THE MODEL HEALTH SHOW

EPISODE 546

Nutritional Psychiatry: This Is Your Brain On Food

With Guest Dr. Uma Naidoo

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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. We are in desperate need of healthy communication right now. As of this recording. Just this week, the CDC published new data stating that fentanyl overdoses are now the leading cause of death for American adults. That's right, Americans between the ages of 18 and 45, the leading cause of death is overdose from opioids. According to the CDC, again, fentanyl overdoses have killed more people between the ages of 18 and 45 since 2020, than COVID, than car accidents, and also including suicides as well.

This is the leading cause of death. Now, the interesting thing is that you've probably not heard much about this in major media. This is being covered by local news stations. Maybe you might see a little bit on Yahoo News or something like that, but you're not going to see this on major news networks. And this should be front page news, this should be a highlighted thing everywhere. And the question is, why is that? Well, the truth is, is that pharmaceutical companies are in fact one of the biggest providers of funding for major news networks, and this is just the way of the world. This is just the state of affairs right now. And of course, there can be a beneficial relationship there we can't say that this is all bad. We want education around medicine and technology and things of the like.

But the issue arises when funding for what should be unbiased information, unbiased news, or the public at large. When that begins to be controlled and manipulated and colored in a certain way, and folks aren't receiving very primary education on what's really happening in the world, that's what the news is supposed to be. And so, the fact that this isn't getting talked about is speaking to a deeper symptom that we've got to addressed in. Listen, right now, again, I started off by saying that we're in desperate need of healthy communication. And that's at the core of it, because human interaction and communication and coming together is what's really going to help us to solve the most pressing issues that we're facing right now. And here's another really powerful fact, and if you're wondering why we're having a lack of healthy communication right now, there's so much divisiveness taking place in our society, like never before.

At a place when we're supposed to be so evolved and so intelligent, emotionally intelligent and being able to have healthy conversations and to bring multiple perspectives to the table. Why is this not taking place? Well, I'll tell you right out. It is very difficult to have compassion for another human being when you don't feel well. It's not impossible, it's just more difficult.

It's very difficult to perspective-take. To put yourself in someone else's shoes, to see from their point of view, when you're not doing well physically and mentally yourself. When you're struggling with your own internal milieu, when you're struggling with your own internal battles. It becomes more difficult to step away and to have empathy, to have understanding, to have patience, and we know this is based on real world peer-reviewed data. One of those interesting studies was conducted by researchers at the Ohio State University and want to find out just what happens when our blood sugar gets a little bit wonky as far as our relationship with the people that we love, not to mention people we don't even know, or don't like, but people in loving relationships, couples. And so, we know this is a commonality in our society today.

This term of being hangry. Are you hangry? This is a real scientific thing that's being studied right now. And what it really is, is a hyper-aggression that takes place when we are craving something. When we're hungry. When we need to eat something because our blood sugar has gone too low. And how do we get there so frequently is decided today where our body isn't able to just normally regulate and manage blood sugar, whether we're proactively hunting down a meal or not, just to have a place of stability. Is that we have these peaks and valleys taking place. We have these peaks, and we go into this hyperglycemia state, and then we go hypoglycemic. And our blood sugar drops too low, now the body is amazing in his ability because a low blood sugar through our evolution, could mean potential danger. Could mean potential death. If our blood sugar is too low and our senses aren't ready and rearing to go, if we are needing to be in a state of fighter flight to be able to track down our food, whatever the case might be.

Our blood sugar needs to be stable and our brain functioning needs to be on point so that we can survive. Now today, obviously, we don't have these very volatile conditions for the most part as humans in civilization today, but these primary programs are still alive and well within us, and so when that blood sugar crashes what happens to get it back to a baseline is the release of catecholamines or stress hormones. Our stress hormones are not bad, they're there to help our bodies to regulate the due processes for our survival. But we can put these things into a very black and white perspective of stress bad, relaxation good. But it's not like that all of these things play a part. But when we have this incitement of stress hormones because our blood sugar is too low, the side effects is that we become more aggressive, we become more irritable and agitated.

Have you ever experienced this? The crazy thing is, we don't realize we're doing it. But have you ever caught yourself in a state when you're hangry? When you're a little bit irritable, nitpicky, when you're just not really feeling it or wanting to be bothered. And a nice little some nibble on helps to make things all better. Alright, most of us have caught ourself at least a time or two doing this, but a lot of times, this is happening on automatic. And so, what the

researchers has discovered was that, when folks experience crashes in their blood sugar, they were far less likely to have patience for their partner, they were more irritable towards their partner.

And here's the biggest thing, and why I'm bringing this up right now, they were also far less likely to solve their relationship conflicts. At the end of the day, we see what's happening objectively with their blood sugar. But what happens in the real world, far less likely to come together and solve issues. And this is what's happening perpetually in our society today. In the United States, we've got about 130 million of our citizens have type 2 diabetes or pre-diabetes, right now.

This is almost half of our population. Abnormal blood sugar is just the norm. This is not to mention folks that don't have a diagnosis or pre-existing condition with pre-diabetes or type 2 diabetes, but just folks who are... They're just kind of adhering to the standard practices of nutrition and consumption of our society today, and is putting them at a metabolic, and also, emotional disadvantage, and we don't even realize it. So, I'm very, very excited about this episode today, because we've got one of the foremost experts in the world in understanding and teaching how our nutrition dramatically affects our mental health, dramatically affects our emotional stability. She's a Harvard-trained psychiatrist, but also an expert in nutrition as well. And being able to marry these fields together, she's really a pioneer in it. Being able to implement this in hospital settings so that patients have access to this, so that other health care workers, other physicians have access to this data. It's so crazy.

And I asked her about this during this episode. When she went into medical school, she was taught almost nothing about nutrition. It was such a tiny, tiny portion of her training, what was taught was standard of care, that, as the results speak for themselves, has not led us to a very good place as a society. We're not getting the results. If we're going to continue doing the same thing that we're doing, we're going to continue to keep getting what we've been getting, which is the sickest nation in the history of humanity.

Now, I believe that we are far better than this, and we can use this time as a reference point, as a contrast to know exactly what we don't want, to know exactly how bad things can be, and for us to paint a picture of something far greater, to change our vision and to create a society that works for everyone, where health is the norm. Because right now, if you're adapted to the world as it is, a world that is just snuckin' futs... Alright? If you switch some of the letters, you'll know what I said there. But a world that is nuckin' futs, you want to be an oddball in this type of world. You want to be the weird one. Because being healthy is not the norm. You want to be the exception. But we want to get to a place where, again, you are a leader in this, you are a model in this, to demonstrate what's possible, and lead our world, our society, our communities, our families to a better place, and to make this the norm, make health the norm,

make compassion the norm, make success and service the norm for everyone in our society. It's possible, but it starts with us.

So again, really pumped about this episode. We're going to be talking about a myriad of different ways that our nutrition impacts our mental health, and also specific foods, specific nutrients. One of the things that she talks about multiple times in her new book, This is Your Brain on Food, she talks about magnesium, this remarkable micronutrient that has all of these wonderful metabolic effects. I've been talking about the necessity of magnesium. It's really a top tier as far as micronutrients are concerned because it's responsible for over 600 biochemical processes that we are now aware of. Alright? Just a few years ago, we only knew about 300, 350 biochemical processes that magnesium is involved in, meaning that if magnesium is not present, these actions, these processes in the body can't take place. So, this is related to the parasympathetic nervous system processes, muscular relaxation and contraction processes, cognitive processes, bone building processes, the list goes on and on and on. It is incredibly important.

The key is, we want to get it from whole food sources. So, eating foods that have a high ratio of magnesium. But here's the rub. Today we're exposed to more stress than we've ever been exposed to, because we're more in a state of chronic stress. Not a stressful event takes place, and then we're able to relax, like what would happen through our evolution. Today it's a chronic low-grade stress, and it's just siphoning magnesium, because it's responsible for so many stress buffering processes. So, this is a place that we definitely need to supplement. I would point you in the direction of, let's not do an isolated synthetic version of magnesium. Let's move towards whole food concentrates that are very dense in magnesium. Alright. So, this is going to be in the green superfood category.

