THE MODEL HEALTH SHOW

EPISODE 891

Can Plastics Make You Fat? The Truth About Plastics & Metabolism

With Guest Dr. Vivian Chen

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SHAWN STEVENSON: New studies have just been published affirming that plastics, microplastics, and nanoplastics in our environment are in fact contributing to obesity. Today's episode is dedicated to sounding the alarm on the influx and the invasive nature of these microplastics. How are they contributing to unwanted weight gain and the inability for us to lose weight in a normal way? There is something abnormal that is happening in our population. Yes, the food culture is wildly messed up. Yes, we have a very sedentary culture as well. We've got all manner of issues that we need to clean up. But this issue here on planet Earth is now omnipresent. Plastics are now ubiquitous. They're everywhere.

They're in the very air that we breathe. They're in our food supply, our water supply, our personal care products. The list goes on and on. We're gonna talk about these ever increasing exposures today, and we have an incredible guest, one of the foremost experts in this subject matter, to talk about the impact that they're having on our bodies, specifically how they're leading to fat gain. What is the mechanism and also what are the other issues that we need to be aware of. And I'm telling you right now when our special guest talks about the connection with these plastics and our brain, it's just like this is one of those moments where I've just sat there in awe, but we need to know this.

And most importantly, we need to know what to do about it. And there is no shortage of that in this conversation. We're really talking about very practical science-backed ways, to number one, reduce our exposure. Absolutely. But number two, to understand how resilient we are as human beings and practical things that we can do to help our bodies to eliminate many of these foreign compounds from our systems.

And we've got to do this today. This isn't a, maybe I should, it could be doing something. No, these substances are not inert. They are causing harm and they're accumulating in our tissues. We've got to be proactive. It's just the world that we live in right now. It is what it is. And not only can we do things to proactively help our bodies to eliminate these compounds from our system, but the widespread benefit for us as a human being is that many of these practices help us to get healthier and fitter anyways.

We just need to know what to do. And that's what this episode is all about. Now when our special guest came in today, she's one of those people that whenever I see her, she brings me gifts. She's always looking out for me and even checking in just from time to time to see how I'm doing, how my family's doing. She's a super sweet person and just very genuine and I really do appreciate that. And we were hanging out at the studio and just talking about our love of teas and being that she's somebody who's very interested and also works in the field of health and wellness, specifically with some dedication to beauty.

There's one specific tea that's well noted, yes. With centuries of use, but now we've got mountains of peer-reviewed evidence affirming how remarkable it is for our skin health and protecting our skin from accelerated aging. Maybe you've noticed this, but a lot of skincare products are now including green tea in their ingredients, and there are very specific reasons why. A meta-analysis of 20 studies published in the Journal Skin Med revealed that green tea is effective in reducing acne dermatitis, warts, keloids, rosacea, and many other skin issues. The biggest benefits were seen when green tea was consumed, when drinking green tea versus being used topically.

Though it does have benefit topically as well, but is drinking the tea that reveals the most benefits, but it's drinking the tea that leads to higher level of benefits. Now with that said, there are many varieties of green tea, but the very best source of green tea, that's the richest in antioxidants is matcha green tea. And there's only one matcha green tea that's quadruple toxin screen for purity and is 35% higher in L-theanine that helps to reduce stress induced skin irritations because this is another thing we don't think about. Our skin is our outermost portion of our nervous system. Our skin is deeply connected to what's going on with our nervous system, and many of us wear what's going on internally on our skin.

So it's helping on multiple levels, helping to reduce stress, and also helping to rejuvenate and nourish the skin itself. The matcha green tea that I drink is the Sun Goddess matcha green tea from Pique teas. Again, it is the first matcha that is quadruple toxin screened for purity, which matters today more than ever. There's nothing else added, no nonsense, no preservatives, no sugar, no artificial sweeteners, just the very best matcha green tea in the

world. Head over to Pique life.com/model right now and you're gonna receive up to 20% off plus some limited time free bonuses, like an electric frother to mix your favorite beverages.

That's Pique life.com/model, and it's spelled P-I-Q-U-E-L-I-F e.com/model. And right now you get to try Pique teas risk free with their 30 day money back guarantee. You'll either absolutely love Pique Teas or you'll receive a full refund. Again, go to peak life.com/model. And now let's get to the Apple Podcast review of the week.

ITUNES REVIEW: Another five star review titled Exceptional Podcast by Dr. Sharon B. This podcast is a tremendous resource for anyone interested in learning how to improve their health. Shawn is deeply insightful and caring.

SHAWN STEVENSON: Amazing. Thank you so much for leaving that review over on Apple Podcast or of course right now, you can now leave comments, if you're listening on Spotify. You can leave comments for the Model Health Show for the episodes, and also, of course, you can rate the show over on Spotify. So whether you're listening on Apple or Spotify, whatever medium you're listening on, please share your voice. It really does mean a lot. And now let's get to our special guest and topic of the day.

Dr. Vivian Chen is a UK trained medical doctor with 15 years of clinical experience in internal medicine and family practice now based in California, Dr. Chen traded her prescription pad for a deeper mission, helping people uncover and address the root causes of their health struggles from mitochondrial dysfunction to environmental toxicity. Today Dr. Chen is dedicated to empowering others to reduce their toxic load, support cellular health, and truly thrive. Let's dive into this conversation with the one and only Dr. Vivian Chen. Dr. Vivian Chen, thank you for coming to hang out with us.

DR. VIVIAN CHEN: Well, thank you for having me again.

SHAWN STEVENSON: It's my pleasure. We've got a serious issue going on right now in our society, and it's growing by the day, and most people have no idea about it. Microplastics, nanoplastics everywhere.

The scientists are looking, they're finding the accumulation of these things in our tissues everywhere in the body that scientists are looking and most startling. And why I wanted to have you here today is that it's now affirmed that this is affecting human body, fat and metabolism and functioning in this category of obesogens, right? These compounds that are altering the way that our bodies utilize energy. And so can you start off by talking a little bit about how plastics are impacting human health overall, and also specifically how it's affecting our body fat.

DR. VIVIAN CHEN: Right. Where do I start? Well, first of all, plastics are made up of something like 10,000 different chemicals. So 10,000 different chemicals are used to make plastic. Two thirds of them have never been tested for safety, and around 2000 are actually potentially known to be toxic. Yet they're ubiquitous, they're everywhere. And the Endocrine Society estimated that in 2018, the cost of these toxic chemicals from plastic to human health was $250 billion.

So $250 billion in healthcare costs. That was in 2018. How much is it now? We, we have studies showing that the amount of plastic in our bodies have increased. So yeah, it's, it, it's a big problem. And I'm so happy you are bringing it to light because I think more people need to know about it. And going back to the issue of weight, which you mentioned, a lot of people are feeling bad, they're feeling guilty.

People think they're lazy. Right? When they can't lose the weight, they're doing everything right, but they're actually swimming against this toxic soup of chemicals that are literally holding back the metabolism, changing the way fat cells are storing fat, changing the way we burn glucose, we burn fat, and all of that then can contribute to weight gain.

