



EPISODE 778

How to Fix America's Healthcare Crisis & Normalize Good Energy – With Dr. Casey Means and Calley Means

With Guests Dr. Casey Means & Calley Means

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SHAWN STEVENSON: Welcome to the model health show. This is fitness and nutrition experts, Shawn Stevenson, and I'm so grateful for you tuning in with me today. This episode is powerful. We are literally talking about energy, in particular, good energy that's created in our bodies through our mitochondria. You're going to learn in this episode how our epidemics of chronic diseases, obesity, diabetes, heart disease, cancer, the list goes on and on, is directly connected to the health of our mitochondria. And this science is mind blowing, but more importantly, this combination of guests that we have on here is especially mind blowing. Today we have one of the leading physicians in the world who's out educating the public on metabolic health, and her brother, who is one of the leading advocates in the world in health care policy and policy change? And this unique combination is very special in this new project that they put together for all of us. It is truly remarkable. You're gonna want to listen to this From beginning to end. Make sure you do not miss a minute of this because the end of the episode, ooh it really, really hit me. And this was such a powerful experience and I'm very grateful to be able to share this. This is actually one of the first major interviews that they're doing together about this new project. So this is exclusive, very, very excited about this. And you are in store for so much greatness, but first let's get to the Apple podcast review of the week.

ITUNES REVIEW: Another five star review titled "Recently Discovered" by kray0916. Only recently discovered Shawn's podcast after hearing him on Ed Mylett. I was excited to see over 700 episodes of pure education. I have learned so much in the last month regarding real food, healthy habits, and overall wellness. I can't stop listening. Thank you, times a thousand.

SHAWN STEVENSON: Thank you, times a thousand. I love this so much. Thank you for sharing your voice over on Apple Podcasts. And I am so very grateful, you know, sometimes just being able to stop and look back on it. We've created an incredible archive of masterclasses on so many different areas of health and wellness. And also, shout out to Ed Mylett. And finding me through Ed's show and Ed is one of the premier people in the world and personal development And we've had him here on the model health show and some of our most downloaded episodes. Hundreds of thousands of people have checked out those episodes that have had Ed Mylett lead on them. So I highly recommend checking them out. We'll put his past appearances for you in the show notes if you want to check that out after this powerful episode. But I'm telling you again, make sure that you listen to this episode until the very end. It is very, very powerful. And without further ado, let's get to our special guests, Calley Means and his incredible sister, Dr. Casey Means. Calley Means is the founder of true med, a company that issues prescriptions for food and exercise, enabling tax free spending on items. promoting health.

He's also the coauthor of the incredible new book, *Good Energy* with his sister, Dr. Casey Means. Earlier in his career, Calley was actually a consultant for big food and big pharma companies, and is now exposing the practices that they use to weaponize our institutions of trust. He's a graduate of Stanford and Harvard Business School. Casey Means, MD, is a Stanford trained physician and co-founder of Levels. A health technology company with a mission of reversing the world's metabolic health crisis. She received her bachelor's with honors and MD from Stanford. It was president of her Stanford class and has served on Stanford faculty. She then trained in head and neck surgery at Oregon health and science university. Before leaving traditional medicine to devote her life to tackling the root cause of why Americans are so sick. She's been featured in the New York Times, Newsweek, The Wall Street Journal, Forbes, Women's Health, and so much more. And they're here together on this powerful episode. Let's dive into this conversation with Dr. Casey Means and Calley Means.

All right. There are certain moments in history that change things. Like there's the before and after. This is one of those moments. We've got Casey Means, Dr. Casey Means, Calley Means here in the studio together. Thank you guys for coming to hang out with us.

DR. CASEY MEANS: We're so thrilled to be here.

SHAWN STEVENSON: This amazing book. I've got an early copy and I'm so grateful. This is one of my favorite books in recent years. Not just this year, but in recent years, very, very special. The way that you articulated things, I had so many aha moments thinking about things and I shared this with you, thinking about things that I know pretty well and you said it in a way that made me just think like, I never thought about it like that and it's like a whole new revelation for me. And you started this book off by sharing the story of your mom and the all too common experience in the U. S. healthcare system. So can you talk a little bit about that?

DR. CASEY MEANS: Absolutely. I think that my mother's story is something that almost every American can see themselves in unfortunately today. She got caught up in the chronic disease pill mill, treadmill of so many Americans and while she was such a diligent patient and doing everything her doctors said, her cells never actually healed. So when she was in her forties, she had me and she had gained like 75 pounds during pregnancy. I was a 12 pound baby. Everyone congratulated her for having a huge baby. It was like, Oh my gosh, this is amazing. She went on to have trouble losing the baby weight. She had a tough menopause in her fifties.

High cholesterol started, cholesterol started going up. The doctor said, very, very common for women your age. Here's a statin. Few years later. Blood pressure started going up, again, super, super common. Here's an ACE inhibitor. A few years later, blood sugar started going up.

Doctor again said this is, you know, prediabetes, it's a predisease, there's nothing really to worry about right now. Here's metformin. You know, metformin is prescribed 90 million times a year. This is very, very common. And then she's 72 years old and she's taking a hike with my dad near their house in Northern California and she has a really sharp pain in her stomach and that's unusual for her. It lasts a day or two, so she goes to her primary care doctor and. They order a CT scan because it's pretty out of the blue for her to have a few days of stomach pain. And the next day she gets a text message to her cell phone that tells her the results of the CT scan, which was stage four metastatic pancreatic cancer. And 13 days later, she was gone. She died. And I think that what really struck us in that experience was her oncologist who was at Stanford.

At the time of her death, she was seeing doctors at Stanford, Palo Alto Medical Foundation, Mayo, the best hospitals in the world. And the doctor looked us in the eye and looked at our family and said, we are so sorry. This is so unlucky. And both Calley and I kind of, it made us scratch our heads a little bit because, you know, we knew a little bit about metabolic health at this point. And it really makes you question, like, was this unlucky? And through a different lens, could this have been actually entirely predictable? And I think through our conventional Western view, a very siloed base reactive whack a mole medicine, of course, it was unlucky. It looks so out of the blue. Oh my gosh. You had all these diseases. You had the big baby. You had, you know, tough menopause, these, chronic, high cholesterol, high blood pressure, high, high blood sugar, and then cancer. All these random things. God, how unlucky. But the truth is, and the message that Calley and I are here on this planet to share with the world is that it was not unlucky.

It was totally predictable, but that requires a totally different lens. of looking at the body. It requires a good energy lens, a metabolic framework, looking at the connections between diseases and the connections of the physiology that's linking almost every cause of disease and suffering and premature death in our American Western world today, and that is fundamentally metabolic dysfunction. And through that lens, that connected lens of looking at the connecting pathways between all these different diseases. The big baby that I was, 12 pounds, literally fetal macrosomia, which is a huge predictor of metabolic disease in both the child and the mother, having trouble losing the baby weight, insulin resistance, extreme menopausal symptoms, high cholesterol, blood pressure, blood sugar. Basically, the hallmarks of metabolic syndrome and then cancer, which we are now learning is essentially a metabolically driven disease. Through that lens, it's super, super predictable. And so what Calley and I want to share and what we're here to share is that there are ways to look at the body differently in a much more empowered way to understand our own metabolic health, improve it and optimize it and hopefully help others not go through the same pain that we went through of having to lose a parent prematurely to cancer.

SHAWN STEVENSON: Yeah, and that pain is truly, is becoming an empowerment for so many of us, because even reading that story just hit me different. And of course, just knowing you guys and seeing it from afar, the experience that you guys went through and to see what you've created together, right now is very special. And your respective expertise collaborating on this project is really something remarkable. And, Calley, if you could, you know, you're really looking at how do we actually implement this stuff, right? How do we actually create some social change? Casey so brilliantly is unpacking how all of this is happening in our bodies, which we're going to get to. I'm so excited to ask you these questions, but I'm just curious from your perspective, you know, the catalyst for you, what, what was the driving force for you to work on this project?

CALLEY MEANS: So we grew up in Washington DC and I've been, you know, since I was a little kid, wanted to devote my life to public policy, to American competitiveness, to You know, attacking the biggest public policy issues and, you know, worked for campaigns, worked for food and pharma and, you know, worked on startups. But a couple of life events, including the death of our mom, obviously, led me to believe that what Casey's describing, that micro level of our mom being on the chronic disease treadmill, treating things in silos instead of the root cause. It's the biggest issue in the country. It's the, it's the most important existential thing that we face. We're not at our best. Right now in America, and it's uniquely in America. The stats, I just want to say again, let's just take a minute to just recognize the monumental nature of, you know, by some measure, 66% of American adults being pre diabetic. 33 % of young adults being pre diabetic. 50 % of teens being overweight or obese, 25 % up to, 25 % of young adults having fatty liver disease.

