greatest experiences of my life to have my family there and my oldest son, just to even plant the seed to make a moment like that happened it's really cool. And so the experience was wonderful. My sons, this is the first time they got a chance to go to New York City. So to see all the sights and the sounds and the smells and the, and the food and all the things.

SHAWN STEVENSON: And of course, most importantly, to be on this mission of empowerment because they're on the cover of this new cookbook. And when you go into your local bookstore and you see this book, it stands out. There's nothing else like this. And speaking of which, there was a very special Barnes & Noble location that went above and beyond to support me and their manager, Sharon, at the location **555 5th Avenue in New York City**, 555 5th Avenue. Please go there.

I signed a bunch of copies there. There're signed copies that they're holding, and again, they welcomed me with open arms, and they were so supportive. They did some social media stuff for me. And I really wanna make sure that were supporting our local bookstores and keeping them open, keeping our bookstores open. And for that to happen, we have to invest our time and invest our dollars in these locations.

SHAWN STEVENSON: So if you're in the New York City area, go to 555 5th Avenue, Barnes & Noble location, and get yourself one of those signed copies of the East Smarter Family Cookbook. And hopefully just that experience of even going into a Barnes & Noble location and just being able to see all of the collective knowledge that's placed in a building like that is something special. It's been in our culture for quite some time, but it can be a little bit on the endangered species list because we've got so much digital content now. And so to keep our bookstores alive, please and invest in our local bookstores. So in particular, New York City, I'm calling out to you right now. Go to 555 5th Avenue's Barnes & Noble, and get one of those autograph copies of the Each Smarter Family Cookbook. Now, without further ado, we've got some incredible information to go through today that is tying together food and psychology.

SHAWN STEVENSON: And this is absolutely going to blow your mind. Why does this matter? Well, if we're talking about stress and how food can actually reduce our stress, and in some ways food can increase our levels of stress, why does this matter? Why does this S word create so much tension in our minds when we hear about it? Well, first and foremost, we need to understand the state of stress here in the modern world. According to data published in the Journal of the American Medical Association, Internal Medicine, upwards of 80% of all physician visits today are for stress related illnesses. All right? Most of the time when people are going to the doctor today, it's for a stress related condition. Now, it might be for a cardiovascular issue. The underbelly of that, the undercurrent, the foundational aspect of that condition is rooted in stress. Superficially, we know that stress can lead to cardiovascular events.

SHAWN STEVENSON: And we might see that kind of revelation in a movie or TV show where we have the elderly man who's getting angry all the time. He's like, "you're gonna have a heart attack, Joe, you need to calm down", right? But seriously, our thoughts create chemistry in our bodies that alter what's happening with every single cell in our bodies, in particular, the cells, and the functionality of our cardiovascular system. And so, keeping all of this in mind, stress is not something that's inert just because it's invisible in many ways, this does not mean that it is not deeply affecting our lives. Now, a question should come up for us whenever we're talking about any of these subjects. What is it? What is stress? Well, stress is defined as a physical, chemical, or emotional factor that causes bodily or mental tension, and may be a factor in disease causation.

SHAWN STEVENSON: Now, this just kind of frames stress as something bad, but stress is absolutely not all bad. As a matter of fact, we need stress. We require stress in order for us to survive, in order for us to live here on this planet. Ourselves, have developed adaptations under certain environmental pressures to enable us to walk around, breathe, do all the stuff that we're doing here today. Dancing, driving cars and playing sports, and all the things that we're able to do. Our bodies have adapted to even gravity that's weighing down on us constantly. We've made these adaptations, and so we need stress. And it's because of that specific reason is that stress triggers adaptation. And there's this iconic statement that what doesn't kill me makes me stronger. All right? Shout out to Kanye again. What doesn't kill me makes me stronger. We might hear a statement like that, but it is real.

SHAWN STEVENSON: This is a phenomenon called hormesis, right? So many stressors in our lives are known as hormetic stressors. These are stressors that we engage in that we're exposed to, but when allowed to recover from said stress, we come back better. A perfect example of this is strength training. When we are lifting those weights, we're actually creating micro tears in our muscle fibers. We're creating what would appear in the surface to be damaged. We're gonna see a change in our chemistry. We're gonna see elevated stress hormones. There's gonna be a lot of things that if we were to do a really tough workout and then go get some blood work done or get analyzed, we might even get diagnosed with some kind of a problem. But there's no problem. We just did a great workout and now we need to focus on recovery, good nutrition, getting some rest, because your body doesn't just heal back to where it was because of evolution and our drive to adapt so that if we're ever facing that stressor again, we're better capable of handling it. We don't just adapt right at the level we were at.

SHAWN STEVENSON: We get a little bit better and a little bit better, and a little bit better. That's the secret source of adaptation and engaging in stressful acts intentionally. Now, there is obviously a place where this goes too far, where we become overstressed or excessively stressed and stressors, if you want to think about it like this, a stressor, if you take your baseline level where you're at your ground level, engaging in some stress or being exposed to stress is like digging a hole in your ground level. And if you allow yourself to recover, it's like filling the hole back up. And adaptation is like filling the hole back up with a little bit more than what was dug out, right? So you're starting to develop a mountain, a mound, and now when you're faced with certain stressors, you can dig, start digging, but you still might not even get to that place where you're digging a hole for yourself.