SHAWN STEVENSON: We were just talking about this yesterday and I was kicking some studies back and forth with you and what we're gonna do, and we'll put this up for everybody to see, and we're gonna be referencing this throughout this episode, but this was published in Frontiers and Endocrinology recently, and also this was highlighted by the NIH.

They did a big analysis on this. These studies are affirming that, as you mentioned, and that was the key word, microplastics are ubiquitous, they're everywhere, and we really can't escape them at this point. Even the most remote places on earth, these microplastics are showing up primarily through inhalation.

We're inhaling these microplastics and nanoplastics as this kind of bio biodegradation and also the second biggest, and introductions to the human bodies through plastic water bottles, which we've talked about before. And I wanna talk more about this because on this episode we're gonna be talking about what's happening with our bodies, but also some solutions. So I don't want people to get too nervous, but we have to talk about this. Yes. Because it's changing the way that our bodies function. And so specifically, let's dig in a little bit more on what's happening with ourselves, because in fact, these researchers are finding that the microplastics are specifically accumulating in the mitochondria of ourselves.

DR. VIVIAN CHEN: Correct. Yeah. So if you zoom in to the kind of the root cause of a lot of the harmful effects we observe with plastic and the endocrine disruptors, the root is the mitochondria, because that's actually where a lot of hormones are made, right? So our sex hormones, estrogen is made in a mitochondria. So if your mitochondria is not functioning. First of all, let's, let's back backtrack a little bit. What are mitochondria? So, some people might not even know that. So mitochondria are kind of like the powerhouses inside of our cells. So if you imagine one of those toy cars, you know, the remote control cars, they have batteries inside, right?

When the batteries starts diminishing, that car starts run slower and slower and eventually it stops when your mitochondria is not functioning. It's like that car with diminishing battery. It cannot run as fast, it cannot work as well. So if it's your brain cell, you cannot think as quickly and cannot remember.

So, you know, some people have brain fog. If it's in your liver, you might have impaired glucose metabolism or high cholesterol. So miria is in every single cell of our body, apart from red blood cells. They kind of power every single function in our body. So if your mitochondria is impaired, then it can literally impact every single function in your body.

SHAWN STEVENSON: It's bonkers. And I remember from, and this is probably same for you, but in college when we would study the cell and we see this little diagram, but we were kind of misinformed in a way that there's like one mitochondria in the cell right now we know that there's hundreds or maybe even upwards of thousands potentially in these little energy power plants.

DR. VIVIAN CHEN: Yeah, exactly. And so a lot of the chronic diseases that we are seeing on the rise, so for example, insulin resistance, non-alcoholic fatty liver disease, both are kind of going on this exponential trajectory, right? So we have now a third of Americans with non-alcoholic liver disease, so that's fat depositing in the liver cells. Affecting the function of your liver. And it's associated with insulin resistance. Pre-diabetes, diabetes, metabolic syndrome. In 1988, only 16% of Americans had non-alcoholic fatty liver disease. Now we have 30%, so it's gone up by a hundred percent. Same with pre-diabetes, diabetes that's now affecting 50% of Americans. We have, I think, something like 70% of Americans overweight and obese, all of these diseases. It's kind of like a manifestation of what's going on at the mitochondrial level, in my opinion.

SHAWN STEVENSON: You know, you said something so powerful that I don't wanna glance over. You mentioned how these plastics aren't, they aren't just plastic.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: And it isn't just a fossil fuel. There are thousands of other chemicals, used as plasticizers and stabilizers.

DR. VIVIAN CHEN: Correct.

SHAWN STEVENSON: And coloring agents and all these things to make plastics do what they do. And so when we think about something like. BPA. Right. Some people might think that that is plastic, that's a plasticizer. And that's just one of the many chemicals that, again, these are holding up shop and accumulating even in our mitochondria. And so referencing back to that study that I mentioned, the research has noted that microplastics induce oxidative stress.

Number one, so we're talking about damage to the cell, damage to the mitochondria. They also note that it alters energy and fatty acid metabolism because our mitochondria are the end destination for when we think about fat burning.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: It's the mitochondria that are doing that in the job.

DR. VIVIAN CHEN: Exactly. Yeah. Exactly. And what's so interesting is that last year a study came out of my alma mater, UCL, so that's where I went to medical school in London. Research was done by a researcher called Dr. Glenn Jeffries. So he's a photobiomodulation researcher, a red light therapy researcher, and he was looking at how red light therapy could impact blood sugar. And red light therapy, for those who don't know, is one of those modalities that can improve our mitochondrial function. So what he did was he recruited 30 healthy volunteers. He divided them into two groups.

So one group drank 75 grams of glucose diluted in water, and then the other group drank the same drink, 75 grams of glucose, but 45 minutes before they drank that drink, they had 15 minutes of red light therapy applied to their back. The group that drank the glucose who received a light had 27% lower glucose spike. So what does that tell you? It means that this red light therapy is activating and helping the mitochondria process that sugar better, and therefore the blood sugar level after the drink was 27% lower.

SHAWN STEVENSON: That's phenomenal. That's so powerful. Listen, what we're talking about here today is beyond the superficial, right? Because so many of our chronic disease epidemics, we know that food has a big role in this. We know that, absolutely. But it's not just the food itself and the nature of these ultra processed foods. It's all the other chemical conglomerates coming along with it. You know, specifically as noted by these researchers, these microplastics and nanoplastics, which the average person is now coming in contact with. I'm talking about consuming via their breath or through water consumption. Food consumption, milligrams a day, right? Whereas a lot of these other chemical contaminants or.

You know, nano, we're talking about nano levels and, and micro levels, and so just the sheer amount that we're taking in. But I want to point this out. Yes, we need to move. Yes, we need to eat clean food, but also there are things about us that go beyond the superficial, which is like light. We are a, a conglomeration ourselves of these biophotons. Yeah. You know, we seem like this very solid thing, but you know, even me being able to see you is a big function of light, you know, 100%. And so our bodies respond to light. It is something we evolved with, and we have these photoreceptors throughout our entire body, not just our eyes that are picking up data and informing our liver, our kidneys, our heart, and generating these responses. So utilizing light, specifically red light, and there's so much science about this now. To know that red light can impact our blood sugar is a game changer and people need to know this.

DR. VIVIAN CHEN: Yes. And it's not just red light, right? You don't have to go out there and buy a fancy device if you can't afford one. Go out into the sunlight. There's actually a study showing that what they did was they correlated people's blood sugar and their metabolic health with the amount of sunlight in the environment. And they showed that on days where there was more sunshine and they were exposed to more sunshine, they had better blood sugar control.

SHAWN STEVENSON: Be more human. That's the one of the big takeaways from today.

DR. VIVIAN CHEN: Yeah. So I actually see light as a nutrient. You know, it's not officially classified as a nutrient, but it just informs so much of our biology that it is really, really important. And most of us Americans spend 93% of the time indoors, so we are really deficient in this very important nutrient.

SHAWN STEVENSON: That's so crazy and that that devolution of staying away from the sun and natural light Yeah. Has just been in the last few decades.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: So this is a huge human experiment that we don't know that we're doing.

