

# **THE MODEL HEALTH SHOW**

**EPISODE 536**

## **Why Is Obesity The Leading Risk Factor For Covid-19?**

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**SHAWN STEVENSON:** Welcome to The Model Health Show. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today. Today, we're going to start by addressing some of the surprising characteristics that body fat can express. We know that body fat is a highly evolved system for storing excess energy on our bodies to be utilized when needed, but what happens when we begin to store too much of it, and what can we actually do to find a healthy body fat ratio? First, it's important to understand what body fat actually is in this context. When talking about storing extra energy on our bodies, that's referring to a specific fat cell community called storage fats. Now, I use the term fat cell community intentionally because storage fats, though it's dispersed at various places throughout our bodies, it functions as a singular organ.

That's right, it functions as a singular organ, interconnected with a network of nerve cells, immune cells, and our body fat composition. This community, also produces its own hormones, functioning as a dynamic complex endocrine organ. Alright. Again, our storage fat communities, again, dispersed throughout our bodies, function together as a singular organ. Now, to break this down even further, within this fat cell community, there are a couple of neighborhoods, and these three neighborhoods of storage fats are where we're actually putting our excess energy and also some other substances that we're going to talk about in a bit, in these particular storage containers, these storage fat systems. So, let's break these three down. Number one is our subcutaneous storage fats.

Now, subcutaneous fat is the fat that is just beneath the surface of our skin, and this can be the fat on your arms, the fat on your legs, on your buttocks, shoutout to Forrest Gump. And also, you can have some subcutaneous fat on your belly as well, but this is the stuff that you can pinch. And the subcutaneous fat also helps with protecting us from falls, helping with a little bit of thermal regulation and some insulation, it has other aspects as well, but again, it's a highly evolved system for us to store energy when we need it. The next neighborhood in this fat cell community of storage fats is visceral fat. Now, visceral fat is also known as an omentum fat, and this is the deep abdominal fat, so this is the fat that is deeper inside the wall of your abdomen and is the fat that is surrounding your internal organs essentially. This is a type of fat that's harder to pinch, again, it's deeper, it's a little bit more firm to the touch, and this is also the fat that's more well noted to dramatically increase our risk of chronic diseases.

So, we're looking at, when our visceral fat ratio is increasing, we're seeing higher rates of insulin resistance, that's one classic sign when someone is carrying more weight or expanded waistline is, this is a sure sign that we're developing insulin resistance. So, it also increases the risk of cancer, increases the risk of diabetes, obviously, that's tied to insulin resistance, heart

disease, dementia, the list goes on and on. So much is correlated to our waistline and the development of visceral fat, but we have visceral fat for an important reason, again, we evolve this important system to be able to store energy for when we need it. Now, we're looking at today, again, what happens when we store too much of it, but first, we've got to keep digging and understand what we're actually dealing with here, so visceral fat. Now the third in this neighborhood of storage fats is something called intramuscular fat. Intramuscular fat.

Now, all three of these subcutaneous, visceral, and intramuscular fat, are in this category that's also known as white adipose tissue. Now intramuscular fat, it is kind of indicated by the name, which is operating directly in tandem with your muscle. If you want a visual of what intramuscular fat looks like, think about the marbling of a steak alright. Now, intramuscular fat is used as on-site energy for our muscles. When I was in my university class, talking about this particular subject matter, looking at how the body stores and burns energy, I was indoctrinated with an idea that muscle and fat are really dichotomous, they're operating on two different systems, you want to build muscle and burn fat, but in reality, these two systems are working together. In truth, everything in our bodies are working together, but our muscle and fat have an actual intimate relationship.

Again, specifically, we look at something like intramuscular fat, being able to feed our muscles, provide on-site energy for our muscles to do all the stuff that we need to do to express movement. So, it's pretty important. Now, we can have an excess storage of intramuscular fat as well, and you might have this concept or this connotation of "chubby muscles". Alright, so if we're talking about this community, this fat cell community, the various neighborhoods of storage fats. Now, there are other fat cell communities that include brown fat and beige fat, which we'll talk about later, and also structural fats that give our cells and tissues shape and structure like those found in the brain. But another strange type of visceral fat that isn't often talked about, and it's especially important for this episode today, is something called epicardial adipose tissue, or visceral fat of the heart. We tend to think of the heart also as a muscle or cardiac muscle, to be more precise, but the weight of a healthy human heart is made up of about 20% fat.

Now, epicardial fat covers about 80% of our heart's surface and has some critical roles in heart health, such as providing on-site energy for the heart, supporting thermal regulation, and aiding in inflammation regulation. This is critical. Now, epicardial fat is comprised of adipocytes, nerve tissues, vascular and immune cells, very much like the other fat cell communities. Now, epicardial adipose tissue, and that acronym, epicardial adipose tissue is EAT. Our epicardial adipose tissue is a metabolically active fat depot, particularly abundant in pro-inflammatory cytokines. Now, this is very important. I want you to remember this. Again, our epicardial adipose tissue, the visceral fat of the heart, is a metabolically active fat depot, a storage system, particularly abundant in pro-inflammatory cytokines. Again, we're going to

come back to this later. And I want you remember that. Now, let's look at what's going on when these storage fats begin to grow excessively. Well, it's important for us to know first and foremost that growing extra body fat or a fatty heart is not a result of haphazardly creating new fat cells. We're not just creating new fat cells on our belly or on our heart, for example. We're not just creating new fat cells.

That's a little bit of a misconception. What's actually happening when body fat grows is that the fat cells themselves are growing. In fact, fat cells can actually expand their volume more than 1000 times their normal size. Okay, now, I'm going to repeat that. Our fat cells can actually expand their volume more than 1000 times their normal size. Nothing else does that in the human body. And in the Marvel Comics Universe, this would be like Ant-man pushing the button and becoming Giant-man. Or I respectfully use this analogy, it's like a trash bag getting filled with contents, because a trash bag, if you think about it, even in its packaging, it starts off as this sort of compact thing with a lot of plasticity and room to grow. And so, as that trash bag is getting filled up, getting filled with contents, and the trash bag has a certain capacity, and it's going to keep expanding and expanding and expanding, depending on the quality of that trash bag as well, we can get to a place where it's pretty sustainable. But we can also get into a place where the trash bag starts to have breaks in, it starts to have leaks. Or maybe you're trying to tie it together or lift it somewhere and move it around, and it's more fragile, and you start to get stuff coming out everywhere. And it gets into a place where stuff gets a little bit nasty.

