THE MODEL HEALTH SHOW

EPISODE 476

Vitamin D Masterclass: The Sex, Cancer, & Covid Connection

You are now listening to The Model Health Show with Shawn Stevenson. For more, visit themodelhealthshow.com.

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 to me today. Here in this episode, we're going to be diving into a master class on vitamin D. It's one of the most well-researched remarkable nutrients that's ever been discovered. Now, let's kick things off and talk about what is vitamin D in the first place. Well, vitamin D is a group of fat-soluble steroid hormones. So it's not even a vitamin in the conventional sense, it functions as a steroid and does many other processes in the body related to hormones that we're going to talk about soon. But first and foremost, it's a group of fat-soluble steroid hormones. Now, Vitamin D is primarily produced in the skin in response to UVB radiation from sunlight, and of course, we know that it can be absorbed through the food that we eat, which we're getting about on average, 10% of our vitamin D is coming from food and upwards of 90% is going to be coming from interacting with sunlight. That's kind of the natural turn of things and evolution of things, if we're talking about humans living in a natural setting that would be about the ratio.

So the question is, how does your body actually turn sunlight into usable vitamin D? I'm glad you ask. The first thing is this incredible interaction that takes place from UVB rays from the sun hitting our skin and interacting with a compound in our skin called 7-dehydrocholesterol. That's right, it's a form of cholesterol embedded in our epidermis that UVB rays from the sun interacts with, and it converts it into something called cholecalciferol, also known as vitamin D3. Now, hold up, this isn't where the story ends because D3 is not the usable form of vitamin D. This is just where the story begins. There's another series of steps involved in getting it into its usable form, but again, it's kicked off when the sun rays hit that cholesterol in your skin, it hits that and it converts it into D3.

But from there, it's going to move through the bloodstream to your amazing liver, where your liver is now going to convert that D3 into another compound and this compound is called 25-hydroxyvitamin D. 25-hydroxyvitamin D, also known as 25-hydroxycholecalciferol. Long terms, bottom line is now we're getting closer to the usable form of vitamin D. And actually, this is what most doctors will test for if we're looking for vitamin D deficiencies, is this interaction with vitamin D and then this conversion taking place with the liver, but still this is not the usable form of vitamin D in the body. It has to take another step, and this is where it's getting transported to the kidney, so it's hitting a bloodstream again, going to the kidneys, and once 25-hydroxyvitamin D reaches the kidneys, it's getting converted into its final form, which is 125-dihydroxycholecalciferol, aka 125-dihydroxyvitamin D.

And this final compound, and the name that we need to know it by, is calcitriol. This is the real vitamin D. Will the real Slim Shady vitamin D please stand up? You probably need some vitamin

D. Calcitriol, this is the final form, this is its ultimate form. So going through all of these steps from sunlight to the usable form in the body, this is how the magic happens. So you truly cannot get the D without the kidneys being involved. The kidneys are incredibly important in this process, and this is why vitamin D and its synthesis and being able to be usable by the body, is not just taking a supplement. It's having healthy organ function overall, because we can take all the supplements in the world, have all the vitamin D-rich foods in the world. We have to be able to enable our internal organs to make this conversion process happen and give us the benefits that we're going to be talking about. So the kidneys are incredibly underrated in this equation, the kidneys are underrated like Tim Duncan. Tim Duncan, he didn't talk a lot, but he's dunking on people, he's got the smooth moves, keeping his mouth a little closed. He's underrated because he's not flamboyant, like he's wearing his Hawaiian shirt and his flip-flops to the pre-game.

Underrated, but perennial All-Star, Hall of Famer. Shout-out to the kidneys. Also, kidneys are underrated like Big Sean, the rapper Big Sean, not me. Bars, bars. Have you listened to the new album, Detroit 2? Bars. He's talking about meditation, he's talking about conventional medicine. He had a story when he was 19, he had a heart condition. I believe he was 19, but he was a teenager, he had a heart condition, went to conventional medicine, they said they're going to have to put a pacemaker in it, went to the holistic doctors, mother took him to a holistic doctor, they prescribed him magnesium for three weeks, went back to the regular doctor and they said, "Damn, huh, we don't even need to proceed." That's how I knew that Western medicine was weak. Bars, Big Sean, underrated. Underrated, the kidneys, aka Big Sean. Underrated like finding the movie that you were hunting for at Blockbuster Video. That was the vibe. Now, we got infinite everything access. Many people will grow up without knowing the thrill of the hunt. A new release comes out and you go to Blockbuster and you actually find it, you get the new release copy, you stand by the door. It's an underrated vibe, it's an underrated feeling, but the kidneys are very much like that. Underrated in this incredible process of vitamin D synthesis conversion and putting into it's usable form. And now we're going to talk about some of the borderline miraculous ways that vitamin D interacts with our bodies.