DR. VIVIAN CHEN: Right. So compound that with the microplastics, the nanoplastics, the endocrine disruptors that are damaging the mitochondria. And then you're not actually providing the solutions to help your mitochondria either, right? So that's kind of like a double whammy.

SHAWN STEVENSON: Yeah. Oh my goodness. You know, and I'm gonna reference back to this once more, but again, this was published again in Frontiers and endocrinology, and again, to cite directly from the study, accumulation of microplastics in the liver and kidneys has also been shown to boost the growth and accumulation of fat cells and disrupt energy balance, which ultimately can affect our body weight. So again, this is going beyond calories in, calories out. We are changing the way that our metabolism is working overall with our constant exposure to these microplastics. And so what I wanna do today is number one for everybody to understand the sense of urgency with this because, and we'll flash these up on the screen.

We've got studies affirming that microplastics are now being found in the human heart testicles and also we're gonna talk about a master organ in the body in just a moment. But we're gonna talk about what we can do about this to minimize our exposure. So number one, I wanna talk about our sense of urgency and we've gotta do something about the, because this is not a joke and that study that I referenced in the New England Journal of Medicine for cardiac tissue. And, the arterial plaque buildup being so rich in microplastics was found to significantly increase the risk of cardiovascular issues, heart attack, stroke.

DR. VIVIAN CHEN: Yep.

SHAWN STEVENSON: And so keep this in mind, but. I wanna talk about microplastics in the brain. Now let's, let's talk a little bit about that.

DR. VIVIAN CHEN: That's the latest finding, right? That's shocking that we have around a teaspoon worth of plastic in our brain. They looked at 45 postmortem samples of brain tissue, and they took the samples in 2016 and 2024, and what they found was that every single sample contained microplastic and the amount increased by 50% between 2016 and

2024. Hmm. So we are exposed to exponentially more in the environment. We are absorbing it, and it's getting into our bodies and it's depositing in our major organs. Now, a lot of scientists or argue, we don't know what that means, right? This is what, when I first started talking about this. No, eight, nine years ago, this is what doctors and scientists will say, we don't know what it means.

It might be benign. Well, it's not benign, right? Because what they found was, now this is an association, but people with dementia had more microplastic in their brain. So it's a correlation. We don't know if it's causative, but we have other studies showing the presence of microplastic or nanoplastic causes inflammatory markers to go up.

SHAWN STEVENSON: Yeah. And we know that that has all manner of ramifications.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: Whether it's for..

DR. VIVIAN CHEN: Inflammation is the basis of chronic diseases, it impacts our mitochondria. It damages our mitochondria. So that's one of the mechanisms. Inflammation causes weight gain. Inflammation's being linked to increased heart disease risk, increased risk of diabetes, Alzheimer's, you name it. Inflammation is bad news and we don't want that. And it's being shown in Petri dish studies, animal studies, that presence of microplastic and nanoplastics cause inflammation. And that study that you just talked about from the New England Journal of Medicine, they actually looked at around 200 samples of artery biopsies from people undergoing surgery to remove plaque from the arteries.

So this is a major artery in your neck called the carotid artery. And when they analyzed the samples, they found microplastic and nanoplastics and 50% of the samples, and they followed up these people for three years. Those with microplastic and nanoplastics had a 4.5 times increased risk of heart disease, strokes, and death from any course. So this, I think this is a landmark study, right? So important because it's the first time it's been shown in humans. That microplastic can is linked to increased risks of diseases.

Previous to this, we've had smaller studies that show people with more microplastic in the poop had an increased risk of inflammatory bowel disease. So that's things like Crohn's, ulcerative colitis. So these are inflammatory conditions in the gut where you have bloody diarrhea, severe abdominal cramps, and you might need surgery. It's very serious conditions.

SHAWN STEVENSON: This is, again, I, I really hope that this is a revelation for everybody. You just mentioned this, that, you know, for years and even this getting introduced into our environment, being led or misled to believe that these things were inert. You know, they're not going to do any harm. It's just this new innovation we're seeing the ramifications, we're seeing the downstream effects because our entire world we're surrounded by plastic now. Yeah. And. It is, again, in the air that we breathe, we can't really escape it. Our food supply, our water supply, and we know that this is causing harm to our health. Right. So the accumulation in our brains and our heart and our reproductive organs.

DR. VIVIAN CHEN: Oh yeah.

SHAWN STEVENSON: The list goes on on, actually, I'm gonna mention this because in that analysis from Frontiers and endocrinology. They stated that, and again, it's difficult to track these things in humans. Right? We know that we are finding microplastics in the placenta, for example.

DR. VIVIAN CHEN: Yep.

SHAWN STEVENSON: But being able to see this firsthand, they noted specific animal studies finding that maternal exposure to microplastics altered energy and lipid metabolism in the offspring of subsequent generations. It's changing how our kids are able to metabolize food. How they're able to metabolize fat in negative ways.

DR. VIVIAN CHEN: Right. That's because if you expose the developing fetus to obesogens, so these chemicals we just talked about that alter metabolism and increase our propensity to weight gain during critical windows, when that baby's developing, you can actually switch on and off genes. So one of the genes these chemicals can switch on is PPAR gamma.

So this is a master regulator of fat metabolism, and if you expose these cells that are developing during critical windows to something like BPA phthalates, which can switch on and off, these gene, that cell can now become, you know, from stem cell to fat cell. So you can change the course of development of that cell and the cell will actually store more fat as well and become bigger.

SHAWN STEVENSON: Unbelievable. Unbelievable. So if we wanna look at this again in a superficial way, the accumulation of these plastics in our brain. In our heart, in our reproductive organs, in our skin. The list goes on and on. We are plasticizing ourselves as a species.

DR. VIVIAN CHEN: Yeah, unfortunately.

SHAWN STEVENSON: You know, we're becoming walking, talking Barbie and Ken dolls. It's not an accident that Barbie, this is a conspiracy. Barbie came out recently. No. In reality, again, the human body we're very resilient. That's the point I wanna make.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: We're very resilient and even in the face of this issue, life finds a way. And so we're going to make adaptations. Yes. And the question is, are we gonna make these for the betterment of humanity or not. And part of that adaptation is our intelligence to be able to choose what do we do proactively in our lives?

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: As human beings, as a world family to create more resilience in the face of this, again, ubiquitous exposure. How can we help our bodies to, number one, we wanna reduce our exposure. And number two, I wanna talk about how we can potentially help get these things out of our bodies. So let's start with reducing our exposure. What do we need to do?

DR. VIVIAN CHEN: Yeah, so you know, the plastic most commonly found in these tissues is polyethylene. What's polyethylene? If you take your plastic water bottle and you look at the number on the bottom in the triangle, it's usually one or two. So two and four. The numbers two and four are polyethylene, so that's usually your milk curtains, your food packaging, your Ziploc bags.

So that's how it's exposed, right? It's how we are exposed. Rather, it's through food packaging. What's the number one source of exposure? In my opinion, is plastic bottled water. Right. Studies have shown that a liter of plastic bottled water contained a quarter of a million particles of micro and nano plastic. And that's not counting the amount of endocrine disruptors it may contain. Right. Phthalates BPA that we just talked about.

