

# **THE MODEL HEALTH SHOW**

**EPISODE 541**

## **Foods That Create Metabolic Chaos & How Being Health Conscious Can Make You Unhealthy**

**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've got a question for you: Are we eating foods that aren't really foods? If you grew up anything like I did, I just had the concept that if I could eat it, it was food. And I lived in a spectrum, I lived in a snow globe, a human snow globe of delicious, processed foods. I lived in what was considered to be a food desert, but there seemed to be food all over the place. So, this concept of a food desert is putting a little attractive label onto a very dire situation. A food desert might be a place you might go on a safari, you can go on a little trip with your boo, but a food desert in reality is talking about an environment where there is a substantial, crippling lack of actual nutrition in the environment. Again, there was a lot of food around, but very little nutrition. And so today, we're going to be talking about some of the most commonly consumed food-like substances that could very well be damaging our society's metabolism and our health overall.

Plus, we're going to be talking about an interesting dynamic that can take place where we make a shift and we start to focus and target on eating more real food, things that we can actually recognize where they come from, and still possibly having a metabolic clog, having something take place where we're not getting the results that we're striving towards. What can be holding up things in that domain? Even if we've made this cognitive shift, a global expanded cognitive awareness of the damage that fake foods could be doing, and we make a shift over to eating more real foods, what can be causing an anchor to be dragging along behind us, and how can we lift the anchor so we can really set sail?

Now, looking back on this food desert that I grew up in, we also had... What's the thing that you're looking for in the desert? You're looking for something, a drink. You're going to be seeing the mirage, so, the mirage that I saw on a daily basis was the soda at the corner store. So, my favorite sodas were, again, food deserts, so we had the cheap stuff, Vess. Not everybody knows about Vess, but Vess was that half the price of the fancy sodas, the Pepsis of the world, the Coca-Colas of the world, the Sprite. So, Vess, it was just cola. It was cola. It was grape, it was strawberry. Oh, that strawberry Vess. Ah. So, these are the things that I grew up consuming, but myself, personally, I wasn't really a big fan of sodas. Of course, I would have sodas from time to time, but I really enjoyed juices.

So, depending on where you live, it might be called quarter water, it might be called a barrel juice, but those little juices, we had a little foil over top, you take your finger and pop, pop it right into that foil, and get that sweet, sweet, whatever that is, alright? Because it literally says "0% juice" on the juice. So, riddle me that, Batman, how do we solve this mystery? What is it? So, I'm growing up consuming these things, I'm growing up consuming Kool-Aid, again, not

having much money, we also had Flavor-Aid, so this was half the price of the Kool-Aid, we couldn't even get the Kool-Aid man jumping through our wall at our house. We have Flavor-Aid.

And so, with that said, in my house, I made the Kool-Aid, I was that guy, I know how to dabble with the sugar, get that sugar just right, and I thought I was advanced 'cause I was combining flavors, you got the two-liter pitcher, you need two-packs of Kool-Aid. I'm not just going to do two packs of the same kind, I'm going to mix that cherry, that Wild Cherry, I'm going to mix that with a little bit of this orange over here, we're going to see what happens. And a lot of times, my Kool-Aid experiments would work out. It definitely did not work out for my blood sugar and for my cognitive ability, I'm sure, but these are just the things that we were doing on a day-to-day basis.

And you know the thing about humans is that we want change, but oftentimes we don't want to change that much to achieve that change. And so, this is why having those pivots of familiarity, things that we have some kind of appeal towards because of a comfortability, something that looks familiar. So, taking somebody who's eating like I was eating, where my meal literally at my apartment when I was in college, a meal would consist of Velveeta Shells & Cheese. There's nothing else to that meal. I know you might have been expecting something else to get added on there, but my meal was a box of Velveeta Shells & Cheese. A regular meal. Are you kidding me? So having that as a meal, and then somebody telling me I need to start eating some kale salad, I mean, where is the bridge? I can't even see that. Kale, are you kidding me? It's just like not even in my universe. I'm not going to go from the Velveeta Shells & Cheese as a meal to a nice, fresh batch of sauerkraut that Shirley made. I'm not doing that. Shirley better get out of here with that sauerkraut. There's no bridge, there's no familiarity there.

And so this is why I love the way that humans can innovate and understand this, and we can do things, we can upgrade the habits that we have kind of accumulated in recent decades, and we can radically upgrade those things and create a bridge, but not just a bridge that leads to similar deliciousness, but a bridge that leads to far better health, an infusion of health, with getting real nutrients from real botanical sources into our bodies.

And so, my obsession growing up was Hawaiian punch, tropical punch, I was that punch guy. And so today, my family, these are not things that we have in our environment, we just... We don't have a wine punch on the shelf at my house, whereas that was a staple when I was a kid. And so, what we do have, however, is something that is radically upgraded, has created a bridge for many people, many kids across the country, and shout out to everybody who's implemented this with their children as well, I've gotten so many wonderful stories, and also seeing this first-hand, I might bump into some parents out there and their kids are with them and they're sharing their stories with me as well. But we are taking this red juice concept and

we are radically upgrading it with the red juice formula from Organifi. Instead of it being based on all these synthetic compounds and artificial flavors, artificial colors, it's based on real nutrient-dense foods.

For example, acai is one of the ingredients. Acai has an ORAC value of 103,000. This means that it's about 10 times the antioxidants of most fruits that you see out there in the produce aisle. It is out of this world, but the question is, okay, we've got this remarkable source of antioxidants, which this is anti-oxidation, helping to with oxidation. A great synonym for this, as far as the human body, is likened to metal rusting, that process of aging. So, if we have excessive reactive oxygen species accelerating the oxidation of our tissues, this is when we see accelerated aging taking place. So, this is why antioxidants are super important part of this conversation but getting it from foods that are just so dense in this nutrition.

But the key is, okay, we see it on paper, but how does it actually show up in our bodies? Well, a study that was published in the Journal of Agriculture and Food Chemistry found that acai actually raised participants' antioxidant levels, demonstrating specifically how effectively it's absorbed through our intestines, through our gut. It's actually absorbed and gets into our system, into our bloodstream. And researchers at the University of Michigan published data finding that blueberry intake can potentially affect genes relating to fat-burning. Guess what else is in the red juice formula? Blueberries. Another thing that's in this formula: Beets. Beet has just skyrocketed as far as human performance, as far as exercise, as far as competition. Folks who are doing athletic competitions, this is one of those... Legal boost is coming from beets. A study published in the Journal of Applied Physiology showed that drinking beet juice boosts stamina up to 16% during exercise and training.

Come on. These are just some of the ingredients in this remarkable red juice formula. And not to mention the reishi, not to mention the cordyceps, not to mention the adaptogenic things that are in there, like rhodiola and Siberian ginseng. It's amazing. Kid-tested, mother-approved, kids love the red juice as well. Head over to [organifi.com/model](http://organifi.com/model), and you're going to get 20% off their incredible red juice formula. That's O-R-G-A-N-I-F-I.com/model, for 20% off. Now, let's get to be Apple Podcast review of the week.