You know, it's obviously a disaster when it gets to adults, but this unprecedented statistics with children. There's something evil happening. This is not a personal choice. This is not, you know, people making the wrong decisions. There's not a kind of systemic nature of kids wanting to be sick and depressed. You know, 15 % of high school seniors being on Adderall. 40 % of high school seniors qualifying as having a mental health disorder, SSRI antidepressant rates doubling in the past seven years among high schoolers. Statins being doled out like candy now in high schools. I mean, this isn't something parents want, it's not something kids want.

So I just want to say that very plainly, like we debate and I think almost by design a bunch of trivia and a bunch of distracting issues on the news and on podcasts and the public debate. This absolute crippling of our human capital, particularly starting at kids. Is Just the key issue. We're not going to be competitive as a country if we continue getting sicker, fatter, more depressed and, and importantly, more infertile. Actually rates of infertility are, are, are absolutely PCOS, I think it's just monumentally going up, sperm count going down, we're

losing our ability to reproduce. So if we recognize that and kind of recognize in the micro instance we had with our mom.

There's two elements here and this is what the book and this is I think where Casey and I really come together. There's, it has to be a revolution of personal empowerment and I think this book contains the best personal empowerment tips ever put to paper thanks to Casey's genius and I know we'll get into that. But I want to be very clear, there's got to be systemic change. You know, going back and tying back my work for food and pharma, you've got the largest industry in the country stacked against us. The healthcare industry is the largest and fastest growing industry in America. And fundamentally just not emotionally, not conspiratorially, I'm just gonna say as a statement of economic fact that industry is incentivized for kids to get sick and get sick earlier, because there's no better profit generating force than chronic disease in the history of American capitalism.

When a kid gets on a statin or, or is obese and gets on ozempic or has high cholesterol or your high blood, sugar and gets on metformin, any of these chronic diseases, right? They're gonna just start, keep racking them up. The drug by its very definition says, take this for life, you know, and that's your cure. They're not addressing the root cause. A child that has one of these chronic conditions reversing their underlying metabolic function is very disruptive and takes them off those roles. But getting on the chronic disease treadmill, you know, is very profitable. So we've got to attack those incentives. And that's what I'm personally working on. I'm working with activist investor billionaires on lawsuits against food companies. I'm working with a nonprofit to prepare executive orders to actually attack these incentives. My company, TrueMed, is actually writing doctor's notes to actually enable Americans to use AFIS AHSA dollars for food exercise, root cause interventions, which are actually entitled to do the IRS is attacking us, but it, but it's, it's legal and I want every American to know they can use their HSA, FSA dollars for root cause interventions. So you've got to just attack the money and that's what I'm really focused on.

SHAWN STEVENSON: Yeah. Yeah. That's what I love about you too.

CALLEY MEANS: Thank you.

SHAWN STEVENSON: It's just, that's, that's a real. That's a real application of this because I've been talking about this for years, but not thinking through that lens of what to do about it. And you know, there's a lot of like last ditch efforts by some of these processed food companies going on right now. You know, like Kellogg's for example, and you know, framing it. You know, cereal for dinner and that kind of thing, which I've done many a day.

CALLEY MEANS: Right.

SHAWN STEVENSON: You know, living in abject poverty in Ferguson, Missouri, and for them to reach because their profits are getting cut into, they're not just going to sit back and go quietly, but also they're going to chase the opportunity. And so if we're not framing it in a way where these very, very powerful entities can profit as well from social change, from a healthier society, it's going to be a war.

CALLEY MEANS: Yeah. I don't want to mince words. And I think these podcasts have changed my life by folks coming on here and talking about personal empowerment, steps we can take. But unless we change from the top down, I'm worried about our country. You can't, I think, continue to exist when the largest industry in the country are fundamentally rigging our system and incentivizing trillions of dollars for us to be sick. In Kellogg's case, they have lobbied, you know, to have ultra processed food on SNAP and, you know, food stamps. They have spent tens of millions of dollars on research to say that, you know, Lucky Charms literally are healthy and then get them in schools. So they've kind of rigged the system, rigged the research, pushed those in, and then they've lobbied. And have ingredients in those foods that aren't available in any other food in any other country.

They literally change the ingredients because of the rigged system and the research that they funded. Then they run ads on children's television, as you said, saying cereal for dinner. So, in that case, you know, we're working with some leading investors. Elon Musk's lawyer, who just announced two days ago, filed an activist demand letter. We're doing an activist movement against them. And we're demanding that they change, in this particular case, their food dyes that are basically, essentially banned in every other country that they're marketing to U. S. kids. We've got to have specific issues like that. And I will say there's a coalition of folks forming that are using the legal system, using the financial system.

Bill Ackman just expressed support for using the public policy system. These institutions have been rigged against us. I don't think Americans are trying to be sick. Something I've learned from Casey is that that's a huge impact for me is how doctors are trained. Doctors are trained that the American patient is lazy, that they're going to make the bad decisions and they profit from cleaning up the mess. They're not talking about the underlying root causes of the incentives that have led us to get sick, which is that we've subsidized addictive poisonous food, that we recommend it frankly. And then all the healthcare industry makes money from chronic disease management, not underlying root cause. The central point of this book, this book for me, is a stake in the ground saying we need to have not an incremental, but a fundamental rethink of how we see medicine. It's not about all these siloed conditions. 90 % of medical costs, 10 causes of US death are tied to the same thing, metabolic dysfunction. But that's not how doctors are trained.

That's not what we're talking about. You've got to change that from the personal empowerment standpoint, also from the legal and public policy standpoint. That's our mission.

SHAWN STEVENSON: You know, there's a ton of red flags that will come up if people are just observing. However, there are some loopholes. You know, we think about an aging population, right? Our lifespan has supposedly been getting longer, of course recently that is reversed, but it has been getting longer in recent decades. And so you, you would assume there's going to be higher rates of chronic illness, but, and this is the red flag that you brought up, let's look at what's happening with our kids. This is incredibly abnormal. And this reminds me of Nelson Mandela "that there can be no keener revelation of a society's soul the way in which it treats its children", and getting to that root cause and that's what you're addressing so beautifully in this book like never before. You are addressing that many of these epidemics of chronic disease are not actually diseases in the way that we would superficially look at them.

These are actually adaptations. And these adaptations are driven by what's happening with our mitochondria. Now, this is something, of course, we hear about in high school biology class, but you break this down in a way that really makes sense, that this is the place to focus. If we're talking about healing, if we're talking about having true good health, we're talking about the health of our mitochondria and good energy. So let's talk a little bit about this whole scenario with the mitochondria.

DR. CASEY MEANS: Absolutely. So I would say at the highest level, our chronic disease epidemic is representing, a true dimming of the life force of our population. And that goes directly back to our mitochondria because the mitochondria is how we produce energy in the body. And it's so simple, actually, when you think about mitochondria. Like, ignore the Krebs cycle and all of that. We eat 70 metric tons of food in our lifetime. And metabolism is how we convert that food energy into human energy to power our cells and ultimately bubble up into powering our lives. And right now, that process of converting food energy to human energy is broken in 93 % of American adults, which is the number that the most recent research from the American College of Cardiology is saying that that many people have a suboptimal metabolism.

This divine, beautiful process of taking the external world, food, the environment, cosmos, potential energy, transforming it through our body, through the center of our cells to create a currency of energy. That essentially is what pays for every chemical reaction that happens in the body. What is our life really? We are 37 plus trillion cells. And each of those cells is like a little factory, a little machine, a little city. And each one of those 37 trillion cells is doing trillions of chemical reactions per day. And every single one requires something to pay for

that. That is the energy that the mitochondria makes by converting food energy to human energy. That process is now broken, so we have underpowered cells. And what is our life? It's the bubbling up of all of those chemical reactions. And right now, we're not able to do that properly. And that is because our modern, industrial, Western environment that has changed so drastically over the past 50 to 100 years is synergistically on every single level hurting the mitochondria, blocking that flow of cosmic potential energy in the form of food, to human energy, to power our lives.

So, what are we? We are underpowered machines sputtering along to do our work. So the question is, well, how would this one fundamental dysfunction of mitochondrial dysfunction be leading to all of the different diseases that we know are related to metabolic dysfunction. From things that are sort of early signs like depression, anxiety, gout, infertility, erectile dysfunction, brain fog, to, or migraine, pain, to the things that are really going to kill us more quickly like type 2 diabetes and Alzheimer's dementia and cancer and fatty liver disease and stroke and heart disease. All of those are on the metabolic spectr we now know. And the reason that this one fundamental dysfunction can lead to all these branches of the tree is also quite simple. We have 200 + cell types in the body. We come from one cell, but that differentiates into 200 cell types. types. We have liver cells.