SHAWN STEVENSON: But excessive stress and being overstressed is where you keep digging and digging and digging to now we have a pit that's dug and shout out to Shia LaBeouf. We have holes, all right? We have holes in our game. We have holes in our psychology, in our physical health and in our emotional wellbeing because we keep digging down too far and

we're not allowing ourselves to recover. Now we're gonna look at what is the big gap in our understanding about stress? Because we tend to look at this through very selective lenses, because as I'm talking about that digging of a hole for ourselves and allowing ourselves to recover, we might be like, well, I'm not training that hard, or, I don't have that much stress at work. But that's not how stress is. Our bodies and our brains truly do collect data. It's a consolidation of our overall stress inputs that are affecting whether or not we're digging that hole too deep, whether or not it's getting refilled, and whether or not we're being able to adapt.

SHAWN STEVENSON: And so what is your overall stress load? That's the equation to start to look at here. What are some of the inputs for our overall stress load? Well, there can absolutely be physical stress. There's also emotional stress. There's mental stress, there's environmental stress, which is a huge, huge aspect of stress today because we're living in conditions that are incredibly abnormal compared to the conditions that we evolved in. There can be relationship stress as well. That's a huge stressor because our relationships impact so much about our lives and our livelihoods. Also, there can be a spiritual aspect of stress as well, having a sense of purpose, having a sense of significance, feeling connected to something. All of these things are deep human needs. In addition to that, we also have food stress. We can have a stress regarding food, for lack of food or lack of nutrition, but also an excess or an excess of things that we might consider food but aren't really food, and the impact that those things can have on our overall stress load.

SHAWN STEVENSON: So all of these things are going into your overall stress load, and they could be digging that hole deeper and deeper and deeper, and we don't even know it. And so today, we're putting the power back in our hands. We're understanding how this stuff works, in particular in the context of food, because this is something that we have true, tangible ability to change our inputs and what we're putting into our bodies, but oftentimes it requires a deeper understanding of how all this stuff works. So I'm really, really excited to dive into this today. So now we're going to transition into specifically how food can act as a stress reducer, how food can help to modulate or neutralized stress in certain ways and help us to reduce our overall stress load. Food can actually be helpful in that. And it starts with the understanding of a new field of science called Gastrophysics.

SHAWN STEVENSON: Now, this is very close to astrophysics, but we're talking about the universe inside of our bodies. And Gastrophysics is the science of the perception of food. It is largely our perception of the food that we eat that determines our experience. Our reality is based on our perception, and this holds true when it comes to the food that we're eating as well. Did you know that a potato chip experiment led to a scientist receiving a Nobel Prize? Well, professor of experimental psychology at Oxford University, Dr. Charles Spence and his team conducted what is now known as the sonic chip experiment. The sonic chip experiment

had test subjects bite into potato chips while wearing headphones that selectively amplified parts of the crunch at various times. Pringles potato chips were chosen for this experiment due to their uniform shape and density. After compiling the data from the study, it was revealed that loud chips tasted better for study participants, loud chips, a sound made the food taste better, made it more enjoyable, and by increasing the volume of the crunch via headphones while eating the chips made participants believe they were 15% fresher and crunchier and tastier.

SHAWN STEVENSON: Dr. Charles Spence's data indicated that how something feels in the mouth is often secondary to flavor when it comes to foods that unsettle us. So food is not just about taste at all. It's also about texture, and it's even about sound. He states, "Texture seems to be the key sense in determining our food dislikes." He said, "There may be a primitive thing about the state of foods texture and their likelihood of being safe or nutritious." Fresh fruits and vegetables, for example, tend to have a crispy texture that isn't found once they go bad. So his data is alluding to that the way that we evolved and our ability to assess whether or not a food was safe to eat, had something to do with their crispness, right? If you think about, for example, biting into an excessively soft apple, mm, skepticism, a little bit of internal red flag starts to go off that, hey, this might not be okay to eat.

SHAWN STEVENSON: The same thing holds true when biting into a limp carrot. All right? Nobody wants a limp carrot out here. Also, thick congealed oatmeal, for example, like that texture, when it's all congealed like that, and kind of bounded together. This reminds me of that movie, "The Golden Child", with Eddie Murphy. Classic, classic alert! And they were trying to get The Golden Child, these evil doers, to basically consumed some, like, it was kind of gross, but some blood. But they like covered it up with like some congealed nasty oatmeal was on top of it, and the little Golden Child kept on pushing the food away, basically not eating the food, and kept on snacking on a little leaf that the Golden Child had in their pocket. All right? But shout out to Eddie Murphy. I want the knife shout out to anybody that knows about The Golden Child.