**ITUNES REVIEW:** Another five-star review titled “So inspiring” by Gret Hill. “The Model Health Show has quickly become my favorite podcast, Shawn's positive energy and humor, the mountains of evidence and research shared, and giving us the tools to take control of our health and life in a natural positive uplifting way.”

**SHAWN STEVENSON:** That's what it's all about. Thank you so much for sharing that review over on Apple Podcast, I appreciate it immensely. And if you've yet to do so, please pop over to Apple Podcast and leave a review for the Model Health Show. And on that note, let's get to our

special guest and topic of the day. Our guest today is a health and science journalist, and the author of the New York Times best-selling book, *Genius Foods: Become Smarter, Happier, and More Productive While Protecting Your Brain for Life*, and I'm talking about none other than Max Lugavere. Max is also the host of the phenomenal health and wellness podcast, titled *The Genius Life*, and he regularly appears on major television shows like *The Dr. Oz show*, *The Rachael Ray Show*, and *The Doctors*. And he's back here on the *Model Health Show* to talk about all things food and nutrition, and now, we're going to jump into this conversation with the amazing Max Lugavere. My guy Max, welcome back to the *Model Health Show*.

**MAX LUGAVERE:** Thanks for having me, Mr. Shawn Stevenson, always great to see you.

**SHAWN STEVENSON:** Yes, it is a pleasure, man, here at the new studio.

**MAX LUGAVERE:** It's beautiful.

**SHAWN STEVENSON:** Thank you. Thanks for stopping by man.

**MAX LUGAVERE:** Thanks for having me. Every time I get to see you, it's always great. We always have such a wonderful mind-meld, and you've been on my show a bunch of times at this point, my audience loves you, and yeah, you've been putting such good stuff out into the world, so it's really an honor to be sort of in your orbit.

**SHAWN STEVENSON:** Thank you, man. Thank you, I appreciate that so much, and you're one of my favorite people. And the thing I admire about you most, which is just... It just resonates with me so much, is that you just pay attention to data, and you are a big fan of results, what actually works in the real world. So, the first thing I want to ask you about is, what are some of the commonly consumed foods that people are out there eating on a regular basis that could actually be hurting them, that could be hurting their metabolism and their health overall?

**MAX LUGAVERE:** Yeah, such a good question. I feel like there are a lot of foods out there that have this sort of health halo, perhaps even marketed as superfoods, which is not a scientific term; it's a term invented by food marketers. And many of these foods are not just meaningless in terms of potential for health benefit, but actually can harm you. So, one of the, I think, most pervasive healthy foods with a healthy halo out there are commercial fruit smoothies. So, we

all kind of know about fruit juices, fruit juice, you have a savvy audience, right, we all know at this point that you can cram as much sugar into your average fruit juice as a soft drink, as soda, but I think people still buy these commercial fruit smoothie drinks, whether they're made on the spot or whether they're pre-packaged, thinking that you're actually adding something beneficial to your health.

But when you consume these kinds of beverages, first of all, they pack so many calories into such a small form factor that it can be really easy to over-consume your calories for the day, which I think we all tend to debate what the root cause of obesity is, we have the insulin obesity model, we have the energy balance model, and I think the truth is somewhere actually in the middle, we need a new model to describe the root cause of obesity and particularly the obesity epidemic that we're now seeing around the world, one of the most pressing epidemics that we're seeing.

But commercial fruit smoothies, they are generally calorie-laden bombs of usually a very high amount of fructose. About 70% of people are actually... Have issues with fructose absorption called fructose malabsorption, which can create problems in the gut, ranging from diarrhea to bloating to gas. This is one of the reasons why the consumption of fruit smoothies, which, again, we tend to think of as being benign, equivalent, even, to eating whole fruit, can leave people with digestive problems. So, when it comes to fruit consumption, I'm a big fan of whole fruit, I think that it's very hard to argue against the consumption of whole fruit, but whole fruit is inherently satiating. First of all, when we're... Even before we consume a piece of whole fruit, we initiate what's called the cephalic phase of digestion. So, cephalic basically means your head, so it's like the phase of digestion prior to food actually even entering your stomach and your GI tract. You see the food, you smell the food, our salivary glands start to activate, pumping out enzymes like amylase into our mouth so that we can properly absorb and break down starches and fruit. We begin to secrete insulin; gastric juices start flowing. So, all this happens and continues to happen as we're biting into and chewing a piece of whole fruit. None of this is able to happen when you plow into a fruit smoothie, because of just the rate at which we consume these items. So, I think that's a major problem.

**SHAWN STEVENSON:** Yeah. Man, this one is... It's already so blatantly obvious, but I was definitely seduced by that marketing, I'm thinking back when I was in college. And actually, when I met my wife, we were both attending the University of Missouri, St. Louis, and I was the health guy, I was a strength and conditioning coach at the university gym and I shifted over my course work, now I'm studying more... Getting back into biology and all the things that I detested earlier on now that I'm helping people, and so, I was drinking these Naked juices.

**MAX LUGAVERE:** Oh, yeah, they're the worst.

**SHAWN STEVENSON:** Shout out to Naked, Naked juices, and the one that I would drink the most was Green Machine, because I still, at that point, had never eaten a salad in my life. But I'm like, "I'm getting my greens in!" It was like 64 grams of sugar or something like that, so like 12, 13, 14 teaspoons. And so, I'm just... Even to the point where my wife and I had a class together, it was a marketing class, and I was like, this little team that we had, she was actually in my team, happened to be, and then there was this other person. I was like, "Let's do our marketing presentation on Naked juice. This is amazing stuff." And so, of course, I led the presentation. But now, looking back on it, and I would see even post-having it, the kind of going from that hyper to hypoglycemia experience, just having his crash take place, essentially, and I just brush it off as normal. So, I'm so glad that you brought this up. We can consume so much sugar so quickly and we don't really realize it.

**MAX LUGAVERE:** Well, it's not just the sugar quantity; it's the fact that fruit sugar is, for the most part, it's some combination of fructose and glucose, but we have a finite capacity to properly absorb fructose in the gut, and as I mentioned, a significant portion of people experience fructose malabsorption, whether or not they have any pre-diagnosed GI condition. And so, they could be chugging along, no pun intended, with these smoothies on a daily basis, experiencing severe GI upset, and that can present a major problem to people. And also, fructose is a major driver of non-alcoholic fatty liver disease, which we see a lot of in this country. And not to demonize sugar found in whole fruit, but today, we tend to over-consume fructose because we consume lots of sugar-sweetened beverages, and most people...

The thing about fructose that's interesting is that if you're in a calorie deficit, people who are in a calorie deficit, their bodies are pretty resilient, you can eat a lot of... You can eat pretty much whatever you want, when you're in a calorie deficit and your body will tend to roll with the punches, but that's not common in the United States, in the Western world, the vast majority of people are actually not in a calorie deficit for any significant period of time; they're in a calorie surplus. This one of the reasons why by the year 2030, one in two adults are going to be not just overweight, but obese. And so, in that milieu, in the milieu where we're all chronically over-consuming calories, you add excess fructose into the mix, and it's a recipe for disaster, it causes your liver to export fat.

