

**THE MODEL
HEALTH
SHOW**

EPISODE 403

**Hyperpalatable Foods,
Sketchy Ingredients, &
The Genius Life**

With Guest Max Lugavere

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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. I'm really pumped about this episode. We're doing a dedication this month. Two things that can help to improve our brain health. We've got another incredible guest. He actually is the New York Times bestselling author of Genius Foods, and really focusing on foods that fuel our incredible brain but today we're parlaying that into something even bigger, beyond food, and even beyond our brain health a little bit and looking at what's affecting our health overall but truly, our brain is impacting every other aspect of our bodies. It's this incredible regulating force, whether it's regulating our blood pressure, whether it's helping to regulate our hormone production, our sex hormones, whether it's helping to regulate our stress response, our blood sugar. Our brain plays a critical role in so many different things. Regulating what's happening with our digestive system. There's this intricate song and dance going on via our gut and our brain all the time, alright. It's amazing. It's amazing what it's capable of doing in our lives. So we really want to focus on great brain health.

And for me, the input isn't just from food. It's also from our experiences, and I had a really interesting experience today. My son Braden, he's eight years old, he's in second grade right now and he came over to me this morning, he was like, "Dad, why are bad words bad words?" These are words that we just make up what they mean. Why does it even matter? And I'm just like, "Bro, wait a minute. Hold on." I've thought about the same thing before on many occasions, just trying to like mull over myself and process and meditate on what makes words so powerful. Why are these words deemed bad? Why are these words deemed okay to say? If so, in that moment, I told him, "Number one, this is an incredible question. And you think like me, and I respect that. Alright? You're special. A little DJ Khaled love, like you're loyal. I appreciate that." But also I told him that I think the context and when people will say it's a bad words, because this word is deemed commonly agreed upon to be offensive to somebody and I asked him, "Do you know what offensive means?" And he said, "It's kind of..." And he starts to like, go into like a fighting stance. And I was like, "Yes, it's kind

of like, it's attacking somebody at some level."

But the reality is this, and the overall reality that I want him to understand and for all of us to understand is that words, they're so powerful because of the meaning that we give them. It's not the word, it's the meaning that we attach to the word, right? Words have associated feelings, words have associated experiences, words have associated descriptions of certain things, right? If you say a word like couch, like there's going to be an image that comes attached to that. It's a whole different spectrum of potentialities for couches in your mind that's unique to everybody else. You might have thought about your couch when you got your first apartment, right? You might have thought about a couch you grew up on, like your mom's couch with the plastic on it. I don't know about you. I don't know, I don't think you probably grew up like that like I did. My grandma Olame, she had plastic on her cushions. Okay. Number one, you can't sit on it. Okay? But then like a certain amount of decades go by and you can, right? But then if you do get to sit on its plastic wrapped over the cushions, not comfortable and don't let you sit on it in the summertime when you got the short shorts 'cause we went to short shorts... We had short shorts first and then it transitioned to the long shorts.

Now we back to the short shorts, but we had a short shorts and the plastic sticking to your legs. Come on, not cool, but it's all coming from a word, right? Words are powerful. And so, what words are we imbibing? What words are we pulling in from the world around us and the things that we're reading, the things we're listening to? What words are we telling ourselves? And the way that we speak to ourselves and the way that we describe ourselves and circumstance and situations, right? Because every single word has meaning and your brain is absorbing it, your brain is absorbing it. These commands that we give, every single moment of every day, the words that we're taking in that we're associating with are having an impact on us and our thinking and our experience in life. So I just wanted to share that little story and to plant that seed to be aware of words and the power of words and also to be aware of when the power of words goes too far, and you let them control you, right? Because it is indeed just a word, right?

So I wanted to share that with you. And again, I think that you're absolutely going to love this episode as we're diving in and talking more about brain health, talking about words, we got all the best words, alright. But before we do that, I want to give a quick shout out to something that helps my brain to

perform at its best level. And for me, it's really understanding that your brain is like the VIP section of your body. Okay. It's like if you go into the club, and then they got the little, they got the velvet rope, right? Where they got that section that not everybody can get into. Alright, that's what your brain section is in your body, it's that VIP section, like you're going to know somebody, you're going to have some kind of exceptional value. You're going to be on the list, right, to get into the brain. And with that said, with all the different things that we are able to take in via our nutrition foods that we eat, hundreds, hundreds and hundreds of different nutritive components, all the different antioxidants, enzymes, all the different micronutrients, macros, all of these different components that we know about. There's only a few dozen that we know for sure get express VIP access into your brain itself because your brain, that velvet rope or the security, security that is there at the door of your brain is known as the blood brain barrier.

It's a internal defense for things that are internal in your body and also external inputs as well. We need to have a guard up for that. But here's the thing, crossing past the VIP section, the blood brain barrier, only a handful of stuff can get in there, to number one, nourish your brain, number two, to help to improve communication between your brain cells. The synaptic connections. And so the stuff that can get in there is of the utmost important but so many of us are actually deficient on things that can fuel our brain and fuel our performance. One of the things that we know for certain that's able to cross the blood brain barrier, now via two different actions, is MCT oil. We've got new data showing that MCTs, medium chain triglycerides can cross into that VIP section of the brain and directly feed your brain cells and help to stimulate and support neurogenesis, but also MCTs have the ability to improve your cognitive function by increasing your body's production of ketones. Whether you're on a keto diet or you're fasting or not, consuming high quality MCT oil helps your body produce ketones, like that.

This is part of the reason why every day, today included, I make sure that I'm getting a high quality source of MCT oil because there's a lot... Like with anything, marketers try to see something, they try to jump on it and they water it down. That's not happening with the source that I get my MCT oil from. High quality, sustainably sourced MCT oil plus I love the emulsified MCT oil. It's beyond your great granddad's MCT oil. The emulsified is like a coffee creamer. It's delicious. You can stir it in with a utensil versus like if you try to mix in that oil, it doesn't combine, right? The conventional MCT oil, which is fine, we can use

those two. We can use those two for salad dressings, we can mix them in if you're going to blend it into something, into a smoothie, things like that but, or take it straight if you're a shot taker, but for me, I love the experience of enjoying my nutrition, not just having something that's important for my body, but like, I like to enjoy the process.

And so that's why I'm a huge fan of the Onnit MCT oils. I'm a big fan, my favorite is the almond milk latte flavor. It's Onnit, that's O-N-N-I-T.com/model, and you get 10% off all their MCT oils, as well as all of their earth grown nutrient-based supplements. Human performance, they're about optimal human performance. They've got fitness equipment as well, they've been a real pioneer in the fitness equipment domain with the battle ropes and the primal bells, the steel clubs and maces. Onnit pushed that into popular culture. Just a big shout out to them. So my wife's favorite is the vanilla, so many different flavors to choose from. They got savory MCT oils as well for salad dressings, so much good stuff there. Pop over there and check them out. It's onnit.com/model, that's O-N-N-I-T.com/model, again 10% off every single thing they carry. And on that note, let's get to the Apple podcast review of the week.

iTunes Review:

Another five star review titled “binge it” by “Living and Thriving”, “Literally one of the two podcasts that I could binge all day. Shawn's voice is soothing and smooth as butter while delivering relevant and scientifically backed health and wellness knowledge bombs, grateful for Shawn and all his guests on the show for educating me and giving me the tools to build a fuller and healthier life. I've fallen in love with keeping me and my family happy, fed right and active. Thanks to you all. Keep bringing the heat.”