SHAWN STEVENSON: But here's the thing, none of those things, soft apple, limp carrot, congealed clumpy oatmeal, none of those things probably sound appetizing to you. And it has to do with the texture of the thing, not the flavor of the thing. Now, as mentioned, the sonic chip experiment won a Nobel Prize, but there's a little asterisk by it because it won the Ig Nobel Prize, which is conducted by Nobel Prize committee members. And it's an award given to the stranger discoveries that "Honor achievements that first make people laugh, and then make people think." Again, this is tying in to something really important when it comes to our association with food and how it can help to reduce stress. So as we're taking this journey, keep some of these insights that you're gaining in mind, because again, our perception of the food that we eat determines our experience.

SHAWN STEVENSON: A study published in the Journal of Food Science and Technology stated, "Food oral processing is extremely complex, and taste perception is affected by the influence of food ingredients as well as physiology and the human mind." The researchers noted that food texture is determined by sensory receptors in the mouth, but it's also combined with our perception about the noise the food makes as we chew it. And to summarize, it isn't just the tastes, it's also texture that plays a major role in our enjoyment of food. Often meals will have a diversity of textures that will perceive as a more balanced meal.

SHAWN STEVENSON: Now, here's where it becomes a little bit tricky in our modern society, because we can become conditioned to eat meals of soft, hyper palatable foods, and then look for the crunch elsewhere. So we can eat meals again, of hyper palatable soft foods, but because our bodies are still looking for some crunch, we'll try to find that elsewhere. So this makes me think of one of my favorite TV dinners as a kid, which is the Salisbury steak, the soft steak, the mushy steak, right? It usually came along with not only do you got the mushy steak, you've got the super soft mashed potato-ish, all right? Not quite sure if it came from a potato, but it was mashed potato-like, and you would probably have some other form of veggie, usually some kind of corn that had like a sad semi-firm texture for like half a bite, but generally, that TV dinner is made of these soft, hyper-palatable foods.

SHAWN STEVENSON: And so after a meal like that, we shouldn't be surprised that we have a craving for some Doritos or a Nestle Crunch Bar or some Oreo cookies. Something that has some crunch because we didn't get the crunch that we evolved having when we were eating real foods. And so this can be part of that pleasure gap or that satiety gap where we're not getting the textures that we evolved having with all of these, again, soft, hyper-palatable foods. Now, here's the key and here's the action step for us to leverage this to make food more enjoyable for us, to have more pleasurable food experiences that help us to reduce stress. And we're gonna talk more about why that is. But to use the desire for crunch to our advantage.

SHAWN STEVENSON: Let's proactively combine intentionally healthier forms of crunches and/or healthy soft foods along with some crunch companions. What does this look like? Basic snacks out there on the streets, chips and salsa. The salsa's kind of, it's soft. It's got the liquidy nature to it. And then we got the crunch coming along with the tortilla chip. One of my favorite recipes in the Eat Smarter Family Cookbook that I have every week is the speedy super food guacamole. All right, we're about that guac life. We just are, all right? This is coming from a guy. I didn't eat anything avocado-like until I was 25 years old. Just didn't do it. There was no, it just, I didn't grow up like that. I grew up on the TV dinner, like I mentioned, and avocado looks super sketchy to me, let alone guacamole. And I thought they were one and the same to be honest, I didn't know that there was a difference.

SHAWN STEVENSON: And I definitely didn't know where that green stuff that people were dipping chips in. I didn't know where it came from, because I didn't have that in my culture. And so for me to stand here today and to tell you how delicious that this guacamole is, I'm not playing. I'm not playing. And it's combining also some other traditional foods, like avocados are really a staple in a lot of traditions around the world. In particular, the Aztecs and the Mayans, but a big source of protein for them was spirulina. This super green algae. And who knew combining the guacamole with a little bit of spirulina would bring about a superpower. It would unlock a superpower of guacamole, deliciousness that here before we didn't know existed. And so, and it's super easy to make as well as a quick recipe.

SHAWN STEVENSON: But whether you're using, organic tortilla chips, corn chips, there's the blue corn, white corn, and everything in between the yellow corn. There are also a huge wave now of different types of tortilla chips. They're making tortilla chips outta everything. Quinoa, there's flax chips, there's all kinds of different chips out there on the streets. Or we could simply use some veggies in our dipping process, which leads to the next thing simple, veggies and hummus. All right. Shout out to The Love Guru. That's how I learned how to pronounce hummus correctly, hummus. All right, shout out to Mike Myers and The Love Guru. So carrots and hummus and carrots and hummus. This could be, of any other broccoli, whatever it is for our dipping pleasure. All right, that's another thing. Again, combining like a whole food along with something soft.

SHAWN STEVENSON: The same thing holds true with folks with yogurt. A lot of people are doing the straight yogurt jump off, which might not be the best go-to, especially for yogurts that have added sugars. So we wanna move away from that. Ideally, Grassfed yogurt, there's a bunch of different forms if people are not vibing with the dairy forms as well, but let's add some crunch to it, because our bodies might feel like it's missing out on something. But bringing in that crunch in the form of, there's a variety of different granolas and crushed nuts and things like that. But to combine these different things, different textures, but also we wanna strive for nutrient-dense versions of those things. And for me, I'm a big fan of... No, let me make this clear. Acai bowls can be incredible. I'm a big fan of Acai, and we have to be mindful about the sugar content of the Acai bowls that are out here on the streets with these different companies.