Now, this is a specific analogy that I'm utilizing here as we start to venture into new domains of science today, looking at leaky gut, looking at leaky brain. And also, just cellular activity where there's leaks or breaks happening, and things are getting in places where they're not supposed to, specifically, the toxins that our cells could be carrying. And we're going to talk about that more in a moment and specific peer-reviewed evidence that we have on this subject. But to finish off this fat cell growth mechanism, fat cells grow as they're being filled with excess energy in the form of triglycerides, okay? Triglycerides. This is three fatty acid molecules attached to a single glycerol molecule. Again, triglycerides. Now, here's where all of this gets really interesting. Fat cells are not just packed with triglycerides. They're also used as a growable storage depot for things like persistent organic pollutants and other toxicants. According to a study published in the peer-reviewed journal, *Comprehensive Physiology*, the lipophilic nature of newly invented environmental chemicals leads to the bioaccumulation of them in our fat tissue. Lipophilic, with lipo meaning fat and philic meaning loving, denoting what compounds are drawn to bind with.

So, these persistent pollutants, these chemicals that are released into our environment have a fat-loving capacity to them. They're drawn to bind with fat. When we gain excessive weight, we literally become a magnet for environmental toxins. The researchers have noted that PCBs,

PBBs, and other industrial chemicals are incredibly resistant to biodegradation, and they readily find a home in our fat cells as our body fat levels expand. Now, this is an incredibly concerning issue today because it's estimated that 10 million, 10 million new chemical compounds are being unleashed into our environment each year. Again, 10 million new chemical compounds. A recent study published in the journal, *Frontiers in Ecology and the Environment*, states that the research community is falling woefully behind in studying the chemicals, pesticides, pharmaceuticals, and other novel concoctions discharging into our air, our oceans, our waterways, soil, and the food chain.

The truth is conventional science has no idea what all of this new chemical exposure is doing to us. We have no idea. 10 million new chemical compounds released into our environment every year. And wondering again, what's happening with humanity? Why is our health in such a tragic place? Could this be playing a role? You already know the answer to that. What is it doing to us? What is it doing to our planet? Just on the topic of pesticides alone, there are more than 34,000 pesticides derived from 600 synthetic chemicals that are registered by the EPA as safe to use in our country. 34,000 pesticides. It's unbelievable. That's the Environmental Protection Agency, by the way. It's supposed to be protecting the environment, which we are a part of the environment.

In addition, there are also 85,000 more chemicals that are regulated separately under the Toxic Substances Control Act. They're supposed to be controlling this stuff. But again, science is so far behind, unable to keep up with all the new chemicals that are getting put into our environment. And our fat cells are just... Especially as our fat cells, our body fat is expanding, we just become a reservoir. We become a sponge for these environmental chemicals. Now, circling back to how our bodies are handling this immense exposure, our fat cells sequester a significant amount of these toxicants. And this is one of the issues with fat cells contributing to inflammation. But there's also the issue of the excess fat itself inciting an inflammatory immune response.

I'm going to share this information with you directly for my best-selling book, *Eat Smarter*. In it, I state, "Scientists from the Methodist Hospital in Houston, Texas unveiled concerning new research published in the journal, *Cell Metabolism*. The report established that when it comes to excessive inflammation and fat storage, the fat cells themselves are at least partly to blame."

"We've established that inflammation is a natural response of our body to injury or infection. And even though your fat cells may be in good working order, when they are overburdened, they appear to issue false distress signals that send your immune cells into a tizzy. The study found that fat can trigger heightened activity with your immune system. And too many over-filled fat cells can make your body think that you're infected."

“This is yet another way that body fat can become a vicious circle of inflammation and more fat storage as a result. The lead investigator, Willa Hsueh, MD stated that, "(Your fat cells are) doing the thing they're supposed to do, storing energy, but reacting negatively to too much of it." This again, stresses our need to implement methods that reduce body fat and reduce inflammation collectively. Managing inflammation is like playing with fire. We need just enough to keep your house warm, cook, and keep everything running, but when it's in excess, it can quickly burn your metabolic house down." Now again, this is a segment taken directly from my book, Eat Smarter. And this leads to the great issue that we're facing today. Our already inflamed cells and organ systems are facing off against an infectious disease that adds an even greater inflammatory response to the mix, creating a metabolic mess. An absolute metabolic fire. That metabolic house is getting burned down. It's not at all a surprise for researchers who are actually following the decades of data that we have on metabolism, inflammation, and infectious diseases.

So, here's where we're at currently. A recent study that was published by the CDC, analyzing COVID-19 hospitalizations and severe illness from over 800 US hospitals and over 540,000 citizens who contracted COVID-19. What the researchers uncovered was that the biggest risk factors for hospitalization were, number one, hypertension, which is related to the heart and cardiovascular system, which visceral fat of the heart plays a direct role in. So that was number one, hypertension. Number two, disorders of fat metabolism. There's that word again, metabolism. And number three was obesity. Again, these are the risk factors for hospitalization, but the CDC reported after analyzing these 540,000 test subjects, the strongest risk factors for death from COVID-19 were number one, obesity. It was a clear risk factor repeatedly in multiple arms of this study and many others as being, again, the number one risk factor for death from COVID-19.

The second leading risk factor reported in the CDC study... I want to encourage you to check out the video of this episode so that you can see all of these studies on screen for yourself and go along with me. But the second leading risk factor for death in the CDC's report, risk factor for death from COVID-19 was anxiety and fear-related disorders, which we covered in-depth on episode 506, so make sure to check that out. That's right, anxiety and fear-related disorders were the second leading risk factor for death from COVID-19, analyzing the data from 800 US hospitals and over 540,000 COVID-19 patients. Now, the third leading risk factor for death from COVID-19, the third leading risk factor was diabetes. Again, heavily related to metabolism. Now, this study is mirroring many other studies that are demonstrating the dangerous connection between obesity and COVID-19. And in this episode, we're going to actually detail what's happening. How is this happening? How is obesity actually leading to worse health outcomes?

But just to dig a little bit deeper here in the data, demonstrating the outcomes of obesity in relationship to COVID-19, this is another study published by the CDC that a lot of folks don't know about, and this was done on healthcare workers. Now, this is a population with notable exposure. And still, what the data shows is that all people were not affected equally. In fact, the numbers weren't even close. A meta-analysis published by the CDC found that 90% of healthcare workers hospitalized with COVID-19 had at least one underlying chronic condition, with obesity being the most prevalent. Again, 90% of healthcare workers hospitalized with COVID-19 had at least one pre-existing chronic disease, obesity being the most prevalent.