There was a paper that was published, 'cause I know you love to bring the references, I believe it was the Journal of Scientific Reports, where they found that in young healthy men, so these were men that were not overweight, that feeding of fructose and sucrose, sucrose is 50% glucose, 50% fructose, it led to their liver starting to create fat, export fat. It's called de novo lipogenesis, and this is something that easily happens when we over-consume fructose. So that's why I'm very cautious about when it comes to consuming any kind of fruit juice or anything like that, which I think people are way better off avoiding, but even these fruit smoothies. With a fruit smoothie, yes, you get a bit of fiber, but many commercial fruit smoothies, they will tend to add fruit juices into the mix that they aren't super transparent about. So even Naked Juice, it's not 100% pureed fruit; sometimes they'll add fruit juices, and I think this is another area where I think we all need to be a lot more cautious.

I don't know if people know this, but China is one of the world's largest exporters of fruit juice, in particular apple juice concentrate, but about 70% of the apple juice concentrate consumed in the United States comes from China. And there was this big expose, this finding a couple years ago, where they found that fruit juices that were marketed to babies had very high levels of arsenic and lead, which are known neurotoxins. So, we want to be really cautious and do our best to eliminate fruit juices. And I think when it comes to fruit smoothies, we, yeah, definitely should do our best to eliminate those from our diets.

**SHAWN STEVENSON:** Yeah. And this is the difference between something that is healthy and something that is framed as healthy.



**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** And I love the fact you reiterated multiple times, of, the fruit isn't the problem. And now we have camps, of course, that are demonizing fruit. And of course, this might be depending upon your unique metabolism, something to be cautious about with certain fruits that have been wildly hybridized or whatever the case might be, but in general, you're not going to get the same metabolic chaos that takes place.

**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** And mentioning what can happen with the liver, this is because fructose is digested differently in the body. This is another framing that takes places, is fruit or fructose or these juices don't spike your blood sugar; they're not high-glycemic.

**MAX LUGAVERE:** Right.

**SHAWN STEVENSON:** Right? And this is because the brunt of the weight of it is getting hit by your liver. Your liver has to process it first. It can just start printing out fat if you're overbearing on your liver.

**MAX LUGAVERE:** Yeah, absolutely. So, fructose actually has a glycemic index of... I think it's about 19 or 20. And glycemic index, the root origin of the word "glycemic" is "glucose." There's obviously a shared suffix there, or prefix. And so, you're absolutely right. Fructose has been marketed and sweeteners that are predominantly fructose are marketed as being diabetic-friendly because they don't elevate your blood sugar, but that's precisely because fructose, as you mentioned, it goes straight to the liver, and its primary function is it re-glycogenates the liver. So your liver has the ability to store some capacity of sugar. It's about 100 to 125 grams of sugar in the form of glycogen, and your muscles have the capacity to store another 400 grams of sugar. So your body's total sugar storage capacity, it's finite and it's fairly limited. It's about 500 grams, give or take, depending on your body size. That obviously plays a role there, but unlike glucose, which enters your blood, spikes your blood sugar, and is ideally sucked up

by your skeletal muscle to serve as an energy substrate for later on, usually when we're doing high intensity exercise, we're grateful that we have sugar in our muscles 'cause it helps us power through high-intensity anaerobic exercise, like when we're weight training or boxing or what have you.

But fructose has a different digestive and metabolic path. It goes straight to the liver. And for the most part, in the milieu of the standard American diet, the fact that leisure time physical activities is at an all-time low, our livers are already full of glycogen. So, we have the storage, this finite storage capacity, and what happens when your liver is full of sugar and you're just adding more sugar to it? You're saying... The liver is like, "What am I supposed to do with this?" It's going to create fat, and it's going to export that fat into circulation. So that's one of the reasons why people... One of the mechanisms by which people experience high elevated fasting triglycerides. It's because their livers are just... They're continually exporting fat.

**SHAWN STEVENSON:** Little not-so-fun fact: Liver disease is in the top 10 causes of death in the United States, and you never hear a peep about it.

**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** And it's just getting absolutely beat down with our lifestyle. So, let's talk about another one of these commonly accepted as healthy foods that very likely are hurting people's metabolism.

**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** Another one of these that I saw you mention was... And you, of everybody, you've been really the foremost voice in talking about the benefits of olive oil, but there are these olive oil "blends" out there. Let's talk about that.

**MAX LUGAVERE:** Definitely. This is, again, where marketing trumps even reason. Extra virgin olive oil is an incredible food. It's a food that humans have been creating for thousands of years, because the way that you create extra virgin olive oil is very simple. You just crush olives,

and the fresh juice that you get from the olive fruit, it's an incredibly healthy food. It's got an amazing fatty acid profile, it's about 70% to 80% monounsaturated fat, oleic acid in particular, which is the most abundant commonly found fat in nature. It's got 15% of saturated fat, which is very chemically stable, and a very low amount of polyunsaturated fats, which we know are very delicate and damage prone. They're the most delicate and damage-prone of the three major dietary fatty acids.

This is in contrast to the way that most grain and seed oils are produced, which are produced via innumerable industrial processing steps ranging from... Well, first, we have to extract the oil from the food, whatever that food happens to be, whether it's soybeans or corn or grape seeds. Oftentimes it's done using harsh chemical solvents like hexane, which is a known neurotoxin. But even if not, these oils are produced... They go through a number of production steps including de-gumming, and in particular, there's one step that I love to draw people's attention to, and that is the deodorization process.

So, a lot of these oils are very caustic in nature. They're noxious, they don't taste good, they have bitter flavors and aromas, and they're not as versatile as food producers need them to be, to be able to squeeze these oils into any number of ultra-processed foods, whether granola bars or salad dressings or frying oils. And so, this deodorization process, basically it's the food processing equivalent of the witness protection program. It basically takes these oils, and it makes them all it makes them devoid of any character, and that's why food processors love them. But the problem with that step is that it creates a small but significant amount of trans-fats. So, it damages these already vulnerable-to-damage oils. The extraction process strips them of the antioxidants that they're typically bound with in their whole food form. And then we cook with them, we eat foods that are fried in them, and that continues to damage these oils. And a damaged oil damage you.

The kinds of fats that we consume on a moment-to-moment basis influence the quality of our cellular membranes, they can affect things like our hormones, which are immensely powerful in terms of our physiology. And so, getting back to extra virgin olive oil blends, sometimes on the market, you'll see products that are labeled as extra virgin olive oil, and you have to look really closely to make sure that it's not a blend. Because what they're doing is they're blending

this near-perfect food, extra virgin olive oil, with some of these actually quite unhealthy cooking oils, like corn oil, canola oil, and soybean oil.

It's actually really frustrating that they do this because for people that are making that effort to reach for a healthier oil, they're being duped. And these are people that tend to be vulnerable, they're not people who, like you or me, look at them or are meticulous about the foods that we allow to enter our households and are looking at the ingredients; they see extra virgin olive oil, they maybe heard about the health benefits of olive oil on your podcast, and they go to the supermarket, and they pick it up. And what they don't realize is that oftentimes, these are just blends that will use a little bit of extra virgin olive oil and they'll bulk it up with these less healthy oils.