SHAWN STEVENSON: And so just be mindful of that. But this is why I put my own Acai protein bowl into the Eat Smarter Family Cookbook. It's one of the, it's one of the amazing things I've been seeing a lot of pictures, family sharing with their kids. Having the Acai bowls has been one of the coolest things. And one of the most frequent things I've been seeing as well, is people making the acai protein bowls and sharing it on social media. So, I intentionally knowing that this is kinda like an ice cream. We gotta come in here with the, we gotta have

some crunchy elements to it too. So that can be, again, crushed nuts, some high quality granola, and things like that. The same combination holds true with something like not just the crisp, delicious apple, but let's go with a creamier soft, higher protein implement as well.

SHAWN STEVENSON: So having that crisp apple along with a seed or nut butter of your choice. We got almond butter, we got pumpkin seed butter, we got obviously the classic peanut butter. We got cashew butter out here. Walnut butter, they're butter and everything. Shout out to Butters in South Park. All right? They're butter and everything. So finding these different flavor experiences, nutrient-dense, real whole foods, and combining that sense of crunch as well, that crispness, our brains are looking for that. And it can leave a gap in our satiety when we're not getting in these different textures. So give yourself food, texture experiences that make your brain happy. Our personal perspective of texture is the product of experience and expectation. Our individual memory, bank of food memories and how things quote "should be" is really driving our expectation. When foods don't have the textures that we expect, it makes us internally upset.

SHAWN STEVENSON: It disrupts us. On the other side. When we expect certain textures, when we eat certain foods, and the food matches our expectation, it pleases our brains, it makes our brains happy, it makes our brains feel content. And all of these things help to reduce stress. Now, a little caveat to this. Sometimes unexpected textures can be exciting, but it's generally in the context of knowing you're about to engage in something new for you. Different cultures feature different food textures that our minds sometimes have to be prepped for when we try different foods outside of our norm. So keep all these things in mind. Use these things to our advantage, because that sensory mismatch that can take place when we're eating foods can create more stress for our bodies underneath the surface. And so leaning into that intentionally and healthfully can help to use food in a way that is supportive of reducing stress.

SHAWN STEVENSON: Now, what's another way that food is proven to impact our levels of stress in a positive way? Well a lot of times, when in particular, if we're noticing that we are dealing with a little bit of stress, a lot of times, honestly, we don't notice when it's happening. But we have this tendency to seek out more carbohydrate-rich foods when we're feeling stressed. And there's a reason why carbohydrates can actually help to boost serotonin production and help reduce stress. All right? Recently, as we had a war on fat, there's been a war on carbs, there's been a war on protein. All this is silly. All of these macronutrients that we've identified recently in science, our ancestors just ate food. But we've turned food into this debate about macronutrients. But the reality is, if we are eating real, natural foods in the construct of a natural environment, our bodies are going to self-regulate substantially and utilizing carbohydrates.

SHAWN STEVENSON: This is not a bad thing. This is one of the macronutrients found in abundance in certain foods that are incredibly healthful for the human brain and the human body. Now, with that said, when we are looking to modulate stress, and we know this, a lot of this has to do with preparation and being aware of what's coming. Shout out to Benjamin Franklin. All right? My guy was, he was with it with the experiments and the whigs and all the things, but he has some great quotes. All right, Benjamin Franklin, it's all about the Benjamins, by the way, we gotta shout out to P Diddy and the boys. But Benjamin Franklin said that if you fail to prepare then you're preparing to fail. That's a pretty hard hitting statement. And there's a lot of truth in that. And so knowing that, Okay, I'm experiencing a little bit of a stressful day today, your biology, especially if you've had those experiences of like, Oh, that glass of wine helped me to feel less stressed. Or, that chocolate cake helped me to feel less stress. Your biology, all the cells in your body have that data programmed into it.

SHAWN STEVENSON: So when you start to experience those higher levels of stress, your brain is going to be directing you towards that bottle of wine or that chocolate cake. Not to villainize any of these things, by the way, but sometimes it can get out of hand. And we don't want these things to be controlling us. We wanna be in control of our choices, and so that we can engage in them intentionally and enjoy the process and not feel side effects or a sense of, I shouldn't have done that because we don't like how we feel later on. And so, with this being said, to get ahead of it in helping to reduce stress, let's choose some higher quality carbohydrate foods, right? We know, for example, that sweet potatoes are having a moment right now. Now, even though sweet potatoes have been around for a thousands of years, enjoyed by humans, it can be a little bit, kind of run of the mill.

SHAWN STEVENSON: Recently, for the average person, we're probably more exposed to the different varieties of sweet potatoes and yams recently, right? So we've got, the Orange Boy is the one that's out there most of the time, but there's Japanese sweet potatoes with a kind of purple-ish skin. But inside it's white. We've got literally purple sweet potatoes where the inside is like a purple blueberry kind of color. There's many different varieties. So that's one way to kind of play with this and have some different food experiences and also different antioxidants. That's what those different colors are indicating. And some of the cool things about sweet potatoes that I highlight in the Eat Smarter Family Cookbook, because we are looking at eating for a purpose. And so if we want to support the health of our gastrointestinal tract, there are like these little emojis by each of these kind of top 40+ science back foods for improving our metabolic health.