Among healthcare workers hospitalized with COVID-19, nearly 75% were obese. Many of the healthcare workers, again, had two or more pre-existing conditions with hypertension and diabetes rising to the top as well, in addition to a plethora of other conditions. Now at this point, let's take a look at some of the mechanistic drivers of COVID symptoms in the presence of obesity.

A new study published in The Journal of Infectious Diseases titled, Clinical, Immunological, and Virological SARS-CoV-2 Phenotypes in Obese and Nonobese Military Health System Beneficiaries. This is a data set taken from folks who are military family members and the like, were utilizing military health system benefits, and also, of course, some folks who are in the military as well. And the researchers stated, "Obesity has been associated with a higher level of ACE2 receptor expression, the membrane-bound host cell protein that mediates SARS-CoV-2 attachment and entry into the cells. Some posit that this difference in ACE2 receptor expression may potentially lead to higher SARS-CoV-2 viral loads among obese individuals."

Now, the study results found that, yes, some populations of obese patients did in fact have higher viral loads than normal-weight patients. And the researchers stated, "We also observed that obese or severely obese participants had a higher immunoglobulin G antibody response compared to normal-weight participants," and this could indicate an excessive immune response, an abnormal immune response, or even an insufficient immune response. So, this is starting to give us clues as to why we see, consistently in the data over and over again, worse health outcomes, when we're experiencing a state of obesity, being overweight, when it comes to this infectious disease that has gripped our world. And this is yet another study, the one that we just covered, in this study again, the researchers found that nearly 75% of the COVID-19 patients were overweight or obese.

Now, let's start tying all this together and take a look at the data that we have on the other type of visceral fat, the visceral fat of the human heart in relationship to COVID-19. In a study titled, COVID-19 and Obesity: Role of Ectopic Visceral and Epicardial Adipose Tissues in Myocardial Injury, published in the journal, Frontiers in Endocrinology has researchers sharing the following findings. One, obesity was found to be associated with chronic low-grade

inflammation, immune dysregulation, and over-expression of pro-inflammatory cytokines. Two, the role of excess white visceral adipose tissue in individuals with obesity seems important as a viral reservoir for SARS-CoV-2 via the ACE2 receptors. Three, in obesity systemic viral spread, entry, and prolonged viral shedding in already inflamed adipose tissue may spur immune responses and subsequent amplification of a cytokine cascade causing worse outcomes. More precisely, visceral adipose tissue, more than subcutaneous fat, could predict intensive care admission.

So, they were able to predict who's going to end up in intensive care based on their visceral fat levels. And four, epicardial adipose tissue could fuel COVID-19 induced cardiac injury. I'm going to repeat that. Epicardial heart fat, epicardial adipose tissue could fuel COVID-19 induced cardiac injury and myocarditis, and extensive pneumopathy, which these are diseases of the lungs, by strong expression of inflammatory mediators that could diffuse through the vascular wall. So, we know now that SARS-CoV-2, COVID-19 has this tropism for lung tissue, for the cardiovascular system, but more specifically in targeting the endothelium. So, what we're seeing here is that with excess visceral fat of the heart is dramatically increasing the risk of myocarditis and other cardiovascular issues and lung issues as well, lung diseases as well.

Now, at this point, we're ready to take the next step in understanding how obesity is creating such a tragic susceptibility to COVID-19. This issue is not getting addressed. No one is actually stepping up and saying, "Hey, this issue is taking place, here are the mechanisms behind it, and here's what we can actually do about it." But for you being an empowered citizen at this time, more than ever, getting this information in your hand, sharing it and applying it, this can be absolutely lifesaving. Now we've already denoted how carrying excess weight is inherently creating a pre-inflamed state in the body. And also, we denoted how the data is expressing, how we see a prolonged viral shedding when we're carrying excessive body fat. We're seeing issues with a higher viral load. These are all components.

Now, to give a simple example, based on the data we've already covered, what happens when we're in a pre-inflamed state when our fat cells are setting off an immune response, sending out this distress signal and we have this state of chronic inflammation already taking place in the body, and then we are exposed to a virus, to a pathogen, to an infectious disease that spurs about a proinflammatory response as well, which it's not the virus that creates the inflammation, it is our body's response to the virus, that's the key. What if the immune system is already over-burdened, it's already dysfunctional, and now we have this viral infection to deal with? We are literally just creating the foundation; we're creating the scenario where our body fat is loading the gun and then COVID-19 can come into the picture and pull the trigger.

And so, this is already setting the foundation. Now we're going to take this another step, because there's another important dynamic that you need to know about, and it's this field of



science looking at something called immunometabolism. Immunometabolism. There are two primary aspects to understanding the subject of immunometabolism. One, analyzing immunometabolism from the micro-perspective. Immunometabolism describes the changes that occur in intracellular metabolic pathways in immune cells during activation.

In essence, our immune cells rely on very dynamic metabolic pathways to operate appropriately. Whether it's in the context of minute-to-minute management, and maintenance, responding to injury or facing off against pathogens, the metabolic health of our immune cells will ultimately determine their effectiveness. So, we're talking about the metabolism of the immune cells themselves. So that's one aspect.

Now, the second aspect, analyzing immunometabolism from the macro-perspective. Immunometabolism then describes how the health and metabolism of the individual overall controls the functionality and efficacy of their immune system. Obesity/poor metabolic health leads to significant dysfunction in energy production. And you need energy for cellular function, you need energy for immune cell function. Every cell in your body, specifically right now, is of the utmost importance is our immune cells, they require energy, and without adequate energy, those cells struggle to perform even at substandard levels.

So, these are the two aspects of immunometabolism. One is the micro aspect, looking at the metabolism of our immune cells themselves, so this is critically important. Our immune cells, they have their own metabolic function. And then the second aspect of immunometabolism is looking at the health of the individual overall and understanding that if energy is being siphoned to deal with this chronic low-grade inflammation, to deal with the constant processing of abnormal food, and the constant processing and storage of abnormal toxicants in our environment, it's just requiring... So much energy is getting siphoned away from the energy that could be used by our immune system, our immune cells to mount an appropriate response. This is starting to pull away the cobwebs, it is starting to part the clouds, and us being able to see clearly why is obesity creating this mighty susceptibility in the context of COVID-19.