So, superfoods like chlorella, like spirulina, like moringa, these are all going to be great concentrated sources of magnesium. And this is why myself and my family utilize the Organifi Green Juice formula. This should be in your cabinet at all times. Pop over there and check 'em out. It's organifi.com/model. That's O-R-G-A-N-I-F-I.com/model. You also get 20% off their incredible Green Juice formula, and also, the rest of their superfood concentrates. Alright? They're doing stuff the right way. Organic, cold temperature-processed, and we're talking about the top tier of concentrates of green... And we're talking about the top tier of green superfoods here, with spirulina being the number one source of protein, most concentrated source of protein ever discovered, about 70% protein by weight, dense source of magnesium, phycocyanin, the list goes on and on, vitamin A, and other micronutrients. So again, love it. It actually tastes good too. It's a good on-ramp for folks that might not be getting in the veggies that they're targeting. It's just one of those things to have in your cabinet at all times. Go to organifi.com/model. 20% off. Now, let's get to the Apple Podcast Review of The Week.

ITUNES REVIEW: Another five-star review titled, "My fave podcast," by healthforme.com. "Such great information. The kindness and knowledge that Shawn gives me gives me the strength to make so many changes in my life. Greatly appreciated."

SHAWN STEVENSON: And you are greatly appreciated. Thank you so much for leaving that review over on Apple Podcasts. If you've yet to do so, please pop over to Apple Podcasts 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 Uma Naidoo, MD, and she's a board-certified psychiatrist, professional chef, and nutrition specialist. She's currently the director of nutritional and metabolic psychiatry at Massachusetts General Hospital, where she consults on nutritional intervention for the psychiatrically and medically ill. She also teaches at the Cambridge School of Culinary Arts. She's been featured on many different major news outlets and media, like LIVE with Kelly and Ryan, The Today Show, The Wall Street Journal, Shape, Parade, and much more. So, let's jump into this conversation with the amazing Dr. Uma Naidoo, welcome to The Model Health Show.

DR. UMA NAIDOO: Thanks so much, Shawn. It's lovely to talk with you.

SHAWN STEVENSON: It's my pleasure, thank you so much for coming by. I want to ask you first and foremost, what is it about food, why is food such a powerful influence over our mental health?

DR. UMA NAIDOO: I think it stems in part from our childhood. Food... Think about when a baby is born, it goes back to those primitive drives and primitive needs. Baby is born, they cry, they breathe, and they eat, right? Those are the three things that happen sometimes in the delivery room. And there are check points the doctors will check. So, it goes back to something very fundamental in who we are, and I think it also over time in our childhood and as we grow up, there are many food memories that develop, and it may be associated with sometimes positive, sometimes not positive things. As a psychiatrist, I see both. I see kind of the spectrum of all of that. But food becomes a powerful tool in how we negotiate our lives. Our current obesity epidemic, the things that COVID-19 has uncapped, well, brought that forward. But I think the thing that we're missing, Shawn, is that it's a very powerful tool for our mental health, and I think or that's what I'm hoping nutritional psychiatry will help people understand, that there's a connection we haven't made before as obviously. And if we understand it, the power is within our hands, at the end of our fork and not only controlled by a prescription pad.

SHAWN STEVENSON: I love that you brought this up about the memory connection with food. I know that when there are certain smells it takes me back to a specific moment, you know? The olfactory senses and this connection, there's a lot going on there in the brain, and you

even talk about this a lot in your book, about the relationship with our food and specific cognitive and specific parts of the brain, like the hippocampus...

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: As well, let's talk about that a little bit.

DR. UMA NAIDOO: So, you know, these food memories can... Let's talk about the positive ones. Will take you back in time, and they will bring back a positive memory and they will hopefully help to guide you in a good way, and I think that what I'm trying to bring forward with nutrition and mental health is that sometimes those are not always the easiest memories. Sometimes people struggle around positive memories or have had more negative relationships with food, or maybe family or maybe other relationships. How do we take that and make it healthier for them, heal that relationship with food and then help them make healthier choices? Because one of the things people are always talking about are comfort foods. I've been known to say, comfort foods are discomfort for the brain, because I think you and I know that the things we tend to reach out for, that we consider, or society considers to be comfort foods are not great for the brain. They are often sugar ladened or the wrong types of carbohydrates or whatever it might be. And I think that that becomes important for us to use as leverage to help our mental well-being.

SHAWN STEVENSON: Yeah. Yeah. You actually have a chapter that's looking at the connection between PTSD and our nutrition...

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: Which was one of my favorite sections. And in one sub-title, and this one was called "Foods that deepen trauma."

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: You say that "When you don't have trauma to deal with, you have enough brain capacity to take the time to make healthy choices, but a brain that is under fire from fear and painful memories has an entirely different agenda. All it wants is a little break. Fast foods and soda can act as a form of self-soothing, providing comfort in an almost automatic reaction that is difficult to stop."

DR. UMA NAIDOO: It becomes a cycle, becomes a cycle of eating those foods, and having less space to make better choices, and we get into the cycle of cravings that people will talk about. We know that sugar is associated with the dopamine neural pathways that street drugs are

like cocaine. So, we know that when people speak about a strong term like sugar addiction, it actually has some scientific basis to it. So, with PTSD you're already struggling with an overload of things on your brain, and you have less capacity to make those healthier choices. So, how do we walk ourselves back from that, how do we break that path? Certainly therapy, certainly other forms of treatment become important, but food is also something we can deal with in that instance.

SHAWN STEVENSON: Right. Now I'm going to bring up something that might have got skipped over there, you mentioned cocaine. Alright? And this pathway being very similar with sugar. And I think a rational argument would come up is that nobody's selling their furniture to get sugar. Or like selling their...

DR. UMA NAIDOO: No.

SHAWN STEVENSON: Out selling their body or something.

DR. UMA NAIDOO: True. True. But...

SHAWN STEVENSON: But in reality, it's because sugar is so easily accessible and socially acceptable, and there's a really famous study that was done on rats, giving them the option of choosing between sugar, water, or cocaine, and to rats that were even addicted to cocaine, soon shifted over their addiction to the sweetened beverage. It's so bananas.

DR. UMA NAIDOO: It is not only crazy, it is in our food everywhere, and I think that this is something where we have to educate ourselves. The power of nutrition becomes, as you talk about really important to us, because people don't realize there's an organization out of Austin that has listed upwards of 250 other names for sugar on food labels. So, a couple of things about this, people don't realize that something simple, like brown rice syrup is actually sugar, because brown rice is associated with a more complex carb, maybe people are encouraged to eat that over other forms of rice.

But people also don't realize from food labels that because our food labels are in grams and not ounces and pounds, which is how we... All our cookbooks are standardized in the United States, they don't know how to convert it. So, four grams of sugar is one teaspoon. So, if you start to convert that, you'd realize on a package, on a food that you're eating the amount of sugar you're consuming. And sugar taps into that dopamine reward pathway, and that's in fact how we start to crave it more, along with all the other stuff, Shawn, the artificial sweeteners and all the other things that... Well, certainly the older ones that happen.

SHAWN STEVENSON: Yeah.

DR. UMA NAIDOO: It's a trap.

SHAWN STEVENSON: That's so powerful. I think about this drink that I used to have when I thought I was doing really well, I was eating healthy, and I would get this green Naked Juice. And it had almost 60 grams of sugar in it.

DR. UMA NAIDOO: Okay. There you go.

SHAWN STEVENSON: And I'm just like... Because of that conversion process, mentally, we don't really understand what that looks like, so we're talking like, 15 teaspoons of sugar and it is marketed as healthy beverage...

DR. UMA NAIDOO: Juice.

SHAWN STEVENSON: Right. It's stripped down and it's naked.

DR. UMA NAIDOO: Right.

SHAWN STEVENSON: It's like, this is the power of marketing.

DR. UMA NAIDOO: Except for the sugar.

SHAWN STEVENSON: Except for the sugar, and it's hitting our blood stream so quickly...

DR. UMA NAIDOO: That's it, it's fast.

SHAWN STEVENSON: Because it's in liquid form.