The kidneys are so important in converting vitamin D into its usable forms that a study published in the Clinical Journal of the American Society of Nephrology demonstrated that kidney disease and insufficient kidney function is a major risk factor for vitamin D deficiency. So again, we've got to get our major organs healthy and robust. One of the most essential things for healthy kidney function is simply hydration, making sure we're getting adequate amounts of water and also not forcing our kidneys and our liver to deal with a lot of abnormal food stuffs.

But here's one of the things that vitamin D is most notable for in the body. Once we get into its usable form, vitamin D is actually required to absorb calcium from the gut, from food, into the bloodstream. Having too little vitamin D in the body results in the failure to control calcium homeostasis directly causing osteoporosis and conditions like rickets. Rickets used to be hot on the streets, people are just walking around like they got the tumbleweed legs. The tumbleweed can just blow right under their legs, they got the rickets, they got the bowed legs. But we've largely eradicated rickets, but still, it still exists. There are still tens of thousands of cases, maybe hundreds of thousand cases, but we got billions of people on the planet, so it's a smaller percentage, but vitamin D is one of the biggest underlying factors with conditions like rickets.

So please understand, if we're talking about bone density, vitamin D is critical in that equation. I was marketed to, I know that you were as well, milk does a body good for strong bones. Calcium can't do anything without vitamin D. Vitamin D is the major key alert for calcium to be able to do what it does in the human body. And it's also calcium isn't just for our bone density. It's also for clotting our blood, and the list goes on and on. So to be able to assimilate calcium, vitamin D is critical. And so growing up, little did I know... Again, if you know my story, I was at track practice, aspiring athlete, 4, 5 40-yard dash when I was 15 years old. Touchdowns, 2-3 touchdowns a game. It's crazy. It's doing great. At track practice, doing a 200-meter time trial, I broke my hip while I was running, just from running. There was no trauma, I didn't fall. My hip broke, my iliac crest broke while I was running. I was drinking milk like crazy at the time, but it wasn't doing the trick clearly because I broke my hip. But nobody stopped to ask, "How did a kid break his hip from running?"

My bone density was that low. Plenty of calcium, definitely lacking vitamin D because of my lifestyle. Literally, I was on this program where I'm getting bused to the "good" schools. It's dark outside, I'm literally going to school, getting to the bus stop, getting on the bus at 5:00 AM in the morning. And I don't leave there, oftentimes, especially Missouri where I grew up, getting out of school, I've got a tiny bit of daylight left a lot of the year. So that's one part of it, but that's not the only part. And we're going to talk about some of that stuff as well. Getting access to adequate sunlight and also the time of year plays a role. But it's the health of the internal organs, so the liver being able to convert and do its job, and also the kidneys being able to convert and do their job. And definitely, I had some liver problems for sure, with the way that I was eating.

Now, yes, Vitamin D is an incredibly important nutrient for our bones and our bone density and our bone development, but that's not the only bone it's good for. Vitamin D, as we talked about at the top of the episode, it's a steroid hormone. It's a steroid hormone. In a study published in the International Journal of Impotence Research found that compared with healthy men, subjects with vitamin D deficiency obtained lower scores for erectile function,

orgasmic function and sexual desire. Without the D, we have a little bit more problem giving the D. So this is an important part of this conversation that's looked over. It's a steroid hormone, so it's involved in bone formation, it's involved with bone density, our steroid hormones have a lot to do with that, but also sexual function, that's another big role that vitamin D plays. And deficiency in vitamin D, it's one of those things where you got... You might have the bowed leg version versus the never mind. So I want you to keep that in mind as well. It plays a lot of different roles, but it can be kind of subjugated in our culture today to being this one thing.

Right now, what's top of mind is the immune system connection, and we're going to talk about in regards to that is really going to blow your mind. But let's talk about overall, why is this an important nutrient? Why does it deserve a master class and a big understanding in our culture today? Well, the 2010 report, published in Genome Research, found that vitamin D influences several hundred genes, many of which control disease suppression or expression. So we've already hit on some kind of superficial things, like we see with bone formation, with sexual health. These are just out-picturings of things, these are symptoms. These are conditions that get exacerbated below a much more powerful conversation, which is how vitamin D is an epigenetic controller, it's regulating what our genes are doing. According to the scientists in the study, vitamin D deficiency isn't just implicated in bone diseases. Vitamin D deficiency also increases our susceptibility to autoimmune conditions like multiple sclerosis, rheumatoid arthritis, and type 1 diabetes.