Now, one other aspect of immunometabolism that's noted in the peer-reviewed evidence is that gaining excessive body fat causes genetic alterations that can derange the body's immune response. Again, gaining excess body fat literally creates genetic alterations that derange the body's immune response. This is an epigenetic influence that's changing the expression of our genes and shifting how our immune cells are even operating in the first place overall, globally within our system. So, this is really powerful. So, this field, this understanding of immunometabolism is really coming to the forefront if we're starting to understand how obesity is such a risk factor in the context of COVID-19.

Now we've got to address this issue head-on. This is the worst part of all of this. Obesity rates have already been the highest in recorded human history here in the United States, prior to COVID-19 even being in existence, being a part of our lexicon. It's already well established that here in the United States over 240 million of our citizens were overweight or obese prior to these pandemic times even taking place. Again, 240 million US citizens being overweight or obese. Our rates of obesity, our rates of chronic disease are higher here than anywhere else on planet earth than anywhere else in recorded human history. And this is not a good trophy to prop up. This is not something we want to celebrate and be happy about, except in the context of, we can also be the solution. Because things are so bad here that we can demonstrate what's possible when we turn these things around. And I believe that we can do it.

Now, this was prior, again, to the pandemic taking place, and the worst part of all this is that things have gotten substantially worse due to the social and economic shutdowns related to COVID-19. One study published in the Journal of the American Medical Association tracked about 300 people for several months over this pandemic and found that people were gaining about a pound and a half additional weight each month. Alright. And this is just one, there's so many studies that are being done and tracking this information. I just felt this one was interesting because it's looking at a specific monthly increase in weight over these pandemic times. So, that can add up rather quickly.

So, you put that in the context of one and a half pounds accumulated each month over the course of 10 months, 12 months, 15 months, but most alarming for me, and what we have some of the best data on, is what's happening to our children. Here in the United States since 1980, the obesity prevalence among children and adolescents has almost tripled, again, prior to COVID-19. Since 1980, the rates of obesity in our children have tripled. Today, nearly one in three of our kids are overweight or obese. Now, according to the CDC, the rates of childhood obesity took an enormous leap during the pandemic. Their study detailed how severely obese kids expected annual weight gain increased from 8.8 pounds, before the pandemic, to 14.6 pounds.

And in moderately obese kids expected weight gain of 6.5 pounds went up to 12 pounds, nearly doubled. Nearly doubled in this short time span. And even children who are noted to have a healthy weight prior to the pandemic, saw their annual weight gain increase from 3.4 pounds to 5.4 pounds. Now, the superficial mindset can say, "Hey, it's alright, we can fix that later. What they went through was a temporary thing", but they're negating the signs around recidivism and how our weight accumulation during childhood and as adolescents then is the launching pad for our weight, for our metabolism, for our health state, our prevalence towards chronic diseases later in life, once we get into our 20s, 30s, 40s and beyond. When we're accumulating this kind of weight, excessive weight gain as children, it makes it exceedingly more difficult to

lose that weight as we get older. Many people have experienced this, firsthand, but now it's at an epidemic proportion.

So, we're setting our children up for a lifetime, oftentimes of struggle because they're not getting this kind of education. But again, I'm a firm believer that we absolutely have the power to turn this around. Me being very science-minded, I have to open the door for miracles to take place, it's going to take a miracle, it's going to take a miracle for us to turn this around, but I believe that we have the capacity to do it. We've got to get this education. We got to say, "Enough is enough, this is not okay. Look what we're doing to our children. Look what we're doing to ourselves, which makes it easier to do this to our children. Because we're not in a good state of health". And so, looking at these numbers, we can just... If we just take a rational, logical perspective, something is wrong, something is severely wrong here in the way that we're handling this situation. Because not only is obesity the number one risk factor for death from COVID-19, but now we've made obesity far worse in our society.

How does that even make sense? And what we're doing is we're taking a superficial treatment approach in this, as we've continued to do, having pharmaceutical interventions, and not addressing the underlying susceptibility that's going to make a susceptibility to this virus and all future viruses because this is not the last time, making us more susceptible... Now, we're not just susceptible to this particular virus, we're more susceptible to death from everything because our health is getting worse.

One of the overlooked results that has taken place in 2020 with all the shutdowns, with all the changes that took place, with... Under the guise of protecting us, was the dramatic increase in deaths from heart disease that is simply not getting talked about. On average, we have about 630,000 folks die in the United States from heart disease each year, which is terrible. But that number jumped up to almost 700,000 in 2020, and you don't hear a peep about it. We've successfully made our society sicker. We've successfully made our society more susceptible to all manner of infectious and chronic diseases with how we've handled this, and we're still not addressing how do we get our citizens healthier. But this is within our power.

We are going to take control of this ourselves. We are going to improve our own health, the health of our families, then out-picture that to the people around us. We can influence influencers, we can lead leaders, and we're going to do this by being the example, by being the model. So, at this point, let's dive in and talk about what are some of the simple actionable things that we can do to shift this body fat ratio, to shift this issue with obesity?

Simple. Again, clinically proven things that we can do right now to start to make a change. Number one, we've got to look at what is the biggest ingredient in our excessive weight gain that we've seen as a society in recent decades. Well, according to the Journal of the American

Medical Association, the number one contributing factor to our nation's epidemics of chronic diseases, heart disease, obesity, diabetes, and the like, the number one contributing factor is poor diet. We've got to remove the cause. But let's not go and just try and say, This food's bad, that food's good. Let's talk about a guiding principle. We don't have to be all or nothing. Well, let's talk about a guiding principle that we can use right now to positively shift our body fat ratio, dramatically decrease our susceptibility to high viral loads, to improve this category of Immunometabolism, putting things in our favor.

Number one, in the diet context, is taking on an insulin-optimizing diet. We talked about how diabetes is a major contributing risk factor, and obviously, diabetes is a major role player, they go in tandem, there's this term diabetes, diabetes, and obesity. So, helping to optimize and improve what's happening with insulin, because insulin is our body's major driver, it's kind of our major key in opening up our cellular doors to be able to store energy. Alright.