And I think that's a big problem, especially when there are so many health benefits associated with the consumption of extra virgin oil. There's a very large long-term randomized control trial called the PrediMed trial that was published a couple years ago that showed us that the consumption of extra virgin olive oil, up to a liter a week, is associated with robust benefit to our cardiovascular system, our metabolic health, which we know is so important now, our waistlines, our cognitive function. And so, extra virgin olive oil is the oil that I tend to prioritize in my cooking, and I try to avoid, to the best of my ability, exposure to any of these grain and seed oils that are so pervasive in the modern food environment.

**SHAWN STEVENSON:** Wow, this is nuts, because... So, we're taking something ridiculously healthy and then these, street dealers are basically cutting it, and then selling a much lower quality product to unsuspecting buyers.

**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** So, we're talking about some local drug kingpins in a sense, you know what I mean? And I think I might have mentioned this to you before, but I was looking at the journal, Inhalation Toxicology, and they found that just smelling these oils while cooking, these highly refined seed oils can damage your DNA. And I was like, "What the... "" I couldn't believe that that was even a thing, but then of course, I just pieced together the logic, and that even

if we're smelling something, we are... It's interacting with ourselves. It's inside of our bodies. And when you talk about the deodorization process, because these oils, honestly, when they're processing corn oil or soybean oil, it's going to smell like ass in the power plant, in the food processing plant. And so, they're using these very harsh chemicals to try to make it inert as far as the smell. There's so many things used to mask the taste and smell. They would taste bad and smell bad. But, yet, go ahead and put it together in your healthy oil.

**MAX LUGAVERE:** Yeah, these are garbage products, like grape seed oil is something that didn't exist up until a few years ago, and it is the result of some industrious winemaker actually realizing that they were throwing out the seeds of grapes. Grape seed oils, it's a by-product of the wine-making industry. They were throwing out the seeds of grapes, but then somebody realized that you could press these seeds for oil and run them through all of these different processes, and you get this like dirt-cheap cooking oil and it's now a multi, multi, multi-million-dollar business around the world. And for me, I think the most treacherous thing about these oils, 'cause I don't like to fearmonger, I think it's when we consume ultra-processed foods that are stuffed with them, and also... And I would say mostly, when we consume fried foods, because when you go to a restaurant and you order anything that's been fried, I think, in the back of our heads, maybe we expect them to be changing out the oil between every dish, but restaurants have notoriously thin margins, especially these days.

And so, that oil sometimes isn't changed for days, and it's the constant heating and re-heating and just the maintenance of these oils at extremely high temperatures that causes them to degrade and oxidize and generate various oxidative by-products like certain aldehydes, which are toxic to our mitochondria. So, I know you talk about the value of metabolic health all the time. The source of metabolic health can be traced to the mitochondria, the energy-generating organelles in our cells. And so, by consuming fried foods, you're literally... Especially on a chronic basis, you're poisoning your mitochondria, essentially. And it traces all back to the fact these oils can be so... They mutate and they become so damaged over that chronic heating and re-heating that happens all the time in restaurants.

**SHAWN STEVENSON:** If people can't see my face when you said poisoning our mitochondria, I made the Macaulay Culkin face, and then I realized I'm making the Macaulay Culkin face, shout out to Home Alone, everybody. But man, that is nuts. Have you talked with Dr. Cate Shanahan?

**MAX LUGAVERE:** I have not, but I really like her work. I know that she's been a whistle-blower on these oils for some time now. So, I have not had her on the show, but yeah, we're very much aligned.

**SHAWN STEVENSON:** It's already done. I'm going to make that connection, you guys just remind me of each other as well, it was going to be a great, great conversation. One of the things that she shared was a series of biopsies done, one was early part of the 1900s, and looking at what are our fat cells actually... What's in there? And finding that the make-up of human fat cell was somewhere in the ballpark of about 2% of these PUFAs, these polyunsaturated fatty acids. But more recently, when biopsies have been done looking at the constitution of human fat cells, now it was upwards of about 20 to even upwards of 30% polyunsaturated fats. Literally the make-up of our cells is different. We're not even the same humans anymore; we're made up of different ingredients. And with these types of oils being so volatile and so pro-inflammatory, it's just, again, another reason why it's not just the fact that we're gaining so much weight as a society, but we're also so much sicker. So, now, let me ask you about this other, which when I was a kid, I remember my grandmother, my grandfather had high blood pressure, and he was giving some orders on what are you supposed to eat by the doctor, and one of those things was to switch over to margarine. So, let's talk about, what is margarine? Let's talk about that.

**MAX LUGAVERE:** Yeah, I grew up consuming margarine, I remember having the little yellow tubs in my fridge at all times, 'cause I grew up in a house, my mother, in particular, was very concerned that she... Because she believed that she had heart disease and her family would develop heart disease, and so she was very attuned to the marketing surrounding food products and what we thought at the time about the relationship between dietary fats, like saturated fat and cholesterol, as it pertained to our cardiovascular health. So, I grew up in a house that was very concerned about heart disease, and so, yeah, I was eating margarine all the time as a kid. Now, back then, margarines were composed of partially hydrogenated oils, so they would use soybean oil, corn oil, and they would partially hydrogenate these fats to

make them behave more like saturated fat at room temperature, and add some artificial coloring, squirt it into a tub, and that was supposed to be your butter replacement.

Now, thankfully, as of about seven years ago at this point, we've banned partially hydrogenated fats in this, a lot of who were confused, partially hydrogenated fats, fully-hydrogenated fats. Fully hydrogenated fats are actually... They aren't as harmful as the partially hydrogenated fat, there's some confusion over that. Well, partially hydrogenated fats are trans-fats, essentially, and there's no safe level of trans-fat consumption. These are directly toxic to our cardiovascular systems. We know that higher levels of trans-fat consumption is directly and powerfully associated with increased risk for cardiovascular disease and even for dementia, for Alzheimer's disease, as well. 'Cause the kinds of fat that we eat, as you mentioned, influence not just the fatty acids that we store in our adipose tissue, but our brains are made of fat, so the kinds of fats that we consume dictate, on a moment-to-moment basis, how well our brain's function, the kinds of fats that our brains are constituted with. And so trans-fats are definitely a major enemy.

And just going back briefly to the grape and seed oils that we talked about earlier, just because we've banned, the FDA's banned, partially-hydrogenated oils from appearing in our food supply, that doesn't mean that we don't have any trans-fats anymore in our food supply. Trans-fats are created, again, via the production process used to create these grain and seed oils. So, trans-fats, we're probably exposed on a per capita basis to a lower amount of them, but they still exist. And I think the problem with margarines, even today, is that they're comprised of these grain and seed oils that... They're just these... They're not very transparent about how they're produced, and so I don't know what the production process is that these oils undergo prior to making it into these yellow tubs. I would be very skeptical that they're treated within the care that fatty acids, as delicate as polyunsaturated fats, ought to be treated with that, that they're doing that.