DR. UMA NAIDOO: Exactly. Because of that liquid form, it's different than eating a little cup of blueberries. And it's going to be metabolized as differently. And I think that... I don't want to say it's trickery, but it is confusing for the public. Because any recipe you look at, and whether it's a holiday recipe you're looking at, it's all pounds and ounces. So, you don't think about it when you see grams, and you don't realize that 60 grams is actually a huge amount of sugar. So, it's learning those little things that I think help empower us, especially with our mental health, but also physical health, because we know that COVID has uncapped metabolic health as being a huge driver of disease. And we know that about 88% of Americans have at least one abnormal metabolic health factor. And we know that sugar impacts that. Sugar is one of the ingredients that impacts that. So, our propensity towards diabetes or basically all of that are all enmeshed, they are all enmeshed. But so is mental health.

SHAWN STEVENSON: Yeah, oh my goodness, this is so good. So, I've talked about this several times. I don't think that the message can be stressed enough, and I'm grateful to have you here, because we can expand on this message. But of course, I was ringing the alarm about some of these things very early on, just paying attention to the data, and of course, there's a logical progression of infectious diseases, for example, in a pre-inflamed body. If we're experiencing obesity or whatever the case might be. And the CDC, this was published in July, massive meta-analysis, 540,000 COVID patients, 800 US hospitals. The number one risk factor for death was obesity, and the second leading risk factor for death in this report was anxiety and fear-related disorders. And it's just as if that doesn't exist, it's as if no one is acknowledging that that is a risk factor and how much our mental health has an influence over even our immune system.

And this gets into the conversation that you talk about so eloquently in the book, what's happening in the gut and how that effects our... Not just our immune system, but also our mental health, and in this chapter is the gut-brain romance. So, let's talk a little bit about that.

DR. UMA NAIDOO: That's one of my favorite chapters, besides Chapter 11 which is recipes, but partly, Shawn because it sort of unfolds what nutritional psychiatry is about. Because this is newer science, the gut-brain connection, the gut microbiome is newer science. It really only evolved in the last decade and a half, but between about 2013 and 2017, there were probably about 12,000 articles published on the gut microbiome and what that also helped to do is bring forward this connection between the gut and the brain. Because the gut-brain connection actually explains that food mood connection. So just like romance, there are good days and bad days, no day is perfect, so is that relationship between the gut and brain. But when you understand how food interacts with that, and you understand that the gut and brain originate from the exact same cells in the human embryo, then they divide up in life and form these two organs, you think, well, they wouldn't be connected, but they in fact are.

Then they connected physiologically, biochemically, anatomically by the vagus nerve, which is called the wandering nerve. That's the other name. It's the 10th cranial nerve. And this acts like a two-way superhighway. You know, in Boston we have the Mass Pike, and it never stops. So, it's this two-way superhighway allowing for chemical signaling between these two organs all the time. And when food is broken down, think about it just very simply, as our digestion process happens in the day that you're kind of going through the fast-food restaurants and getting those milkshake and whatever it is, the breakdown products are more toxic to our body and especially to our gut. And the gut lining is a single cell layer thin and starts to build up on inflammation. But when you're eating a healthier meal, the breakdown products of the digestion of that food are more positive products like short chain fatty acids.

So, they are more positive for the gut environment and for your body. Just very simply that unpacks it, and then you need to think about the fact that we know within the 24-hour period, those gut microbes, the 39 odd trillion that live in our gut microbiome, start to be impact... They start to be impacted almost immediately by the foods that we... You may not feel it in your body, they start to react and respond. So over time, if you are eating an unhealthy diet, let's say, it's going to lead to inflammation, and now inflammation is understood to be an underlying driver of those conditions like anxiety, fear, depression, PTSD, all of it. A lot of mental health conditions including cognition. So, we now understand that that form of chronic insidious inflammation in the gut can also impact that loop, that gut-brain sort of ecosystem and be an underpinning of driving those conditions, and I've seen it clinically.

SHAWN STEVENSON: Wow, this is so powerful. I want to circle back and talk more about the vagus nerve, and I also want to highlight this point. I mentioned this paper a while ago, I was looking at the psychosomatic effects of COVID-19, and it was talking about this two-way street of the anxiety, fear-related conditions exacerbating inflammation and inflammation exacerbating anxiety and related mental cognitive issues as well. And again, this data is pretty well known, but it's like putting it in the context of COVID-19, but it's as if, again, we know this already, we know how much... We know psychoneuroimmunology, we know how much our thoughts affect our immune system and our endocrine system, the list goes on and on. And I want to see these things brought to the forefront because we're so much more powerful to effect change in our bodies than we've been led to believe.

And I'm going to share this really quickly as well, this is one of the most startling papers that has come out in recent times. This was published in the journal "Gut", like the specific journal looking at gastroenterology and the like. And the title of the study is, "Gut microbiota composition reflects disease severity and dysfunctional immune responses in patients with COVID-19". And the researchers uncovered that... And I want to ask you about this specifically, the researchers uncovered that hospitalized COVID-19 patients consistently had lower levels of immunomodulatory bacteria coinciding with higher levels of inflammation. So, what do you think is going on here?

DR. UMA NAIDOO: As you well know, it's a complicated system, but I think the more that we understand it's all connected, the more powerful we can figure out the interventions. So, my understanding is really that these chronic insidious ways in which... So, when we look at COVID, let's look at COVID-19, we know that some of the underlying factors that were worse, were things, pre-existing conditions like obesity. We know that those who've survived COVID-19, those who've suffered the long-hauler syndrome also have new diagnoses of anxiety and depression that are much higher, but that's a different study. When we take it back to this one, I feel as though that chronic inflammation that we're dealing with in our gut through how we're eating, if we're eating poorly is also... The gut is dealing with our immune system, our

circadian rhythms, our sleep, our hormones, our vitamin production, immunity, vanishing our mental health.

So, it's dealing... I kind of think of it as Grand Central Station. It's kind of like becoming the center of many of these interactions. When we look at just inflammation, if our gut is inflamed, it's going to affect our immunity, 'cause 70% of our immune system is in the gut. And here in lies, I think, some of how the science will unfold even further that the study showed. I think if we understand that connection and we think about one way to reduce the inflammation being... Stress management is certainly one of them so we can't ignore that. And also, how we eat to reduce inflammation, and think about that in terms of how we can then impact our gut health and then impact our mental health, but also, immune health and other things.

SHAWN STEVENSON: Perfect. So again, they mentioned immunomodulatory bacteria. In your work, you talk about this throughout the book. This aspect of certain bacteria strains even having a direct impact on our mental health like issues surrounding depression, for example. So, let's talk a little bit about that specifically looking at our gut bacteria, this plethora of sentient things that are living in and on our bodies.

DR. UMA NAIDOO: Right. So, one of the studies that I liked was because it of course involved food, was the fact that they looked at the impact in depression of using probiotics versus Prozac, in a particular study. And what was compelling was that they found by manipulation of the gut microbes in that study through the use of probiotics, they were actually able to overcome the impact, or when they compared it to the impact of Prozac, which tends to be highly prescribed in this country, that the probiotic came out on top. Such a simple study, but I think what was powerful is it provided more solutions, it should be providing psychiatrists with the understanding that there are more solutions, not just the power of that prescription pad, because I do think as a physician, we are... Our system is... We're encouraged to write prescriptions. It's the way the system is set up, it's the way hospital visits are set up.

But I think that we need to be thinking about more options, like how can we impact those gut microbes by simply how you're eating, maybe it's a probiotic supplement, which you can also get those through fermented foods. So, a study in... A pretty powerful study in a very high reputable journal "Cell", which I know you know about, Shawn, from August of this year, from a group of researchers at Stanford, looked at... They found, actually, that fermented foods impacted inflammation in the gut. So, you can get these live active cultures from probiotic-rich foods, but you can also get them from fermented foods. So again, impacting that inflammation could improve your immunity over time, could improve your mood over time, could lower your anxiety. So, the manipulation... And one of the things I'm most excited about is...

In the future, what I think the future in mental health should hold is the use of manipulating those gut microbes to improve mental health without the use of a prescription medication. So, there'll always be need for life-saving medications for someone who's actively suicidal, manic, has lost touch with reality and is psychotic. So, the acute psychiatric conditions, it's not that food or nutrition can't be part of the solution, but that person may need more immediate help. But here's the power of the gut microbes. If we can learn to manipulate them through the use of psychobiotics in the future, to impact mental well-being, I think that that would be a super powerful long-term outcome and goal in nutritional psychiatry.