We have a bunch of different brain cells. We have ovarian theca cells. We have endothelial cells of the retina. You know, we have all these different cells and underpowering in different cell types looks like different diseases, but our system, our siloed based system based on fragmentation and disconnection, 42 medical subspecialties, really fragmentation is built into the way we even look at the body. It sees those diseases and it describes them by their symptoms. And what we're asking is for a different view to actually look at the underlying physiology that's leading to those symptoms and recognizing that it's really fundamental. And the reason we're, we have all these different diseases is because this fundamental process is showing up in all these different parts of the body.

Now, what is so profitable, but illogical, is to treat each of those diseases as different things and to totally ignore the true healing, which has to happen inside the cell, and there is no medication that fixes mitochondrial disease disfunction. There is certainly no surgery that fixes mitochondrial dysfunction. This is why I left being a surgeon because I recognized that fundamentally a lot of the conditions I was treating were rooted in a problem inside the cell and you cannot operate there. We need to fix that mitochondria by taking away the environmental factors that are synergistically damaging it. And from the research, which we outline in the book very clearly, these environmental changes that are hurting the mitochondria synergistically are across the vectors of food, our ultra processed micronutrient depleted diet covered in toxic pesticides, sleep, our sedentary behavior, the movement

vector, the chronic low grade stress that we're all dealing with from having the pain and suffering of 8 billion people being streamed to a phone in our hand all the time.

The environmental toxins that are surrounding us, the 80,000 synthetic toxins that have entered our food, water, air and homes in the past 50 years. Our new modern relationship with light, that's totally messing up our circadian rhythms, this artificial light 24 hours a day. And lastly, temperature, our thermo neutral existence, where we're sort of always at 72 degrees, and never getting that sort of energetic stimulus of Hot or cold, which is actually an amazing stimulus for ourselves to do better metabolic work. So across all these vectors of modernity, we're synergistically damaging this precious part of our cell that converts potential cosmic energy to human energy to help us reach our highest purpose in health. And that is what we need to do as humans is understand, first of all, there's really two things we need to do.

One, we all need to take stock of where we are on the metabolic spectrum. We need to understand our own metabolic health, which the health care system is not going to help you with because it doesn't even understand this. So we need to understand our own metabolic health and then we need to take stock of our lives and what is hurting our metabolic processes and work to improve them. And that really needs to be the foundation of how we approach health as individuals and as a system. And this is really our call to action for both people, the system, and policymakers to focus this 4 trillion dollar arrow of American health care costs towards the real problem at the center of the cell. And if we did that, We would have such rapid, empowering healing for kids, ourselves, and our parents.

CALLEY MEANS: I just, I just going to add on, there's a lie being propagated. In the past 50 years that the reasons we're getting sicker, you know, more depressed, more infertile are siloed. The siloing of American health has been an absolute disaster, but Casey just described it's a more scientific explanation of the root cause of chronic disease, I think it's safe to say, than it's learned at Stanford Med School or Harvard Med School, where they literally treat you from day one and train you from day one. That heart disease is a statin deficiency, that, you know, diabetes and prediabetes deficiency, that depression is an SSRI deficiency, and that's not really even a joke. You, we trace the, the coursework at medical schools, at leading medical schools. That's 80%, 90 % pharmacology. There's not, not even a class on nutrition in most cases.

You mentioned this important statistic about the miracles of the medical system and life expectancy. We attack that in the book because we've been the staunchest defenders of the medical system for most of our lives, right? You know, defending pharma, defending healthcare, working up the ladder of the system. It's been a process to unpack this, but it's very important. The system has been a miracle and life expectancy has increased because of

acute solves for acute issues that were going to kill you right away. Chronic disease management has been a scandal and it has hurt life expectancy. Peter Atiyah pointed out in his book that if you control for chronic diseases, life expectancy actually hasn't increased in the past hundred years, despite trillions and trillions and trillions of dollars of annual investment. We have to get our heads around this. the medical system very explicitly. Took trust engendered after World War II, when all of medicine was on acute things, emergency surgical procedures, antibiotics, which helped win World War II, you know, that, that's, you were in and out. You took a pill for a week.

The first chronic disease treatment was in the late 1950s, the birth control pill. At that time, almost 0 % of medical spending was on chronic disease management. Chronic disease management, you know, diabetes, heart disease, kidney disease, respiratory illness, that was outside the doctor's office. They saw though, with the birth control pill, the first time you could take the pill for months or years. And now today, 90 plus % of medical spending is chronic diseases. It's gone from zero % to over 90 % because it's recurring revenue. So the massive mistake is bringing chronic disease into the doctor's office, which has exploded the size of the health industry, but actually led to declining health outcomes. I'll say this, my opinion is very, I'll say it very clearly. If you eliminate chronic disease research. You know, and, and frankly, nutrition research, this, this exploding industry, the bulk of healthcare, we'd be a healthier country. Chronic disease and the medicalization of chronic disease has actually caused negative health impacts. And we've got to be clear on that.

DR. CASEY MEANS: Something Calley and I laugh about is, you know, just step back and kind of look at some of these realities. The more money we spend on healthcare, the sicker we're getting. The more nutrition and fitness research that we publish, the sicker we're getting. The more we specialize in healthcare and literally invent new medical and surgical subspecialties, the sicker we're getting in America. You gotta step back and scratch your head a little bit. If the more we're spending and the more we're investing, the sicker we're getting, maybe we're focusing on the wrong problem, maybe we have the wrong approach. And you know, you look at some of the rhetoric that's coming out of the system, like trust the science. And while I'm on PubMed every single day and there are literally hundreds if not thousands of scientific references in this book, you have to think about what is the subtext of that statement, trust the science.

The subtext is that you should not trust yourself. And this is really where the healthcare conversation has gone very, very dark because let's look at the world. We are the only species with PubMed and experts. And we are the only species with a chronic disease and obesity epidemic. And so we're being told to trust the science and not actually trust our body awareness, our deep internal knowing, our hunger cues. And in doing so, we have become the sickest nation in the history of the world. So this is not to say don't read scientific literature,

obviously, but I think, Where we're lost is that we've asked people to be absolutely divorced from their common sense. And this is a huge, huge problem because we are miraculous, incredible beings with the biggest brains of any species on planet Earth. Like we, we do know how to eat properly. We do know what's right for us and our families. And we have been told to abjectly ignore that, have been infantilized and patronized to think that that's a problem. I think that that is such a huge, huge problem with where culture and society is going.

CALLEY MEANS: It's a spiritual crisis.

SHAWN STEVENSON: We've got a quick break coming up. We'll be right back. If you're going to improve your metabolic health, you've got to switch up your sweetener. Highly refined sugars are causing massive dysfunction to our cells, our bodies, and Our mitochondria and our health overall, and there's only one natural sweetener that's been found to actually improve our metabolic health. A recent study published in the peer review journal nutrients detailed how raw honey can actually improve fasting blood sugar levels, improve fat metabolism, and reduce the risk of heart disease. Additionally, the scientists noted that the vast antioxidant and anti inflammatory properties that honey has is contributing to its overall metabolic benefits. Now you might hear this and want to run out and get your Winnie the Pooh on and grab any honey in sight. But are you aware of the Honeygate scandal? All honey is not created equal. Recently an analysis of the world's honey market revealed that nearly one third of all the honey sold is adulterated with other sweeteners.

They're adding fructose. They're adding refined sugars and the analysis even found that some honey on the market is completely fake. There is no honey in the honey. Now in this recent honey gate scandal, the U. S. Department of Justice stepped in to address one of the biggest food fraud cases in U. S. history. Multiple companies were involved in illegally routing sham honey into the market. into the United States to avoid import fees. Not only were other sweeteners found in the honey, but antibiotics were found in the honey samples as well. This was a nearly 200 million scandal. Yes, the companies involved paid a couple million dollars in fines, but these unsavory practices are still alive and well today.

So you better know where you're getting your honey from. The honey that my family has been using for years is third party tested for over 70 contaminants, including pesticide residues. DDT, arsenic, lead, mercury, bacteria like E. coli, and other unsavory things that should not be coming along with this incredible source of sweetness. Plus they are dedicated to regenerative, sustainable beekeeping and they are truly creating a movement with their incredible bee products, including their superfood honey, their propolis immune spray, their nootropic that's based on royal jelly. For cognitive performance and so many other wonderful things.

But you've got to try their super food, honey. I absolutely love it. And right now you're going to get 20 % off when you go to [beekeepers naturals.com/model](https://www.beekeepersnaturals.com/model). That's B E E K E E P E R S naturals.com/model And you're going to get 20 % off storewide, but most importantly, again, you're You have to know where your honey is coming from. Get your honey from the best company in the business. Beekeepers Naturals, their superfood honey is truly something special. Check them out. [Beekeepers Naturals.com/model](https://www.beekeepersnaturals.com/model) And now back to the show.

You know, this is, it's so crazy when you laid it out so bluntly. We have a cellular and environmental mismatch.

DR. CASEY MEANS: Yes.