And so, I tend to avoid margarine, and also, why use something like margarine when extra virgin olive oil again is so beneficial from so many different angles? You could see there's a hierarchy of evidence, like extra virgin olive oil, we've seen in culture, we've seen in animal studies, we've seen observationally, we've seen with randomized controlled trials actually is

beneficial to human health. But it's these replacement oils that we've just had to accept because, what, food marketers tell us that they're the best oils to use? Extra virgin olive oil, I think, is like... It tastes better than these synthetic margarines that you find on the market. Now, the question is, is it healthier than butter? I still think that butter is a great food, it's a nutrient-dense food. With a serving a butter, you get about 10% of retinol, which is vitamin A, pre-formed vitamin A, which is highly bio-available, you also get compounds like butyrate, CLA, vitamin K2.

In some people, butter will raise levels of LDL, which isn't necessarily, depending on your overall metabolic health, a bad thing, but some people might want to reduce saturated fat in their diet, which is something that I understand. Everybody's different, so I don't prescribe a one-size-fits-all approach to diet, but in that case, the alternative to butter that I would recommend wouldn't be margarine; it would be extra virgin olive oil or something like avocado oil, which is also a great... Has a really great fatty acid profile.

**SHAWN STEVENSON:** It's so good. You just brought up something about vitamin A that is really important. This is one of those nutrients that's highly correlated with longevity, but there are different forms of it. The plant form isn't the same thing, and so, just keeping that in mind, in our back pocket, and also just looking at really what I'm hearing is humans have been doing this for a long, long time, and we have a cold processing, a cold extraction method, versus the high heating of these very volatile and sensitive oils that happen for these vegetable oils. So I really want to be able to put this to bed.

And I remember, and this is a true story, at that university, this was like about 17 years ago, maybe 18 years ago, I was showing people, whenever a new client or doing a training program with some of these athletes, I would pass around this Kellogg's cereal bar, and it was my cereal bar that I thought was super healthy. And then I came across some data on partially-hydrogenated vegetable oils, and the fact that they were about to be banned in New York City. I think this was around 2007, when they were officially banned, possibly?

**MAX LUGAVERE:** Yes, yeah.



**SHAWN STEVENSON:** And so, this was prior to this, so this is maybe like a year earlier, a year and a half earlier, I was still sharing the data, and then once that article came out, everybody was like, "I told you!" You're like, this is not good stuff. And so now, here we are all these years later, when they finally get out of circulation, and as you mentioned, I think it was about seven years ago, but look how long these changes take, and look how long they were consumed by millions upon millions of people every single day, and it was literally breaking down their bodies, their cardiovascular system. These were things that were promoted as healthy by dietitians, by our healthcare professionals, because, and I want to ask you about this, because you mentioned with your mom, she was what we call health conscious. She was very health-conscious, but it was the belief system that that was... There's an overarching intention of eating healthy things, but the marketing can manipulate our thinking rather than reality, in a sense. So, can you talk a little bit about that, the idea of being health-conscious versus partially-hydrogenated vegetable oil?

**MAX LUGAVERE:** Yeah, people who are health-conscious are willing to spend, and so, the food industry knows that, and so they're happy to exploit our anxieties and our fears about food. And so, my mother was one of those characters. She was health conscious. This was like before the Internet, obviously, so thankfully, now, we have access to thought leaders in the space, people like you. We all have access to PubMed. There's this democratization of information that has occurred over the past 10, 20 years that prior generations really... They didn't have access to. They didn't have access to the kinds of information that we had now, and so they were much more vulnerable. Not to say that we're not vulnerable today. We certainly still are, but my mother read all the magazines, read all the newspapers, and the paradigm for health that she received was that dietary saturated fat, very harmful; dietary cholesterol, very harmful; refined grain products because they were low in fat, benign, if not beneficial, to her health.

So, I grew up in a household where we ate lots of refined grain products. Generally, we ate low in cholesterol foods. We had fat-free foods all around the house. I even grew up in a neighborhood in New York City where we had a supermarket, it was called F3, Fat-Free Foods.

**SHAWN STEVENSON:** What? Are you kidding me?

**MAX LUGAVERE:** Yeah. Yeah, it was a supermarket. It was like a 99-cent store, but instead of everything being 99 cents, everything had to be fat-free or low-fat in this supermarket, because back when I grew up, that was like... I was born in 1982, which, thankfully, when I became aware of my diet, we were just sort of getting out of that hysteria surrounding fat, but my mom was certainly influenced by it. And so, growing up, I remember I was about 12 years old when I had my first egg, when my mom made an omelet for me for the first time. We had margarine in the fridge, as I had mentioned, and these were all well-intentioned attempts at getting healthy, at being healthy.

And so, I think it's a shame. My mom, this is public, she developed a form of dementia, which she struggled with for years. My mother never ended up developing heart disease, but she ended up developing all of these other problems. The major problem that my family struggled with is the fact that she had a form of dementia, and I would never be able to trace her health problems back to any singular food component, but I do know a lot about her dietary pattern over the years, and it was low in fat. It was largely devoid of animal products, very little dietary cholesterol, but full of these fake, industrially produced fats and oils. And so, I can't say that those are the smoking gun, but as in sort of N of one anecdotal correlation, it's clear that that dietary pattern didn't protect her. And it's been a motivating force in my life to try to unravel and understand what it is, how we can eat to preserve and enhance our brain health and our cardiovascular health and our metabolic health as we age.

**SHAWN STEVENSON:** Yeah. This is, again, one of the reasons you are who you are, man. You're invested in this in a different way because of the experience with your mom, and again, that really, that creates this perseverance in somebody that you just can't put into words.

**MAX LUGAVERE:** Yeah. I mean, I've had the misfortune of seeing real illness. And insofar as we can influence our health with the choices that we make day-to-day, I think we ought to, right? Because chronic disease, it's like trying to get out of that... First of all, it's like anybody who's listening to this, who's ever had a chronic illness knows that it's essentially the fog of war. You can't see which way is up, it's very hard to get... Especially with a complex medical condition, finding a diagnosis, that's like the first thing you want, but even that can provide a false sense

of security, because a diagnostic term doesn't say anything, really, about the root cause of a condition. And certainly, when you have something like dementia, which takes years, if not decades, to manifest, like most chronic diseases which people are struggling with, which kills 60% of people worldwide according to the World Health Organization these days, these are conditions don't develop overnight. They take years of poor dietary and lifestyle habits to come to fruition. And so it can seem like a lot. It can seem like a big undertaking to take the reins of your own health, but I think it's so worth it. And the earlier you start, the better.

**SHAWN STEVENSON:** Yeah, yeah. Powerful. We've got a quick break coming up. We'll be right back. Very often is the small things that can make the greatest impact. Archimedes said, "If you give me a lever and a place to stand, I can move the world." It's all about leverage. It's all about positionality. And the same thing holds true when it comes to human health and performance. It is truly honoring the things that give us the greatest leverage. No process can happen in the human body without this remarkable sodium potassium pump. This exchange helps our mitochondria to create fuel. This exchange helps our heart to beat. This exchange helps all of our brain cells to communicate. Nothing is taking place without electrolytes. Electrolytes are minerals that carry an electric charge. And also, we've got mountains of pure, good evidence as to their efficacy with every single area of human health.