SHAWN STEVENSON: That is scary pants.

DR. VIVIAN CHEN: And don't be fooled by BPA free.

SHAWN STEVENSON: Right.

DR. VIVIAN CHEN: BPA free just means that they've substituted BPA with an alternative B-P-F-B-P-S and studies have shown that they're just as harmful.

SHAWN STEVENSON: Exactly. Exactly. And again, it might be well intentioned even from a brand trying to be BPA free, but if you don't really understand the science and dig a little bit deeper, you find out that for the plastic bottle to be made into that plastic bottle, it has to have these plasticizer chemicals to help to mold it and make it into what it is.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: And that is going to biodegrade, fold, degrade. It's gonna break down into that water. Water is the universal solvent.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: You know, that's what I was taught in school. It's the universal solvent. And so when we're drinking water that's bottled in plastic, we are drinking a plastic tea. And it is what it is.

DR. VIVIAN CHEN: Yeah. Unfortunately. So the first place I would start is in your kitchen, right? So if you're looking at, at your water, are you still drinking from plastic bottled water? When I go to Costco, I still see people buying crates and crates of Arrowhead in plastic. Right. And they're consuming those bottles at home. They're single use, you know, those small bottles. If you can please stop doing that because number one, it actually costs you more in the long run to buy that water. It costs less to install a water filter and then you know, you can filter out the water. You have actually more reassurance that that water is clean.

And studies have shown that tap water has less microplastic than bottled water, so that's number one. So think about your water source. Stop drinking from plastic bottled water. Invest in a water filter. And you know, I know everybody has different budgets. You don't have to get a fancy thousand dollar reverse osmosis. What you have to do is just look up your tap water report. So you can do that by going to the EWG website. So that's the environmental working group. If you type in EWG tap water database into Google, it'll pull up the website and all you need to do is, um, just put in your zip code and you'll pull up the contaminants in your water. And now the next thing you've gotta do is find a water filter that's been NSF certified to remove those contaminants. That's all you need to do. And for me, I don't even need a reverse osmosis. I just need a under sink filter that costs me a hundred dollars.

SHAWN STEVENSON: It's a lot of good options and it's never been as accessible, you know? And I remember when I got my first water filter when I was in college. So this was like, you know, 20, 20 ish years ago and it was like a Brita filter. And I remember later on, after really starting to research it, this was like a year later, and then I read, I actually read the package when I bought a new one.

It says, removes the taste and smell of chlorine, but it doesn't remove the chlorine. It was made by Clorox, actually, the brand Brita was made by Clorox. And, but it still did, it still did a job. It had the charcoal filter, it had certain.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: Filtering processes that remove a lot of stuff. And so even something as simple and rudimentary as that. It's not gonna make your water a complete blank slate. Right. But it can do the job that's gonna make that water far better for you than the average bottle water.

DR. VIVIAN CHEN: Yeah. 100%. And the other thing is what you are putting your water into, right. A lot of people use plastic bottles now they also wash that plastic bottle in a dishwasher. Heat detergent degrade that plastic. So when you take it out of that dishwasher, now you're filling water. Now all these chemicals are leaching into your water. So consider investing in a glass or stainless steel bottle instead.

SHAWN STEVENSON: Yeah. Awesome. And also, of course, when you purchase bottled water, if you find yourself in a situation, if you can get bottled water that's bottled in glass or ..

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: You know, I don't, there is like aluminum, but I know that that's sketchy.

DR. VIVIAN CHEN: Yeah, right.

SHAWN STEVENSON: As well.

DR. VIVIAN CHEN: Because water metal is going to cause rust. Right. So there must be a layer. So for example, paper, paper cups. Well, paper's not waterproof. So it requires that epoxy layer, a layer of plastic between your water and your paper to make it waterproof. I think the same thing is happening with aluminum bottles.

SHAWN STEVENSON: Yeah, absolutely. Yeah. So bottled in glass if you do, but now here's the thing, if you find yourself in a situation where water that's in a plastic water bottle is, is the only choice in that situ, maybe it's a flight or something, we don't want be super neurotic in

situations because again, we, we are resilient and that leads us to what can we do to support our body's ability to detoxify, to eliminate some of these compounds.

And not just plastics, but just the many toxicants, the thousands upon thousands, the billions of tons of toxicants that are affirmed by the EPA and other agencies to be released into our environment every year. What are some of the things that we can do to help our bodies to eliminate these things?

DR. VIVIAN CHEN: I love that question, and I love that point actually because during the LA fires, I got lots of questions from my followers who are worried about drinking from plastic bottled water. And I said to them, this is the one time you should not worry about that because it's actually better to stay safe than to try and filter your water. And you don't know what's the con, what the contaminants are, you know, during a fire you don't know if your filter is actually working adequately. You could be actually consuming more carcinogens and things like that.

So it's actually better in this scenario to drink from plastic bottle water. So there's nuances and there's always exceptions. I'm traveling today, came, came down to see you, and I would have no qualms drinking out of plastic bottle water on my way home, on a flight if I can't get glass. And it's because I know I have natural detox organs inside of my body that can keep me healthy and eliminate the exposures.

So I think the whole point is not to be super obsessed and you know, try to be 100% non-toxic because that's not achievable. It's not even possible. Just do what you can. What we're trying to do is just to minimize that toxic load so that the, the organs in our bodies can do its job to eliminate. So inside our bodies, I actually think the gut is such a overlooked but super important detox organ. So a lot of people think straight away liver is like the biggest detox organ, and that's true. Liver is kind of our number one detoxifier of chemicals. What they do is to neutralize and break down the, the chemicals. But what they do then with that is to pass it to the gut to eliminate. How many people are constipated?

They're not pooping every day, so your liver could be breaking down these toxins, but if you're not pooping, they're not coming out, and in fact, they are being reabsorbed. So you're just recirculating, if you're not pooping. Pooping is actually the number one detox tool that I, anyone who comes to me who says, I want to take a liver supplement, I ask them, how many times do you poop a day? You know, sometimes they say once a week. No, no. Let's backtrack. Let's start with the gut first. Let's get your gut healthy. Let's get you pooping every day. Let's get your gut microbiome healthy, because guess what? The bacteria in our gut can break down BPA and some of these toxicants, so you never even absorb it if you have a healthy gut microbiome.

SHAWN STEVENSON: Listen, this is. We've never talked about this before. We're thinking about it. We're getting rid of plastics and the, the pro, the, the compounds that come along with plastics via our poop. It's one of the primary ways that our body's eliminating waste, which we know this, like this book.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: For many of us, we, we might, this might be a revelation. And the importance of having healthy, consistent bowel movements is important for getting these, this crap literally to getting this crap outta your body.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: So, okay. What do we do to make sure that we're having some good poops?

DR. VIVIAN CHEN: Yeah, so I, I feel like people are not eating enough fiber. 95% of Americans are deficient in fiber, so we should be getting at least 25 grams a day. Most people getting around 15, 10 to 15. So that's number one. Get more plants and fiber into your diet. Now, a lot of people say, oh no, but it makes me bloated. Well, that's a gut microbiome issue, right? So if your gut microbiome is not healthy and you have dysbiosis, a lot of fiber can actually make you bloated and very uncomfortable.