SHAWN STEVENSON: Yeah, so powerful. This is one of the things I admire about you as well is that it's about equipping people and even our healthcare practitioners who again, get into this field to help people with more tools, versus... It's generally going to be a first to go to, is to try to treat a symptom. You mentioned Prozac, we have other SSRIs as well.

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: Let's talk about this connection with the gut, because we're talking about a selective serotonin reuptake inhibitor.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: How does serotonin and the gut connect here?

DR. UMA NAIDOO: Absolutely. So, it's interesting that these are some of the most highly prescribed medications. During COVID-19, in June 2020, Zoloft went on shortage in the United States. The other name for Zoloft is Sertraline. And this was shown through surveys to be because it... These were new prescriptions for anxiety, depression, and insomnia. That occurred, so in my entire career, first time Sertraline ever went on shortage. But these are powerful medications, in the right situations, where someone is actively suicidal and severely depressed, there's a need for them. However, they're not the only solution. But one of the things that we don't really think about or realize, but you would've thought about it if you've known a family member, friend or physician who's prescribed an SSRI, because 90% of the actual serotonin is produced as well as other neurotransmitters produced in the gut and more than 90% of the receptors are there.

The connection to their prescription is that the first 7-10 days someone actually has gastrointestinal side effects. Many people, it's one of the commonest side effects of these prescriptions. But we haven't previously really made that connection, that is because the receptors are there and that's where a lot of that action is happening. Of course, ultimately, the impact is on the brain. But that's important for us to know, that there's the gut brain

connection, there's two-way signaling connection, plus this is where the receptors are located. So, I think it's just a powerful area that I want to see us delve deeper into the research on, to find more solutions.

Because part of my design in my clinic around using an integrated holistic and functional approach to psychiatry, partly comes from my cultural background and learning meditation yoga from my grandparents, and then thinking, when we went to medical school and started to prescribe medications as a resident, "Why are we only pulling out a prescription pad? Why aren't we asking... " If someone is coming into my office and is already... I can see his struggling with a little bit of a weight issue and may be depressed or even anxious. Why aren't we thinking about more solutions? Like why isn't that happening?

And probably have always been an outlier in that way, but I do think it's become an important part of the "food is medicine" movement, in finding more solutions to mental health. 'Cause it's so stigmatized still, and if we can de-stigmatize that through the lens of food, I think that can be a powerful tool that will help people with their mental health and metabolic health, all which we know are now related, but also their physical health.

SHAWN STEVENSON: Yeah. It should seem obvious... The crazy thing is, and I've really thought more about this lately than I ever have in my life, is that the obvious is often the most difficult to understand or the most difficult to analyze or question, because it's accepted as just kind of a cultural, "This is how it is." And for me, the obvious would be, what we're putting it to our gut, where all of this is taking place... This is literally a front line of serotonin activity of the receptors. Of course, what we put into this environment is going to deeply affect that connection. And I think that, of course, we've got so many amazing tools today and we're grateful for those things, but one of the things you really brought forward, and I'd never seen it articulated like this is actually how ineffective our chronic treatment of depressive symptoms with these medications, how ineffective they actually are. Now, of course, there are situations... I think you said 25% of the time we get sustainable relief and solutions through medications, but overall, about 50% of the time it's just not effective. Is that accurate?

DR. UMA NAIDOO: Exactly. That's accurate. So, some research from around 2015 and then has been repeated in other studies has shown that there's a place for psychiatric medications, don't get me wrong, but it's not the only solution. Because about 50% of people recover, feel significantly better. Another 50%, still have symptoms and they're still struggling, and I see this in my practice. I still prescribe medications, and I do see this in my practice on an ongoing way. And the problem also becomes Shawn is those individuals may have the side effects of the medication, but not the relief of the symptoms, so they might actually have the weight gain from selective serotonin reuptake inhibitors. They may have the loss of libido from those

medications. Those are probably the two things that people suffer with most as side effects. Certainly, I've seen that clinically.

And when they don't get relief and they have side effects, what happens to those individuals? What are we doing? In a certain way, I think our medical system, and certainly as psychiatrists, I think we're failing those individuals, because we need to find more solutions so they can feel better. 'Cause they continue taking medication, the only thing that continues is side effects without the relief of symptoms. So, I feel like we need to take a little bit of a step back and look at this more broadly and what the bigger picture is and find more solutions for more humans.

SHAWN STEVENSON: Perfect. Yeah. I'm a big fan of effectiveness. So, if something's working, I'm a massive proponent. But if it's not working, let's analyze it. But it just becomes an issue when it becomes the standard of care. And I want to ask you about this. What is it about our conventional antidepressant medications that actually leads to weight gain being one of the primary side effects?

DR. UMA NAIDOO: So, some of it is the mechanism of how people will talk about this. They start to have this drive of their appetite, and they start to crave certain foods. And some of it is actually the mechanism of the medication. The risk-benefit ratio, which we go through with patients all the time, is this we hope. We want to present them with the most positive picture, because they may be severely depressed, and of course, in need of that help. But as that happens, you may also have these cravings or these... You might want to eat more, you might notice. And that's why that conversation I mentioned, Shawn that I feel is missing at the get-go, when we take out the prescription pad, or whether... These days you do it electronically, but whatever format. That missing piece is also when you share that risk-benefit ratio with someone, sharing with them that there should be solutions to that. The stuff that you talk about and a proponent of just outstanding nutrition science, but also really outstanding physical health, being aware, having that. That becomes important in the discussion, because explaining to them that you may actually have, not everyone, but many people do experience those side effects and those sort of cravings that develop because of the mechanism of the medication.

SHAWN STEVENSON: Wow. That's so fascinating. So, we're talking about potential... So, this is more of an increase of craving, of desire to eat. So, we're looking at possibly something going on with the dopamine, because we're using an intervention that's targeting this one neurotransmitter/hormone.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: What about the impact it's having on the rest of the system? That's all interconnected.

DR. UMA NAIDOO: It's all interconnected. And that's actually how I often explain it to people, that we're giving you something that's going to impact your neurotransmitters, the chemical, for want of a better word, your chemical signalings. Sometimes people think about depression, they've been told it's sort of this imbalance of your chemicals in your brain. And that's, obviously, a simple explanation, which you're absolutely right. We're not just impacting one thing. We're impacting a system. Just like when we eat food, the food that gets digested is impacting all the bacteria down there, in our gut. And actually, the five other types of organisms down there, the bacteria and four other types. But it's a similar thing with the medication. It's not just... You're impacting a system; you're impacting the entire brain. So, there are going to be those side effects. And I think we need to manage them better by offering people more solutions.

SHAWN STEVENSON: Yeah. I often think about this interconnection. I'll just sit and just kind of imagineer how my thyroid is interacting with the meniscus in my knee, for example. It seems so far-fetched until we think about it, because it seems like, Oh, that's so far away. It's literally within the same system, the same human.

DR. UMA NAIDOO: That's right.

SHAWN STEVENSON: They are inherently connected. And once we can really kind of start to grasp that, and just even simple examples of that, and how our toes are affecting our consciousness, our awareness. Right now, people will think about their toes, where probably your attention wasn't there, but it's all intimately connected. And the nerves firing, they're on this superhighway that's so beyond our understanding.

DR. UMA NAIDOO: It's so true. We're probably only scratching the surface of this. And it's absolutely true. Because one of the other two things that I think I feel I should share with you, Shawn, that with the brain, when we have conversations with our doctors, we talk about type 2 diabetes, we talk about hypertension, we talk about the weight gain, how do I lose this weight, what happened during COVID, but we don't talk about the brain. The brain arguably is the most important organ, 'cause it's driving all of those connections. The thought about your toe, when you look at your toe, when you feel your toe, all of that is mediated through the brain. And yet, we don't have that conversation. So that's one of my sorts of pet peeves.

And another pet peeve I'll share about with you, is that in mental health, psychiatry is based... The way that we treat patients clinically is based on DSM-5, and there's a new one about to come out. But this Diagnostic and Statistical Manual is checklists. We don't have a brain biopsy;

we don't have an actual... If you have bronchitis or pneumonia, we'll check your sputum culture, whatever it is, or blood test or... And we don't have as many of those in psychiatry and mental health. So, I feel like we just need more solutions. And we don't have them. And we should be acknowledging that, rather than... And I'm not saying that psychiatrists think this way, but I feel like you're not capturing everyone. Because I find clinically with those checklists, someone with PTSD may be depressed, someone with ADHD, may be super anxious. People fall between categories. They don't always fall as humans into one checklist category. And I think that that is why we need more solutions. And certainly, nutrition, exercise, movement, meditation, mindfulness, all of this, hydration, outdoor time in nature, all of this matters to not only de-stigmatizing mental health but improving our emotional well-being.