This is regulating and modulating, interacting with genes that code, that regulate autoimmune conditions. So it's not just osteoarthritis, it's also rheumatoid arthritis, if we're talking about bone health, but also issues to do with our nervous system, for example, like MS. And also, the researchers noted how vitamin D deficiency plays a role in dementia as well. So we're talking about a much, much deeper story here, much deeper understanding. So when we're talking about getting adequate amounts of sunlight, getting enough viable usable vitamin D in our bodies, this is a really big deal. Now, how deep does this vitamin D equation go? How deep does the D go? Well, vitamin D receptors are actually found in nearly all, if not all, of the cells in the human body. Essentially every cell in the human body has vitamin D receptors, that's how it's prominent. It's a prominent in-demand nutrient for cellular function. Your body is looking to latch on to it pretty much every cell.

Now, every day, we have cells that mutate, and when that happens, vitamin D actually plugs into these mutated cells. It's one of the things that vitamin D is used for. And when that happens, it delivers instructions to the cell to repair itself, to fix the mutation and get back to being a healthy, normal replicating cell. However, if that vitamin D plugging in doesn't give the instruction properly where the cell responds and fixes itself, it provides the instructions for the cell to take itself out, to basically have this process of apoptosis, this programmed cell death,

and helping the cell to destroy itself so it doesn't lead to cancer. If we're deficient in vitamin D, however, there are going to be some issues with this very essential and vital process is taking place, would be taking place in a normal setting if vitamin D is available.

So let's keep digging into this. Researchers at the University of Oxford wanted to uncover the extent to which vitamin D interacts with our DNA. They used new DNA sequencing technology to create a map of vitamin D receptor binding across the human genome. The vitamin D receptor is a protein activated by vitamin D, which attaches itself to our DNA and thus influences what proteins are made from our genetic code. Vitamin D is controlling which proteins are getting made from our genetic code. Now, not many nutrients that we've identified have this capacity. To even label it as a simple nutrient is a gross over-simplification. It is powerful. It's affecting our genes. So let's look at this in relationship to cancer, since vitamin D is kind of stepping in and giving the instruction plugging into the cell, the vitamin D receptor in the cell, if it mutates to give it instructions to fix itself or that programmed cell death.

Vitamin D is a well-noted immunomodulator. It is a very important term because immunomodulation means the ability of the immune system to have an intelligent function where it can heighten or increase its activity if need be, or lower its activity if need be. If we're talking about a situation of autoimmunity, this is when the immune system is over-reactive. And so we want to help the immune system to be a little bit more subdued and bring it down, get it back to a baseline and not hyperactive. Whereas, we're talking about a situation with defending the body against an infection or against cancer, we want a heightened immune response to be able to take out the rogue cancer cells or infectious cells that have been infected. And so, looking specifically at cancer, there are several meta-analyses studying the effect of vitamin D and cancer, like the one published in the American Journal of Public Health. The research has found that vitamin D has a protective effect in lowering cancer risk, and as the researcher stated, lowering cancer mortality "at low cost with few or no adverse effects" going up against several of the most prominent, most deadly forms of cancer. The most rampant forms of cancer, everything from breast cancer to colorectal cancer. The list goes on and on. Vitamin D has been shown in big meta-analyses time and time again to prevent and even help as a form of treatment.

How often are you hearing this message? Because the key is, let's not have the cancer in the first place, primarily. And vitamin D is involved in that process of that cellular intelligence, because each and every day we have thousands of mutations that take place during the process of cell replication. Each and every one of us has cancer cells that develop every day, but a healthy, robust, naturally functioning immune system with vitamin D being at the helm, can identify these cells, help them to fix themselves or trigger apoptosis, where the cell can destroy itself, and we're not allowing it to grow and having a cancer cell to have the time to

latch on and have angiogenesis, so latching on the blood vessels where it can start to feed itself and get nutrient supply and blood flow and manifesting itself into a larger tumor or the like. So all of this process, it starts with let's prevent it from taking place in the first place and getting out of hand. Vitamin D is a big component. I want you to take this piece of data, utilize it for yourself and your loved ones, because the data exists. It is so thick, it is so heavy on how important vitamin D is in this equation of our immune function, cancer prevention, and so much more.

Now again, in regards to vitamin D being an immunomodulator, right now, our immune system is a big topic of conversation. So at this point, we're going to look at the peer-reviewed evidence regarding COVID-19 and vitamin D. We're going to start with a peer-reviewed study published in scientific reports, and it took a set of people with confirmed cases of COVID-19 who had no symptoms, and these were folks categorized in group A.