So what you need to do is then go slow. So if you suddenly eat, a lot of it's kind like if you never lift weight and then you go into the gym and you weight, you'll try to lift a hundred kilograms or pounds, you're not going to be able to do it. So go slow and introduce, let's say five grams of fiber. So a tablespoon of beans a day. When you're comfortable go up to two tablespoons. So do that slowly, and then you've got to be thinking about your gut microbiome all the time too, right? So what can we do there? Fermented foods, kimchi has been shown to actually help break down BPA as well. So fermented food. I love that For detoxifying, for gut health.

SHAWN STEVENSON: Yeah. Bacteria is often the answer for a lot of things.

DR. VIVIAN CHEN: Yeah. Yeah.

SHAWN STEVENSON: You know, so just that mention of being able to break down these compounds, fungi is really being studied now for its ability to break down plastics even in our environment.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: And so again, but we have a microbiome, we have fungi in our bodies, in and on our bodies that are again, helping us if we help them. And so foods make sure that we're eating a diversity of plants.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: Diversity of plant inputs. Ton, there's so many varieties that are ancestors thrived on, you know? Thousands, tens of thousands of different foods. And now the average person is getting it like 30 different foods a year.

DR. VIVIAN CHEN: Exactly. Yeah. And you know, I, I mentioned 25 grams of fiber. When they look at our ancestors poop, they estimate that they were eating around a hundred grams a day. So even 25 grams, it's very little compared to what our ancestors did. Right. And speaking

of plants, there was a study looking at 700 healthy adults, and the more plants they ate, the less cadmium, heavy metals and pollutants they had in their bodies.

So plants are very important for two reasons. Number one, the fiber itself bind to these contaminants that you don't want. And when it binds to it, it doesn't actually get absorbed. Right. So you are then eliminating it before it even gets absorbed. And number two, plants are full of these antioxidants that help mitigate the harm. So we talked about inflammation and oxidative stress. Plants have antioxidants that fight the oxidative stress. So that's why plants are so important.

SHAWN STEVENSON: I love that because we noted that these microplastics and nanoplastics are causing. Oxidative stress. Yes. That can damage, destroy our mitochondria or really harm ourselves. Getting those antioxidants in. It's another defense 1%. When I mentioned the average person is eating like 30 foods a year, different foods, it's, and I'm not exaggerating because it, it's the appearance of variety, right. The store, you know, the shelves look like there's a lot of different stuff, but it's largely made from the same core ingredients.

DR. VIVIAN CHEN: Yes, that's true.

SHAWN STEVENSON: Corn. Wheat, rice, soy, and all kinds of different formulations of that, because that cereal aisle, it looks like so many different types of cereal. It's just like there's 50 varieties of cereal for me to choose from, but it's made from like the same three base ingredients and then a bunch of newly invented chemicals. Right. And so we've got to be more proactive in eating to be specific. A variety of real foods.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: A diversity of real foods. So..

DR. VIVIAN CHEN: Yes, absolutely.

SHAWN STEVENSON: In addition to that, I would imagine making sure that we're adequately hydrated.

DR. VIVIAN CHEN: Oh, yeah. That's, that's really easily missed. Right. A lot of people don't link hydration to pooping, but it's so important. Yeah.

SHAWN STEVENSON: And what about pooping position?

DR. VIVIAN CHEN: Oh, I know. Yeah. Like the modern day pooping position is not how we are designed to poop, actually. So I think that's why those, what are those called?

SHAWN STEVENSON: Squatty pots?

DR. VIVIAN CHEN: Yes. That is why it went viral. 'cause it actually works to help people poop better.

SHAWN STEVENSON: Yeah. But like the fun fact, we were the first show to feature like major podcasts to feature the Squatty Pot years ago, years ago. So yeah. Big fan.

DR. VIVIAN CHEN: Oh, that's so, that's so interesting. Yeah. And I love Kiwis Kiwis for pooping. Studies have shown that Kiwi can actually help relieve constipation and bloating from constipation as well.

SHAWN STEVENSON: A ver, fruits are special. You know, again, there's something that we're attracted to our ancestors and ourselves, you know, it's just something that is alluring. About fruits just, and they, and they have the different flavor notes and things like that. It's just, it's, it's really special. So I would encourage everybody to also, you can look up what, what is seasonal, you know, like what is available in your, in your particular environment at certain times of year and go for some of those different foods as well.

DR. VIVIAN CHEN: Yeah. That's so important. Some maximum nutrient density.

SHAWN STEVENSON: Persimmon was like last month or whatever, which I'm not a big persimmon guy. I don't really, you know, but because they were in seasonal, I was like, let me get a couple persimmons, you know? Yeah. And so I added.

DR. VIVIAN CHEN: Did you like it?

SHAWN STEVENSON: Some types.

DR. VIVIAN CHEN: Okay.

SHAWN STEVENSON: There was like three different varieties that I got. Uhhuh one, I loved it.

DR. VIVIAN CHEN: Okay.

SHAWN STEVENSON: The other two was meh.

DR. VIVIAN CHEN: Did you, is it the one that's long and soft?

SHAWN STEVENSON: No, the one that I ended up liking was just kind of like a medium size.

DR. VIVIAN CHEN: Oh, okay. Okay. Yeah.

SHAWN STEVENSON: Yeah, there was, again, so many different varieties and again, going to a farmer's market, right? Going to, or joining your local CSAs and there are so many different stores that are, are catering to this now. You know, we, there's Whole Foods all over the place now. But they tend to get in some seasonal produce as well. So yeah, just something to be proactive about. So again, healthy elimination is gonna help. What else can we do to help our bodies to detoxify some of these compounds?

DR. VIVIAN CHEN: So next we go to the liver, right? Once you're pooping, now we can talk about what we can do to help our liver and nutrition is always first, because the process of detoxification by the liver is very energy requiring. So it needs a lot of a TP and a lot of nutrients, minerals, B vitamins, zinc, magnesium, vitamin C, it.

Vitamin B, like lots of different vitamins and minerals. So if you are not eating that variety you're talking about, you're not going to be getting those minerals and you know, antioxidants and vitamins to help the liver do its job properly. So number one, and then we

can go to look at specific foods that actually have been shown to upregulate liver detoxification enzymes.

So these are enzymes that actually break down chemicals, harmful chemicals for us. So broccoli sprouts, it's gotta be one of my favorites. And if you can't get broccoli sprouts, then broccoli. So cruciferous vegetables is this family of vegetables that are very high in sulfur that actually help deliver detox. So think broccoli, Bok Choy cabbage, kale. These are cruciferous vegetables, but broccoli sprouts have been shown to contain two to 50 times more sulforaphane than broccoli itself, by pound. So I sprout broccoli sprouts myself at home and it's been shown to reduce risk of cancer neuroinflammation. And I feel like it's all through helping the body eliminate these toxins that cause inflammation.