Shawn Stevenson:

Thank you so much and I absolutely will continue to do that. Keep bringing that heat. Thank you so much for leaving that review over on Apple podcast. If you've yet to do so, please pop over to Apple podcasts and leave a review for the show. You have no idea how much that matters to me. Thank you. Thank you. Thank you so much. And on that note, let's get to our special guest and topic of the day. Today's guest is Max Lugavere, who's a filmmaker, health and science journalist, the author of The New York Times bestselling book, Genius Foods. Max is also a frequent guest on some of the biggest major media shows out there, including Dr. Oz, the Rachael Ray Show, The Doctors and more. He's also contributed to Medscape, Vice, Fast Company, CNN and the Daily Beast. He's been featured in NBC Nightly News, The Today Show and in the Wall Street Journal. And now he's back to talk about a step up from just Genius Foods but

also how to live a genius life. So let's jump into this epic conversation with Max Lugavere. There's so many things in your book, a lot of people talking about intermittent fasting but you went in like, just by putting it into this window, same amount of calories. I think it was a mouse study though, but mind blowing, you know what I mean? I talked about that, the calorie issue, there's a lot of parallels, and I think again like some of these things are really going to rise to the top right now, I think your book is one of those.

Max Lugavere:

Dude, well, I mean, yeah, as I said, coming from you, that's like, that's amazing. I mean, it's a response, I think, in many ways to what was going on in my life while I was writing it, and also the kinds of things that I see on social media. We see this obsession with calorie counting, with macros and things like that. I mean, you know just as well as anybody like that there's... There are definitely people who are willing to become obsessed with these kinds of things, but I just don't think that that is the key to ultimate health and happiness and even sustainable weight loss. And it's, so yeah, so yeah, I kind of just try to give people tips that they can use that are going to make things practical and easy and without having to like become obsessed over esoteric artifacts like calories and things like that. Not that they don't matter. But...

Shawn Stevenson:

Yeah, it's just, it's one component, but we can become calorie obsessed, obviously, I've got a friend who's like, a weight loss doctor, like a very famous one and he's just all the calories, like, "If you just cut the calories then this and that," but the reality is, it's such a bigger story. And calories were actually they were invented for physics, not even for nutrition, it's like, it kind of fell into this thing. And you got to even think about the foods that we eat when we're out, packaged foods, things like that. These are gross estimates at best, you know what I mean? Just like when you're getting on a treadmill, and it's telling you, you just burned 120 calories, kind of, you know what I mean? But so, what are some of those pieces that we can kind of get a little bit, that we need a little bit more focus on? One of the things you talk about in the book is like the hyper-palatable foods. Like food being a certain way, causing you to eat more of those calories, for example.

Max Lugavere:

Yeah, for sure. I mean, here's the thing about telling people... Calorie counting obviously is going to work. You need to be at a calorie deficit to lose weight. I'm not refuting the calories in, calories out model of obesity, but telling somebody that their weight ultimately comes down to the amount of calories they're consuming is just like saying, if you came to me and you were like, "Max, how do

I get rich?" It's the equivalent of saying, "Earn more than you spend. That's it." But it doesn't tell a person anything about how to save money, how to make money, anything like that. It's just very poor advice. So what I offer in the book is sort of like how to get rich, and how to make more money, and how to save more money, without really having to become obsessed and let it rule your life. I'm glad you brought up hyper-palatable foods. I think this is a huge topic. I liken it to mouth porn, essentially. You're seeing a lot of people who are actually becoming addicted to pornography today due to the fact that it's just ever-present on the internet and super accessible. The same thing could be said for ultra-processed convenience foods. They're always at arm's length today, and this is one of the reasons why your average person is eating for 16 hours over the course of the day.

From the minute they wake up in the morning to just before they go to sleep, they are consuming and metabolizing food. The proximity issue is one thing. And the other issue, which we now know thanks to data which wasn't even available to us when I had written my first book, that ultra-processed foods cause you to overeat them. We know, thanks to a study at the National Institutes of Health that when you base your diet around ultra-processed foods, which I'm not just speaking in abstract, like this is 60% of the calories that most people consume today come from ultra-processed foods, that it becomes exponentially more difficult to control your hunger. And this is to a pretty profound degree, people actually will end up consuming, over-consuming about 500 additional calories every day when they base their diets around these ultra-processed foods. And conversely, if you stick to primarily whole foods, your hunger self-regulates and you actually come in at a calorie deficit effortlessly. And in that study, both times, both on the ultra-processed foods diet and the whole foods diet, the subjects were eating to satiety. They were eating to fullness. They were eating until the point at which they were like, "Alright, I've had enough."

Shawn Stevenson: Incredible. One of the things that you talk about is that the process of digestion itself burns calories. It's one of the things that we really don't think about in the context of eating foods. So how does that compare for eating a processed food? Maybe it's just, I don't know why this is jumping in my mind, but Funyuns, a bag of Funyuns versus a bag of raw almonds?

Max Lugavere: Yeah. Man, all the... That's why I love talking to you because you ask all the best questions. I was hoping that I would get to bring this up because this is another

new study. Yeah, I mean digestion is crucially important, obviously, to assimilate and absorb nutrients from our food, but it also... How we digest these foods dictates to a large degree the amount of energy that we're absorbing from them. And when you're eating ultra-processed foods like Funyuns, like ice cream, like commercially-produced breads, you can be certain that you are absorbing 100% of the calories that you consume. When you're eating whole foods, you actually... A significant portion of the calories that you might even read on the serving size of the nutrition facts label, a significant portion of those calories are actually not even getting digested. They're passing through you. This was recently revealed in a USDA study where they looked at whole nuts, and they found that a significant, like almost 30% of the calories that were previously thought that nuts had contained, were just going undigested through the digestive tract.

And they did this study, kind of gross, but of course needed to be done, where they looked at the residual calories in the stool of subjects after they ate whole nuts, and they found that a significant amount of these calories aren't even being digested because they're a whole food and there are particles that go undigested and remain undigested through the GI tract. But then you take a food like nut butter, like almond butter, peanut butter, which is a processed food, right? It's basically pre-digested, and you're absorbing 100% of those calories. So by sticking to whole foods, yeah, I mean your hunger is going to automatically regulate itself. You're going to digest probably a significant fewer amount of calories, which is another reason why calorie counting I don't think is the best solution because there's such a wide margin of error that calorie counting is subject to. And then there is, of course, what's called the thermic effect of feeding. And so certain foods have a higher thermic effect than others, meaning that your body is going to burn energy. It's going to burn off calories, just digesting the food alone without you having to do anything other than eat it.

And high protein foods are going to have the highest thermic effect, high protein whole foods. And the lowest thermic effect are going to come from... Can you guess? Ultra-processed foods. And that's because whole foods burn about twice the calories just via digestion alone as ultra-processed foods. And when it comes to macro-nutrient composition, ultra-processed foods are primarily going to be... They're primarily constituted of carbs and fat. Carbs and fat are that sort of ultra-palatable. It just lends a really great mouth feel. It sends our dopamine, rewards centers in the brain, it's like the Fourth of July fireworks

when we eat foods that combine usually sugar and fat. But people might know that fat has nine calories per gram; carbohydrates and protein have four calories per gram. But actually when you look at the thermic effect of these macro-nutrients, protein actually has three calories per gram, because a third of the protein calories that you consume get burned off. So you're actually... You're getting a bit of a metabolic advantage by prioritizing protein, and that's one of the dietary recommendations that I make in The Genius Life.