SHAWN STEVENSON: Gut health, brain health, sleep quality, he list goes on and on. But by the sweet potato, you're gonna see a little emoji that's indicating that it's good for your gut health. And so I share a study on that. But also, one of the interesting things was a study that uncovered that the anthocyanins that are found in sweet potatoes, again, attributing that

color of the sweet potato, can actually act upon the memory center of our brain and potentially enhance our memory. So pretty cool. What are some cool things we could do with the sweet potato outside of the usual baked sweet potato? Well, you already know, if you've been listening to recent episodes, you know that we have a delicious protein, sweet potato pancakes. Ah. So instead of the ultra processed flowers as the base, we're using delicious nutrient-rich sweet potatoes as the base for this incredible pancake.

SHAWN STEVENSON: And what we love to do is make a bigger batch than what we're eating at the time. So we could freeze some so that, in the morning, my youngest son could just warm some up, get himself some fruit. And he's got a protein pack breakfast to start his day. So, and by the way, if you're watching the video version, you'll see some of the pictures from the Eat Smarter Family Cookbook as well. We've got several other great recipes in the Eat Smarter Family Cookbook that's leveraging the power of sweet potatoes in these higher quality carbohydrates on purpose. I'm not just doing it just because I know that that's going to help to incite the production of serotonin in a much more healthful way. So that's another way that what we eat can actually help to reduce stress.

SHAWN STEVENSON: Now, moving on, let's look at another way that food can actually help us to reduce our stress. And this was highlighted in the Eat Smarter Family Cookbook as well. And this was a study featured in the Journal Biomed Research International, that detailed how the process of chewing. The process of chewing itself can act as a stress reliever. The process of chewing itself. And if you think about, again, our evolution coming, finding something to chew on, that's a moment, that's a moment of relaxation. We've accomplished our goal, we found something to eat. And so the act of chewing itself can help to reduce stress. But the question is, are we actually taking the time to take advantage of this? Are we chewing our food well? Well, we're gonna talk about the potential ramifications the other side of that in a moment. But this should just be a call to arms to take advantage of this superpower that we have innately within us to just take the time to chew.

SHAWN STEVENSON: Chewing can help us to relax, but this also speaks to textures and density of certain foods. We have a lot of soft foods out here today, and they don't require, oftentimes for us to really be able to work those muscles of our jaw. Also our teeth, their bones. And so they need that exercise as well. Those exposures for our teeth help our teeth to remain healthy as well. So it's just kind of like all of these beneficial things happen when we're taking the time to chew our food and seeking out a diversity of food densities can be helpful as well. Now, let's look at certain foods that actually have science to support, eating these particular foods can actually help to reduce stress in the human body. One category of foods that strangely enough has been found to help to reduce stress is fermented foods.

SHAWN STEVENSON: Several studies are now affirming how fermented foods and probiotic bacteria can reduce stress and improve mental health. For instance, a study cited in the journal, *Psychiatry Research* titled *Fermented Foods, Neuroticism and Social Anxiety*, denoted how animal and human studies show that fermented foods have the potential to reduce symptoms of anxiety. What? How? Well, a lot of this chemistry, a lot of our neurotransmitters associated with our mood, are located in our gut. There's this interface between our gut bacteria and these enterochromaffin cells, enteroendocrine cells that are producing and storing the chemistry that affects our mood. And we know there's this profound gut-brain connection that has recently been detailed in a tremendous amount of peer-reviewed data. So this is what's happening. We're bringing in these friendly, complimentary probiotics, and they're really helping to support that environment, because that's what it's really about, is having a healthy environment that supports a good mood.

SHAWN STEVENSON: And also, of course, the reduction of stress. What are some of the most popular forms of fermented foods out there? Well, we've got obviously sauerkraut. We've got kimchi, we've got pickles. Now you gotta make sure that they're actually real pickles, because with real pickles, that's gonna be in the refrigerated section of the grocery store, by the way. And this is utilizing brine. So it's gonna be salt, water, and it is fermented. There's a trick with the food industry where they can basically create a pseudo pickle by using vinegar. All right? So it's like making the pickle twerk its way forcefully into becoming a pickle, alright?

SHAWN STEVENSON: Versus the pickle twerking its way to being fermented on its own free will. Alright? We want freedom of twerk out here for our pickles, for our fermented foods. I don't know why I use that analogy, but I did, it just happened right here. So keep in mind, we wanna make sure that we're going for real pickles when we're going for pickles. And also, there's a variety of different yogurts. There's varieties of also fermented breads as well. There's so many different things that different cultures around the world look to. There's fermented shark up in Iceland, they eat fermented shark up there. Alright? It's a thing.