SHAWN STEVENSON: Yeah. During the LA fires, recently, it's been a couple months now, but you sent me a message, you were checking in on me and you reiterated, make sure you're getting extra broccoli sprouts as well, you know, and I appreciate that. So again, being mindful of caring for our major detoxification organs. And one of those is our skin, is our skin.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: So what about sweating? Oh yeah. Will that be helpful in eliminating some of these comments?

DR. VIVIAN CHEN: So studies have shown that sweat can contain. These endocrine disruptors, BPA, phthalates, even heavy metals as well. So we are sweating these things out. I love exercise actually, because exercise has been shown to upregulate glutathione, which is a master detoxifier. So glutathione actually binds to these toxins and kind of ferry them out of the body and breaks it down in the liver. So upregulating glutathione in your liver through exercise is great and you're sweating in the process.

You're getting your lymphatics going. So a lot of people have sluggish lymphatic system. And think of lymphatic as kind of like the piping around your house as carrying waste right between your cells to your liver for detoxification.

Now, if that lymphatic system is stagnant now. The waste cannot get to where it needs to be. So it starts to cause damage, inflammation, and things like that. So you want that lymphatic flowing and exercise is a great way to do it.

SHAWN STEVENSON: Yeah. Yeah. We have upwards of, you know, somewhere around four times more lymph than we have blood. You know, so that we have a lot of lymphatic fluid. And it's kind of like, like an extracellular waste management system in a way. And, unlike the cardiovascular system, we have the heart and arteries that have this pumping action. Our lymphatic system is, it doesn't pump, it doesn't really move unless we move.

DR. VIVIAN CHEN: Exactly.

SHAWN STEVENSON: And that's why movement and exercise is so important.

DR. VIVIAN CHEN: Yeah. Yeah.

SHAWN STEVENSON: And, again, like how many people in our society, we, we, this is a fact. We have the most sedentary society in the history of humanity. All right. We, yep. And, and. Just a very rudimentary view of this. We had to move to survive. Now you don't, you could sit there and get anything you can imagine. And you know, whether this is food, you could ask somebody, you know, uh, bring it right to your door, put it right in your hand. You could find a mate on your phone. You know?

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: Like the list goes on and on. All these human needs, we don't really have to move. In order to do them our grocery shopping and not to minimize some of these advantages, because some of these things can be very helpful.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: But if we're pulling out movement from our lives for convenience, this is where it comes in, where we have to find other ways to supplement that because our genes expect us to move.

DR. VIVIAN CHEN: Oh, 100%. Yeah. And movement is that kind of healthy stress, right? That then triggers your mitochondria to work harder and become better. Yeah. Yeah.

SHAWN STEVENSON: Entertainment just right there in your head. Just anything you can imagine. We've got it right there.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: And so, yeah, so exercise, movement, getting our sweat on is gonna be helpful. Sauna is gonna be helpful.

DR. VIVIAN CHEN: And you mentioned hydration, so we can't forget our kidneys. That's another major detox organ. Right. And like you said, water is the best solvent, so you've got to be drinking clean water and lots of it, because otherwise that's, you know, the toxins can't be carried out of the body. So BPA, for example, they're excreted mainly through the urine. So if your kidneys are not working optimally, then you can't excrete that as much.

SHAWN STEVENSON: Yeah. Now you mentioned earlier the influence that light can have on our mitochondria, which again, and I want everybody to understand this. Please, because that is what really inspired this conversation today, is that scientists are now finding that these microplastics and nanoplastics are accumulating in the energy, power plants of ourselves themselves. They're accumulating in our mitochondria. This is not a joke. This is not something for us to just dismiss anymore. We have to be proactive about this. And you are very likely, I mean, without a doubt, one of the foremost experts in the world in this subject matter.

DR. VIVIAN CHEN: Oh, thank you.

SHAWN STEVENSON: Of light therapy, red light therapy in particular. And so I want to talk more about this as a methodology. A means for us to be proactive and caring for, again, we can't escape this. I'm gonna say this once more. The largest intake of these microplastics and nanoplastics, they very air that we breathe alright. Through our lungs, through our water supply, through our food, through our skincare products, cleaning products. The list goes on and on and on. These things that many of us engage with on a daily basis. We've gotta do something to be proactive in helping us to minimize our exposure, but also helping our bodies to detoxify.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: Where does red light come in?

DR. VIVIAN CHEN: Oh, I love red light therapy and I, I'm surprised I didn't learn about it in medical school because there was already available and there were already research studies on it, but nobody taught me anything about it. I only really opened my eyes to it when my dad was bedridden for weeks on end with this condition called piriformis syndrome. And he just, his doctor just prescribed him more and more painkillers and, you know, I was worried, starting to worry about addiction to, or opioids and things like that. So I flew home. I had a little, red light therapy device with me at the time that I was using for wrinkles that I was trying to rejuvenate my skin with.

I had him use it. Now, this is a very weak device. So he had to use it for hours to get any benefit, but after two weeks he was up and walking. Now of course I did all the other stuff too, you know, anti-inflammatory diet and other things. But red light therapy was actually a very key component and when I saw that huge impact, I thought, I just have to look into this more. And then when I dug into the research, my mind was absolutely blown. You know, there were thousands of studies and this was all kind of triggered by NASA actually in the 1980s. So they found they were using light to grow, help grow food in space for the astronauts. And they found that the astronauts who were using red light to grow food versus the other wavelengths, their wounds healed much faster.

So then they started to do more research into red light therapy and it impact, it has on our physiology and that's where kind of it all started. And now we have studies showing that it can help minimize the appearance wrinkles, fine lines, because it helps to support collagen production in the skin. It helps to boost circulation, blood flow to the skin as well. So you get that glow, natural glow, it can reduce inflammation. So things like pain relief, you know, if you have joint aches, muscle recovery, if you work out, you work out a lot. So you know, it's actually been shown to help with athletic performance as well. So a lot of athletes use it. And the reason why it can do this many things is because it's targeting the mitochondria at the powerhouse.

When you give a cell more energy, it can do its job better. So in the skin now, the fibroblasts that makes collagen can make more collagen and elastin. You know, it secrets growth hormones to actually get the cells growing. And then in the joint it can start to bring in anti-inflammatory factors in to reduce inflammation, the joint, and that then can help with pain relief as well.

SHAWN STEVENSON: There's so many applications. And can you talk about a, a little bit about this, which I'm glad you brought this up, about your father inspiring you to create the Lume box.

DR. VIVIAN CHEN: Yeah. Yeah. So when I realized in the studies that a lot of the applications are very irradiance dependent. So irradiance is kind of like the power density, how powerful that light is. So think of a supplement you would take, let's say magnesium. You take a certain dose, right? So you need that with light too. So it's not just like, oh, I lay there and you know, shine any old light on me. It may not do the thing that you want it to do. So in the studies they've shown that the skin doesn't need very much light because it's on the surface, a little bit will do the trick.