I go sort of big on protein, which is something that people in the fitness community have known the value of protein, but I think the population at large has gotten a little bit confused about the value of protein because you hear things in the media all the time like we're eating too much protein, protein is not good for you, it's bad for your kidneys. None of which is actually true. And I think as a tool to satiate your hunger, protein is the most satiating micronutrient and that caloric advantage that you get. I think that's one of the more practical recommendations that I make in terms of diet, that just by focusing on protein, prioritizing protein, most people will experience a spontaneous weight loss especially if you're eating a low-protein diet.

Shawn Stevenson: Yeah. And it's so powerful, man. It's doing so many different things, like the thermic effect, but also it's essential, it's a building block for communication in your body, your hormones, your neurotransmitters, so many benefits. And I'm so glad that you brought this up. This is something, again, I've been really talking about and thinking about and wanting to press into popular culture because there's a lot of infighting with the carbs and fats and proteins sitting over here like, "I get no respect." You know what I mean?

And it's so important. It's such a powerful fuel. But I think that even going back a little bit and talking about the public perception, which is we're eating too much protein, and one of the reasons is like we see these processed meats, for example. You'll see the commercial with the KFC stacker. We got the fried chicken bun, each bun is a chicken and then like a, I think it's like a burger or something in the middle with bacon. I don't know. It's just like...

Max Lugavere: Oh my god.

Shawn Stevenson: Yeah. I mean, yeah. Then we have just how folks have evolved, you know what I'm saying? No matter which place we look in the Blue Zones all over the world, we're seeing a source of protein coming into play, but we're not talking about it

enough. So, I'm so glad you brought that up. But I want to go back and talk about that driving force when you talk about sugar and fat coming together. And so, for me, it's like, and I know you grew up much the same way, it's like eggos. Let go of my eggo, with some butter on there, you got the Pop Tarts. You've got all these different snack cakes and cookies and all these different things. When you combine these together, and you offer up a great tip in the book and just like put a potato in the oven. So can you share that example?

Max Lugavere:

Yeah, exactly. I mean, you can see the nature of hyper-palatability at work if you just do this little thought experiment. You can actually do it in your kitchen, if you have a big potato around. But if you were to bake a potato, a plain baked potato, you probably wouldn't be inclined to over-consume that potato. Maybe you'll take a few mouthfuls but it's really not going to be all that palatable. Interestingly enough, potatoes are pretty satiating. But they're just not... I think that the reason for that is that they're not very good. People don't really want to eat much more after just a few forkfuls. But if you take that same baked potato and then you add fat to it, like let's say some grass-fed butter, which I've certainly indulged in a baked potato with grass-fed butter, you're adding fat to it, and then you put some salt on it, suddenly that baked potato, the combination of those three elements makes it hyper-palatable. You know, you're going to want to eat the whole thing. You might even go back for seconds. But the baked potato by itself, not all that palatable. The butter by itself, not all that. I mean, nobody's walking around eating sticks of butter, right?

Shawn Stevenson: Wow.

Max Lugavere:

Maybe Dave Asprey. The salt. And that's another thing, like a lot of people will say that sugar is addictive. I think that statement requires a little bit of investigation as well because it's not like you see people mainlining pure sugar necessarily, but it's the combination of all those things that really trips up your brain's satiety checkpoints and hunger check points and it's at the root cause I think of the modern obesity epidemic where by the year 2050 one in two adults are going to be obese, which is just insane to consider.

Shawn Stevenson: It's crazy, man. Crazy. So, your book. So, Genius Foods, first book.

Max Lugavere: Yeah.

Shawn Stevenson: That's really the focus on food nutrition. This is the Genius Life in this book. And you're traversing into other domains that help to create an overall healthy sovereign human being. And one of the things you highlight, just to talk a little bit about the food a little bit more, but it's not just the food but also when you eat. And so you brought up some of the incredible data and we're talking about things like intermittent fasting, but just overall fasting in general. And so I want to talk about the mTOR. I want to talk a little bit about mTOR and how that plays into things. We're going to talk about fasting, longevity and AMPK. I like AMPK.

Max Lugavere: Yeah. AMPK, yeah. I mean, this is so cool. This is the first time I've been asked about these actually. So, basically, these are two of your body's chief nutrient sensors. So, it's sort of like a thermostat that your body uses, for lack of a better term, that your body knows, that your body uses to gauge nutrient status in the body, nutrient and energy, nutrient status, energy availability, things like that. For an organism, energy availability is a very pressing concern. Are you going to have enough energy available to navigate the world, to procure food, to procreate and ultimately to survive?

So, your body has these nutrient sensors, AMPK is one of them, mTOR is another one of them. mTOR is primarily sensitive to dietary protein and in particular an amino acid called leucine. Leucine is not bad or good, but it is the most anabolic or growth promoting of the amino acids. So, anybody who's ever been interested in bodybuilding or fitness knows that you need to get adequate leucine to grow muscle and to get strong. But mTOR activation, which occurs when we consume leucine, also has a dark side. Too much mTOR activation is thought to underlie the growth of tumors and cancers, things like that. AMPK is sort of a nutrient sensor that gauges the overall energy availability in the body. And how this works, it's pretty interesting. So, the chief energy currency of cells is ATP and when ATP gets used up, it basically becomes AMP, which is sort of like an energy depleted form of ATP. And when there's a lot of...

Shawn Stevenson: I like it. I think of AMP, kind of. It's just how I think of it.

Max Lugavere: AMP kind of. Yeah. But essentially, when too much AMP builds up in the cell, that's a sign that there's not enough energy. And so, it activates AMP kinase, which is a pathway, it's a protein that basically sends a signal that there's not enough energy around. We need to create more energy. So it actually encourages the burning of fat, the burning of sugar. It's basically just like a land grab for energy when AMPK is activated. And it also helps to create new

mitochondria, so it boosts insulin sensitivity and is one of the pathways responsible for mitochondrial biogenesis, which is the creation of healthy new mitochondria. And the way to activate AMPK, which is thought to be this longevity pathway, also Metformin, the diabetes drug, Metformin, activates AMPK. And this is one of the reasons why Metformin is being looked at as a potential fasting mimetic longevity promoting drug. I wouldn't recommend Metformin because studies have shown that it can reduce the benefits associated with exercise.

But nonetheless, so AMPK is this like this generally very beneficial thing, and it's thought to underlie the mechanism by which calorie restriction seems to be one of the most reliable ways to extend lifespan in smaller organisms. So you restrict calories, AMPK becomes activated because of that deficit of energy. You can also activate AMPK with high intensity exercise, because what you're doing when you're doing high-intensity interval training, for example, like getting on that assault bike or swinging the battle ropes, or even with resistance training, you're creating a momentary energy crisis in your muscle cells that are like, "Oh my God. There's not enough energy around. If we don't generate enough energy, we're not going to survive." And so, AMPK activates, mTOR suppressed, and so, those are the two mechanisms by which exercises and calorie restriction are meant to really be beneficial for the body.

And these are also the proposed mechanisms by which intermittent fasting is supposed to work. So when we intermittent fast, for a time, we're depriving the body of energy, we're depriving the body of protein, and so what you get is an upregulation of AMPK, a down regulation of mTOR. And both of these facts are thought to be longevity promoting, they're thought to reduce cancer incidents. Also mTOR suppression is what drives, or one of the factors that drives, autophagy, which is what I call the Kondo... The KonMari method for biology. Marie Kondo, it's like she's all about tidying up.

Shawn Stevenson: Yeah.