For example, our cognitive ability depends mightily on the function of electrolytes. Take sodium, for example. Not only is sodium required to help to maintain fluid balance in your brain itself, a study conducted by researchers at the McGill University found that sodium functions as a literal on/off switch in the brain for specific neurotransmitters that support optimal function and protect the brain against numerous diseases, like epilepsy, like neuropathic pain. How simple, how foundational, how much leverage we can get from making sure that we're getting adequate amounts of the right type of sodium?

Fascinating new study published in the Journal of Neuron found that another remarkable electrolyte, central electrolyte, magnesium, is able to restore critical brain plasticity and improve cognitive function. Truly, we can fight so hard, so mightily, to find nutrient-specific foods that can help to bolster our cognitive performance. But it really boils down, first and foremost, to leverage. And our electrolytes are at leverage.

Now, what about the immune system? This is something that is on a lot of people's minds today. The meta-analysis published in the Annals of Clinical Biochemistry titled Electrolyte Imbalances in Patients with Severe Coronavirus Disease, COVID-19, it analyzed five studies with nearly 1500 patients with COVID-19 and found that both sodium and potassium, another critical electrolyte, were significantly lower in patients with severe COVID-19. Now, this should raise a lot of flags. It should raise up our antennas to understand, "Hey, what's going on here with our electrolytes? Is electrolyte deficiency leading to worse health outcomes? Severity? COVID-19? Or is COVID-19 and any infectious disease requiring electrolytes for the healing process for an appropriate immune response to be mounted?" The answer is visible, and the answer is, we got to ensure that we're getting high-quality electrolytes in the right ratios.

This is why myself and my family utilizes LMNT, L-M-N-T. Go to [drinkLMNT.com/model](http://drinkLMNT.com/model) and you're going to get to try LMNT for free. They're going to send it right to your door. Just pay a little bit in shipping, you get to try a variety pack of LMNT. This remarkable electrolyte is not coming along with any binders and fillers and artificial colors and flavors. No sugar, any of that stuff; just the high-quality electrolytes that you need to thrive. Alright, so, check them out. Again, it's getting shipped right to your door. Go to [drinkLMNT.com/model](http://drinkLMNT.com/model) and get your electrolytes optimized today. Now, back to the show.

You mentioned in your experience growing up the refined grain products. Again, because they're low-fat, you've got these the superior grains that we have available now, and then there was a shift, of course, to trying to do everything, whole wheat and things of the like. Would that be on that list of foods that are propagated as healthy that are probably damaging to our metabolism?

**MAX LUGAVERE:** Yeah, absolutely. I think people are starting to wake up to the fact that most things that are refined are not great for you, but you still can walk through the aisles of a modern supermarket and see countless refined grain products that are marketed as being healthy, whether they are low in fat, low sodium, gluten-free, non-GMO, organic. There are numerous health terms that are planted on these products. The red heart healthy logo, for example, is pervasive. If you look at breakfast cereals, it would almost lead you to believe that

heart disease is caused by a deficiency of morning oatmeal, when that's not the case. And so, I think that this is a major problem. The thing about refined grains, there are a number of incriminating aspects to them, but we could talk about the fact that it becomes really easy to just consume a lot of what is essentially sugar after these products pass your lips. The ensuing avalanche of blood sugar that occurs with just one... That can occur with just a single bolus of a refined grain serving, whether it's your morning oatmeal or a commercial cereal or the like. Or it's the fact that these products take little to no effort for your body to digest and assimilate.

There was a great chat that I had with a food scientist recently, and we were talking all about the fact that when you're consuming whole foods, there's actually a proportion of calories, and it varies from food item to food item, that don't get absorbed by you. And there was a study that was published by, it was actually... It came out of the USDA, of all places. And they found that when you eat whole nuts, meaning you have a handful of whole nuts, you chew them yourself, so this isn't nut butter, they're whole nuts, you chew them yourself, about 30% of the calories that you ingest actually don't get absorbed. You end up passing them because they just... They can't get broken down and be assimilated in time before you expel them.

So, the same goes for most whole foods, but the problem with refined grains is that you absorb 100% of the calories that you consume when they're from these refined grain products. Refined grain products also tend to have a lot of added sugar. Your average American today consume 66 pounds of added sugar per year, which is just a tremendous amount of sugar, and we have no dietary or biological need for added sugar of any sort. And also, most of these products are devoid of any real nutrition, so they're essentially empty calories.

Now, food manufacturers will tend to fortify these products using synthetic vitamins. If you pick up a loaf of commercial bread, usually, you'll see niacin has been added, folic acid has been added. Food manufacturers enrich these refined grain products so that they're not completely devoid of any nutrition, but we touched on beta keratin and vitamin A earlier. Folic acid is one example of a nutrient that a lot of people can't properly metabolize. They need to ingest fully, which is the natural form, folic acid is always synthetic, and so, do you really want to be ingesting synthetic nutrients? I'm not saying that these are going to harm you in any

significant way, but refined grain products, yeah, they're just empty calories and they're just... It's like they're one of the defining features of the standard American diet.

Your average adult now consumes 60% of their calories from ultra-processed foods. Most of those foods are based on refined grains. And for children, it's even scarier. I know you're a dad. Children, their consumption of ultra-processed foods make up something like 70% to 80% of their daily calorie intake. It's shocking.

**SHAWN STEVENSON:** It is insane. And we're wondering... It's not even... This is not hard, to do the math. When you go into a grocery store in the United States. And I remember you posted this, and I want everybody to make sure they're following you on social media, @MaxLugavere on Instagram, and you posted that there's this health food section of the store. What is the rest of the store, then?

**MAX LUGAVERE:** Yeah.

**SHAWN STEVENSON:** If you really think about that, and I'm just thinking about the experience today of walking down the cereal aisle and it looking like a damn circus. It looks like I've walked into some kind of a strange, weird carnival with all of the colors and all of this seduction and really targeting our children with these friendly characters. And of course, there have been studies done on this looking at basically having the kids to demonstrate using a smiley face measurement how much they enjoy the cereal, and they find that the kids enjoy the cereal more when it has a mascot. Same cereal, just of it having a character, they like it more. And so, we know that this manipulation is happening, and it's happening while we're young, and so you get these kids inundated with these connections, these very abnormal connections, to stuff that's not even real and just see that play out.

And this is where we're at today, where we see the life expectancy now reversing. But also, the great thing about us as humans is when we have the ability to innovate and to problem-solve, and so it's forcing change right now. And so, a lot of folks have taken on this mantle, and this is what I want to ask you about, of eating real food, which is a huge... It's a game-changer, just by making your body out of real stuff. Now, with that said, this does not guarantee weight loss.

What are some of the things that people might unknowingly be doing, eating real food, that can still stifle their weight loss?