SHAWN STEVENSON: Yeah. These are at the core of human health. These are the things our DNA expect from us. And when these are removed, we're going to have the expression of symptoms that are demonstrating... Is giving us valuable feedback. One of the people who wrote an endorsement for your book was Dr. Daniel Amen.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: He's a really good friend.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: And with that said, he's somebody who's really been at the forefront of saying, "Hey, you know what? You're treating an organ we're not actually looking at it and getting much feedback from." And so, let's of course, if we can, let's get a peek at the brain. And as you're alluding to, what are some more things we can do to actually get some viable data rather than just going off this system? Which again, the system is valuable, but it can't be the only tool.

DR. UMA NAIDOO: That's right.

SHAWN STEVENSON: And this leads me to a point with you, and you're somebody truly, you are a pioneer who's created a space for treatment and for education for other physicians to utilize food. And my question for you is, when you first went to school, when you first went to medical school, why did this not exist? Why are you the person who's really pioneering kind of creating this entity for food to be utilized? The title of your book is, This is Your Brain on Food. And it should seem very obvious, again, that every bite of food that we eat has an impact on every cell in our body. But what was your education like prior? Was this a big part of your education? Was food something you guys spent a lot of time on? Can you talk about that a little bit?

DR. UMA NAIDOO: Sure. So, it wasn't a huge part of my education, but it was a part of my cultural heritage. So, I grew up around my grandparents because my relationship with food goes back to my childhood. I spent a lot of time in the day with my grandparents, because my mom is a double boarded physician, so she was in medical school when I was born. And from them, I just learned yoga meditation. My grandmother would pick fresh vegetables from the garden, I'd help her. I was too little to cook, but I would help my shell peas and do all sorts of things, but then they would certainly eat lunch with me. They would spend time with me. I learned so much from that, thinking back, and I think that that came with me in my DNA, it was imprinted in. But also, there were other scientists in the family. So, my mom's siblings, many of them are physicians, but there were couple of Ayurvedic practitioners in the family, who were uncles and aunts.

And so, there was that influence. And so, I kind of came with all of this into medical school. And I realized in medical school, I loved human behavior and I loved psychology, and I loved psychiatry. Like my brother who's a surgeon, and I wasn't headed in that direction, so I pursued that. But it was really a seminal moment as a young resident in psychiatry, learning to prescribe medications when it came together for me. And I talked about this in my book, but you've kind of timid you're learning everything in this big belly patient who's a construction worker in Boston, and her favorite coffee in Boston is Dunkin' Donuts. And he came in with this huge coffee and I'd prescribed Prozac for him a few weeks prior. And he must've read the side effects, but he came in telling me that I caused him to gain weight. And he was upset with me. So here I am, this timid resident learning and trying not to upset him. And I was looking at his chart, I realized it actually wasn't me because I had the data in front of me around his weight, and I shared that with him. But then I saw the coffee and I intuitively said, "Well, what did you put in your coffee today?" So firstly, I did distract him. That was true.

But when he told me that, "Oh, I put this, and it was 20 ounces." So, he had put in more than a quarter cup of processed creamer, 'cause it was the one at the store and eight teaspoons of sugar. And when I was able to sit with him and calculate that, I'm not a huge calorie counter, I much believe in the quality of food. But here, I translated those things to him, and his eyes lit up, because not only did he move from angry to appreciative. His eyes lit up because he also saw the power that he could make a difference. He was drinking and consuming empty calories. That to me was a very huge... That was the aha moment which put it together. If I can translate stuff that I grew up with, understanding into information on which someone can make an action. People know a lot of stuff; they don't always take the action. Do we know we should eat healthy? We all do. Do we know this and that? We do, but it's hard to take that action step. And that, for me, was the powerful moment because if I could then fill that gap in my education around nutrition and share that with someone, it was an additional thing, separate to the prescription pad, that didn't have to ignore therapy, which I very much believe

in, the different forms of therapy, prescriptions, which may or may not be needed, and then what else you think. And that to me, drove it home.

SHAWN STEVENSON: That's such a powerful story, and I'm sure you have so many stories like this.

DR. UMA NAIDOO: That's my favorite.

SHAWN STEVENSON: Got a quick break coming up, we'll be right back. Very often, it's 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 peer-reviewed 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 McGill University found out 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 Neuron found that another remarkable electrolyte, essential 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 that leverage. Now, what about the immune system? This is something that is on a lot of people's minds today. Well, 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 1,500 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. This 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 with 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 it's full. And the answer is we've got to ensure that we're getting high quality electrolytes in the right ratios. This is why myself; my family utilizes LMNT, L-M-N-T. Go to 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 'em out. Again, it's getting shipped right to your door. Go to drinklmnt.com/model and get your electrolytes optimized today. Now, back to the show. Tying in this aspect with sugar, just to hammer this point home.

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: In the book, you mention the 2018 cross-sectional research study of depressed college students.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: Finding that about 30% of them ate fried foods, 50% drank sweetened drinks, and over 50% ate sugary foods upwards of every day. And so having that connective tissue thereof, how is their diet possibly at least a minor contributor to their mental health status. So, let's hammer this point home here with sugar. What's going on in the brain when we're consuming this refined sweet stuff?

DR. UMA NAIDOO: Absolutely. So, one of the ways to think about it, and I also want to look back to childhood obesity on that point afterwards. But basically, when we consume, let's take a sugary donut, it's a simple carb. You eat it, hits your bloodstream, we know that it impacts our blood glucose levels, impacts our insulin. But one of the things that happens is that it allows for Tryptophan to enter the brain, that's a precursor to serotonin, and it gets converted. And so, when people say, "Oh, I feel good when I eat a donut, Dr. Naidoo," it's true, for a few minutes after they eat that donut, they feel good. But guess what, I usually say, "Well, by the time you got to work, though, when you got off that train or you parked your car, weren't you hungry again?" Because it's pretty much gone through your system and you're starving. You want either another donut or another food that you reach out for.

That temporary feeling is a little bit of a trick because we believe that we feel calm, or we feel better when we eat that simple carb. The long-term effect on our brain is hugely problematic because that insulin rush, the elevated blood glucose levels, all then actually affects our brain cells. And so, we need to understand that comfort foods are discomfort for the brain because there is a long-term effect. It can affect our cognition. It is something that we need to have an

awareness. We cannot avoid sugars entirely, that's not what I'm saying. But we can be more aware of those 8 teaspoons of sugar, the 60 grams of sugar and something, a sports drink that may have a ton of added sugar. And the more we understand that the better options and better choices we can make. So, part of it is that people do feel that initial good feeling, and they don't realize there's a long-term effect of sugar on the brain that is problematic. And I'm just talking about the brain. It's also impacting the rest of your body, the inflammation in your gut, it's impacting every other system, but that's the impact on the brain.

SHAWN STEVENSON: Yeah. So crazy. Obviously through our evolution, sugar was incredibly valuable.

DR. UMA NAIDOO: Absolutely.

SHAWN STEVENSON: Because the brain is running on glucose.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: And one of the most fascinating things that I noted, this was maybe five years ago, was just how quickly the brain will confiscate any glucose that you consume. It will gladly confiscate about half the glucose you bring in, in a given meal. And we have insulin activity in the brain as well. And we also have insulin resistance that can take place in the brain, which is one of the hallmark things we're seeing related to Alzheimer's for example.

DR. UMA NAIDOO: That's right.

SHAWN STEVENSON: And so, we've got to understand that our exposure to sugar is incredibly abnormal. It's something we've never seen before in our history.

DR. UMA NAIDOO: Absolutely. And that's why they're calling Alzheimer's type three diabetes now. And it's that impact on sugar on cognition that I think if it's one thing we need to take home, and we all have sugar in our environment, so I am aware of it all the time, myself. It's when we don't realize the amount of added sugars in even savory foods, ketchup, pasta sauces, salad dressings, separate to the preservatives and all of that, we then... It's like with my patient... Well, when you have awareness, you then realize you can change things. And that becomes a powerful tool. But the other thing, Shawn, you spoke recently, did a really great piece on the impact of childhood obesity right now. And processed food sales during the pandemic have been precipitously high, and they haven't really gone down.