SHAWN STEVENSON: Period. You know, our bodies know what to do, our brains know what to do, we've evolved in a certain way. We would just be able to go to sleep. Why, why do we have, you know, a hundred million people who are chronically sleep deprived? You know, all of these issues, these are newly invented...

DR. CASEY MEANS: Invented.

SHAWN STEVENSON: Issues.

CALLEY MEANS: Exactly.

SHAWN STEVENSON: And as you just shared, this has just really unfolded in the last 50, 60, 70 years. And really in the last 30 to 40 years, it's become just precipitously high now, just like exponentially growing. And I want to unpack this because this is one of the coolest parts about your work and about this new book. is that you're detailing what these mismatches are. And so, we gave an introduction of the role and importance of paying attention to our mitochondria. And you shared, you, you ran through some of these. Because you're here with me, we're gonna dig into them a little bit more. And these mismatches, you start off by talking about chronic overnutrition being one of the things hindering our body's mitochondria. Let's talk about that. What is that?

DR. CASEY MEANS: One of my favorite topics. So we, Calley alluded to this, which is that if we actually did less nutrition research, we'd probably be healthier. And I think there's honestly something to that because over 80 % of Americans are confused about nutrition. literally confused about nutrition and it makes them doubt their choices. And this is the face of more nutrition research being done. So I think we have to step back and we have to really think about eating as a matching problem. We have these trillions and trillions of cells and those

cells are 100% built from food and are in many ways, the function of those cells is dictated by food.

Food is molecular information and if the molecular information we put into the body matches the needs of the cells, fundamentally we're going to get closer to health. It's one of the biggest, biggest foundations. And so the reason that processed food is such a problem and really a root cause of our chronic disease epidemic is because this molecular information is totally confusing our bodies. It's not what our bodies are expecting and it's essentially giving them mixed messages. It's not giving them what they need. And so what that's doing is our in the brilliance of our biology. The cells are realizing they're not getting their needs met. And it's driving us to literally eat ourselves to death because we're not actually giving the cells what they fundamentally want, expect and need.

And therefore our internal wisdom is going to drive us to eat so much that we literally eat ourselves into the grave, which is what is happening in America right now. And, you know, if you really step back from the more clinical nutrition research and actually come back to molecular biology, like what do our cells actually need? This is how we developed the, the good energy eating plan, which is not based on any dietary dogma. There's no keto or vegan or paleo. It's about what molecules do your cells need? to function properly and how do you get those to them? And so we just have eight simple strategies, essentially. It's five things to put into your meals and three things to take out of your meals to essentially give yourselves what they need. And those five things are healthy protein, omega 3 fats, antioxidants, a probiotic source, and fiber. And that's not exhaustive, but if you focus on getting those five things in every single meal, you are going to be giving your body so much of what it needs. And the three things that we recommend taking out are the ultra processed grains, ultra processed sugars, and ultra processed industrial seed oils, which do nothing to meet the needs of your cells and essentially are empty calories that prevent you from actually getting your body what they need.

On top of this, we of course have an industrial agriculture system that has killed the soil in our country and the soil is what injects healthful nutrients into our food. And so a huge swath of that 70 metric tons of food we're eating in our lifetime is depleted because of our soil and it's depleted because of our ultra processing. Ultra processed food now makes up about 68 % of the calories we're consuming. Now, let's make this really relevant to people because a lot of what people really, really care about is obviously weight, like weight is so important to people. And something that's so fascinating to me is in this, in this, this matching problem conversation about food is that. We have cells literally in our body that are nutrient sensing cells all throughout the gut that can pick up nutrients from the food.

And in response to seeing the nutrients they expect, they will produce hormones. And some of those hormones are satiety hormones, the hormones that tell you, You are full. You do not need to eat more. And one of those hormones that the L cells of the gut, a nutrient sensing cell of the gut, makes is GLP 1. And of course, there's this huge conversation happening right now about ozempic and, you know, it's a fever pitch around these drugs. The message that I want to get across to people is like, you can literally make your own ozempic. But the way that you make your own GLP 1 at higher levels is you have to give the body the nutrients that allow the nutrient sensing cells of the gut to make that GLP 1. And it's really quite simple. The things that stimulate those cells of the gut to make that GLP 1 are found in healthful whole foods.

It's protein and amino acids. It's short chain fatty acids that are made when the microbiome converts fiber into short chain fatty acids. So if you're eating a protein rich fiber rich diet, and healthy fats. They've shown that avocado and eggs can stimulate GLP 1. You're going to make those satiety hormones. The body has exquisite capability of getting you to feel full and to have satiety, but it requires that you give it the molecular information in your food to tell it to make those hormones. And this is why an unprocessed diet is so, so, so important. You know, the point we're trying to make in the book is that all this diet war, all the diet wars that we're seeing out there are designed to benefit industry, not humans.

It's so much simpler than we have been led to believe. We need to re-eat real unprocessed food that meets the needs of the cells. And one of the ways we can do that is to make sure we're maximizing antioxidants, protein, omega 3 fats, probiotics, and fiber in our diet. And that can really apply to any dietary strategy. Maybe carnivores would be a little tough with the fiber, but By and large, that can apply everywhere from vegan to paleo to Mediterranean to keto.

CALLEY MEANS: Wow. I have so much to say and add, Casey, but I just, that, that simple list Casey gave, and I really mean that. If, if, you know, it's a half page, that would be a more effective list to guide nutrition policies and frankly, healthcare policies and chronic disease management policies if we could steer incentives to that list. And I just want to say like, like, you know, it's been a transition for me, I know it's a progression for many people on, you know, hearing about dietary philosophies and some of these root cause health concepts. Oh, that's preventative health, that's kind of a fluffy thing. My point now, what I've really been convinced of is, is, is enshrining what Casey's saying in both bottoms up habits, which I know many listeners are doing, and hopefully this book helps them on that journey.

But we can enshrine those in our public policy, right? We can steer the 4.6 trillion dollars we spent on health care to launch people on a path of curiosity about what they're putting in their bodies. You know, my company, as I mentioned, TruMed, we're working with a lot of

supplement companies. There's research on probiotics actually helping to stimulate GLP 1. We work with a company called Pendulum that's done significant research on this, and there's actually, you know, bacteria strains that actually can help supplement your diet, can actually produce these GLP 1s and help stimulate them naturally, obviously, as Casey said, with food too. It's like doctors can write letters of medical necessity for that.

We can follow the and, you know, recommend food interventions when people have diabetes or heart disease, even Alzheimer's, which is exploding right now. Teens are getting dementia, just as they dropped the early onset diabetes because so many young people are getting diabetes. There's early onset Alzheimer's. They're going to drop that. It's going down and down, down. Doctors could be writing food prescriptions and exercise prescriptions, and we could have public policy that steers more money to that and actually instills this as the standard of care. We're not anti pharma in this book, and our mission isn't anti pharma. We're pro follow the science. And our argument isn't to change the science, it's actually to follow as Americans are, you know, facing this cascading and growing, you know, connected set of metabolic conditions that. You know, it's RFK's talked about when his uncle was president with 6 % of Americans and now 65% of Americans have a chronic condition.

You know, we're just saying to follow the science and the science is simple. When I was working for the food companies, I was shocked as a junior employee dictating millions of dollars of research funding to professors at Tufts and Harvard. That's what PR executives in Washington DC are doing. I thought highly of myself, but you know, I was an unimpressive PR executive, sitting around with other relatively unimpressive people who are dictating like, like foundational nutrition research. There, as Anahad O'Connor in the Washington Post recently reported, an amazing, reporter on the food industry, there's millions of dollars going to nutrition influencers, to confuse the issue and actually stoke these diet wars and stoke this idea, oh, the ultra processed is good, the carnivore is good, the, the vegans are, it's, it's actually, that's literally, this confusion is being purposely stoked. So, yeah, I, I, I think if we can really enshrine these simple concepts, both in bottoms up, but also top down, we'd be in a much better place.

SHAWN STEVENSON: Yeah. Yeah. When you're saying follow the science, you mean the real science and that's the clarification here and this is available, you know, and it's never been as easy to access valid, applicable science, and at the same time it's never been more complex. And you guys are really concentrating the simplicity and giving us direction in all this and this is what's so cool because there is a paradox right now. We've got access to all this information and yet we're sicker than ever. We have all this apparent innovation yet we're sicker than ever. Something is not adding up and thankfully I have more people in this space now who are standing up and saying, this doesn't make sense. And, you know, just even bringing up this subject. It is skyrocketed obviously in popularity so quickly, this anti obesity, anti diabetic

framed drugs initially and, you know, getting approved for obesity and other purposes, which a lot of folks, as you know, they're not even into that particular BMI.

It's just one of those things that becomes popularized and, you know, there can be good intention behind it. And there's a place for this also. And this is, like you just said, we're not demonizing this. Right.