So fat cells are getting filled with content based on the activity of insulin, alright. Now, we can get into this place where insulin has been so busy, it's getting worked so hard because of things that we're bringing into our bodies via just absolute bombardment with the glucose, for example, that insulin starts to sleep on the job, that insulin starts to become more resistant to, one, production or, more likely, in many cases, it's getting produced, but the cells that... Those receptor sites for insulin become resistant to its signal. And this is what happens when we're constantly bombarding our system with things that get our blood sugar very high because insulin is just doing what it's designed to do, our body is doing what it's designed to do, it's helping to clear and clean our blood, get that glucose out of our bloodstream, because truly if we have high blood sugar, it can tear stuff up in our circulatory system. I liken it to having shards of glass, like a lot of pieces of glass that can easily kind of get vacuumed up, if it's a little bit, but if we have a lot, it can start to really tear stuff up, especially those smaller capillaries, and this is why we see side effects and symptoms related to diabetes, like vision loss, we start to see neuropathy, we start to see issues with folks getting things amputated because of that circulatory system getting damaged.

What can we do to help to address this, to shift our body fat ratio, to improve our insulin sensitivity, is having an insulin-optimizing diet? Number one, the clear indicator here is simply reducing the carbohydrate load. A recent study published in the Journal, Cell Metabolism, had overweight test subjects with high levels of liver fat, reduce their ratio of carbohydrate intake without reducing calories, and here's what happened after a short two-week study period, the subjects showed, "Rapid and dramatic reductions of liver fat and other cardiometabolic risk factors." Again, without reducing calories, they made a positive alteration in their metabolism. So, we're not getting into the calorie conversation, we're just talking about insulin-optimizing diets, reducing that carbohydrate bombardment. Particularly, we're not talking about real whole foods, the carbohydrates seen in starchy vegetables like potatoes, for example, or non-

starchy green leafy vegetables or low glycemic, high quality antioxidant-rich berries and things of that nature. We're talking about the white stuff, we're talking about that cocaine, we're talking about sugar, we're talking about that stuff, we're talking about highly refined carbohydrates, these hyper-palatable, heavily processed foods, the stuff that I grew up with.

Alright, I grew up with Ramen noodles. I'm talking about that's a meal. And so, I actually just took my son to a soccer practice the other day, and there was three packs of Ramen noodles just sitting on a random bench, and part of me wanted to get up. It is that old me was in there. We used to take Ramen noodles to school. Alright, but not like what you think. We're not like putting them in the microwave at the... We didn't have it like that. I was in the free lunch program. My school... I was in... I was not in a good neighborhood. What we would do is take the Ramen noodles and put them into a plastic baggy, crunch them up, like smash them up, add the seasoning in and just kind of shake the bag up and just nibble, just like a little, put your hand into the bag and nibble on that all day. That's what we did. And we would also take packets of Kool-Aid or Flavor Aid because again, we're broke, and we would add sugar, put it into a bag and just lick on that through the day. I didn't personally do that one. Okay.

But the ladies did, the young girls in my school, my elementary school, they had that more... More of a tendency to do that, some of the fellows too, but having the sweet stuff... Literally, that's crazy, right? But these are the things we were doing. Not to mention the penny candy, \$1, 100 pieces of candy, the crazy chips, the Lays, the soda, the Vess soda, that was my jam. Where I'm from, strawberry Vess, grape soda, the orange Sunkist, these are all things on a regular basis, the fast food, I'm just inundated with these things in my environment. I don't know any better, and so I'm bombarding my system with all these heavily process processed, high glycemic insulin-deranging foods, and it's not an accident that the majority of my family members growing up were obese.

But this doesn't mean that they're not good people or smart people, we just didn't know. This is what we were exposed to in our environment, and so helping to improve exposure, it's our responsibility to change, but the key is we have to be aware that change is possible, we have to be aware of what change actually looks like. Let me be clear, because in my mother's mind when she was wanting to lose weight, in her state of obesity, she got the McLean burger, this is when McDonald's came out with the McLean, trying to do better, diet soda, it's the marketing leading to a dysfunctional belief about how do we actually get to health, slim fast. I learned... I saw my mom doing it, never quite getting the results that she was looking for.

So, number one, we want to avoid these crazy highly refined, should be borderline illegal, maybe get on the black market, that's where we should be getting the Chocodiles, and the Twinkies and the honey buns that I was eating, that should be some black market stuff, to be honest. No, in reality, we can still engage with some of these foods from time to time, it's not

about just black or white. Ideally, we wouldn't have immense exposure to those things and being conditioned to think that those foods are normal, but we want to avoid those things, for the most part, integrate and bring in higher quality, real whole food sources of carbohydrates, we're not creating a villainize situation, we're not making carbohydrates into Willem Dafoe, Green Goblin. We're not doing that, what we're doing is helping to shift this ratio to an insulin-optimizing diet, and the other part of that equation is optimizing protein. A study cited in the American Journal of Clinical Nutrition revealed that simply lowering study participants' ratio of carbs and increasing the ratio of protein without changing calorie intake led to higher levels of satiety, a higher resting metabolic rate, and higher levels of fat oxidation.

What's happening is that shifting this macro-nutrient ratio is creating a shift in thermal regulation. There's a thermic effect of food and including more high-quality protein, and this isn't about having a high protein diet, this is optimizing that protein ratio, which is going to be unique to you, is increasing that thermic effect, because processing and breaking down protein into usable amino acids, not only are these amino acids utilized for everything, from literally building your immune cells to building your hormones. Your hormones and neurotransmitters are literally made from these amino acids, not to mention your skeletal muscle, the list goes on and on. So many things are getting utilized. This is why your body is breaking these down into usable components and shipping them all over the place, so it's creating this kind of metabolic power by, again, optimizing protein and creating an insulin-optimizing diet overall.

Another study, this was conducted by researchers at St. Louis University, in my hometown, and published in the International Journal of obesity, and it sought to discover what happens with fat loss when you eat a high carbohydrate breakfast, which in this instance is a bagel, versus a high-protein/high-fat breakfast, which in this context is eggs. When the calorie count of each of the meals is exactly the same. Okay, we got the carb breakfast, bagel, protein fat breakfast, eggs. The researchers did have a study participants decrease their overall caloric intake by 1000 calories a day in this particular study, but they had different people to use different macro-nutrient ratios just for the first meal of the day.