Max Lugavere: So it's how your cells actually tidy up. They clean out worn-out dysfunctional proteins and organelles and things like that. And so when you calorie restrict, when you intermittent fast, when you do high intensity exercise, you're basically activating all of those wonderful pathways. And the beautiful thing about exercise and intermittent fasting and calorie restriction is that, unlike drugs, like say Metformin, which I mentioned earlier, these pharmaceuticals really work on

singular biological pathways or chemicals. Exercise, calorie restriction, intermittent fasting works the whole system out, and it just... It's so evolutionarily... It makes so much sense. And it's so comprehensive in terms of its effect on the body. That's why I think these sort of lifestyle interventions should always be a first line of defense against the diseases of aging and even aging itself.

Shawn Stevenson: Yeah, yeah, I totally agree, man. I was really surprised to see such a big focus on what I'm about to ask you about, but it was pleasantly surprised. And it's the chapter on the vigor trigger.

Max Lugavere: Yeah.

Shawn Stevenson: Right? So number one, can you share what that is?

Max Lugavere: Yeah.

Shawn Stevenson: And number two, why did you feel it was a necessity to highlight this in-depth, like you did in this book?

Max Lugavere: Yeah, so the vigor trigger, it's what I call the chapter where I cover all things nature. And this isn't just going out into the woods hippy-dippy style. I talk about the value of getting sun on your skin, the value of exposing your body to variation in ambient temperature, just getting out into nature and being around greenery. There's just so many benefits associated with nature bathing. They're doing a lot of this research in Japan, but the benefits have become so obvious and so clear that now various universities and academic centers are studying how nature exposure can reduce cortisol, reduce anxiety, depression, things like that. But yeah, there's that saying, "What doesn't kill us makes us stronger," and today, we've become... We've built these environments around us that we've created to ultimately coddle us, whether it's the chronic climate control that we're exposed to, or the fact that the Environmental Working Group estimates that we spend 93% of our time indoors, out of the sun.

There's just a lot that we've lost touch with. And so, in that chapter, I talk about a few things. I talk about, for one, the value of getting vitamin D, of optimizing your vitamin D levels. So vitamin D is a steroid hormone that essentially controls the expression of a 1000 genes in the body, at least, which is 5% of the human genome. And it's important for keeping inflammation in check, keeping your

blood pressure healthy, promoting arterial flexibility, which is the ability of your arteries to expand and contract in accordance with the needs of the organism as it navigates the environment. It's also being looked at now as a way of both preventing and treating auto-immunity. There is this really interesting study that found that children who were born during the summer months, meaning that women were... Likely had a higher...

I think it was actually babies born in the winter months, meaning that women spent most of their time pregnant in the summer months so that they were having... So that they had higher levels of vitamin D, ultimately ended up having lower risk of multiple sclerosis or MS.

Shawn Stevenson: Interesting.

Max Lugavere: And vitamin D is actually the only vitamin supplement where there's really a strong body of evidence now saying that vitamin D can potentially help as a therapeutic tool for sufferers of MS.

Shawn Stevenson: Oh, man. I've seen even so MS but I've also seen rickets. Like, literally somebody comes in, their child into my office, rickets, just like they can walk over a tumbleweed. Their legs are so bowed. Vitamin D. Man, I mean, legs are amazing today.

Max Lugavere: Yeah. Vitamin D is important. I mean, people think about it really in terms of bone health and being able to prevent rickets, but it really, it's important for so many things. I mean, there are vitamin D receptors in cells in every organ of your body. It's important for reducing inflammation in the brain, in fact, there was a very interesting small study, it needs to be replicated, but they found that the mere supplementation with 800 international units of vitamin D per day in patients with, I believe it was, Alzheimer's disease or a mild form of Alzheimer's disease, that just the supplementation... It was a randomized placebo-controlled trial, found that vitamin D supplementation was able to essentially halt the progress of the disease for a time. So again, small study, I wouldn't take that as a gospel at this point, but yeah, we know that vitamin D is good for us.

Shawn Stevenson: Yeah, so what do we do? Do we go out and just swipe down the store shelves of vitamin D? What is the optimal way to get our levels right?

Max Lugavere: I think you want to spend more time in the sun. So when our skin is exposed to

the UVB rays from the sun, our skin creates vitamin D or a precursor to the active hormone in the body and then it has to be converted in the kidneys and the liver to the active hormone form. What I think most people don't realize about vitamin D, which was surprising and something that I discovered while writing the book, is that the enzymes that activate vitamin D in the body require magnesium.

Shawn Stevenson: Mm-hmm.

Max Lugavere: And 50% of the population does not consume adequate magnesium. So what that means is that you might be supplementing with vitamin D, you might be spending time in the sun, maybe even spending too much time in the sun burning and you might not actually see your vitamin D levels budge on labs until you start consuming more magnesium. So I'm actually a huge fan of magnesium. I talk about that in the book. One of the primary drivers of aging, it's been posited, is DNA damage. And DNA damage is also the root cause of cancer. And we have an ability in our bodies to repair against DNA damage but all of the DNA damage, all of the DNA repair enzymes require magnesium. So again, magnesium is this amazing thing, we require it to create ATP, which is energy. If you're not consuming adequate magnesium, you're not going to be generating the energy that your body is capable of generating, you're not going to be repairing against DNA damage to your full capacity and you're also not going to be creating vitamin D effectively.

Shawn Stevenson: Yeah. So now the big question and I totally agree with you like this is something we... Humans evolved getting access to sunlight. Now we're spending 93% of our time indoors on average which is crazy.

Max Lugavere: Yeah.

Shawn Stevenson: And we've created this fear of the sun. And truthfully, the sun can hurt you but it's for many people, it's... You need more. You need more than the fear kind of construct has created. Now, with that said, what about folks that... You moved from New York, right?

Max Lugavere: I grew up in New York City, yeah.

Shawn Stevenson: And then you... Of course, you're out here now, it's Cali sunny, but what about folks in NYC, what about folks in New England, what about folks in Halifax,

Canada? What do we do in the winter months?

Max Lugavere: That's a good question. It's funny, I moved out here and somehow I still look like you're staring into a tube of Elmer's Glue.

Like I need to get that...

I need to practice what I preach is what I'm starting to think. Well, so vitamin D, you need to... I think the best way to get it is from the sun because the sun, you're not just getting vitamin D, you're getting a boost in nitric oxide, which occurs when our skin is exposed to the UVA rays from the sun. You're also getting adequate bright light to anchor your body's circadian rhythm, which I talk a lot about in the book and the value of that. But yeah, there obviously is variation in our capacity to synthesize vitamin D. If you're older, you need to spend more time in the sun compared to when you're younger. You become less efficient at creating vitamin D in advanced age compared to younger people. If you have a darker complexion, you need to spend more time in the sun. Melanin is nature's sunscreen so even though people with darker skin color might actually look better as they age, they need to really be conscious of vitamin D and spending more time in the sun.

People who are overweight actually need to spend more time in the sun than their thin counterparts because vitamin D, like vitamin E, A and K is a fat soluble vitamin, it gets sequestered by fat tissue. So if you've got some weight on you, you're going to spend more time in the sun. That being said, you don't want to burn. But yeah, time in the sun, I think is crucial. Now, because there's also seasonal variation, that's where I think eating foods that are high in vitamin D can come in to help get you to the next time at which you can get out into the sun. And so, fatty, oily fish, cold-water fish, egg yolks, great source of vitamin D, a significant source of vitamin D through the diet. And then also, we can store a little bit in our fat tissue as well.