And they tested their vitamin D levels, and they also looked at people with COVID-19 who were suffering from severe symptoms and they were categorized as group B. Tested their vitamin D levels and here's what they found. The scientists uncovered that the people with severe symptoms were significantly more deficient in vitamin D than people without any symptoms at all. It was one of the things that really jumped out at the researchers, raised some eyebrows, the conversation started to get around at how this association might be something for us to investigate more. And so, many other studies have come out since digging in deeper and looking at this. Now, the researcher stated that, "The fatality rate was high in the vitamin D deficient Group B. Vitamin D level is markedly low in severe COVID-19 patients. Inflammatory response is also high in vitamin D deficient COVID-19 patients. This all translates into increased mortality in vitamin D deficient COVID-19 patients out."

Now, this is just one of dozens of studies that we now have, and mirroring the conclusion of almost two dozen other peer-reviewed studies, the scientists stated, "We recommend mass administration of Vitamin D supplements to populations at risk for COVID-19." They recommended mass administration. Prior to all of this stuff and the drugs coming on the market, all these things, but did you hear about this on the news? Did you hear that scientists were recommending mass administration of vitamin D? Because that they could see right there in black and white, that folks who are deficient in vitamin D, the likelihood of severe symptoms is exponentially higher. As a matter of fact, people with efficient levels of vitamin D, sufficient levels of vitamin D were far more likely to have no symptoms at all, but yet you don't hear that in the news. You don't see the government agencies rushing to get something that is incredibly inexpensive to citizens, especially those who need it, who might not have money.

That didn't happen. Why? Well, you very well know the answers to that already. We're talking about multi-multi-billion dollar industries that are designed and built on the farming of sick people, and continuously creating synthetic pharmaceuticals to treat the symptoms that result from abnormal diet and lifestyle interactions. And one of those lifestyle interactions being getting adequate sunlight. And so we've got a drug for that, we've got a drug to treat the osteoarthritis, we've got a drug to treat the autoimmune condition. How about we address the underlying cause? Vitamin D is critical in this equation, and it's inexpensive. As a matter of fact, it's free if you go outside, but there's a nuance there, and we're going to talk more about that. So we're not seeing commercials to encourage Americans, and really citizens all over the world, but specifically Americans who are the most Vitamin D deficient, one of the most Vitamin D deficient populations, to make sure that they get their vitamin D up. To make sure that they're going out is critical right now.

We've got peer-reviewed evidence on this, dozens of studies on how important this is, but what you will see is commercials for synthetic pharmaceutical drugs to treat symptoms. So they're going to treat your erectile dysfunction, right? You're trying to watch the game, and then they got the guy, he's on the boat with this lady... Here's... Erectile dysfunction hindering your life? Vitamin D, right? The crazy part is they're on the boat, and it shows like they're on a boat having a good time. It says "It's got this benefit, ask your doctor for the drug, ask the dealer." Is that even appropriate, to ask your doctor for the drug that you want? That sounds like a different kind of relationship. But then what they go on to have is this long list of side effects. Blindness, seizures, heart failure, kidney disease, death. They'll slide death in there, all from taking this substance that's designed to treat a symptom, and it's not addressing the underlying cause of the condition in the first place. So I want to start to encourage us to look through the lens, when we see these things, to see it for what it is.

This is window dressing. This is superficial. Everything has its place. Pharmaceutical medications can be life-saving in the right instances, but often times the vast majority is designed to treat symptoms of the diseases that are caused from the way that we live our lives, instead of removing the cause of the disease, we treat the symptom. And this is what keeps people in this very vicious and deadly circle, where today we have 70% of citizens in the United States are already on pharmaceutical drugs. We have the most drugged out culture in history, and yet we have the sickest, most diseased obese society in history at the same time. The drugs aren't working, because they were never meant to work, they're not designed to work, they don't work. Now, when I say that we are the sickest nation in history, I mean self-inflicted. We have 242 million Americans right now, 242 million Americans are overweight or obese. We're getting close to 50% of our citizens being clinically obese. Half of our population.

It doesn't even make sense, it doesn't even register how severe this issue is, and I've never met one person from my family, growing up in a family where most of my family members are

obese growing up, in my clinical practice I never met one person who didn't want to be healthy. It's just a matter of education, access, culture. We have a culture of sickness. Man, so many of my family members, of course, they're on medication, they're on drugs. As a matter of fact, I lost the love of my life, my grandmother, who taught me unconditional love, she died from an overdose. So I take this really seriously.