And we know that... We know that weight has been an issue for more people or more Americans than not. But if you think about it, kids follow this sort of group where you know, a

lot of process snacks, a lot of junk foods, a lot of things that are easy. Families were on quarantine; parents were trying to cope with how do we manage all. School lunch is no longer existed. So, a lot of things happened. So, this is not about blaming people, but how do we raise awareness, how do we reverse this. Same thing with the processed foods. A lot of it comes down to sugar and those processed ingredients so.

SHAWN STEVENSON: Yeah, yeah. This is...

DR. UMA NAIDOO: It's all tied in. All tied in.

SHAWN STEVENSON: Yeah, it is, and this is something that really motivates me a lot. It was already a motivational force in my life, because of just being a person, a child growing up in an environment that was so conducive to being unhealthy at every turn. I didn't know that there was a difference. About 80% of the people in my family were obese. It was just a commonality. The heart disease, the diabetes, the mental health issues, the drug abuse, the alcohol abuse, and so I have a really visceral connection to children who are in these situations.

DR. UMA NAIDOO: Situations, yeah.

SHAWN STEVENSON: Who, we're just kids. We're just trying to have fun, to play to live our lives. And slowly we're being inundated with things that really start to degrade our... Expression of our genes really, if we're talking about their genetics.

DR. UMA NAIDOO: Yes, and your development. And development of your brain.

SHAWN STEVENSON: Yes. That is huge.

DR. UMA NAIDOO: Because it all... It's all happening at that time, and I completely agree with you. I think children don't know the choices they should be making. They are products of their parents but also their environment and everything around them. So, it's tough to put on them that they need to make the choice. Unless you... You talk a lot about meal prepping and helping people decide how to get meals out for the week and involving kids in that is a very powerful thing because they learn about whether it's shelling the peas or whatever it is. Inadvertently you're teaching them healthier eating habits versus a processed snack out of a bag. When orange doesn't have an expiration date. So, you know, it's not a whole food. If it hasn't expiration date, it's not a whole food. It's just simple things to help them understand that it's like eat the whole orange, skip the store-bought oranges. Teaching a kid that becomes some basic things you could impact.

SHAWN STEVENSON: Yeah, it's so powerful and the data exists. It's just for us to bring attention to it and also to bring solutions. The study that you're mentioning, it was reported by the CDC looking at annual weight gain of our children during this pandemic.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: And one cohort, so these were kids who were moderately obese. Their annual rate of weight gain essentially doubled over this short period, and we can be like Okay, well, this is a short-term thing, but it's continuing on number one and number two, if we get into the understanding of recidivism, and once we start to set this template as a child, it becomes exponentially more difficult to address these metabolic issues as we get older. And so, this is so important, and again, we're talking about solutions today, but another absolutely massive issue specifically affecting our children right now is ADHD. And so, if you could, can you share just how long you've been in this field, and could you share what you've seen over the span of your career with rates of ADHD? Has this been going up from what you've been seeing firsthand?

DR. UMA NAIDOO: It actually has. So, we've been in this... I've been a psychiatrist for just over two decades now, and I will tell you that prescriptions in both children and adults are precipitously higher for ADHD. I would say in the last decade or so that I've noticed only under my career, yes it was important. Yes, it existed, but now I'm finding that more adults are coming in with problems, but also children. But it's just... I feel like it's everywhere. And I know that's a gross exaggeration, but I feel like that's what's going on in the clinical world. And I am a nutritional psychiatrist, I'll probably take everything back to food, but the truth is, our food system has changed. What we're eating has changed. Eating a night of Pop-Tarts and cereal is going to impact your brain development. So, we have to make that connection that food is impacting the brain development of children. And I can't ignore that fact when prescription rates are going up for things like ADHD.

So, I feel like taking a step back from that and re-thinking what we're doing from early on is going to affect the brain development of children. Of course, there're genetic environmental factors, so many different things. Not every child has the same access to food or the same access to food or serve, same access to healthy food. So, all of that becomes important, but I think our messaging has to be different in terms of our own understanding, 'cause I think that that's where the power lies. Food labels are not necessarily going to change Shawn. No one else is from the outside is going to tell us, but I think we need to empower ourselves to, of our own families, help our kids, help our generations that are after us or before us.

SHAWN STEVENSON: Yes, so we can do it.

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: Let's dive in and talk about some specifics here with this one. What are some of the specific foods that can trigger or contribute to symptoms of ADHD?

DR. UMA NAIDOO: Sure, so one of the things to think about with ADHD is those processed, ultra-processed foods, the colorants stabilizers, all of those things. The ultra-processed ingredients in those foods are just not good for brain development. So that's a big one because I think it excludes a lot of school age snacks and things like that, then you have...

You want to think about the studies that looked at, what can you do to sort of improve symptoms of ADHD, and something I found interesting, 'cause it's also related to the medication, is eating breakfast actually helps kids focus better. So, a study developed a breakfast bar and they looked at giving the children the breakfast bar every single morning as a stable breakfast, and they found that their attention was sustained better during the day. And this becomes important clinically because medications for ADHD suppress appetite, so often, a person who takes that medication in the morning does not feel hungry and it becomes important to train them, and teach them, and coach them to make sure they have breakfast because it's ultimately going to affect their focus. So, it's just a way to think about it as well.

SHAWN STEVENSON: Yeah, that's profound. Yeah, I've seen... I remember one study, it's been a couple of years now, but essentially, they found that there was some growth patterns being stunted from some ADHD medications, and what we tend to do with our hyper-focus on medications is just like, "Let's try and improve this medication somehow", instead of like, "Let's address the underlying cause here of what's happening with the brain". I know that for me, as soon as you mentioned the breakfast, when I was in high school, most of the days I would eat these mini muffins, or I would eat donuts, I would eat...

DR. UMA NAIDOO: Sounds like my Medical School diet.

SHAWN STEVENSON: Yeah... This sugary cereal, and I still managed to... I was a scholar athlete, student advisory, all these things, but I just imagine, what could I have accomplished with a healthy brain, with balanced blood sugar, and my metabolism was healthy. At the time, of course, I had these... There's autoimmune components to this, of course, but... You know, seasonal allergies, and asthma, all of these things, they don't exist in my reality anymore, and I just look at the things that were holding me back as I'm at track practice, or on the football field, and largely related to what I was eating.

DR. UMA NAIDOO: Absolutely. Also, the gut microbes have been involved, and you may or may not have known that at the time, but I think what you're saying is also super powerful from the

perspective of the fact that we now know the brain can change. So, what I think is powerful for us to understand, if you're listening to this, is that, if you're at that age or at a different stage of life, you can actually impact your mental health through how you're eating. And here's what I mean, for example, think about Alzheimer's and cognitive disorders. As psychiatrists, those neurologists, or whoever it is that's diagnosing it, we're catching it too late, because people come to us with symptoms and then be pulling on a prescription pad for medications that only... They're not curing the disease; they're helping with symptoms. But if we... This is something I've been thinking a lot about recently, if we turn that on its head and we really reverse engineer this, we should all, at all ages of life, be thinking about how we're eating because that information driving process is causing neuroinflammation in the brain.

One of the things, and Dr. Rudy Tanzi, a colleague of mine at Mass General who's a huge Alzheimer's researcher, talks about this all the time, food and our nutrition can impact that significantly, it's the one thing we can reverse. We cannot change... A lot of us can be walking around with mild changes of even Alzheimers without it being symptomatic, but something may not happen. The thing that we can change is how we're eating because any neuroinflammation that's been set up can be reversed through changing our diet, so it becomes super powerful for us to know. Yes, you had that diet as a teenager, and I'm sure your performance could have been different, but you've been able to, through your own adjustments, really improve your brain, and I think we can all do it.

SHAWN STEVENSON: Yeah. We have so much potential, and I think one of the big take-aways from today that I want everybody to really get is, again, this is a very... It seems very obvious, but the obvious can also be the most...

DR. UMA NAIDOO: Difficult.