Shawn Stevenson: Yeah. That's a little bit of an insurance. You can store some so those months that you can get adequate sun exposure, you can store it up so we don't have to be neurotic, but at the same time, incorporating those foods, maybe some high quality supplementation for those that need it, it's such an important nutrient, like you said, it's a... This is a steroid hormone.

Max Lugavere: Yeah.

Shawn Stevenson: But so with that said, also, we want to do this as natural as possible, let our body kind of figure it out and get sunlight. So what's the best way about getting the sunlight exposure? Just like arms being out in your shirt, going out for a walk, shirt off, there's some research with getting some sun on lay sack. It can help to boost testosterone.

Max Lugavere: I've heard that, yeah.

Shawn Stevenson: Now what about... So are we saying... So like get some on your back?

Max Lugavere: Yeah.

Shawn Stevenson: What about the buttohole tanning? The next...

Max Lugavere: Oh man, I've seen that. Yeah.

Shawn Stevenson: So many of our friends even like, taking the pictures, the buttohole tannings.

Max Lugavere: I am glad you brought that up. Glad you brought that up.

Actually, one of the guys who really made it popular, I know him. He lives in West Hollywood. His name is Rah, I've had him on my podcast.

Shawn Stevenson: No way is his name Rah.

Max Lugavere: His name is Rah of Earth.

Shawn Stevenson: What do you...

Max Lugavere: And I've had him on my show. We talked all about buttohole sunning. I forget which episode it is but it's there. The genius life and... But yeah, it's a thing. You know what? There's a lot of people in the evidence-based camp that will poo poo, no pun intended, that whole practice but you know what? If you enjoy the way that it feels, do it. I mean, you're still going to be creating vitamin D down there. Is there any magical thing that's going to happen by exposing your buttohole to the sun? I don't think so. I mean, the sun is a powerful disinfectant. So maybe there's some truth there that this ancient wisdom they found that it was a good way to clean up somehow with the sun.

But dude, I don't know. I think generally, if you're... The more surface area you can expose to the sun, the better. Now that you're still... Like, the sun can still photo-age you so if you're going to spend excessive amount of the time in the sun, you might want to put some sunblock on your face, you might want to, if you're going on vacation and you think that you might end up burning, which is not good, sunblock. I talk all about chemical sunblocks in the book and how you want to avoid those. So if you are going to go for a sunblock, I always recommend like a zinc oxide, like a mineral-based sunscreen. And I'm also a huge fan of a supplement called astaxanthin, which is a marine carotenoid. It's found in wild salmon and crustaceans and it actually acts like a sunscreen from the inside out. So I always... I take astaxanthin every single day but I also will kind of double down if I know that I've got a trip to the tropics coming up or something like that.

Shawn Stevenson: Fascinating. Yeah. I'm a big fan. Krill is like a big source. Krill is great. For the astaxanthin. So wow, that's great stuff. So we got vitamin D and you also mentioned magnesium. So let's hit on just a couple of foods for people to target with magnesium. And also, what about supplementation?

Max Lugavere: Yeah. So foods that are high in magnesium, I always prefer getting my minerals from food but magnesium is sort of an exception that I make. I'll supplement with magnesium. I take magnesium glycinate, which is magnesium bound to glycine. It doesn't... It's not going to upset your stomach. If you take too much magnesium citrate, which is a cheaper form of it, it might give you diarrhea 'cause it brings... It draws water into the gut. So I'll take that. But generally, foods that are high magnesium, you can't beat pumpkin seeds. They are a very high source, very rich source. Dark chocolate is actually a great source. Almonds are a wonderful source. And I just learned this today actually that Brazil nuts are also a fantastic source. And when you eat either of those four foods, you're getting with them a ton of other micronutrients. So I'm a huge fan of dark chocolate, it's great for the brain, great for the cardiovascular system. Almonds are rich in vitamin E, which is a wonderful protector molecule for the brain. Brazil nuts are rich in selenium, which is a great protector molecule for the brain as well. So yeah, you really can't go wrong. Magnesium is... Yeah. It's important. And again, half of the population doesn't consume adequate amounts of it. It's actually like a... It's like a longevity supplement in a way I think.

Shawn Stevenson: Yeah. Absolutely, man. Absolutely. It's so funny that... And you just mentioned, in

food, when you're eating food, you're getting all of this other stuff.

Max Lugavere: Yeah.

Shawn Stevenson: And I... You can't help but have the realization that it probably helps absorption. It probably helps your body to use it more intelligently when it's packaged with these different vital nutrients that are coming along with the magnesium. You know what I mean? Versus the isolated thing, which this is the one thing too. In my practice, when people come in, this was the one supplement that I kind of consistently got people to take in addition to the nutrition changes was magnesium. It's because it's such an important thing, man. And so, I'm so glad that you brought it up and you highlighted it in the book but you also, when we were talking a little bit earlier about the butthole tanning, just to go back a little bit.

Max Lugavere: Yeah, let's go back.

Shawn Stevenson: You also mentioned sunscreen, right? Which... That was a... Is a bad transition there.

Sunscreen is one of those sources, potentially, I saw some research years ago, I haven't looked at it in a while but finding that folks using certain sunscreens and certain compounds in sunscreens being carcinogens that lead to cancer. And you have a chapter in here focused on toxic world.

Max Lugavere: Yes.

Shawn Stevenson: Alright? So let's talk a little bit about that. What are some of the things that we need to be aware of when we are dealing with this very new environment for our human genes to be exposed to?

Max Lugavere: Yeah. So that's a chapter where I try my best not to fear monger, I just... And not to make alarmist claims, but I think it's very important for people to become aware of the different compounds that they are exposed to on a chronic basis that may be having a profound effect on their health without them even knowing it or consenting to it. And so, sunscreen is one of those things where recent studies, very, very recent studies have been performed finding that when we slather our bodies with these chemical drugstore sunscreens in accordance with the instructions on the package, that they are actually able to enter

circulation at a concentration far higher than was previously thought. And the levels at which they're able to reach in the body is even above the FDA's threshold for toxicological concern.

And these compounds include avobenzone, oxybenzone. Oxybenzone is a potential endocrine disruptor, meaning it can mess with your system of hormones that guide everything from your risk for certain diseases, fat storage, brain function and if you're younger, development. So that's a chapter where I really go deep into the science of endocrine disruption and I talk about some of the more common proposed endocrine disruptors but what's so tricky about anything that's going to artificially mess with your hormones is that, at different points along the age spectrum, they could either have undesirable effects or they can have... And temporary effects or they can have potentially lifelong effects. So I just want people to think more critically the next time they take these drugstore chemicals and they slather their children on... They slather them on their children.

Oxybenzone, as I mentioned, may be a potent endocrine disruptor. And also, these compounds actually are able to transform into other potentially even more dangerous compounds when exposed to chemicals in pool water. This was recently revealed. So it's just like... It's a mad world that we're living in and I don't like to give these compounds the benefit of the doubt. The stance that I take in the book is that we should consider them guilty until proven innocent and they really haven't been proven innocent. A lot of the time, these chemicals... Will be sort of foisted onto the human population, allowed to enter the marketplace before appropriate testing has been done.

Like, I'm not... I really don't know why it was now that we found out about this, the fact that these chemicals are to such a high concentration able to enter circulation and what the downstream effects of that are going to be. Like, we just don't know. So people should just definitely be more skeptical. I talk a lot about plastic related compounds like BPA and phthalates. Phthalates are any time you'll see a soft plastic like a disposable water bottle, they're also used in fragrances, so synthetic fragrances are made using phthalates. And then we have BPA, which is used to make hard plastic. So you'll see BPA typically in the lining of cans. You'll see it in reusable water bottles. Consumers have become aware of BPA at this point and so it's led to a lot of manufacturers removing BPA and replacing BPA with...