So a lot of devices target the skin. They're weak. Those are not going to penetrate very deep. It's not going to work for your joints or anything where you need the light to penetrate deep. So brain, you know, joints, muscles, those weak lights really only work for superficial things. But if you want to help your joints, you want a powerful device. And that's why I was looking

for one, you know, after my father said he needed to do it for two hours a day, who has two hours a day to do light therapy? My, my dad did, but you know, most people don't. Right. We have jobs to do and things to do. I was looking around for a portable device because that's how I use it. I don't, I don't really sit in front of big panels like, you know, strip naked and do red light therapy. I'm not saying anything wrong with that. Athletes do that. I don't really need it. I do it on my skin. I, you know, if I have back pain, I use it. So I want it portable so I can take it to the couch with me in the car, with me, in the bed, with me.

There wasn't a portable one that delivered high radiance, and in fact, there were people saying we want weak devices because that's the power of the, you know, you want those suns kind of irradiance. I think that's well and good for certain purposes, right, but not for deep penetration. So I wanted to create something that was kind of like a Swiss Army knife, because if you start with high radiance, you can move that device further away to get your low. I radiance because distance dilutes the radiance, right? So I wanted something that was in the range for joints, because then if I wanted to treat my skin, I just move that further away and I can treat my skin at the same time. I just don't believe people should be spending $400 on a helmet for their hair, you know? A mask for their face, something for their neck, something for their hands, and then another panel. You know, you could be spending thousands of dollars when you can just invest in one device that can do everything for you. And I couldn't find that thing, so I created it.

SHAWN STEVENSON: And you did? Yes. It's so amazing because your device actually registered with the FDA.

DR. VIVIAN CHEN: Yeah.

SHAWN STEVENSON: As an effective treatment.

DR. VIVIAN CHEN: Yeah. Well, so, here's the other thing that I had trouble with, was getting the third party testing from device companies. So they would list on their website something like Iranians, over 100 milliwatts per centimeter squared. What does over 100 mean? Is it 200? Is it 102? I don't know. And then when you ask them for testing report, they don't show

me anything. So I wanted to third party test my device so I know exactly what I'm getting at each distance. So I, I tested it at one centimeter away and it was 125 meter watts per centimeter square. So that's the perfect kind of irradiance for joints, muscles, anything deep. And then I tested it at 15 centimeters away as well. So that's the distance you want to use it for your skin for rejuvenation, I'm talking about. And that produced around 25. So that's the perfect irradiance for your skin.

SHAWN STEVENSON: Now, I shared this with you before about the skin health specifically because my wife would go do some skin treatments every now and then, which she has beautiful skin, but you know, she does this getting, you know, different facials and things like that. But she shared that they would do red light treatments. And this is for years. And then when she was being nosy and saw me opening my Lume box and, you know, I told her about what it is, she was like, oh, I have that treatment when I go for this expensive facial that she's doing.

DR. VIVIAN CHEN: Right.

SHAWN STEVENSON: And so, but since then, this has been a staple for my family, you know, whether this is like prehab or rehab, helping accelerate recovery from injuries or, you know, gameplay with my sons and the competition, things like that. And also as a gift that I've given, I, I.

DR. VIVIAN CHEN: Oh?

SHAWN STEVENSON: Did I tell you this? That we got Michael Beckwitha Lume box as well.

DR. VIVIAN CHEN: Oh my goodness. I'm so honored.

SHAWN STEVENSON: So we use it.

DR. VIVIAN CHEN: I love him.

SHAWN STEVENSON: He use it all the time. You, you were just sharing that, that you love him. Oh, and yeah, he use your Lume box.

DR. VIVIAN CHEN: Wow. It means so much to know that he has a Lume box in his home.

SHAWN STEVENSON: Yep. Yep. So it's a gift that I love to give and there's so many applications. And right now, and this is as of this release of this episode right now, it is the birthday celebration of Lume Box. And congratulations.

DR. VIVIAN CHEN: Oh, thank you so much.

SHAWN STEVENSON: And to celebrate the Lume Box's birthday, you're doing something extremely, extremely special for everybody. And this is for a limited time as of the release of this episode. Yep. Which is you are giving everybody 50% off of the Lume box, 50% off now that it's amazing and a little crazy. And I, I understand, and I, and I appreciate why you're doing it, but this is something, you don't have to do this, you don't have to do this, but to celebrate.

This brand to get it into more people's hands and into use for their families, especially now I understand why you're doing it and it has a triple, it has a trickle down effect. And so I really appreciate you doing that. And for everybody, if you go right now to thelumebox.com/model, you could take advantage of this 50% off. And that is T-H-E-L-U-M-E-B-O x.com/model. 50% off right now for a limited time. So this is about a week as of the release of this show.

DR. VIVIAN CHEN: Actually, it is less than a week.

SHAWN STEVENSON: Less than a week, 50% off. So take action on this now.

DR. VIVIAN CHEN: It ends on May 4th.

SHAWN STEVENSON: Ends on May 4th. So take advantage, don't wait. And also, of course, if you, if you're listening to this in the future, which many people are, it's okay because. I know that you're gonna take care of us and still offer some money off.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: For everybody a discount, but 50% off is just for this birthday celebration, and I appreciate that.

DR. VIVIAN CHEN: Well, I appreciate you so much. I, I just love the work you're doing and spotlighting really important issues. So it's an honor to be able to do that.

SHAWN STEVENSON: Amazing. So, of, of course we've got the application with the red light, but Lume Box is more than that. It has another feature as well. Can you talk about that?

DR. VIVIAN CHEN: So I wanted both near infrared and red at the same time. So, at the, when the box that I gave to my dad, it had one red bulb, one infrared bulb, and it was all, you kind of just spread apart and you want that dense kind of lights to be close together. So I wanted every single bulb to emit both wavelengths if you wanted it. Right now, if you're just doing your face for rejuvenation, you might only want to do red. And that's okay. You can do that. But if you just wanna do your muscle, you can just do near infrared. So near infrared and red, the biggest difference between the two is that near infrared penetrates deeper than red.

So if you want to target your muscle, your joints, you know, a lot of people actually using it over their liver now. Speaking of liver detoxification, so I actually read a study that showed, I think it was on, on something like 60 people. Red light therapy actually improved non-alcoholic fatty liver disease in terms of the enzymes. And I've had customers, now it, this is totally anecdotal, so I'm not telling everybody like, Hey, expect this obviously work with your doctor and you know, speak to them first. But we've had customers write to us and say their liver enzyme have improved after putting it over the liver as well. So, but, you know, for that to happen, you need penetration, right? Where's the liver? It's not on the skin. It's deep. It's a deep organ. So you want penetration. That's when you want the near infrared.

SHAWN STEVENSON: Amazing. Amazing. And again, it's all in one device. And there are many other applications. We're just touching on some of them. And since I have you here, because again, this is just kind of coming up for me right now, I wanna ask you about this.

In addition to our epidemics of chronic health issues, that so many people are suffering, unnecessarily. And obviously we are very passionate collectively about doing something about this, but simultaneously we have mental health epidemics. Right now, and this has a lot as my friend, mentor colleague, Dr. Daniel Amen states is that, you know, a big part about mental health is brain health.

DR. VIVIAN CHEN: Oh yeah.