SHAWN STEVENSON: So a variety of fermented foods can be great for our waistline, but also for what's happening with our mind, our ability to process and modulate stress. And it has a lot to do with what's happening with the gut-brain axis. All right, so moving on. What's another science backed food that can help to support the reduction of stress? Well, this one is actually traditionally used as a beverage, but it also is used culinary ways today in different food preparations. And I'm talking about Lion's Mane medicinal mushroom. I just went to a farmer's market the other day and there was a table there that had this wide variety of different medicinal mushrooms and Lion's Mane was there as well, and some folks who were getting the Lion's Mane to use it in different dishes. But traditionally it's gonna be a decoction or hot water extraction to kind of break down and extract these compounds that I'm about to share with you because within Lion's Mane, a study published in biomedical research found

that test subjects with a variety of health complaints, including anxiety and poor sleep quality, were given Lion's Mane or a placebo for four weeks.

SHAWN STEVENSON: The participants who use the Lion's Mane significantly reduce levels of irritation and anxiety than those in the placebo group. Alright, so we're talking about a reduction of agitation, a reduction of stress. The researchers stated "Our results show that Lion's Mane intake has the possibility to reduce depression and anxiety." That's special, man, that is really special. And as mentioned, you wanna make sure that this is a dual extraction to really get all the compounds from the mushrooms. This is why I'm such a huge fan of Four Sigmatic. I have Lion's Mane almost every day. So whether it's in the Lion's Mane Organic Coffee along with Chaga medicinal mushroom, or it's the Lion's Mane Elixir itself, this is one of those staples in my household for sure. Huge fan of Lion's Mane, and you could check them out. Go to foursigmatic.com/model, that's F-O-U-R S-I-G-M-A-T-I-C.com/model.

SHAWN STEVENSON: You get 10% off storewide. Four Sigmatic really is the best. They've been such a huge supporter. We're a big supporter also of the movement with Eat Smarter and Eat Smarter Family Cookbook as well and just providing great gifts and things for giveaways and support just to really help with this movement with family wellness. So definitely appreciate Four Sigmatic. Go to foursigmatic.com/model for 10% off. Now let's move on to another one of these foods that has signs to affirm that it can help to reduce stress. And this food is kind of omnipresent in our world today, or should I say a version of it, but the root of it is remarkably effective at reducing our levels of stress. And I'm talking about chocolate. A study published in the International Journal of Health Sciences determined that even a small amount of chocolate can significantly decrease perceived stress because our stress association, it is based on our perception of the stress and chocolate can decrease perceived stress.

SHAWN STEVENSON: There's a reason why when we're feeling stress, people go to chocolate. But oftentimes, again, it's coming along with all of these other synthetic ingredients if we're talking about these conventional chocolate products out here. But the root of chocolate is something really, really special. And this is why I sought to incorporate chocolate AKA, it's origin cacao into several recipes in the Eat Smarter Family Cookbook as well. So whether it is in a delicious heart-healthy smoothie, or it's actually in our slow cooker chili, there's a little bit, it creates this delicious, sweet and savory combination, that chili is fire. That's actually what I made on Good Morning America and the entire studio was flipping out. Alright, just with the smells. Alright, they were, Tony Braxton on the smells they were getting. Ooh, I get so high on just the aroma itself.

SHAWN STEVENSON: And there's something about a good chili that's just kind of like a hug in a bowl, all right? It's so wholesome and delicious and just being able to incorporate

wonderful real whole foods together and off school. This is one of those recipes where you can make a big batch, freeze it, and then reheat eat whenever we feel like it. So that's what we're looking at. Again, this is great for families and just stacking conditions in our favor. But chocolate, if you're gonna do a chocolate bar, if we can get a higher percentage of cacao, ideally, and there's a lot of great chocolate companies out there today, but just be mindful of that, that chocolate does actually help us to reduce perceived stress. It's one of the reasons that we tend to be attracted to it. Let's cover one other food that has been shown, again, science-backed proof that it can help to reduce stress.

SHAWN STEVENSON: For this one, we're gonna look at a spice. This one is turmeric. Turmeric has been found to improve insulin sensitivity, reduce blood fats, and directly act upon fat cells. Plus research published in the Journal of Ethnopharmacology points to turmeric's potential in reducing the severity of both anxiety and depression. Yes, we can add some turmeric to different recipes. However, to get a truly therapeutic amount of it, I'm a huge fan of making a turmeric latte. And for that, my favorite turmeric latte is from Organifi Gold. Organifi Gold not only has an incredible source of organic turmeric, but also combines magnesium, Rishi, and other incredible ingredients that really help to reduce stress in the human body. They made that product so intentionally utilizing the highest quality ingredients and just making it easy to enjoy the process of getting well and getting these powerful nutrients into our bodies.

SHAWN STEVENSON: For the Organifi Gold, go to organifi.com/model. That's O-R-G-A-N-I-F-I.com/model. You get 20% off storewide, so they're gold formula, they're Organifi green juice, which I mentioned spirulina a little bit earlier. It's one of the highlighted ingredients in the Organifi green juice. But in this particular instance, if we're talking about reducing stress, Organifi Gold is my favorite. Alright, now moving on and looking at how food can reduce stress. It's not just the food itself, it's not just the perceived experience of the food, it's not just the chewing part, it's the conditions in which we're eating because a lot of the latest science is pointing to the fact that eating with people that we love is a powerful defensive mechanism against stress. A study that was conducted on office workers at IBM working in Tech revealed that regardless of how high their stress was at work, if they were able to make it home and eat dinner with their families on a regular basis, their work morale and productivity stayed high and stress stayed manageable.