And here's what they found after the eight-week study period. The study participants in the lower-carb breakfast group showed a 61% greater reduction in body mass index, they showed a 65% greater weight loss, a 34% greater reduction in waist circumference and a 16% greater reduction in body fat percentage. It's very difficult to explain with common language how remarkable that is. Making a shift in one meal, that first meal of the day, and just shifting the ratio, because again, the two meals were the same amount of calories, but the makeup, the their macro-nutrient makeup... And also, you can lean into the fact that the bagel is a more process-refined form of those carbohydrates. There's a shift that's taking place in the metabolism that's not accounted for simply by looking at the domain of calories. These studies

are actually getting pulled from my book *Eat Smarter* as well. So, it's a great resource to highlight these simple clinically proven principles, and then we also demonstrate how to apply these things in a comprehensive fashion.

Now, we're just touching... Again, I just want to hit some simple principles as far as nutrition, and the principle here is creating an insulin-optimizing diet. Now, part of the reason protein appears to be so effective is, it is beneficial in changing our brain. That's right, researchers at the University of Kansas Medical Center used fMRIs and discovered that adding in more protein, specifically for that first meal of the day literally decreases the signals in the brain that stimulate appetite and lead to overeating. Pretty powerful stuff. Just make some conscious shifts, let me add in a little bit more protein, a little bit less carbs in the morning, and extract some of these benefits alright.

Now, for the average person here in the United States, wow, what changes they can make here. If we're really optimizing things for ourselves, this might just be a small tweak, but my breakfast for decades of my life was based on carbohydrates. I'm having cereal, I'm having bagels, I'm having donuts, these are the foundational things. Muffins, when the mini muffin was invented, I was there. And I'm literally starting my day with this derangement to my blood glucose, my insulin levels, glucagon, all the resulting things from that. And the body is resilient, this is part of the reason that we develop, and our fat cells have this capacity to grow a thousand times their normal value, is that the body is so adaptable. It's just trying to do whatever I can do to keep us healthy, to save us, to help us to survive. It's just very good at it, and if we don't change what we are instructing our body to do, then we're just going to continue to see the onset of the issues that we're experiencing right now as a society. Now also, in addition to optimizing insulin for ourselves, we also want to bring in dense micro-nutrient sources, because this is a huge key here, in this battle that's taking place, in this epidemic that's taking place in the domain of obesity in our society, is that listen to this, chronic nutrient deficiency leads to chronic over-eating.

Chronic nutrient deficiency leads to chronic over-eating. We are hard-wired, deep, primitive programming. Our genes expect us to derive specific nutrients from our food. This is... Put them in the category of what we call essential nutrients, these are things that our bodies can't make. We have to get them from the external world. And we have deep psychological, physiological programs that drive us to seek out food in order to get these nutrients in our bodies, but that association... We might have a certain craving in a natural environment, a certain craving for a certain food. And as we evolved, certain foods, we created this post-ingestive feedback, when we would eat certain food, our biology would take notes on what nutrients we can get from those foods, and we'd seek those out when we need those nutrients.

Today, that association has been... Somebody's taken it and put it into a shaker bottle, a dirty shaker bottle that's had some whey protein in there for a week, and it's already stinky and nasty, and then taking and putting it into that bottle, shaking it up, that's kind of the situation we're dealing with as far as our association with our body's understanding where to seek out nutrients when we get hungry. When that hunger pang happens and our body is wanting sulfur, it's wanting magnesium, it's wanting vitamin C, it's wanting vitamin A, we don't know where to get that stuff from anymore, just from a pure, deep intuitive connection because we're so inundated with processed foods. And this is where we need to be proactive in getting our micronutrient needs met, and also there are specific key antioxidants, key anti-inflammatory nutrients that can aid in this process of shifting our body fat ratio, but also creating an increased resilience to infectious diseases.

Now, this study just blew me away. I couldn't believe it when I saw this. This was published in the peer-review journal, Gut. The researchers gave mice a terrible diet of processed fats, high fructose corn syrup they're just giving them the worst stuff, the worst of the worst that would normally make the mice obese and... Listen to this, and make the mice develop immunometabolic disorders. But when the mice were fed Camu Camu berry along with their diet, it prevented excess weight gain, lowered fat accumulation, and blunted metabolic inflammation. The Camu Camu berry led to improved glucose tolerance, insulin sensitivity and also fully protected against excessive liver fat development.

Now, listen to this, this is the most remarkable part, they also found that Camu Camu berry led to an upregulation inactivity of brown adipose tissue. What? How? That's incredible. This particular food created a shift in the ratio of brown adipose tissue to white adipose tissue. So, we talked about these fat cell communities, we've got white adipose tissue being a fat cell community that stores energy with brown adipose tissue being in a community that burns energy. It has this well-documented thermic affect, so need I say more, this superfood has centuries of documented use and now, studies like this more and more are coming out demonstrating its remarkable benefits for human health. Camu Camu berry is the number one source, botanical source of vitamin C ever discovered. And vitamin C is obviously a major player right now in the immune system function, but what's the actual mechanism? That's what we're talking about today. We're talking about mechanisms. Well, here's one of them. A major part of vitamin C's benefit is the reduction of infection-oriented inflammation.

A recent study cited in the journal, PharmaNutrition, investigated the impact of vitamin C in relation to the cytokine activity associated with COVID-19 and found that vitamin C is effective by inhibiting the production of cytokine storms. Come on, this is a no-brainer to add to our repertoire right now, for the benefits with our metabolism and also improving the function of our immune system directly.



I combine Camu Camu berry along with amla berry, another one of the most potent sources of vitamin C and amla berry demonstrates the same anti-inflammatory performance, specifically in the endothelial cells, and we know that COVID has its tropism for endothelium. A study published in the Journal, Diabetes, Metabolic Syndrome, and Obesity found that Amla berry, significantly improved endothelial function and reduced biomarkers of oxidative stress and systemic inflammation in patients with type 2 diabetes. This is one of the greatest susceptibilities. We've got mountains of data, this already exists, demonstrating without crazy side effects, simple things that we can do to improve our health and our resilience. Now, the Essential C Complex that I utilize is amla berry, Camu Camu berry, and acerola cherry, my three favorite vitamin C then superfoods, and it's in one source, the Essential C Complex from Paleovalley. Go to [paleovalley.com/model](http://paleovalley.com/model). They're also going to hook you up with a 15% off. No binders, no fillers, all organic. I roll with them because they do stuff the right way, and it's one of the things that I regularly utilize because of these remarkable benefits. It's just... Again, it's a no-brainer. So, this is something you definitely want to add to your superfood, repertoire, the Essential C Complex from Paleovalley.