**MAX LUGAVERE:** Oh, man. Such a good question. So, off the top of my head, what came to mind first was eating while distracted. So, a lot of people, we love to eat while we're watching TV or when we're on our smartphones. Research shows that when we're eating while we're distracted, we tend to consume about 15% more calories. So, that can be significant, especially if every meal you're eating, you're distracted. If you're eating lunch at your desk in your office while you're cramming for the afternoon presentation that you've got to give, or if you're eating in front of the TV binge-watching your latest favorite show on Netflix or what have you, if we're doing this chronically throughout the day, that can cause a very significant imbalance in our calorie consumption over the course of the day.

It's also, I think, really important to be mindful of your trigger foods and foods that are more calorie-dense as opposed to less calorie-dense. So, for example, we were talking about whole nuts, for example. Nuts are a great food. Lots of observational evidence that show the people who consume nuts, and it doesn't have to be that many, it's about a serving and a half a week of nuts to get the health benefits seen in these observational studies, can reduce risk for kidney disease, cardiovascular disease, neurodegenerative disease. So, they're a great food, but we no longer have to shell our nuts ourselves, we buy them and they're already... It just becomes so easy to eat them by the handful. And I'm guilty of this, too. When I'm on set at any of these health shows, at the craft service bar, they usually have salted nuts, and it's so easy to just dig your hand in and shovel them into your mouth. And nuts are one of the most calorie-dense foods that exist, so I think it's definitely worth being sort of mindful of that.

So, knowing how beneficial nuts can be from a health standpoint, what I like to do is I like to integrate them into recipes, so I like to cook with them as opposed to eating them as snacks, 'cause I find that eating them as snacks, it can... It's just so easy to overdo. And you especially want to be cautious with nut butters. We all know that once you crack into a jar of peanut butter or almond butter, it could be very hard to pump the brakes. Also, I can be... I'm guilty of that as well. So, these are triggers that I've learned personally over time. I think sticking as best you can to whole foods, you kind of nailed it, but that's really important. There was this pivotal

study that came out in 2018 from the NIH, actually, that found that when we are given an ad libitum diet of ultra-processed foods versus whole foods, ultra-processed foods lead to a surplus of calories that we consume by about 500 calories a day, so that's stretched out over the course of the week, that's a pound of fat gain. Whereas whole foods, we tend to come in effortlessly at a calorie budget, at a calorie deficit, of about 300 calories. So there's an 800 calorie swing determined largely by the kind, the quality of food that you're consuming, so that's really important.

And I think it's really helpful for people to know that what you eat can influence how much you eat. We tend to lead... We tend to approach our weight loss, for example, the other way. We try to tamper down and moderate how much it is that we're eating, but if we're not mindful of the quality of our foods, then I think that that's a losing battle and one of the reasons why diets tend to be so unsustainable for people. Hydration, I think is also really important. It's interesting and not all that intuitive to realize that for a hunter-gatherer, for one of our ancestors, water would be the best way to find water to hydrate our bodies, but the second-best way would be from food. So water is actually a significant constituent of our food, whether it's produce or even animal proteins. Beef is something like 70% to 80% water. So, we can actually experience hunger if we're just thirsty, so making sure that we're hydrated throughout the day, I think that's a really potentially important or useful tip for people.

**SHAWN STEVENSON:** That's great, man. Yeah, that's such a good one. I always think about what's regulating our hunger, and it's all integrated in the same place in the brain, really, in the hypothalamus, regulating our thirst signals and our hunger signals, and these things can get crossed up pretty easily, especially today when we're really distracted from our bodies. So I love that you lead off with paying more attention to your food while you're eating. That's great, man. And also, you mentioned earlier about that USDA data, and I believe the title is something along the lines of The Atwater Discrepancy or Discrepancy in the Atwater System, where we find that eating these almonds, in this study, we had a different net caloric gain from eating the almonds. So, like 30% of the energy that's supposed to be there, we don't necessarily absorb, or our body expends trying to process it. So, it can be considered one of those foods that you can get some benefit from, but you're not extrapolating a lot of calories. Contrast that with the ease of eating those things, I'm about the pistachios right now.



**MAX LUGAVERE:** Oh, my god, they're so addictive.

**SHAWN STEVENSON:** So good, so good. And so... But if you're not shelling them yourself, you can tear through 'em pretty quickly. And also, these nut butters, man, and I've had so many different types. So, I've had walnut butter, I've had macadamia nut butter, pumpkin seed butter was one of my favorites, it was this weird sweetness there. And again, these are things that can be easily over-consumed because they're pressed down into these whipped up, sexy butters. So again, these are things that, even if we're eating real food, these might be unknowingly stifling our process. Another one I want to ask you about is just pivoting into what you mentioned earlier with the fruit smoothies, but again, we can be eating whole foods and then guzzle down some smoothies and unknowingly packing these smoothies with a tremendous amount of calories. And again, it's not that calories are everything, but they do matter in this equation.

**MAX LUGAVERE:** Yeah, calories are not everything. I definitely like to talk about calories because there are some that promote that calories don't matter at all. They certainly matter, but again, just going back to the NIH study, if you're really minding your food quality, then you shouldn't have to think about calories. Thinking about calories is a very... The fact that we're able to even do that and log our calorie consumption, it's a modern privilege, and it's something that can be a very effective tool because we're surrounded by modern foods, and modern foods... One of the defining characteristics of modern foods is that they're not satiating, especially these ultra-processed foods, which we've been talking about. They're usually... There are three factors that make a food satiating that we know of thanks to modern scientific research, and one is its protein content. So, protein is the most satiating macronutrient. And that actually is another potential pitfall that you can still succumb to if you're eating only whole foods. Even among whole foods, there are some that are more satiating and there are some that are less satiating. So, protein, we know, above and beyond carbs and fat, is the most satiating macronutrient.

The other aspect of food that makes it satiating is fiber. Fiber is satiating not because we have a biological need for fiber, we actually don't, but fiber mechanically stretches out our stomach.

So, we know that when our stomach is empty, it secretes a hormone called ghrelin, which makes us hungry, it's sort of referred to as the hunger hormone. And when our stomach stretches out, which fiber can certainly help do, because it absorbs water, and again, mechanically stretches out the stomach, it turns off the secretion of that hormone. And there's some lag time there, also, which is another reason why we want to slow down and enjoy our food, not guzzle it in the form of a smoothie.

So, protein, fiber, and then thirdly, water. And water is satiating for a number of reasons, I mentioned already that when water ceased to be available for one of our hunter-gathers, we would look for water elsewhere, we would look to get water in our food. But these are the three sort of defining characteristics, or the lack thereof, of ultra-processed foods. Ultra-processed foods tend to be low in protein. This is a universal truth about ultra-processed foods. They tend to be high in some combination of carbs and fat, most tend to be high in both. Very low in protein. They also tend to be low in fiber, unless that fiber is added in. Usually, it's some synthetic form of some isolated fiber extract, which the FDA is investigating to see whether or not those isolated fiber extracts actually act like fiber. I have a feeling they don't, or at least not all of them, but they can also cause GI upset, like chicory root fiber, inulin, all that stuff. But generally speaking, ultra-processed foods, which are not very satiating at all, tend to be low in fiber, and they also tend to be dehydrated. And why do food manufacturers dehydrate ultra-processed foods? Because it makes them shelf stable.