SHAWN STEVENSON: But as soon as work obligations cut into their ability to have dinner with their families, work morale plummeted, perceived stress, their experience of stress starts to go up significantly. Being able to eat with people that we love, there's this kind of invisible thing that's happening and we've been pointing out some of the science recently here on the show. But one of the things that happens is we're producing more beneficial chemistry like oxytocin, AKA, the cuddle hormone or the love hormone that helps us.

Oxytocin has been found to essentially neutralize the activity of cortisol. So it's helping us to downregulate from that fight or flight nervous system and switch over to the parasympathetic rest and digest nervous system. So we're literally digesting our food better, we are improving our process of elimination and assimilation. It's something really special about being around people that we care about, especially under the powerful sphere of good food as well.

SHAWN STEVENSON: So use this to our advantage. I'm a big advocate because based on the data, it's three meals per week at least, of eating with friends and/or family, three meals a week to extract these benefits, to help us to metabolize and process stress better. Because the stress from our day-to-day lives where we're digging that hole, sitting down and eating face-to-face with people that care about us, helps to fill that hole back up. And also, again, as you've already learned, adding a little bit more so it makes you more resilient. Alright, so we've covered how food can potentially reduce stress in many different aspects. Now we're gonna look at the other side of the coin and how food can cause stress. Now, the first insight for us to have is that the process of eating food in and of itself can evoke notable stress. Your body takes it very seriously when something foreign is getting put into it.

SHAWN STEVENSON: All right. So when we're eating food, we're taking something from the outside world and putting it inside of our bodies. Alright? Our human cells, first and foremost are about survival of self. Yes, we have a deep primal drive to consume foods, to rebuild tissues, to run processes, all the things. But your body is hyper-cautious about that process because through evolution we could eat things very easily that could kill us. And so the immune system has to be front and center. It has to be frontline paying attention when we eat a meal, and this is what we see in the data, we see an increase in the activity of our immune system when we eat. Now, there are certain factors that increase that immune system response, and one of those noted in the data is that when we venture into obesity and we eat a meal, we see an even more heightened activity of the immune system.

SHAWN STEVENSON: And what we're seeing in the data is that we have a heightened state of inflammation in the body when we're carrying excessive amounts of body weight. Because as our fat cells are getting filled with more and more energy, essentially as our fat cells are filling up with more and more contents, it can send off a false distress signal to our immune system that our cells are essentially infected because we're not being able to offload the energy that they're containing. And again, through our evolution, we would have times where we are filling up those cells, but then we would have times to offload. And today, because we don't have famines in our kind of modern society, it's just constant consumption. There isn't a chance to offload that energy. And so the immune system stays in a heightened state of activity and then in comes a meal and all that associated, there's so, we're talking about

millions and billions, billions of processes happening at lightning speed in our bodies to take that food stuff.

SHAWN STEVENSON: And number one, keep us safe, be able to extract what is usable, send it to, whether it's your eyes to your liver, your toenails, whatever it is, it's sending these nutrients all over your body and also utilizing energy for storage for later. And also to run processes, let alone fueling your brain cells and helping to remove metabolic waste. The list goes on and on. It's a lot of stuff happening at one time. So your body has to be front and center a lot of energy. And this is the point. We've got one aspect of stress being the immune system response inherently from eating a meal and also the incredibly high energy requirement to take that food, keep us safe and to do something with it. It might be the most energy intensive thing that the human body does is digesting a meal.

SHAWN STEVENSON: All right. So, which can be, again, we can do it in a way that helps to reduce stress, but we can also do it in a way that makes it even more stressful. Part of this today is that when we're sitting down to eat, or sometimes we're not even sitting down, but when we eat a meal today, we have this new manifestation of fake food or what we call it officially is all ultra-processed foods. A 2021 study published in the International Journal of Environmental Research and Public Health is one of the many studies affirming the connection between ultra-processed food and excess stress. The study titled Unhealthy Food and Psychological Stress found that people who consume the most ultra-processed foods have higher levels of psychological stress. Now, this study presents a chicken or the egg scenario like which one came first because we can't separate if the fake food is causing the higher rates of stress or if the higher rates of stress are causing the higher intake of fake foods.

SHAWN STEVENSON: And it's very likely that it goes both ways. We know about the phenomenon of stress eating, but there is new data affirming that we can also be eating stress. A fascinating study published in the Journal Nutrients in 2021, detailed how the consumption of ultra-processed foods can create cellular alterations that lead to excessive oxidative stress. The researchers highlight how eating ultra-processed foods contributes to inflammation, immune system dysfunction, and set the stage for chronic diseases. And so again, we can be utilizing foods to help us to reduce and adapt to stress, or we can be digging a deeper hole with the foods that we're eating because truly diet stress is another thing that is a part of our overall stress load. Another aspect that can cause stress is eating foods that have a lack of nutrients. Yes, we can get some caloric energy from a Twinkie, from a Honey bun, from a Pop-Tart, but are we getting the essential nutrients that we need to survive when we're eating those foods?