SHAWN STEVENSON: Difficult to understand. Your brain cells are literally made from the food that you eat. It's made from the food that you eat, and you get to choose what materials you're giving your brain. And one of the things you mentioned several times throughout the book, for example, are these wonderful and critically important essential fatty acids, Omega 3s and they're used for signal transduction, or the structural integrity of the brain itself. Let's talk about this because I know this is going to be important in solutions for ADHD and also for just cognitive performance overall, brain fog, or things like that.

DR. UMA NAIDOO: Absolutely. So, omega 3 fatty acid is hugely important in many different mental health conditions including ADHD, including cognitive disorders, but also depression and anxiety. And we get them from things like wild sockeye salmon, fatty fish, sardines, anchovies, but you also get plant-based sources. You do get the short chain ALAs in plant-based sources, so there is a little bit of an issue around availability and their conversion because it's

not as efficient as the omega 3 fatty acids in things like fatty fish, but you can get sources in walnuts, chia seeds, flax seeds, sea vegetables. So, we know that they exist, and we know that they are important, so consuming them becomes important. A lot of people say, "Well, can I take a supplement?" You know, you can't out-supplement a healthy diet, so start with food first, and then if you're talking to your doctor and you need that supplement, absolutely. But these are powerful tools in the armor that we need for our mental well-being, and so I would say, if you eat fish, eat those and...

If you're plant-based, and look at those vegan sources, but also maybe taking an algal oil supplement may be a way to go with your plant-based because it could make up for that... Trying to deal with the conversion of the short-chain to long-chain omega-3s.

SHAWN STEVENSON: Yes, that's a tweetable, "You can't out supplement an unhealthy diet". That's powerful. That's powerful. And I love that you gave these different recommendations. So, we got ala, the plant source.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: What we're really looking for the brain is DHA and EPA.

DR. UMA NAIDOO: And EPA, which you get from the seafood sources, and... Really fatty seafood is the biggest source. But the... I don't think the... I know that there's an interaction with turmeric, and the... So, for example, the reason in mu... When I make a chia pudding is, 'cause the chia seeds have a short-chain Omega-3, is also a fiber and protein which is great for you. But I often add tumeric with a pinch of black pepper to my chia pudding because it helps that conversion. So that's just one of my little hacks that I came across. And so, my chia pudding is a little yellow, but... And then the peppery and from the black pepper, that's a different interaction, but that activates the curcumin in the turmeric, and makes it more... 20 times more bioavailable to your brain and your body.

SHAWN STEVENSON: Perfect.

DR. UMA NAIDOO: Two little hacks that improve your breakfast.

SHAWN STEVENSON: I love this. See, I've been talking about this for over a decade, these bio-potentiators, food is so cool. This is what you get from food that you can't get from an isolated nutrient. There's so many co-factors that make the magic happen.

DR. UMA NAIDOO: It's true.

SHAWN STEVENSON: That's so remarkable. So, we mentioned food first for our omega-3s, we've got fatty fish. And there's somebody else who wrote an endorsement for your book, Dr. Lisa Mosconi.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: Another person that you know, I was... Probably the first big podcast to help get her out to the world. I love her, she's amazing.

DR. UMA NAIDOO: She is wonderful.

SHAWN STEVENSON: She's the person who shared with me about caviar and salmon roe having three times more Omega-3 fatty acids than the fish itself, and I was just like... I was kind of taken aback because it was just like caviar. Because all I knew about was from television, from lifestyles of the rich and famous, but there's so much there. But from that, taking another step down, most of the studies on DHA and EPA are coming from fish oil, but there is krill oil now, is really popular. But also, you mentioned if folks can look to an algae oil at least...

DR. UMA NAIDOO: That's right, an algal oil supplement...

SHAWN STEVENSON: If you're doing a fully vegan protocol, the EPA and DHA is so important. I can't stress it enough.

DR. UMA NAIDOO: Exactly. And eat what you feel is important to you, but there are always ways to make up for those nutrients somehow, and that is actually a place, Shawn, where supplementation may be important. I always feel food first. Another one is saffron. Saffron, there's a significant number of studies with the spice saffron... One of my favorite things is spices and helping depression. But you know the quantity used in the studies is not a culinary use. So, we might use a few threads in a dish that you make, and it wouldn't be enough to impact your mood. So that's a place where you may want to speak to your doctor about a saffron supplement because it actually could help your mood.

SHAWN STEVENSON: So saffron, a supplemental form with that...

DR. UMA NAIDOO: Supplemental.

SHAWN STEVENSON: And what are the benefits?

DR. UMA NAIDOO: It improves mood. So, a significant number of studies that showed two things, actually. Tumeric and saffron have very... Have several positive trials that improve mood. And then my hack with tumeric is always add that pinch of black pepper because of the bioavailability. But saffron, people can't really eat enough of it, so enjoy saffron as a spice that you use. But if you really feel you need the benefit for your mood, then speak to your doctor about a supplement.

SHAWN STEVENSON: Perfect. So, I know over the years, of course, you've seen a lot of folks with various sleep-related issues, and this is at epidemic proportions in our culture today now too. So, you talk about this in the book, some solutions. And first of all, let's talk about how maybe certain foods can be contributing to issues around insomnia, poor sleep quality. And then let's talk about some foods we can look to improve our sleep quality.

DR. UMA NAIDOO: Absolutely. During the pandemic, people are calling this "Coronasomnia," because so many are really struggling with sleep, and we know that prescription medications for sleep have risen as well. So, it's certainly a big issue, but the first and foremost with sleep, we talk about sleep hygiene. And again, it's one of those things that people may know about, but we don't always practice it. So simple things. There are very many good benefits of caffeine, but you want to drink it early in the day if you do drink it. With caffeine, as with alcohol, another substance that can affect your sleep. It's often what you add to it as well. So, think about that when it comes to caffeine and alcohol. Caffeine, early in the day if you drink it... A couple of cups of coffee. In fact, 400 milligrams or less were shown in terms of anxiety to be something that a person could tolerate. Unless you feel jittery when you drink coffee, then it's not for you. With alcohol, if you're leaning on that glass of wine to put you to sleep, it's actually impacting your sleep architecture.

If you're just having it with dinner and you're sleeping okay, no worries there. But if you are having that because... As people struggle during the pandemic to go to sleep, then it has a rebound effect on your sleep architecture. Then it's things like shopping at night in bright lights. That's an element of sleep hygiene. Shutting off your devices at a certain point, kind of calming your system down, getting it ready for sleep. Those are all things that actually negatively impact, so... It negatively impacts your sleep. So, think about cleaning up some of those habits first, and then think about the foods. One of my favorite things to do or suggest to people is to have breakfast for dinner, because eggs actually contain a natural source of melatonin. And so, get some good pastured eggs and add some veggies in, like asparagus and a few other things, and have that melatonin-rich meal at dinner. There's also tart cherries, so...

There are tart cherry juices on the market, but just watch out for the added sugars in those. The tart cherries actually have a good amount of evidence that helps sleep, and I know not... A lot of natural markets in California, I've heard from my patients, actually have tart cherry juice,

so people use a little bit of that and that helps them sleep as well. That's if they can't get the actual tart cherries, which are also available, certainly not where I live, but some parts of the country.

SHAWN STEVENSON: So cool. That's one of those, again, rare food sources that have melatonin in there as well, so that's really interesting. And you also talk about something that's traditional. Chamomile tea for example, having that for bed.

DR. UMA NAIDOO: Yes. Yes, simple things. These are things again, Shawn, like you had mentioned, simple things that we often overlook as solutions. Chamomile tea, extremely calming for the system. Passionflower, lavender, a lot of those actually really reduce that sort of activity that's going on in our brain and almost gives a signal to the body and the brain that we're getting ready for rest. All of that becomes important. Another thing is sort of eating dinner earlier than later, because it allows for your food to digest, and your body is calming down, again, getting the message that you're getting ready to rest and sleep.

SHAWN STEVENSON: Alright. I cannot let you go without talking about libido.

DR. UMA NAIDOO: Yes.

SHAWN STEVENSON: Alright, so you mentioned that, again, one of the common side effects of conventional medications can be low libido.

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: But there are... There's a plethora of information now on how our nutrition affects our libido, both negatively and in more positive, affirmative ways. So, let's talk about how our food can be affecting our va-va-voom. I don't know how to say it, I'm sorry.