Now, there's some other ways of positively alter this brown fat, white fat ratio, and one of those ways, clinically proven, is through cold exposure, which depending... And this is data coming out of Stanford in many other places, but this is something, if you want to utilize, you absolutely can, doing the ice bath, doing the cold showers and things of that nature, could start to shift that brown fat ratio. And another one is our next clinically proven implement for us to reduce our number one susceptibility to COVID-19, reducing our body fat ratio is exercise, but we're not just going to do this superficially, we're going to look at the data and talk about specifically what we can do. A study conducted by researchers at Kaiser Permanente Medical Center tracked the exercise habits of nearly 50,000 COVID-19 patients, and it revealed some eye-opening evidence.

After analyzing their exercise habits, over the two years prior to the pandemic, tracking and seeing their exercise behaviors, it was revealed that people who consistently are inactive, were almost three times more likely to die from COVID-19 than people who consistently exercise. This should be front-page news, headline news, everything. This should be going, scrolling across the bottom of the news broadcast 24/7, but that's just one study. It's observational in nature but when you start stacking these on top of each other... And we know this is in addition to the mountains of peer-reviewed evidence that we have on the efficacy of exercise in helping all manner of health issues, but another one of these, looking at the impact of COVID-19, this was published in the British Journal of Sports Medicine, they found, number one, regular exercise has a notable protective effect against contracting COVID-19 infections in the first place. Number two, they found, even stronger, that regular exercise appears to slash the risk of severe COVID infections. And number three, regular exercise dramatically reduces the risk

of death from COVID-19 as well. They did a great job in the study at addressing compounding factors.

Now, here's what they noted, specifically what form of exercise. They actually looked at strength training and aerobic exercise to see, "Hey, what is going to be the best modality to utilize?" They found that strength training definitely had benefits in reducing rates of infection and reducing rates of severe symptoms, while aerobic exercise showed an even greater benefit in reducing rates of infection, severe side effects, and death. But here's the key, combined engagement of consistent strength training and aerobic exercise outperform them all and made the risk of severe COVID infections absolutely plummet. In one cohort, people who regularly strength-train and utilize aerobic exercise had a 27% lower risk of contracting COVID-19 and a 57% lower risk of severe COVID-19 symptoms. Alright.

What can we do with this? Strength training, one to three sessions a week, even one strength training session, can evoke some credible benefits with our body fat ratio and improving this immunometabolism. So, this doesn't mean you got to go to the gym and lift a bunch of heavyweights, which you absolutely can. However, we could also utilize our bodies for strength training, for resistance, and taking advantage of this aspect. And then we can also do these things combined on the same day.

We could do certain forms of exercise that partner these together. Now, we could do some supersets, we could do some circuit training, there's so many different flavors of taking advantage of this. But the most important thing is that we take advantage of this, and at minimum, making sure that we're getting in some cardiovascular benefit because another cohort found that looking at an active group versus folks who were largely inactive, they found that there was a 22% lower risk of COVID-19 infection, a 38% lower risk of severe COVID-19 and an 83% lower risk of COVID-19-related death. Just getting in those minutes each week, getting in some walking time, 20-30 minutes a day, you extract these kinds of benefits.

So, we're talking about... Everybody knows "Eat well, exercise. Eat well, exercise." Why? We can't just operate on the vanity metrics anymore. It's clearly not working, but what if we add in another layer of "This is also going to dramatically increase your resilience against infectious diseases that has just taken over our world"? We start to stack reasons why, so people make this more of a priority, and we see that we can engage our communities to take action to do stuff. People literally turn their world upside down; they did things that they probably thought they would never do and continue to do those things. And it's based on the messaging that they're receiving, but they're not getting any messaging on what they can do to make themselves truly, as a human being, more healthy, sovereign, more resilient, and robust in an ever-increasing, complex and abnormal world that we find ourselves in.

We didn't evolve in the conditions that we're in, that we've just found ourselves in within the last few decades, disconnected from our circadian rhythms, which circadian medicine is one of the leading forms of science right now, looking at how just our association with nature and the time of days, how it affects our hormone production, how it affects our sleep quality, how it affects our metabolism, the list goes on and on. So, we've got to find ways to make ourselves more resilient, and utilizing these specific tactics can really help us to get there, very simple things that we can implement.

Now, in addition to that, I highly recommend folks to make sure that they're proactively adding in things that have an immunomodulatory capacity because we're seeing instances where folks are having a hyper-excessive immune response. And some folks are having issues where their immune response is inadequate, and it's not responding enough. And so, immunomodulators are things that exist from... Again, we've got mountains of peer-reviewed evidence on things that we can do, add in with our nutrition, for example, that are immunomodulators that help to lift and fortify the immune system when it's under active and help to bring down if it's hyperactive.

A study published in *Recent Patents on Inflammation & Drug Discovery* revealed that the renowned medicinal mushroom, Reishi, has potent anti-inflammatory, immune-modulating, and immune-potentiating capabilities. Another study published in the *Journal of Pharmacological Sciences* found that the polysaccharides in Reishi have extensive immunomodulating effects, including promoting the function of antigen-presenting cells, humoral immunity, and cellular immunity as well. It's one of my favorite things. I like to have, some Reishi tea in the evening because it definitely helps improve sleep quality. This is noted in the journal, *Pharmacology Biochemistry and Behavior*, found that Reishi was able to significantly decrease sleep latency, meaning that you fall asleep faster.

It was found to improve and increase overall sleep time. It was found to increase sleep efficiency by improving non-REM sleep and deep sleep time as well. So, I get my Reishi from Four Sigmatic, and they have a great Reishi elixir, it's dual extracted, so you get all of these benefits. It's a hot water and alcohol extract in one source, and it's just one of my favorite things. I just brought some in for my guys, for my team, and it's just one of those things that... Again, we've got literally centuries of documented use of Reishi. It wasn't just made by Theo, and... I don't know why I said, Theo. I was going to say Theo and Claire at the chemistry lab last week. This is something that has sustainability and has a long history of use and also massive amounts of peer-viewed evidence demonstrating its efficacy. Again, this should be a no-brainer right now.