CALLEY MEANS: Right.

SHAWN STEVENSON: Yep. But we're looking at, like you just mentioned, and I talked about this in my previous book as well in *Eat Smarter*, years before the popularity of drugs, GLP 1, here are some things, here are some studies affirming like, just eat this, do this. But here's the rub. When you do that, it's going to have a cascade of other benefits when you do it naturally how your body has evolved. When you come in with a blunt instrument, the ramifications are things that we don't know. We simply don't know, but we do know that this is a foreign exposure. And if history has served us well, if we're paying attention, things are probably not going to go the way we think they're going to go.

Which leads us back to, and this is something super important, in this conversation about the mitochondria and the food that we're eating, what we're doing, when, when you eat whatever the food might be, you're not just directly, you know, that chicken or that Kellogg's cereal isn't just, boom, it's energy you're using. That's a foreign currency. That's like me coming into Macy's with a bunch of yen, a bunch of pesos, like trying to buy some polo gear or whatever. And they're just like, bro, we can't take that. This isn't the energy that we run on. It has to be converted. And that's what the mitochondria are doing for us.

It's converting this food energy into you energy. And so with that being said, the thing that you pointed out in a really remarkable way was how the absolutely abhorrent amount of sugar that we're consuming. Can gum this system up and in this conversation about chronic overnutrition, can you unpack, because as Calley shared, you know, we've got upwards of, you know, a third of our population now diabetic and or pre diabetic right now and it's just growing exponentially. Why is this happening to us? Because, and I'm asking this question because that is a precursor to so many other things. Yes. And it can start with poor management of our blood sugar. So we're eating a food, our body's trying to convert that sugar into energy, it's trying to shuttle it to our mitochondria somehow, some way. We've got cellular respiration, beta oxidation, all that stuff. But how is an insane amount of sugar that we're consuming gumming up that process?

DR. CASEY MEANS: It is such a great question. question, Shawn, because I think some people might think, okay, if you're giving the body more glucose, wouldn't you just be able to make more energy? But I think we have to look at the mitochondria with compassion here. You've got these mitochondria that are basically tasked to process all this raw material from food into this currency of energy that you can, you can use from the yen to the dollar. I love that analogy that you use. And by giving the mitochondria. You know, 50 times more sugar in our diet than we've ever eaten in human history. That's basically saying you have to do 50 times more work and they can't do it. The mitochondria are machines that don't have the capacity to convert all that energy to a usable form of energy that we can use, which is ATP. And so what happens is that you start gumming up the system. The mitochondria become overtaxed and What are they going to do? They're going to say to the cell, Hey, stop the glucose from coming in. We cannot process this. We only have a certain amount of capacity.

And so the body to protect itself to the cell to protect itself actually is so smart and it adapts and it creates what's called insulin resistance, which is essentially saying the hormone insulin that allows glucose to be taken up into the cell, we're going to stop that signal from being transmitted. That's insulin resistance to essentially protect that mitochondria from having all that work. So what happens? Well, more glucose stays outside the cell and then you start seeing it rise in the bloodstream. And then you get to be like, Over 50 % of American adults who have prediabetes or type 2 diabetes. This is when we have the blood sugar rising to an unhealthy level. And the second thing that happens is we start to see things like triglycerides go up in the bloodstream because what's the body going to do with all that glucose floating around? It's going to convert it to a storage form. So it converts it to fat. And then, of course, that gets stored in our fat cells. It floats around in our bloodstream. It causes problems. So two of the five biomarkers of metabolic syndrome are high blood sugar, high triglycerides. And this is all really an adaptive, reaction from the cell being overwhelmed by too much glucose to process.

And I think a really important point here is that it's not just the excess glucose in the diet that is causing this problem. That's a big factor because we're eating astronomically more sugar, refined processed grains and refined processed sugar than ever before in human history. But also anything that hurts that machine of the mitochondria being from being able to flow through that glucose and convert it to ATP, is going to create essentially less throughput and it's going to, it's going to contribute to that cell needing to shut the glucose from coming in. And so, all these other factors that we've touched on, like the sleep deprivation that causes mitochondrial dysfunction and the fact that we're so sedentary and we're so under muscled. And so our mitochondria are dysfunctional from that. And the fact that we have all these environmental toxins, some of which are direct mitochondrial inhibitors, anything that hurts the mitochondria is going to contribute to that cell wanting to block the entry of glucose in because it can't process it.

So it's both the overwhelm of glucose and all the other factors that are directly hurting the mitochondria that synergistically create the situation where the cell becomes insulin resistant. And so in the body essentially blocking that, that glucose from coming in and blocking that insulin signal, the body in its infinite wisdom is like, no, no, no, we need to get the glucose out of the bloodstream. This is bad because glucose floating around causes all these other problems like chronic inflammation and glycation, sugar sticking to things in the body, causing dysfunction. and oxidative stress. So that glucose loading around is bad too. So the body's like, we're going to drive it into the cell. We don't care if the mitochondria is hurting, we're going to drive it in.

So it actually increases your concentration of insulin in the blood to try and push the glucose into the cell. And that in its own right causes other problems because high insulin in the blood, which is hyperinsulinemia, is what really contributes to things like high blood pressure. Because high insulin levels are going to block your body from being able to dilate its blood vessels properly. And then of course that high insulin is a block to that oxidation in the body because insulin is one of our hormones that says no fat burning. And then that contributes of course to us storing and keeping the fat. So at the center of so many of the problems we're dealing with in our country, like high blood pressure and excess weight and high blood sugar and high triglycerides, these features of metabolic syndrome.

The real root is at the very center of the cell. It's the mitochondria being damaged by all these environmental factors that are new and modern and are directly hurting it. Plus that overwhelm of substrate it's being asked to process, which overwhelm it and cause it to protect itself by causing insulin resistance. So you just run through the five biomarkers of metabolic syndrome. high blood sugar, high triglycerides, low HDL cholesterol, high waist circumference, and high blood pressure. And it's very easy to see through this root cause lens, how they're all directly connected back to the mitochondria. And I can tell you at Stanford medical school, I did not learn that. I did not learn how these five pillars of metabolic syndrome. are connected to one core part of the cell. We see them as sort of these interesting things that kind of go together, but not really understanding that that root cause lens. And so you need to focus, you know, our healing from the branch of the tree to the real trunk, which is the mitochondria.

SHAWN STEVENSON: Alright, so you're saying that insulin resistance is a natural adaptation of the body that we've medicalized, alright, so we've medicalized the natural adaptation instead of removing the Mountain Dew, instead of removing the Lucky Charms, instead of removing the Pepsi and the Intamins. I'm thinking about Intamins. My mom was on that. Intamins.

CALLEY MEANS: They're good. They're delicious.

SHAWN STEVENSON: Yeah, they're delicious. Alright, they're delicious. And they're designed to be like that. Alright. And consuming these newly invented food products, again, with our body, as you just mentioned, infinite wisdom, these adaptations are feedback, right? They're these little things to pay attention to. And I'm so grateful that you've mentioned how important we are in this health equation because we've outsourced so much of our health to these entities that are profiting from our ignorance and our sickness. And with this being said, if you could talk a little bit about this issue with sugar and the sugar exposure, and in particular to our kids, the advertisements you mentioned a little bit earlier. Let's talk about that a little bit.

CALLEY MEANS: Listening to Casey talk about the science that no doctor from Harvard or Stanford could tell you about, it makes me angry. And we talk about this in the book and it's one of our central premises is that. This is so damn simple. I can already see as Casey's talking, I see the knife sharpening of the evidence based bros, you know, taking the 50, 000 nutrition studies that have been created as Basically, PR for the processed food industry over the past two years, 50, 000 peer reviewed studies in the past two years have been created on nutrition fully just to basically argue things like, as the USDA recently said in a, in a study, 91 % of a child's diet can be able to process food and still be healthy. There's still studies being pumped into podcasts a day saying fructose and sugar is fine, a calorie is a calorie. That's still a very accepted and propagated idea. No matter what you even think of that or what a particular study says, it misses the point. Ultra processed food is weaponized. Ultra processed food is a science experiment.

Ultra processed food is not the free market at work. It is a rigged system where tens of thousands of scientists, as the cigarette industry 1980s, went to food companies. And you literally have food companies today as one of the biggest employers of scientists in the world. They are doing science experiments to make this food addictive and to make it not filling. And that's what we're giving to our kids. That's the problem with ultra processed food. You know, you have a lot of the evidence based bros saying, well, no, no, it's the calories. Calories have gone up in the past 30 years. Well, why have calories gone up? Because they've gone, because it's gone up with ultra processed weaponized to make us eat more.