DR. UMA NAIDOO: So, it does... Out there, there are these foods like pistachio nuts, apples, avocados, that actually... And then foods that are rich in oxytocin, which is the hugging hormone. It can actually help us a lot. So, you know, always... And dark chocolate, so these are foods that people like. And dark chocolate, extra dark, natural chocolate is rich in serotonin, magnesium, prebiotic fiber. It's actually great. It's usually the sugary candy bars where we go wrong, but the extra dark natural chocolate is great, and it's rich in oxytocin, so adding in those foods... I have recipes in the book, but I also kind of give you ideas of how to incorporate them into a menu. Starting to add those in... Remember, it's not a quick fix. It's not an overnight thing. But think about adding those foods in in a natural consistent way to your diet, and they could positively impact your libido and how you're feeling. And there are a lot more foods in the book.

SHAWN STEVENSON: So, I had a good one: "How foods affect your freakiness." Alright, so what can be, on the other end, creating issues? Because again, this is something I know you've seen has been steadily climbing in recent years of low sex drive, erectile dysfunction, impotency, the list goes on and on. So, let's talk about that. What are some of the things that could be contributing to that?

DR. UMA NAIDOO: Right, so you know, people won't be surprised by this, but again, there are more nuances, and also, we are now understanding that these foods just become so pervasive in our culture, are impacting on metabolic health, and thereby impacting things like erectile dysfunction and other things, so it's sort of a cycle. It's not just fixing one thing and ignoring another. So, we take it down to that level that we want to think about the ultra-processed foods... Basically something that has an expiration date. Look at the ingredients, see what you're eating, because these food stabilizers, the colorants, the dyes, those are not good for us. The trans fats, not good for us. The artificial sweeteners, for the most part, not good for us. These are all disruptive of the gut microbiome and remembering that it's an ecosystem with the rest of our body, and there are several others. But those are some good places to start cleaning our diets... See adding refined sugars, of course, which we've mentioned a few times now.

SHAWN STEVENSON: Yeah, and again, just logically, this can come up... Circulation.

DR. UMA NAIDOO: Yes, yes, exactly.

SHAWN STEVENSON: So, for the brain... Also, I don't think we all often make this connection, but so much to do with our sexual function, with our arousal, has to do with our brain. Our brain is really our largest sexual organ, contrary to popular belief.

DR. UMA NAIDOO: That's right, people don't realize it. Exactly, it's all connected and thinking about how you're eating... Realizing it's not going to be like the famous blue pill that people talk about. It's not that quick fix to something. But you can clean up different things in your diet. You can incorporate these foods into a date night. You can really start to think about it and feel like there are more solutions in your toolbox.

SHAWN STEVENSON: Perfect, so we got pistachios on the list here. We've got...

DR. UMA NAIDOO: Apples, avocados.

SHAWN STEVENSON: Chili peppers.

DR. UMA NAIDOO: Chili peppers.

SHAWN STEVENSON: Spicy.

DR. UMA NAIDOO: Yeah, spices.

SHAWN STEVENSON: Okay, avocados are on your list as well.

DR. UMA NAIDOO: Yeah, they are. And the rich and healthy fats, protein, and fiber, so... All good.

SHAWN STEVENSON: Perfect, perfect. Well, this has been fascinating, and... There's so much more in the book, and you cover... You talk about bipolar disorder. You talk about obviously these epidemics of ADHD and OCD, and you're addressing so many of these things with nutrition-based solutions. And also, again, just helping to put the complete picture together for folks and really empower things, and I love when I asked you about sleep and improving sleep related to diet, you first talked about our lifestyle, right? And having good sleep hygiene in the first place, because even trying to treat things with nutrition, your nutrition is not going to matter if you're staying up to 3:00 AM.

DR. UMA NAIDOO: That's it.

SHAWN STEVENSON: Binge watching, I don't know...

DR. UMA NAIDOO: Eating popcorn.

SHAWN STEVENSON: Yeah, eating popcorn and watching, I don't know... What are people watching now?

DR. UMA NAIDOO: Whatever the hottest thing on Netflix is. So, whatever it is, but it's actually true. And thank you for saying that, because people come in and they can't sleep and they're looking to get a prescription, and in a way it's not their fault, because our system is engineered that way: Go to see a doctor, get a prescription. I think that we have to take a step back in those situations that are not acute, when someone's life is not in danger, and think about, "Are you shopping at such and such a store late at night? Are you buying your groceries at 10:00 PM at night? Are you... Do you have your phone at your bedside with your notifications buzzing all the time?" These are... You know, these are all important things in our lifestyle.

SHAWN STEVENSON: Right, and they're all relatively new, you know?

DR. UMA NAIDOO: Yeah. Yeah.

SHAWN STEVENSON: And what I was going to say earlier, I couldn't remember the name of the show. It's The Witcher, it just came out. And I was thinking about in the context, he has this little vial...

DR. UMA NAIDOO: Okay.

SHAWN STEVENSON: Of some kind of beverage that he drinks, and it unlocks some kind of weird power. It's Henry Cavill, who played Superman, he plays this character.

DR. UMA NAIDOO: Okay.

SHAWN STEVENSON: Anyway, so that just came out. And so, whatever we're binge watching, we got to understand that if we're doing this into the evening and we're wondering why our sleep quality is poor... Not to say you can't watch a show...

DR. UMA NAIDOO: No. Oh, have fun, enjoy it.

SHAWN STEVENSON: Or the case may be...

DR. UMA NAIDOO: Yeah, eat popcorn.

SHAWN STEVENSON: But let's have maybe a little bit of a screen curfew. Let's have an evening routine where we have some chamomile tea and just kind of settle down and make sure that we're practicing this good hygiene. As you mentioned, having breakfast for dinner...

DR. UMA NAIDOO: Yeah.

SHAWN STEVENSON: With the eggs. That was such a great tip as well.

DR. UMA NAIDOO: With the melatonin. Yeah.

SHAWN STEVENSON: So many great tips and insights in the book. Can you let folks know where they can get the book, and also where they can just follow you and get more information?

DR. UMA NAIDOO: Great. Well, thank you. Thank you, Shawn. So, my website is umanaidoomd.com. I'm on social media and all the channels at D-R-U-M-A-N-A-I-D-O-O. I'm

releasing my first virtual course in nutritional psychiatry in January to share more on the work. And thank you so much for hosting me. It was really a pleasure to talk with you.

SHAWN STEVENSON: Awesome, the pleasure is all mine. Thank you so much. Dr. Uma Naidoo, everybody.

DR. UMA NAIDOO: Thanks, Shawn.

SHAWN STEVENSON: Thank you so much for tuning into the show today. I hope you get a lot of value out of this. As I talked about at the very beginning of the show, we cannot truly address our biggest issues as a society, unless we get ourselves mentally and physically healthier to have healthy conversations. We're dealing right now with an epidemic of overdoses from opioids. People are hurting, people are suffering. This behavior doesn't come out of nowhere. We've got to understand that the folks who are determining the information that you're receiving are largely profiting from situations like this. Now, I know that it might sound crazy, but Johnson & Johnson, for example, is the world's largest producer of what's called this, quote, "super poppy" narcotics used to make opioids, used to make fentanyl. They were just recently ordered to pay part of a $26 billion settlement for their crimes in contributing to this opioid epidemic, but most folks have no idea about that.

So, we've got to take back control of our mind. Use rational trust, rational faith, and press forward with intelligence. Because this is a serious issue. It is the leading cause of... It's taken over as the leading cause of death for adults between ages 18 and 45. This is not a joke. We cannot continue to allow this to take place. But for us to have these conversations, and you might want somebody to wake up. It's difficult to wake somebody up if they need to sleep because they're so unhealthy. So we need to get folks healthier just bit by bit. Every little bit count, encouraging folks to just get out for some healthy movement, go for a daily walk, just include a little bit more vitality through their nutrition. Just something to help to get the light bulb turned on just a little bit, being able to turn that dimmer up some or off some, and just begin to light up areas of the brain and of the heart that can enable us to have these conversations that we need to have, alright?

So, instead of us fighting amongst each other, let's encourage better health so we can get to the place that we want to be. I appreciate you so much for tuning into the show today. If you got a lot of value out of this, please share it out with your friends and family, and please tag me on Instagram, and tag Dr. Naidoo. Just let her know what you thought about this episode. And we've got some incredible shows coming your way very, very soon, so make sure to stay tuned. Take care, have an amazing day, talk with you soon.

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