Shawn Stevenson: And where did BPA start?

Max Lugavere: Oh man, BPA start is an interesting story. So BPA actually, it originally was developed as a pharmaceutical. Because BPA possesses profound estrogenic-like activity in the body, it's known as a xenoestrogens. So in the body what it does is it will mimic estrogen or it'll basically, it'll affect how estrogen functions which is the primary female sex hormone but men have estrogen to a much smaller degree in their bodies as well. And so, it was actually designed to be a medicine back in the day... I mean, this was in I believe the 1930s was when the estrogenic properties of BPA were first identified in London by a professor named Edward Dodds, I think his name was. And what happened was ultimately they discovered a different compound called diethylstilbestrol or DES. And DES actually had a way higher estrogenic potential compared to BPA and so DES actually got approved for use as a drug. They started using it to give to women to alleviate symptoms of menopause and premenstrual syndrome, they were just injecting it into women like millions of millions of women. They also started to give it to livestock to increase milk production, to promote growth and what like is so often the case, maybe not often but is so frequently the case, what they ended up ultimately finding was that girls born to women who were injected with DES ended up having all kinds of vaginal cancers, cervical cancer and things like that.

And so DES was basically just a much more powerful form of BPA. But BPA and DES, they're chemical related. BPA was never actually approved for use as a pharmaceutical but instead, they realized that it could be used to make hard plastics. And this was at a time when it was like the '50s when the American dream really was starting to become crystallized in the minds of consumers and suddenly we could fill our homes with plastics, plastic furniture, plastic cutlery, it was it just seemed like this miracle compound, right? You can do anything with it, it was heat-resistant, it was sanitary, it was safe, in air quotes. And that's... I use air quotes to say safe because for the longest time, BPA was thought to be inert. It was just going to... It would be... It could be used to create plastic but that it was going to ultimately stay there. And what we now know is that BPA is able to leach into the foods and beverages that are stored into compounds made with BPA and also chemically similar compounds, newer compounds like BPS and BPF that are being used to replace BPA but there is no reason to suspect that they're going to be any safer than BPA.

And BPA also, because it's used in things like furniture and electronics and the like, actually is able to slough off and create dust that we then inhale. So it's

literally everywhere. It's one of these chemicals that you'll just find in drinking water all over the United States, 99% of... Or 97% of human beings have measurable amounts of BPA in their blood, it's one of these everywhere chemicals. A major source of BPA is actually store register receipts. So if you go to a store and you get a receipt and it's a thermally sensitive paper, you can always tell... I mean they have a certain feel to them, they feel kind of dusty but you can write on them with your fingernail, those papers are coated with BPA. And actually, what's interesting is that if you use a... They've... Another study has found that if you use a hand sanitizer before touching these receipts, it dramatically increases your exposure to BPA. The hand sanitizer basically makes your skin a lot more sensitive and permeable to environmental toxins.

Shawn Stevenson: It's a solvent.

Max Lugavere: Yeah. So...

Shawn Stevenson: Wow.

Max Lugavere: Yeah, it's crazy. And so, just think about all the people who are doing that, right? All the cash register clerks, they're like already making minimum wage stuck in jobs that are probably not what they had envisioned for themselves as children, right? But then they're touching these compounds that are just keeping them not at their most optimal, we'll just say that. And then, we get handed these receipts and then we hold the hands of our children. And children, as I mentioned, they're particularly sensitive to these compounds because these are endocrine disruptors.

Shawn Stevenson: Yeah. First of all, who's still getting receipts? Like, they ask you, "Do you want a receipt or would you like to email the receipt?" It's just silly but it's these micro exposures like you're saying and I love that you outlined so many micro exposures that we're not aware of and it creates this huge conglomeration of...

Max Lugavere: Burden, yeah.

Shawn Stevenson: Yeah.

Max Lugavere: Burden of toxicity, yeah. And to be clear, the doses at which we're exposed to, I mean, they are having effects in the body. There have been a number of studies that have found that they can alter insulin responses, they can... Yeah, I mean,

they act like estrogen. And the thing that I also talk about in that chapter, which I think people need to know, is that what you'll often hear from the evidence base, and I use air quotes, camp, people who are just really not open-minded to the idea that these compounds can have deleterious effects on human health, they'll often say that the dose makes the poison. The dose we're getting is very low, it's been thought to be safe but the dose makes the poison, I think, it works for most... The vast majority of toxins, right? But what makes endocrine disruptors like BPA and phthalates particularly treacherous is that they don't necessarily always follow that dose makes the poison paradigm.

There is what researchers refer to as low-dose toxicity or non-monotonicity. So basically, the dose makes the poison implies that with increasing dose, any compound does end up becoming increasingly toxic, increasingly dangerous. And that nothing is really implicitly toxic, it's all about the dose. You drink enough water too fast, somehow, suddenly water becomes toxic. The problem is that these endocrine disruptors... It's suspected that they don't actually follow that nice and convenient linear curve that they can actually become... They can actually have an effect in the body, a completely different effect and they would have had at a high dose at a very low dose. And that's one of the reasons why I think these compounds have been able to escape political and scientific scrutiny because they're just so hard to study and predict and they might have different effects on different people, at different times in their lives.

Shawn Stevenson: Yeah, yeah that's so important to understand. It's all case-dependent, person-dependent, even time of your life dependent. We're going to talk a little bit more about how to limit our toxic exposure, our toxin exposure, and also some of the most important things in the book, we're talking about really garnering piece of mind and how important that is for genius life. We'd do that right after this quick break so sit tight, we'll be right back.

Growing up, if I thought about chocolate I think about 3 musketeers, I think about a Kit-Kat, Butterfinger, right. I had all these ideas, hot chocolate, chocolate ice cream, chocolate cake, those are the things that would conjure up in my mind when I thought about chocolate. Little did I know that chocolate itself, the original root of chocolate which comes from something that's botanically a seed, these cacao seeds were one of the most healthy foods in the world.

Listen to this, this was from a randomized, double-blind placebo-controlled trial

that was published in the American Journal of Clinical Nutrition found that polyphenol-rich cacao or cocoa without the sugar has a remarkable prebiotic effect on the human body. So what the study found was that folks who are consuming this sugar-free cacao flavanol drink for 4 weeks significantly increase their ratio of probiotics or friendly bacteria.

Bifida bacteria, for example, wow significantly decreasing their class of firmicutes, which is associated with fat gain, so there are certain types of bacteria that are associated with gaining fat in these firmicutes. So the saying in health right now is that if you want to be firm and cute you've got to reduce the firmicutes, I didn't make that up, somebody else did, all right. But the bottom line is, wow it has a really powerful, remarkable impact on what's happening with your microbiome.

The study also found that it was able to reduce levels of systemic inflammation measured by something called C reactive protein and if that weren't enough, cacao also has these compounds that have a really powerful influence on our mood, like Anandamide which is known like, that translates to me in bliss chemical right. Serotonin and tryptophan, these precursors that help your body to produce things like melatonin, right that helps you sleep better.

It goes on and on and on, but the quality matters a lot. And when you get real chocolate into something that is even more health-giving, you've got something really special. And that's what they have with the new Chocolate Organifi Gold drink. So they've got the chocolate along with their incredible, delicious turmeric formula, and as you know, turmeric has very powerful anti-inflammatory properties.