The problem is, we know how to regulate our calories. It's like, no, no, no. It's not, the problem's not ultra processed food. The problem's, it's, they're one and the same. We're being poisoned and we're being addicted and we have a mass drug addiction crisis here. And we literally have the characteristics of addiction, denial from parents who are addicted to these foods and giving them to their kids is because they're normalized. The root of the problem is ultra processed food. In Japan, the childhood obesity rate is 3%. okay? Okay. Bye. It's close to

25% by last count here, okay? It's directly correlated with ultra processed food. Ultra processed food consumption in Japan is more than half of what it is here. It's substantially lower. In most European countries, it's actually uniquely problematic in America, right? On the road to 70%. You know, it's growing every year. It's so simple. The foundation of public policy should be firing every nutrition researcher in the country, letting go of all the corrupt USDA advisors, everyone. One policy, get ultra processed food consumption down because it's ultra processed food consumption goes down, scientists and these companies aren't able to weaponize our food.

Kellogg's, they literally were trying to take the colorings out and they did focus groups with kids and they said kids choose the, Fruit Loops with the brighter colors. They choose that. They're able to do that because they've rigged the market and they're self policing. There's no oversight. I'm a libertarian guy, but it's not the free market to let these food companies regulate themselves to put toxins on our food, the glyphosate, which is being phased out in Europe, which is still totally propagated here. Thousands of additives that are being banned or are banned in other countries.

SHAWN STEVENSON: Thousands. Right.

CALLEY MEANS: Thousands, which, which, which produce, you know, again, you have people on podcast, Oh, that the evidence on the microbiome isn't clear. These are destroying our microbiomes and causing untold impacts to our physical and mental health. That will, we will not understand for a generation, it is wrecking our society, these foreign substances. So, I think the industry likes to kind of revel and, oh no, it's this, it's that, we don't know what it is. It's not necessarily all to process food, calorie. So, if you can just attack ultra processed food, you take away these weapons the industry has to make food addictive, to put these chemicals in that make it more addictive and palatable, but hurt our health, you know, you're able to take that away. So, that's the mission we're on, that, that's what I'm talking to various candidates about, members of Congress.

And the last thing I'll just say is, I think people want change. People have, these leaders have kids. They see what's going on. They see what's happening to their health. The problem is they haven't had the confidence to speak up because they're buried in all this research and they're being lectured, you know, that they're going to be slammed for going against the medical consensus. I think after the biggest public policy disaster of our lifetime, which was the COVID lockdowns and I think rightful distrust of the medical system, I think more leaders are. Are, are finding that voice to step up. My message is, any reader of this book who internalizes the chapters that Casey's talking about on, on food and the interrelated nature of metabolic health, I'll say this very clearly.

They know more about nutrition and the root cause of disease than the graduate of, of Harvard Med School. Literally. And I'm not joking. Doctors in your medical community is not being trained on what actually causes disease. disease and, and, and you should not be bullied for speaking up to your pediatrician if you're not a doctor and saying, trust your doctor. I'm a doctor. I've got their credentials. You have done tick talk everywhere. All the nutrition. Well, I'm getting lectures from people that aren't nutritious. So why did I go to school for four years? You should absolutely have an opinion. Those people are compromised and, and, and, and we've got to be stepping up on this and, and have a voice, you know?

SHAWN STEVENSON: Yeah. Thank you for mentioning that as well, because we don't think about where the information is coming from. We just don't. You know, I went to a conventional university and little did I know that my school's nutrition program, and this is during, I went to school, the first college that I went to was 1997. All right. So the food pyramid was heavy, heavy in use. And we don't realize that these programs are getting funded by ultra processed food companies. You know, our nutrition programs are getting funding from these companies. And if you think about government policy and the lobbyists from ultra processed food entities, from the drug entities, and I shared this, you know, I've, sometimes a lot of stuff ends up getting passed around a lot, but I'll come across something that I haven't seen anyone discuss and I'll, I'll go in deep with it.

And one of the most shocking things I came across during all the chaos of the last couple of years was this report. That found that in 2020, two thirds of all Congress members received money from the pharmaceutical industry. All right. So we're talking about the, this just, this is the thing. And the point I'm trying to make is it's just how business is done. It's just normalized. And you are making a stand and saying, this is not normal. And as a matter of fact, here are some other ways that we can do this, and this is detailed in the book as well. Now I want to circle back in this conversation about pharma, for example, because you talk about something that is easily overlooked as well that just compounds the problem because we've never had more access to medication and yet we're not getting better.

And matter of fact, we're getting worse. And here's why. You talk about the impact that all of these medications that just start to pile up have on our mitochondria, right? And so in the conversation, for example, with the mitochondrial dysfunction taking place, all of this glucose coming in, And you also shared something that we don't think about very often, and I don't, you know, it's one of those aha moments for me. Our bodies tend to make this response, and I know you're just like, what is he gonna say? When we become insulin resistant, our bodies do that response. automatically, which is like, let me start churning out more insulin myself and try to force feed this into the cell. So your body does the thing that then we eventually turn to conventional medicine, metformin, or insulin eventually. Now again, insulin has its place. It

can be life saving in certain contexts. But to go to that, when your body is literally screaming to stop putting these things into my body that's creating this dysfunction.

Do you ever feel like your brain is running on low battery? Well, batteries themselves provide energy from chemical reactions that involve electrolytes. Electrolytes are minerals that carry an electric charge. And electrolytes play a major role in providing energy for your brain. Take sodium for example. Sodium is an electrolyte that actually enables your brain to maintain proper hydration. Our brains are mostly made of water. It is so important for the form and function of our brains, but we can't maintain that hydration to do all the things that our brain does without an adequate supply of sodium. Not only does sodium help to maintain proper water balance, a study conducted by researchers at McGill University found that sodium functions as a quote on off switch in the brain for specific neurotransmitters that support optimal function and protect the brain against numerous diseases. That's just one important electrolyte for the brain.

Another critical electrolyte for your brain for providing that electrical energy for your brain is magnesium. A fascinating study published in the journal *Neuron* found that magnesium is able to restore critical brain plasticity and improve cognitive function. And a double blind, placebo controlled study published in the *Journal of Alzheimer's Disease* found that improving magnesium levels in adult test subjects who were an at risk population for Alzheimer's, these folks were between 50 and 70, improving magnesium levels, was found to potentially reverse brain aging by over nine years.

Getting a functionally and structurally younger brain. Electrolytes are that important. Now, there's one company that has hundreds of thousands of data points for the optimal ratios of electrolytes. And that company is LMNT. Go to drinklmnt.com/model, and you're going to get hooked up with a free gift pack, a free sample pack with every single electrolyte purchase. Hook yourself with any of their electrolyte flavors, and you're going to get a free bonus pack. It's an awesome opportunity to get the very best electrolytes in the world. Without any artificial colors, without any binders and fillers, no nefarious sweeteners, anything like that. Just the highest quality electrolytes on the planet.

And by the way, LMNT is actually fueling athletes in every single professional sport, many professional sports teams from the NHL, the NBA, especially the NFL. Have now switched their teams over to utilizing LMNT for their team's electrolytes. Even though they might have NFL contracts to have those other brands like the Gatorades, the Powerades, the Haterades. They might have contracts to have their containers on the sidelines. But many of these teams are now utilizing the element again, go to [drink LMNT.com/ model](https://drinklmnt.com/model). And with every electrolyte purchase, we're going to get a free sample pack, head over there and check them out. And now back to the show

When we've started piling on these medications, metformin, lisinopril, and SSRI. These things are getting stacked up. What are these drugs doing to our mitochondria?

DR. CASEY MEANS: I think at the highest level, Shawn, it's like what Calley said, like, we're not in any way anti pharma. Like, there's absolutely a time and a place for medications. But the real point that we're trying to make is that so many of the medications that we're dealing with today in our country, these chronic disease medications, where the more medications we're prescribing, it's correlated with an increased rate of the condition in society. Like that's very odd. And the reason is because it's not actually getting at the root cause. It's not doing anything to improve our mitochondrial health. And in some cases, actually hurting mitochondrial health. Some of these medications deplete our micronutrient absorption in the gut. And some of these micronutrients that get blocked in their absorption, are direct mitochondrial cofactors for the enzymes that make ATP. There's other medications that can have a direct, toxic effect on mitochondrial activity. So there's indirect effects, there's direct effects, and then there's just medications that don't actually in any way improve the function.

So what they do is that they, many of these medications will turn the knobs on biomarkers in the blood that we use to characterize disease like an LDL or a glucose level without actually healing the root cause. So while we might have a picture that looks a little bit better on our blood work, the question that I invite everyone to ask is, is it actually healing my cells? Like, are my cells actually working better or have I turned the knob on some of the downstream biomarkers of that core dysfunction? And that's a difficult question, but that's a really a question that I think every doctor prescribing medication should ask is the intervention that I'm prescribing truly healing cellular function or is it turning a knob on a biomarker to make things kind of And so, you know, for someone with type 2 diabetes who is, you know, hyperinsulinemic and we're giving them more insulin, what that might do is lower the biomarker of glucose in the bloodstream because you have stuffed more glucose into that cell.