SHAWN STEVENSON: Part of the response of the human body where we're not satiated and we're wanting to eat more and more and more is that we're not getting in the nutrients that our bodies are screaming for. Now with that lack of nutrients, by the way, this is where it's about being intentional when we're making our food choices to make sure that we're eating nutrient rich foods as much as possible. And to compliment with that in particular, there's a certain category of nutrients that are really important in helping to modulate stress. And this is where electrolytes can be valuable for everybody, especially those who are not getting copious amounts of these stress modulating electrolytes in their diet. A plethora of studies have proven the benefits of electrolytes on mental health and stress management. For example, a study cited in the journal of physiological reports titled Sodium and Potassium Excretion Predict Increased Depression in Urban Adolescents uncovered the overlooked role of electrolytes and mental health, in particular low potassium.

SHAWN STEVENSON: And the sodium intake that's largely coming from ultra-processed foods is creating more mental health issues in our citizens. And of course, by the way, don't forget about magnesium when we're talking about this interplay with electrolytes. Magnesium has too many studies on reducing symptoms of anxiety and depression and releasing abnormal amounts of stress, helping us to metabolize stress. Then we can even mention, there are mountains of studies on the benefits of magnesium and so keep that in mind. This is why I'm a huge fan of course, of getting in our electrolytes in our food, but also supplementing with high quality electrolytes. I'm not talking about Gatorade, I'm not talking about Powerade, I'm not talking about any of that garbage. I'm talking about high quality electrolytes with science-backed data points that is not containing unnecessary sugars and food dyes for me and my family.

SHAWN STEVENSON: This is something that I travel with this as well. It was really helpful. These are those small things you pick up traveling coast to coast to New York City, really helping me to adjust. I'm always traveling with my element electrolytes. Go to drinkmnt.com/model. That's drinkmnt.com/model and they're going to send you a free electrolyte sample pack with every purchase. So whatever electrolytes that you get, they're gonna send you a sample pack to try out their other varieties of electrolytes as well. So such a cool gift that they're giving for folks. Go to drinkmnt.com/model. Truly element is in a league of their own when it comes to electrolytes. Now, in addition to avoiding eating foods that are devoid of real nutrients, wanna look at another stressful adjunct when it comes to the foods that we're eating. And that can be this phenomenon that I grew up doing, which is eating fast af.

SHAWN STEVENSON: All right. Eating too quickly can actually cause our bodies major stress when we're not taking the time and chewing our food well, especially if it's a dense food, the other regions of our gastrointestinal tract are being forced to work harder to extract

nutrients and process food through our systems. Plus, when we're chewing our food well, we're actually encoding and mixing that food with our information. Our data is contained in our saliva. If they're out here doing DNA tests, they're doing a swab. You're not the father, you're the father. They're doing it in a swab. All right, our information is encoded in our saliva and we are interacting. That's the first place where the food is interacting with us and kind of presetting the experience of our digestion later on because it's like, okay, this food is cool with me. I've encoded the data, I've done my pretesting of it.

SHAWN STEVENSON: This is such an important part of reducing stress if we're chewing our food well, but on the other side it can cause more stress. Plus this is not just a hypothesis, this is not an educated guess. This is not an assumption. A 2014 study titled The Pathophysiology of Malabsorption details how poor chewing has been linked to decreased nutrient absorption. There you have it, there you have it. And by the way, a significant number of these studies that we've covered today is featured in the Eat Smarter Family Cookbook. We can utilize our food to support our health and to reduce stress depending on how we're engaging with it. Or on the other side, we can be causing even more stress to our bodies and minds if we're engaging with food in a different way, in an abnormal way. And so my encouragement is to utilize these insights intentionally engage with our food, and also make time to enjoy the process, make time to spend these eating experiences with people that we love, enjoy these moments together as frequently as we can.

SHAWN STEVENSON: This is not about every day we're going to have work obligations and we're gonna have watching things and that's fine. We're not villainizing those things, but we don't want to replace what our genes are really expecting of us, which is to eat more real foods and to do so in the company of people that we love. Thank you so much for tuning into this episode today. I hope you got a lot of value out of this. Share this out with your friends and family. And by the way, again, support your local bookstores. And if you're in New York City, go to 555 5th Avenue and check out the Barnes & Noble right there. Say hi to their manager sharing for me. She was so phenomenal in her support of the Eat Smarter Family Cookbook. And there are assigned copies there, but wherever you are in the US, support your local bookstore.

SHAWN STEVENSON: And by the way, I just got word that the Eat Smarter Family Cookbook on Amazon, it is a number one bestseller. It's just received that label and I'm very proud of that. And by nature of Amazon being Amazon because the book is hot, they've dropped the price by about 20% because they're looking more at volume. And that's another great place where you can pick up the book. But again, it's a both end world support our local bookstores, but also of course you can use your online retailers. The most important thing is to get this powerful resource into your hands and your heart to support your family today. I appreciate you so much for tuning in. We've got some epic 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.

SHAWN STEVENSON: And for more after the show, make sure to head over to 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.