SHAWN STEVENSON: And so really caring for ourselves holistically, and taking care, being mindful of how do we support our mental health. There are, I talked about this over 10 years ago in the first iteration of my book, sleep Smarter. In talking about light therapy. And seasonal affective disorder and things like that. Applications. It had tons of science already published at the time and now it's so much more. But this is another place where we can consider red light therapy as well for mental health.

DR. VIVIAN CHEN: Oh, absolutely. There actually studies on using red light therapy for things like anxiety and depression as well. And there was this really surprising study where they were treating people for back pain. People with depression, their depression improved as well. So I think red light therapy can actually have systemic effects. So, you know, you're shining the light on one spot doesn't mean you're just treating that spot because that mitochondria now being healthy, can send signals across the body to actually have effects, you know, a distance away from that spot. And there was something really interesting during the pandemic or post, slightly post pandemic. Do you know Matt Crem?

SHAWN STEVENSON: I don't.

DR. VIVIAN CHEN: So this, this triple board certified doctor, very, very popular on YouTube, has millions of followers. He actually was talking nonstop about near infra light for immune health. And he talked about this study where, because he's a ICU specialist, and pulmonologist. He was really interested in this study because it was ICU patients with covid and they put everybody in a jacket. Some of the jackets were turned on. They had near infrared lights, LED lamp lights. Some were not turned on. So the patients who had the vest

turned on and received near infrared light therapy, they had better oxygen saturation, better lung function, and stayed on the ICU less.

SHAWN STEVENSON: This just speaks again to the many applications, and I mentioned this a little bit earlier about, you know, our skin has these photoreceptors. And it's sending data everywhere else in our bodies.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: It has to because nothing in our bodies are happening in a vacuum. You know, if something's going on with our skin, it's affecting our liver, our kidneys, our brain, and our body is just really acclimated throughout our evolution to utilize light to utilize sound as well.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: There's, you know, ultrasound.

DR. VIVIAN CHEN: Yes.

SHAWN STEVENSON: For example, therapies of known to be able to, like, whether it's kidney stones or even cancer tumors and other applications as well. Speed and recovery, light sound. These are things that I believe because they're so captain obvious at this point and non-invasive safe are going to be, go-to treatments for many different conditions. And you're really leading the charge in this truly.

DR. VIVIAN CHEN: Oh, thank you. Yeah. They're just so many studies now on light and, you know, we weren't talking about this 10 years ago. Circadian rhythm, like nobody was talking about that, but how important is it? It's so important for our metabolism, for our mood. Just think about the last time you jet lagged. You felt lousy. No energy. Brain fog, that's circadian rhythm dysfunction. Right. And what's the controller of that, is light. And we are not getting light at the right time. The, we are getting the wrong type of light at the wrong time. Right.

And not enough of the right light at the right time. So we're not getting the, the daylight that we need to shut off melatonin.

And then at night we're inhibiting melatonin production with blue light with from our devices and TV and artificial lighting melatonin is actually a very powerful antioxidant for mitochondria. So when our mitochondria works and we're accumulating stresses from the day, you know, from the toxic soup that we're exposed to at night, when we sleep, when melatonin is produced, that's when a lot of the damage is reversed.

So there's this mitochondria theory of aging. So yeah, of course as we get older, our DNA is, you know. Being damaged, and that's part of aging. But a lot of the symptoms that we see as we get older is actually a result of our mitochondria declining. And studies have shown that with each decade, our mitochondria capacity goes down by about 8%. So, you know, I'm 47, I'm almost 50. My mitochondria has gone down by 40% since I was born. So if we wanna thrive as we get older, we really have to look after our mitochondria.

SHAWN STEVENSON: Yes. When you said that you're almost 50, I almost just stopped the recording right there because I didn't even know that. I didn't even know that. Amazing. Again, whatever you're doing is obviously working, but truly just your heart and your dedication, I know that it's not easy, you know, to go through what you've gone through, you know, for making sure that this. Incredible resource is not just accessible, but also is backed by science and also verified by multiple parties. I know it's a lot of work and I appreciate that. And even you coming to hang out with me and you came bearing gifts, you brought some gifts before for me.

DR. VIVIAN CHEN: Oh my, always.

SHAWN STEVENSON: I appreciate that.

DR. VIVIAN CHEN: It's, it's so fun to, chat with you as we, I feel so aligned with your mission. Mission and it's just always fun to talk, talk to you.

SHAWN STEVENSON: Yeah, same. We're gonna continue this conversation. But again, I, I just appreciate you so much. Can you let people know where they can follow you? Just get more into your universe and then more, more into your work.

DR. VIVIAN CHEN: Thank you so much. So I'm on Instagram. My handle there is at Plateful Health, so that's P-L-A-T-E-F-U-L-H-E-A-L-T-H. That's my Instagram. So you can find short form content. I also have a substack now and that's the kind of more nuanced discussion around science and I share studies and things like that. And you can find that through my Instagram link. And I have a website. It's www.plateforhealth.com, so P-L-A-T-E-F-U-L-T-H-E-A-L-T h.com.

SHAWN STEVENSON: Amazing. And we'll put everything for everyone in the show notes. Thank you. So you get access and of course the link to Lume Box, which again, it's Happy Birthday Lume Box. Thank you. Go to the Lume box.com/model. Again, that's T-H-E-L-U-M-E-B-O x.com/model. 50% off right now for a very, very limited time, less than a week. Take advantage and again, I appreciate you for coming to hang out with us.

DR. VIVIAN CHEN: Thank you for having me.

SHAWN STEVENSON: The one and only Dr. Vivian Chen. Everybody, thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. As it said, knowledge is power, but we've got an upgrade for that. Knowledge is potential power. All right? Knowing is half the battle. That's what GI Joe used to say at the end of the episode. Knowing is half the battle, the other half of the battle, the victory is seen when we apply, when we apply that knowledge. And more than ever today, yes, there are a lot of things for us to have on our radars for us to be aware of.

Yes, that is the, the nature of the times that we're living in, but also there's never been more possibility. There's never been more access to education, to strategies, to resources. It's just about saying yes and what are we going to invest our time and energy into? And so I'm very excited about this because this information is getting into the hands and hearts of more people. And this conversation around plastics is something that we thought was, again, something that was inert, invention and innovation and the human story. But there's this

backend problem that we have to address. We've got to do something about this. These things are accumulating in our bodies. This has never been something that our ancestors were exposed to.

It's never been seen before in human history that we literally have plastics in our heart, in our brain, in our reproductive organs, in our skin, in our fat tissue, in our mitochondria, the very life force generator of this human experience. We've gotta take this seriously, do our best to, yes, let's minimize our exposure, but also lean into our resilience. Let's do some things proactively to help our bodies to do what our amazing bodies can do to get this crap out of our system and doing that on a regular basis. So I appreciate you so much for tuning in today. Please share this information with the people that you care about. It's a very important conversation, and we've got more.

Powerful conversations with some world-class guests and powerful masterclasses coming your way very, very soon. So make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon. And for more after the show, make sure to head over to the model health show.com. That's where you can find all of the show notes. You can find transcriptions videos for each episode. And if you've got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much and take care, I promise, to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.