So you've hidden the glucose and the biomarker looks better and we all can clink our glasses and say, we've practiced good medicine. But did it actually cause the mitochondria to have higher capacity to process that glucose? Absolutely not. And so. That's the type of thinking that we need to think about. Like, are we hiding things inside of cells or are we actually healing the thing that's broken that's leading the biomarker to be high? And so fundamentally, when I think about the mitochondria, I'm thinking about flow. I'm thinking about flow through a system. I'm thinking about how do we get the food from the outside world into our body properly digested, getting into the cell, the substrate processed by the mitochondria into human energy that powers our chemical reactions that ultimately bubbled up into our lives. That's that flow of sort of cosmic to human energy that fundamentally is the

root of metabolism. And any medication, well, there really aren't medications that improve that process.

It's diet and lifestyle that improves that process. It's the gentle multimodal nudges that heal our cells. And so if you're a doctor. And the interventions that are being done are not for a condition that is metabolically related. If the conditions are not improving the flow through that system, they are not approaching the root cause. And I would, there is not a medication that I know of that truly fundamentally impacts that beautiful, divine, cosmic process. It's really just the choices that we make every day. that can do that. And like I mentioned earlier, like the absolute beauty of the moment we're in right now in human history is that for the first time ever, literally in the past two to three years, we have the ability as individuals to understand how those metabolic processes are working for ourselves.

Never before have we ever been able to understand for ourselves where we are on this spectrum of good energy or bad energy, where we are on the spectrum of metabolic health. But just in the last couple of years, we have the wearables revolution where you can literally see your own biomarkers in real time. We have the biosensor revolution where we have literal sensors that we can put on our own bodies to see what our blood sugar is doing, which is a metabolic readout. And we have direct to consumer lab testing. Where you can literally go online and order labs that can tell us all about this processes that we're talking about. So we've got this sort of technological advancement that gives us the ability to see inside ourselves. And we also have, I think, through the functional medicine sort of movement. The ability to understand that, you know, how we're actually feeling, how our bodies are feeling is an incredible readout for our metabolic health and that, you know, I'm, this is, I think we can attribute this to, to Mark Hyman or Jeffrey Bland, but like, symptoms are a gift.

So, you know, if your body is expressing symptoms, that is a sign that there is dysfunction in your cells. Symptoms cannot arise in a vacuum. They necessarily result from cellular dysfunction. So if you're experiencing symptoms. It's a sign to think about how are your cells needs not being met or how are they being overburdened with things they don't need. So we're in this very exciting time in history right now where we have the technological advancements to understand whether our bodies are truly healing and where we are in the metabolic spectrum and the awareness to know that. Symptoms are a gift and that if we are not feeling incredible and symptom free and limitless, there's probably work we can do to better meet the needs of our cells or unburden them with things they don't need.

CALLEY MEANS: I was just going to add, I really think, a journey for me right in this with Casey and where I'm at is we need to kill the sacred cows. We just assume that medical specialties are a good thing, that when Casey graduates from Stanford Med School choosing between 42 medical specialties to devote our life to, that's not even questioned. That's totally

wrong, siloing the body. Hearing Casey talk about drugs, I think another important point is, you know, everyone, even folks that are, you know, well on the health journey, you know, and kind of questioning institutions like us, oh, the gold standard is a, a placebo controlled double blind study, right? That's the gold standard of research. It's complete BS. Let me explain how those studies work. You talk about pharma paying off lawmakers. Pharma's also the number one payer for research. Pharma also makes, literally over a hundred million individual payments a year to doctors in consulting fees, basically bribes.

Pharma is the 75 % of funding for the actual regulatory agency, the FDA. You know, bureaucracies are built to grow. They're incentivized for that. And their funding comes from the growth of the pharmaceutical industry. And all the leaders of the FDA are just a revolving door to the pharmaceutical industry. Scott Gottlieb, you know, the former commissioner is now on the board of Pfizer. That's, that's everything. So, they're the bill payer, literally, literally the largest bill payer, single industry of politicians, of the regulatory agencies, of the research, of the media. I've talked a lot about how the 60 % of TV news funding comes from pharma, so the referee on what information, you know, comes to the American people.

So let's just go to a specific example, Ozempic. They're literally able to put people on the FDA panel reviewing obesity drugs. As paid advisors to the company that's making their, there aren't conflicts of interest. I helped pay off the, and helped do donations to an opioid panel about 12 years ago. 90 % of the opioid panel from the Dean of Harvard, Stanford Med School on down accepted money or research grants from opioid makers today. Anyone even in a regulatory capacity that's approving obesity drugs is often paid for by the drug maker who, who makes the obesity drugs. So, what do you have? They choose the game. So, we hear that weight went down briefly, you know, during a short period of time even though these are lifetime drugs being pushed on 12 year olds. Okay. So what does that mean? Well, the study didn't take, take into account muscle versus fat loss. So it's demonstrably and, and much more than usual, almost double the amount of muscle loss versus losing weight normally.

Actually many people in the studies actually technically became fatter as a %age of their overall weight because their muscle was being depleted so much. That's how, they were actually able to design the study, have the people at the FDA fine with that, not even looking at the problem, just like with stans. It wasn't that, that wasn't about heart disease. Those were, the studies weren't tied to heart disease. They were tied to one biomarker, right? So they're able to create the rules of the game, and then push from the media and the government and the whole medical industrial complex that they fund to say, you know, this is the science. We need to start questioning the, the, the apparatus of the chronic disease system. These folks are fundamentally not only not knowledgeable about the underlying connection between diseases, the, the idea that, you know, if you have a child taking

Ozempic, even if they're potentially losing weight, if they're continuing to put toxic ultra processed food in their body, how that's obviously going to result in other problems.

We have a complete lack of awareness about interconnectivity. There was no understanding of the microbiome during the Ozimbic research, that the drug literally is gut dysfunction. It causes severe microbiome issues and is now being investigated in the EU for an increase in suicidal ideation. I said that a year ago when debating a Harvard doctor on the Barry Weiss. I said this is obvious, 95 % of our teratogens produced in our gut. This Harvard doctor didn't even know that. That's just because I've read a couple of your books and a couple of the other folks, you know. I've read a couple of books, I know that. If you have IBS. Or some kind of gastrointestinal issue, you're much more likely to have some mental health problems. You, you, this, the hormone, serotonin regulates everything. It's not a joke. It's, it's like, it's every, it's everything for our contentment. And I, so I said that. I said that a year ago. I was attacked by a Harvard doctor. Oh, no, no, there's no evidence of that. That doesn't make any sense. She started crushing my credentials.

Now it's a massive EU investigation. And there's a huge increase, it appears, in suicidal ideation and depression. Interestingly, It is being aggressively prescribed to anyone on SSRI because SSRIs increase your weight. So there's now a huge movement in the mental health field to prescribe Ozempic, which then makes you more depressed. So you need more SSRIs. These are the, the game is being rigged systematically, on the pharma front, almost, almost willfully ignoring the root causes. That, fundamentally has to change the entire paradigm. This is really our argument. The paradigm of health needs to change from the siloed view where if Casey is doing surgery on somebody that had, their sinuses were so inflamed that they needed to be passed out in front of her and, and, and she had to cut out the remnants of their sinus infection that she didn't speak to the doctors who were working on their diabetes, the cardiologists working on their heart issues. The depression, the kidney issues, she didn't even speak to those doctors in the charts. It was separate, siloed conditions when it's a root cause. That entire paradigm has to change. It's a fundamental, monumental shift that we have to make in how we view chronic disease and how we treat it.

SHAWN STEVENSON: Yeah, just hearing that, it reminds me that we are not, in fact, Legos, you know, we're not just kind of separated into these different parts you put us together mechanistically. We are living, sovereign, interconnected being. And so obviously what's going on with your cardiovascular health is going to be affecting your mental health, what's going to help, impacting your arthritic condition, your gut health, the list goes on and on. You're separated into these parts and outsourced to different experts, who oftentimes aren't getting you well. And that's at the heart of this and being able to hear your perspective and your experience and putting it all together in a resource for us is something truly special. Like this book is special and I want to make sure this is one of the first major interviews you guys

are doing on this by the way, and so I want everybody to rush out and pre order this book. Make it a massive, massive hit and to help to change this. And I want to ask you, for everybody listening, what else can people look forward to in Good Energy?

DR. CASEY MEANS: So Good Energy is a guidebook for each of us to really reimagine what life can look like for ourselves, our families, our communities, and the world. And it gives you really all of the tools to understand your body in a totally different way, a much, much deeper way than the system has really allowed for us to. To feel so empowered. It's very tactical. As Calley said, we've got all the biomarkers that you need to ask for and get an order to understand what's going on inside your cells and your metabolic health. It is going through pillar by pillar, every aspect of our modern life, food, sleep, movement, stress, toxins, temperature, sleep, all of this. And really going. A philosophical framework for how to think about these things, and then also exactly how to understand where you're at and how to improve. And, and it goes deeper.