Go to [foursigmatic.com/model](http://foursigmatic.com/model) and you get a special discount there as well. That's F-O-U-R-S-I-G-M-A-T-I-C.com/model. Huge fan of the Reishi Elixir. And maybe have that with a little bit of

some kind of a high-quality fat. So, this is something you can also again start stacking conditions in optimizing our metabolism as far as the insulin optimization as well, with some MCT oil or something of that nature. So, you can just start stacking it in these health practices. Again, that's [foursigmatic.com/model](http://foursigmatic.com/model). And you'll get at least a 10% off discount there. Now, leaning into another component here with shifting our body fat ratio, I'm going to share one more really powerful way to do this that is totally free and accessible for anybody. And I just mentioned how we can improve sleep quality. It's the domain of sleep and how sleep has a dramatic impact on our body composition and also our ability to defend our system from infectious diseases.

A study published in the Annals of Internal Medicine, and this was conducted by researchers at the University of Chicago, they did a randomized 14-day crossover study. This is amazing. This is where they have both sets of people in a study group and in a control group, in a sense, to do both practices. So, you're seeing the results that people get doing one thing and then doing the other thing. So, it's not like this group of people did this thing, this group of people did that thing. What happens when both groups do both things? So, for 14 days, they allowed folks to get sufficient sleep, which in this study was 8 1/2 hours of sleep. And they tracked their weight loss, their body composition. Now, they put them on a very specific calorie-restricted diet. But it was the exact same diet in both phases of the study. And in one phase of the study, again, they allowed them to get adequate sleep, 8 1/2 hours. Another phase of the study, they sleep-deprived folks. They take away three hours. Now, they're getting 5 1/2 hours of sleep, tracking all their metrics. And here's the key, they're on the exact same diet. Their lifestyle's the same, same diet, everything is getting tracked.

Here's what happened after they collected all the data. They found that when folks were getting adequate amounts of sleep, on the exact same diet, they lost 55% more body fat. I didn't say weight. 55% more body fat. That's just remarkable. And again, this leans into the science around how sleep powerfully controls our metabolism, our human growth hormone levels, testosterone, regulating cortisol. The list goes on and on. Even melatonin has some roles in increasing our brown adipose tissue ratio. So, it's just stacking conditions. Now, here's the key. When folks were sleep-deprived and on this calorie-restricted diet, they lost some weight too, not as much, and definitely didn't lose as much body fat. But here's the key, the weight that they lost was an increased loss of their muscle tissue. Their muscle tissue, their fat-free body mass loss went up by 60%. There's an alert taking place. There's a derangement taking place in the body when we're sleep-deprived that dramatically suppresses healthy metabolic function. The researchers noted that sleep loss negatively modifies energy intake and our energy expenditure, our body's ability to healthfully process energy. So, obviously, we got to get our winks right now more than ever.

Again, this should be front-page news, should be scrolling at the bottom of all the news channels, but it's not. But that's all good, you're here riding with me, you're going to get this information, put in some simple strategies. We've got multiple masterclasses here on The Model Health Show. Just check out the archives for sleep-related science and strategies. And of course, we've got the international bestselling book, Sleep Smarter as another resource as well. But there's so many different modalities we could take advantage of. Why does this matter? Well, a new study published in the British Medical Journal, the BMJ, looking at six countries, uncovered that longer sleep duration was associated with lower odds of COVID-19. The researchers denoted that approximately every one-hour increase in the amount of time spent asleep at night was associated with an additional 12% lower odds of becoming infected with COVID-19. So, if someone regularly sleeps five hours a night. And they devote, optimize, start to extract some of these values, these strategies, things that we talk about here on the show, put more of a priority on their sleep, bump that up by two hours, their risk of infection goes down by 24%. Or if they got up to eight hours, their risk suddenly drops by 36%, according to their data.

Now, this is an observational study. But this is one of the things that we can extract a lot of value from. And more and more evidence on this topic, sleep quality related to COVID, nutrition-related to COVID, we've got a lot of great scientists out here asking great questions. We've got folks like you out here asking great questions, putting things into practice, and demanding real change that this doesn't just improve one thing. It doesn't just protect us from COVID. It doesn't just improve our metabolism. It decreases our risk of all manner of infectious and chronic diseases. It just makes us a better human being. In the study, participants with documented sleep problems had 88% greater odds of contracting a COVID-19 infection. The question immediately should always be why? What is it about sleep that dramatically improves our resilience?

Well, the key is very simple. At its core, high-quality sleep is something that our DNA expects from us, our genes expect from us for healthy expression. We have not evolved out of needing sleep because it drives millions of processes that we don't really fully understand that make us a robust, healthy human being. And it's one of those things that are over time, especially the last few decades, it's been slowly pulled away as far as not just our sleep times, it's not about that, necessarily, more important is the quality of our sleep, having efficient sleep cycles. So, just like the other ingredients here, healthy movement strategy, an insulin-optimizing nutrition protocol, making sure that we're meeting our micronutrient needs, these are all simple principles that our genes expect from us. So being a healthier individual, implementing the things that our body expects from us, our biology, our genes expect from us, is really the way forward, not just in this time, but as a species, as we move forward in human evolution.

So, we're going to evolve in a healthful manner or we're going to devolve, and that's really what we're seeing right now as far as the our-picturing of our health as a species. But again, I believe that we can change this. I know that that is not getting a lot of attention, I know that no one is actually stepping up and denoting, "Hey, we know that obesity is the number one risk factor for death from COVID-19, why?" So that's why this is so important and something that I implore you to share with the people that you care about. Get this education out into more people's hands and hearts. And most importantly, we're not disempowered in the scenario. So, getting this information out on how it all works, but also saying, "Hey, what can we actually do?" Some clinically proven things that we can do right now to fix this issue because it's not getting addressed. We keep doing these superficial things, things that have never been done before in human history, things that have never been utilized that are not proven and essentially ignoring, for the most part, the things that we know to be true, the things that we've got decades of period, evidence that our ancestors have passed down from generation to generation that create healthy human beings.

This is a time to lean into that more than ever. This is a time to evoke and utilize these things more than ever, to become a healthy human being, to become the model of what's possible. And I believe that we can do it. I appreciate you so much for tuning into the show today. Again, make sure to share this out with your friends and family. On social media, you can tag me, I'm @Shawnmodel on Instagram and Twitter, and I'm @theModelHealthShow on Facebook. And of course, you could send this directly from the podcast app that you're listening on right now, to somebody that you care about. We've got some incredible interviews, some epic masterclasses coming your way very soon, so make sure to stay tuned. Take care. Have an amazing day. I'll talk with you soon.

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