And it also has been clinically proven to have anti-angiogenesis properties, so this means that turmeric literally has the ability to cut off the blood supply to cancer cells. And we all produce cancer cells every day, but a properly functioning immune system and being able to regulate this angiogenesis which we need, but we need at certain levels, is incredibly important and food can help to regulate that. So I'm a huge fan of Organifi, now they've got the new Chocolate Gold.

Alright, so pop over there, check it out, just released, just delicious. Organifi.com/model, you get 20 percent off that and everything else they carry. Alright, so head over there, check them out, organifi.com/model, that's O-R-G-A-

N-I-F-I.com/model for 20 percent off. Now back to the show.

Alright, we're back and we're talking with New York Times best-selling author, Max Lugavere about his new book, I've got an advanced copy, but you can get yours. It's out now. "The Genius Life," it's right here. Make sure to pick up your copy ASAP. And before the break, we were talking about some of the crazy exposure of... We're living in a very different world today, toxic world. We have a lot of different things that our bodies have not evolved to interact with and we kind of take it for granted. And just the story about how BPA has evolved, the original intention, and just being such this pervasive thing in our culture is crazy, man. So what I want to ask you is, what are some of the steps we can take to limit our exposure to some of these toxic things that are obviously, like you said, they are having a notable impact on our bodies?

Max Lugavere:

Yeah, such a great question. There's a lot to cover, but I guess at a high level, try to minimize your use of plastic. Plastic isn't going anywhere any time soon, and if I'm dying of thirst on the airport and I don't have a portable water bottle with me, I'll buy water in a plastic bottle. But to the best of your ability, if you can limit your use of plastic, so that means drinking out of glass, storing your food in glass or stainless steel. Also not any kind of processed food, I'm talking about burgers and burritos and pizzas that come in paper wrapping that have a slick oil proof side to that paper. You want to make sure to avoid those. They use chemicals that are kind of related to Teflon, which we know is also another endocrine disruptor. Those same chemicals are used to create glide dental floss actually so.

You want to avoid dental tape or glide dental floss, which is marketed as being an easier floss to use because it more easily slides between your teeth. You need to floss, flossing is great for you, but use more of like a string. And they have those at any drug store. Just avoid the dental tape.

We already talked about the receipts, you want to avoid using more touching receipts to the best of your ability, all crucial stuff. Flame retardants, be aware of flame retardants being used to create your furniture. Flame retardants are not necessary to prevent house fires. Actually, the reason why all of our furniture or a lot of our furniture and our mattresses are doused in synthetic flame retardant chemicals is because people used to smoke a lot more in the house. So literally the whole of the US population has been exposed to these chemicals because people used to like to smoke in their homes.

And so, the tobacco industry, the reason why this happened is because there was pressure on them to come up with a solution for the fact that there were all these house fires, occurring due to people smoking in their homes and dropping ambers on their couches, they're lazy boys or on the mattress.

Shawn Stevenson: Falling asleep with the siggy.

Max Lugavere: Yeah, with the siggy. And so what did they end up doing, deflecting blame, putting on furniture manufacturers like come up with a solution for this, you guys. And so now, we're all exposed to these flame retardant chemicals, which linger in us for years. Interestingly, like BPA, phthalates, parabens, these kinds of compounds once you reduce your exposure to them, you pee them out, your body is an amazing detoxifying, has all kinds of incredible detoxifying mechanisms, but flame retardant chemicals and these Teflon-related chemicals can actually linger for a lot longer.

Shawn Stevenson: Yeah.

Max Lugavere: So you want to be careful if you're on the market for furniture, just be aware of what you're buying.

Shawn Stevenson: I saw a study recently that this was done on the whole base soup like whole homemade soup and canned soup to see the BPA interaction that it would happen in the body and the thing was, of course, they measure urine because it comes out pretty easily, but what they found is this is like a five-day study, and the folks because, a lot of cans. So if you are eating canned food, BPA-free would be nice, but these weren't BPA-free because it's like, it's in the lining of the inside of the can to help erosion that kind of thing.

Max Lugavere: Yeah.

Shawn Stevenson: But they found after five days, the folks eating the canned soup had over a 1000% more BPA coming out of their body, than the folks who were eating the whole food-based soup. Crazy stuff. So again, we are absorbing it like crazy, but like you said, if you give your body a break it can eliminate quite a bit of it.

Max Lugavere: Yeah, I think you want to abide by what I call the three P's of healthy detoxifying and that is to pee, poop and perspire. So making sure that you're staying

hydrated. This is crucial. The solution to pollution is dilution. So making sure that you're staying hydrated. You're peeing clear or light yellow, the darkest, staying hydrated is crucial. Making sure that you're pooping. It's something that I'm sure I don't need to tell you, but I get a significant amount of messages from people that are like, I don't go to the bathroom every day, I go to the bathroom every other day, maybe sometimes every three days. So making sure that you're staying hydrated, which is going to help that, eating a healthful diet that incorporates lots of produce, fresh produce, fruits and vegetables at the end of the day and movement, I mean movement is so important, exercise is so important for digestion.

Shawn, I mean it's amazing. So making sure that you're going to the bathroom regularly. And then also perspiring. So, we release a significant amount of these compounds in our sweat. Maybe not everything, but when... Your skin is a detox organ. So whether it's sitting in a sauna or exercising vigorously, make sure that on a regular basis, I try to sweat everyday, sometimes I don't hit that goal, but whether it's sitting in a sauna or exercising vigorously, sometimes I'll even go to the gym, and I'll just keep my hoodie on, I'll keep my sweater to build up my body temperature so that I get to sweat going 'cause I don't actually sweat that easily with exercise, but sweating is super, super important.

Shawn Stevenson: So we might catch Max with the bag.

Max Lugavere: Yeah, like the plastic bag, the garbage bag. Yeah, I've seen people wear that. I haven't gone that extreme yet, but...

Shawn Stevenson: It's like are you boxing? Uncle Jim is like 57 years old wearing the trash bag outfit like Missy Elliot, but hey, if again, that's what I love about you too, man, is that if it works for you, then it works, you know what I mean? And so I'm really... I love this part of the book, and I love you share first of all, why is peace of mind, part of living a genius life in the first place?

Max Lugavere: Yeah, 'cause we live in stressful times, and I think a lot of us in the health and wellness community will say, Look, "stress is toxic," you've gotta minimize chronic stress to the best of your ability, but the reality is we live in a difficult world and people sometimes can't necessarily reduce certain stressors in their lives. And so what I like to do is I like to offer people both perspective shifts, mindset shifts and then also more biological means of boosting their resilience to stress so whether or not you can actually reduce levels of stress in your life,

which I think everybody owes it to themselves to try to do. You can actually change the way that you respond to those stimuli and how your body responds, how your biology response.

So I talk about how exercise can make us more resilient. One of my favorite actually concepts in the book that I talk about, I haven't seen this in other books, so I'm really excited to bring it into the fold for people is this idea of cross adaptation. So it's kind of interesting how, exercise is obviously a form of stress, but it's a really good form of stress. We know that exercise is good for us, right. Sitting in a sauna is a form of stress, cold water immersion whether it's take a cold shower or getting into an ice bath or doing cryo, these are all stressors on the body, but they're actually good forms of stress. What's so cool about this notion of cross-adaptation is that by doing any one of these different modalities, it actually makes us more resilient in other areas of our life.