So those are the three features that you want to actually seek out if you're looking to be satiated by your food, which I think is... Which we all should be, because being satiated by our food is going to turn off those hunger mechanisms and not cause us to be packing on the fat. When that would have been useful for one of our ancestors in a time of increased food scarcity, but today, we live in a world of food abundance. 24 hours a day, we're surrounded by hyper-palatable, ultra-processed, completely not-satiating food. And so, I think bringing satiety back to the table, that's the secret sauce, the missing ingredient. But knowing those three variables and being able to manipulate them and seek them out in your diet should be very helpful, I think, for most people.

**SHAWN STEVENSON:** Yeah, this has been very helpful already, and we were talking a little bit before we got started here with the show, we're living in a very strange and turbulent time right now as humanity, and obviously, our health is not in a good state. Is there anything that you feel is lacking in getting addressed or lacking in us being proactive and having the ability to actually do something about, right now, to fortify our health in the midst of these pandemic times?

**MAX LUGAVERE:** Yeah, it's such a good question. For one, I think the fact that so few people are talking about how much agency we actually have when it comes to our metabolic health, this is something that... We need to be able to look inward and cultivate our own body autonomy and resilience, and that's not going to come from some tool, or some pill, or some product that we get from the pharmacy, or our doctors, or our supermarket. It's something that we can all cultivate, but it's got to be... It requires a mindset shift, I think. It requires sometimes doing things that are a little uncomfortable. Some of the most effective resilience builders that I'm aware of are actually uncomfortable, and people tend to shy away from them. But whether it's intense exercise... I think a lot of people now, thankfully, know the value of exercise, but are they exercising as intensely as they need to stimulate adaptation in the body? So, dialing up the intensity in your workouts, I think, really important, cultivating resilience in terms of temperature, this is a major. I just had Wim Hof on my podcast, and he's such a great person to talk to.

He's so inspiring when it comes to really driving home the fact that you're not building resilience or grit by sitting on your couch. You got to get out there, get out into the world and expose yourself to things that... Whether it's ideas, temperatures, situations that are not necessarily the most comfortable. That is the best way to bolster resilience, and then we have what's called a spill-over effect. I wrote about this in my last book, *The Genius Life*, that we have what's called cross-adaptation, whereby fortifying our bodies and by building physical resilience, we actually help promote psychological grit, which is a fascinating concept, that you can act your way to greater mental resilience. And we live in a time now where so many of us are struggling to find mental resilience, whether it's the panic porn on the media or even in our own local ecosystems with our local governments. I think that people are struggling with

anxiety, depression. Alcohol sales are up, unfortunately, today, so, I think these are all really important tools.

But again, your best biological self is going to come only once you get out of your comfort bubble and leave the comfort zone. And yeah, there are many ways to do that, a diversity of experiences, a diversity of exposure to a range of ideas and insights, even from a dietary sense. Diversity in terms of the nutrients that you ingest on a daily basis help to bolster your immune system, because you have your microbiota, your gut flora, the trillions of microorganisms that reside in your large intestine that are there essentially in part, to educate your immune system. So, if you're the kind of person who... I like to use the term, if you consume a 12-year-old boy diet, there's a lot of people that consume... They eat like 12-year-old boys and that diet doesn't seem to evolve as they get older, they just love basic, palatable, simple foods. You're not exposing the microbes in your large intestine to this diversity of plant compounds, some of which are actually toxic, and elicit a protective and strengthening process in the body. We call this hormesis. It's a hormetic effect, and so, dietary diversity is also crucially important.

So, there's a lot that people can do. Personal agency, I think, is something that... If you were listening to the news, you might get the sense that we don't have a lot of agency. I think people need to turn off the news. That's what I think. It's one of the best health boosters you can give yourself these days.

**SHAWN STEVENSON:** Facts. Man, Max, thank you so much for coming through and sharing your wisdom and your experience. Can you let everybody know where they can connect with you more, what you have going on in the world?

**MAX LUGAVERE:** Yeah, for sure. Thanks for the opportunity. So, I'm pretty active on Instagram @MaxLugavere, and I also host my own podcast called The Genius Life, but I'm really excited, I've got a cookbook coming out March, 2022. It's a two-in-one book, actually, it's a cookbook, we've got over 100 recipes in it that are super delicious, all gluten-free, dairy-free, generally low in carb, but using the most nutrient-dense, accessible low-cost foods on the planet. And then the first part of the book is actually a diet and lifestyle guide. So, you're getting two books

in one, it's called Genius Kitchen, and it's available at [geniuskitchenbook.com](http://geniuskitchenbook.com), so people can go and check that out and be super grateful for any support.

**SHAWN STEVENSON:** Perfect. My man, thank you so much for hanging out with us.

**MAX LUGAVERE:** Thank you, brother.

**SHAWN STEVENSON:** Awesome. Max Lugavere, everybody. Thank you so much for tuning into the show today. I hope you get a lot of value out of this. One of the greatest takeaways from this episode is that you have agency over your own health. You have agency over your own mind and your own body, and it's time that we start acting like it more than ever, and also reminding others that they, too, have agency over their own minds and bodies. Obviously, getting ourselves healthier opens the door, it opens the gateway, for us to truly see this in living color. It's more difficult to understand how powerful we actually are when we're not well, when we're not feeling well. A little secret here is that emotion can be changed by motion. Emotion can be invigorated by motion; this is why movement is so powerful. Max just dabbled on this a little bit here in this episode, but it's one of the most under-utilized but yet most clinically-proven tools that we have in this situation that we're in right now, to move ourselves out of this situation and far beyond. But the question is, are we taking advantage?

The other day I was driving down the highway and I realized that this institute is actually close to my house, I'm talking about Kaiser Permanente Medical Center, who did this massive meta-analysis tracking the exercise habits of nearly 50,000 COVID-19 patients. And it revealed some eye-opening evidence. After analyzing their exercise habits over the two years prior to the pandemic, it was revealed that people who were consistently inactive, who're not exercising, were almost three times more likely to die from COVID-19 than people who consistently exercised. Now again, this is an observational study, but it's something for us to take notice of. It's something for us... It should be perking up our antennas, we should be like Mantis on Guardians of the Galaxy, when we hear something like this and just like, "Oh, wow." But we know this already. We already know this within our hearts. We know that our genes expect us to move, our immune system expects us to move, our cardiovascular system expects us to move, our endocrine system, our nervous system, expects us to move if we're not doing that.

Movement is life. Life is movement, life is movement. When does life cease? When movement ceases. And we've become the most sedentary culture in the history of the world. We can turn this around. Rock bottom is a good place to stand up from. So, I hope that you really got a lot of value out of this episode and take on some of these insights. Remember the power that you carry, and the power that you carry to positively influence other human beings, to be a light everywhere that you go. And speaking of that, I'm going to make sure that you continue to be equipped with powerful knowledge and incredible teachers to be a part of your own superhero team. So, we've got some incredible guests coming up very soon, and also some powerful masterclasses. So, make sure you stay tuned. Take care, have amazing day, and I'll talk with you soon.

And for more after the show, make sure to head over to [themodelhealthshow.com](http://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.