I think it not only talks about the systems issues that Calley is so brilliant at speaking about and what we can really do to encourage our system to be better. But also it really gets into the spiritual nature of this and how we need to tap into a real deeper sense of what our true nature is as humans, not just this this sort of body that the healthcare system sees us as this sort of thing that we can put stuff in and we can profit off of but really the true infinite potential of our lives as this miraculous thing this conscious beautiful being in eternity that we are and to really actually reclaim a sense of like fearlessness and empowerment in understanding more about our true nature that transcends from the cell all the way to the spirit.

And I think, you know, something that we really talk about in the book in the last chapter, which is my favorite chapter, which is called fearlessness, the highest level of good energy. The book starts with part one, which is everything is connected and it ends with fearlessness, the highest level of good energy. And I think those things, those two things are really related because I think the world that we're living in right now, the healthcare system really weaponizes our fear against us to get us to do almost anything. They have learned that if we can be really scared of life and of death, and of the world that we are so vulnerable and we are so sort of seeking any solution to our existential angst, if we are in a state of fear.

And so every system uses that against us and, there, I think that a big journey for each of us individually, and it's going to be a different journey for each person, is to find ways to create a deep, deep existential sense of safety in our minds because our cells hear every thought that we have. And if we can go on the journey of healing, of reframing, of changing our mindset to feel a sense of safety in our own bodies, which only we can create for ourselves, it sets up a physiology and a biology in our body that it's going to help us make so many better choices.

So, so really the spiritual and the empowerment side is a big part of this too. So that's what people are going to get from the book. And I think, I just want to circle back to something you said about connection. The call to action in this book is to move towards a world of connection. And it's not just connection on the level of that diseases are connected.

It's really four layers of connection that we think can heal the world and help The future of humanity and the planet. First is what we've talked about, seeing the connection between all of the diseases and symptoms we're facing in the Western world, seeing them connected by the root cause physiology of metabolic dysfunction. The second piece of connection is understanding the connection between the human body and everything else on planet earth in the cosmos, from the air to the sunlight, to water, to the food we're eating, to the microbes in the soil, and realizing that we're actually all just a big cycle that's totally connected. I love this Daoist statement. that the human body is a process, not an entity. We think we're this thing, but really we're this dynamic process constantly, you know, exchanging matter and energy with the environment through our eating, you know, absorbing the sunlight and it changing our biology. We're totally connected.

So really seeing that connection between us and everything else in the world. I think the third piece of connection is realizing that loving, trusting connections in person with other people is not a nice to have, it's fundamental for our core biology. We need to be connected in person, and loving relationships, not socially isolated for our biology to work properly. Our mitochondria literally need human connection to function properly. If they don't, they will literally initiate the cell danger response, which starts to screw up our biology. And the fourth piece of connection that we really call for is a real deep existential curiosity and inquiry about The connection between our life and death in an endless cycle through eternity. You know, we, we are so petrified of death in the Western world.

Even though it's really the only thing we can be certain of and we're so afraid of it, that it drives so many of our decisions in this lifetime to be about anything that can cause us to potentially avoid death. So we take the pills and we get the surgeries because we're just existentially petrified. And I think really meditating on the true nature of our lives and our bodies as part of an endless eternal cycle, literally in an infinite universe and, and, and meditate at the, on it the way that indigenous cultures have and, and Eastern cultures and so many other cultures except the West, the Stoics, everyone's thought about this and we just don't talk about it.

And of course death's scary, of course you want to extend life, but we are part of an eternal endless cycle of connection and we can really absorb that on the deepest level. I think we can unlock our highest levels of biology that's rooted in abundance. And that's rooted in an existential sense of calm. So Calley and I are really trying to bring in a vision of connection for

the world that has been systematically taken away from us in very recent history. And we think that that vision can really unlock thriving for both humans, but also for planetary health.

SHAWN STEVENSON: It said energy cannot be created nor destroyed. Only transformed and that original energy is coursing through our veins. It's very powerful and thank you for sharing that last part because it's something that we don't think about. You know, we're so in fear of it, but we are we're an expression of something so much greater, you know. And it's it's incredibly powerful. So that's another expression of good energy is remembering that and I really appreciate you guys for sharing the story of your mom, you know, to start this book off and, you know, just thinking about what she would say to her two kids coming together. And creating this project that's going to impact the lives of so many people. What do you think your mom would say about this?

CALLEY MEANS: We really feel like she lives with us. Casey made this beautiful point that you know, death, we, we had the fear of death. You know, our biggest fear was our mom dying and this was abrupt 13 days. And my mom, in her final days, read hundreds of notes from people she impacted. And then in her final moment of consciousness, you know, we went to the beach. We carried her overlooking where she was going to be buried. And, she hugged my dad and just said, Life was so beautiful, thank you. And, Casey made the point that, She's actually, has changed ever since she met all those letters. She, she literally lives within us because she changed our, our, our biological structure and we haven't been upset about her death.

We, we vowed in the week after she died, to devote our lives to this cause of changing health incentives. I have a young son and I really think it's existential and we have talked and, and been on this mission, are going to be in this mission for the rest of our lives and really feel like our mom lives within us. So I, I hope she'd be proud of that. And I, I just want to say kind of tying back on, on our mom, the, in addition to saying it was unlucky, it was such a movement of the medical system to fight once you get cancer. And, and Casey, after they said that she needed, aggressive interventions after the stage four pancreatic cancer, you know, 99.9% of people go, okay, and she would have died alone. In the COVID ward and Casey said, no, we're going to go home. And all the interventions went to be work, the 12 days that they wouldn't even gotten the results back. And those 12 days were the most important days of our lives. And I just, it's just a principle I want to say, you're going to fight once you or your loved one gets the diagnosis.

The medical system's great. Where the hell was the medical system in the 40 years of her signs of metabolic dysfunction? That's the big scandal in the country right now. If one time. You're going to die early if you don't intercede on the underlying root cause. Write that k th

Megilin Cesti, quite frankly for exercise or food interventions, supplement interventions. Actually talk about what's talked about in this book, which is the underlying root cause. She would still be here. This is happening to the majority of Americans when that prescription pad comes out and not the, frankly, the letter of medical necessity and the discussion of detailed dietary interventions. Americans want this. Americans want, my mom wanted to meet her grandchild. Fathers want to walk their daughters down the aisle, but they're, they're missing that more and more. We're, we're, we're, we're suffering and dying at an increasing rate. So, that's, that's how I tie it together. We don't have any anger or sadness.

Our mom lives within us. This book's not about longevity. You know, we need to savor the moment right now and, and, and, and this moment, you know, us interacting with, with other people. Is the most important moment because that can live on, you know, our mom taught us that. But, but, but we are being robbed of not being on this journey of curiosity and understanding our metabolic health. It's causing untold damage and that's what we're trying to bring forward.

SHAWN STEVENSON: Amazing. Thank you so much for sharing and, I appreciate you both so much. "Good Energy", I have an early copy. Be one of the first people to get it. Pre order the book right now. Make this a huge, huge hit. It already is going to be, but participate in this. "Good Energy", where's the best place to pick it up?

DR. CASEY MEANS: Wherever books are sold. It's everywhere. Yeah. Amazon, Barnes and Noble, your independent bookseller.

SHAWN STEVENSON: And you've got all that. linked up at what's the website?

DR. CASEY MEANS: Casey Means. com/ good energy. We'll show you all the links where you can buy it and exactly what you'll get in the book and all the information you need.

SHAWN STEVENSON: Perfect. And you can pre order on any of those sites and she's got it all there for you. Good energy. It's not just a book. It's a movement. Kylie Means Dr. Casey Means I appreciate you both.

DR. CASEY MEANS: We love you, Shawn. Thank you.

SHAWN STEVENSON: Thank you so much for tuning into this episode. I hope that you got a lot of value out of this. Again, this is a project to support in a big, big way. Head over to caseymeans.com/goodenergy right now. Pre order the book, or of course, from your favorite retailer, you can go to Amazon, Barnes and Noble online, all that good stuff. Make sure to pre

order this book. Let's get a huge wave of support for good energy to help change the landscape of health in our world today. This is a very powerful book and it's written by two very powerful and influential people. And so to support them is to support real change in our world. Our society and we need it. We need it desperately. Good things are happening, but these are the moments where you can really help to make a big wave of change. And again, I hope that you got a lot of value out of this. Share this out with your friends and family as well. You can take a screenshot of the episode, share it on our social media. Tag me, tag, Dr. Casey Means tag Calley very, very active on Instagram. I know that they will love to see the love and support.

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