So by exercising more, by sitting in a sauna, by exposing yourself more regularly to cooler temperatures, you actually... Your body becomes more resilient, obviously to those different things, you acclimate and you adapt to the workload in your workouts, you're able to spend more time in the sauna or do the cold shower for a longer duration but there's what's called a spillover effect, where those same modalities are going to actually boost your resilience to psychological stress. So I mean, this is an amazing thing. A lot of people feel like they've got their hands tied behind their back with obligations that they have in their lives, maybe financial stress, things like that. But I don't offer tips on how to reduce financial stress in the book, but I do offer ways of how to actually bolster your own resilience so that when you are faced with those challenges, which we all are sometimes, that you can actually show up as your best self and not allow it to affect you in a negative way, like it does to so many people.

Shawn Stevenson: Yeah, absolutely. And you do that through teaching and helping people to optimize their sleep because obviously, if you're sleep deprived, it becomes so much more difficult to have peace of mind in the first place. And one of the things you talk about is how lack of sleep can increase levels of amyloid plaque. Can you talk a little bit about that and also the tau proteins?

Max Lugavere: Yeah. So plaque is not a good thing. We know it's not good on our teeth. It's certainly not good in our brains. Amyloid plaque is a characteristic of, it's a defining characteristic of Alzheimer's disease. And our brains, it would be a major oversight on behalf of evolution, if one third of our time that's spent

sleeping was for no reason but thankfully, we know thanks to an incredible bounty of research now coming out, showing us that when we sleep, our brains are doing miraculous things from storing our memories to helping us better regulate our emotional health, to also clearing out these proteins that are associated with Alzheimer's disease and just more generally aging itself. So we know that on one night of poor sleep, levels of amyloid protein and tau, which is another protein that is involved in Alzheimer's disease actually increased to a very dramatic degree, they can look at your cerebral spinal fluid. And what they find is that on just one night of shortened sleep, levels of amyloid beta, actually go up by about 30% and tau go up by 50%.

And the thinking is that having a higher concentration of these proteins is basically going to increase the odds that more of it is going to clump and aggregate and form the plaques we associate with Alzheimer's disease. But sleep is also important as a master hormonal regulator. It's important for emotional regulation, as I said, which can have innumerable downstream effects, right? Because a lot of us eat emotionally. We're emotional eaters. So by optimizing your sleep, you can be sure that your hunger levels are going to be kept in check. We know that sleep deprivation causes the consumption of an excessive amount of calories the next day of about 400 additional calories the next day. If you're under-sleeping over the course of a week, that's a pound of fat gain right there, just from under sleeping. It also makes you temporarily pre-diabetic. So being on shortened sleep, you're less insulin sensitive the next day to the tune of having gained overnight, 20 to 30 pounds of additional weight.

So yeah, sleep, you can't really sing its praises enough. And I know that, I mean, you're obviously a sleep master. You've written extensively about sleep, but it's one of those things that I think you have to optimize. I use a metaphor in the book, it's sort of like, it's a Game of Thrones metaphor. I'm a big Game of Thrones nerd and in Game of Thrones, you're going to kill the Night King so that all of the other zombies fall, you can't beat the zombies until you kill the Night King. And I think that's kind of like optimizing your sleep is killing the Night King. It's killing the Night King because it's the one thing that if you do right, it's going to make dietary adjustment easier. It's going to help give you more energy in the gym. It's going to help optimize your executive function so that you can make better decisions and have a greater sense of impulse control during the day. So yeah, it's sort of like the one thing that really helps to optimize all of the other things.

Shawn Stevenson: Yeah. I love that analogy, man. So great. Max, this has been awesome. And thank you so much for just dropping all these jewels. I want to make sure everybody picks up a copy of the Genius Life. So can you let them know where they can find the book.

Max Lugavere: Yeah, for sure. And thank you so much, geniuslifebook.com. Pick it up, it's available now, I would really be grateful for your support. It's packed with the small things that you can do every day that are going to have big wins on your health, and how you feel in the short term as well as in the long term.

Shawn Stevenson: Yeah. Man, so good. And you start the book off with a really powerful story, like it just immediately gripped me before the last time you were on the show, this is a couple years ago before your mom passed, and you share that experience. So how much is that experience kind of imbued in you putting this book together?

Max Lugavere: Oh my God. I mean, yeah, my mom had a very short life, too short. I mean, I'm sure other people have it worse but my mom suffered immensely in brain and body. She had a form of dementia that she was diagnosed with at the age of 58. And she struggled with that for seven years and seeing her struggle with that really is the motivation behind all my work. So I didn't come at this as an academic. I came at it as... From the standpoint of a son who loves, and continues to love his mother more than anything on the planet. And she actually over the course of writing this book, she was, it was Labor Day of 2018. She was diagnosed with pancreatic cancer. And I hadn't had a family history of dementia. Nobody that I know of in my family had ever had cancer. So trying to understand why my mom developed, not one but two of humanity's most feared conditions. It motivates everything I do. I don't want to get sick. I don't want other people that I love to get sick, other people that I respect to get sick. And so it...

That occurred while I was writing the book, and so it's caused me to look at the world in a new way, and I think that we're all just deserving of just better. And so if my work is able to help one person, then to me, what my mom and we went through wasn't in vain, and it's just my way of taking something that was incredibly painful and turning into something that's somehow positive.

Shawn Stevenson: Yeah, yeah, man. Thank you so much for sharing your story, man. Thank you for having the audacity to dive into the research. I know this could be murky waters

and putting this together for everybody in a way that makes sense, in a way that's enjoyable to read. And man, it's just like there's certain people it's just like there's so much good stuff that's still going to be coming from you and I can't wait to see what you do next, and I want to make sure that everybody else just continue to stay connected with you. Not only are you a prolific writer, but also you've got a top podcast as well.

Max Lugavere: Yeah, my podcast is called The Genius Life. So if you listen to podcasts, come over, say hi, hit the subscribe button. I've had you on it, and I'm looking forward to having you on it again. You're one of my favorite people to chat with, so I'm looking forward to that. And then I'm also super active on Instagram and my Instagram handle is @maxlugavere. L-U-G-A-V-E-R-E.

Shawn Stevenson: Dope. The knight Kings. Take them out.

Max Lugavere: Yeah. Take them out.

Shawn Stevenson: Thank you so much for hanging out with me, man.

Max Lugavere: Thanks, Shawn. It means a lot.

Shawn Stevenson: Everybody, thank you so much for tuning into the show today, I hope you got a lot of value out of this. Make sure to pick up Max's new book, The Genius Life right now. Get yourself a new copy. And listen, again, this is... I love the fact that he went from the focus on food to overall life, and all the different dynamics that create an overall healthy life or what Max calls a genius life. Looking at our movement practices, looking at our nutrition, of course, looking at our sleep, but also looking at how we're relating to the world around us. Right? The beneficial exposures and the not so beneficial exposures, all these things create this overall picture of health and wellness for us. So, just pointing a very intelligent lens at it and diving into the research giving us the facts is what I really respect about Max and his writing. So again, definitely pick up a copy. And I appreciate you so much for tuning into the show. If you've got a lot of value out of this, make sure to share this out with the people that you care about. You could tag me and tag Max and let him know what you thought about the episode as well, and I appreciate you so much. We've got some epic episodes coming your way very soon, so make sure to stay tuned. Take care. Have an amazing day, and I'll talk with you soon.

And for more after the show, make sure to head over to themodelhealthshow.com, that's where you can find all of the show notes, you could find transcriptions, videos for each episode. And if you 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.

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