This isn't something to just play with. We've accepted this as normal, it's not normal. It's not normal. We need to stop treating symptoms, which again, the common thing is you get another prescription to treat the symptom from the other drug, and I know this first hand, it happened with me. Once I finally got this diagnosis, so we know that I broke my hip when I was a kid, but eventually I get this degenerative disease diagnosis. So my bone density's extremely low, arthritic condition, arthritic condition of my spine, and so I'm on all these medications now, and one of the medications created a symptom that I didn't even know until years later. So I was on Celebrex for this arthritic condition, and I started having... What it didn't have a name yet. That's the thing. Once it gets its name, then you can create a fear around it. And so my symptom was restless legs, which it wasn't a thing yet, so this is like way back in the day, this is a couple of decades ago now. But I'm laying down in bed at night, I'm trying to get a little shut eye, but it feels like my legs want to just get up and go without me.

And it's just the... I didn't know what was happening in my life. I didn't know that that was a thing. I just felt like I needed to relax, like I'm not relaxing. But it felt like, you know, when they do that magic show thing and then they have the person get into the box and they saw them in half and then their legs like doing their thing, it felt like that, like my legs were off doing their thing, and I'm trying to lay here. Caused by Celebrex. It's one of the side effects, little did I know. And so then you get a medication for the Restless legs syndrome, and you just get into that vicious circle. So, reeling this all the way back in, I want to really point to the necessity. Vitamin D was being... It was being implored by scientists, mass administration, we got sound data on this, it's safe. It's safe at extremely high amounts that you can add in to help to reduce these symptoms and reduce susceptibility. It's safe and very inexpensive. Mass administration. No, you didn't hear about that, but you hear about the commercial for getting a 17-hour boner through whatever new drug. That's a side effect, you don't want that. Report that to your doctor or dip it in some cold water, I don't know.

Alright, now moving on, there are over 20 more peer-reviewed studies affirming the connection between vitamin D deficiency in COVID-19, including another study published in the BMJ, one of the most prestigious medical journals. And they found that COVID-19 ICU risk is twenty-fold greater in people who are deficient in vitamin D. Twenty-fold greater. Not twofold. Not five, twenty. It's astronomical. The researchers noted that in the study as well, so if that wasn't bad enough, the research noted that African-Americans are specifically at the greatest risk, well noted in this study. And you see this in the data with COVID-19

hospitalizations and mortality as well. And we're going to talk more about this in a bit, but a big reason for that, obviously is melanin. The melanin in darker skin doesn't allow the skin to absorb as much UV radiation, it's really just... It's like a built-in sunscreen. And so we have to adjust for that.

And again, we're going to talk more about that in a moment, but here's another study. Now, this is a meta-analysis of 40 plus patient studies published in the BMJ, and it states, "Collectively, studies strongly suggest essential pro-hormone and nutrient vitamin D is a far more effective potential basal COVID-19 treatment than any additive, pharmaceutical available to date." The data exists, it exists. Yet another study, this one affirms that vitamin D isn't just helpful in prevention, it can also be helpful in treatment in regards to SARS-COV-2. A randomized placebo-controlled study gave patients with SARS-COV-2 short-term high dose vitamin D for seven days, and gave another group of SARS-COV-2 patients a placebo.

Now, both groups in this study, so the placebo group and the vitamin D treatment group are already deficient coming into the study, which most folks are in this situation. Now here's what the study found. In the vitamin D group, the test subjects who were given vitamin D, a greater proportion of these previously vitamin D deficient individuals with SARS-COV-2 infections turned SARS-COV-2 RNA negative faster, with a significant decrease in the inflammatory biomarker fibrinogen by receiving the high dose vitamin D3. They turned negative faster than the people in the control group, who didn't receive the vitamin D, significantly faster. In some instances, if you look at the numbers three times faster, it's pretty remarkable. The amount used in the study, when they're talking about high dose for that short period was 60,000 IU daily for seven days. So that was the amount that they used in that particular study. Now, again, pretty remarkable, there was no other treatment involved, they used the vitamin D to see what happens, and it has these kind of stand-out effects, but again, you're not hearing about that because you're not meant to hear about that. That's why this is so important, staying plugged into things that are real and being able to see all of the...

The nonsense and the misinformation and the lack of questioning things and looking at things from multiple perspectives. We just jump right to problem pharmaceutical. That's it. It was from the get-go. We got to find a drug for this, we got to find a drug guys. Not looking at the fact 80%... According to the CDC, 80% of people hospitalized with COVID-19 78%, to be exact, almost 80% were clinically obese or overweight. This matters. Let's address this. It's been over a year. A matter of fact, five years from now, unless we change it, the conversation still isn't going to shift to getting people healthier because the susceptibility is so high when we're venturing into obesity, also top co-morbidities, 94% of folks, according to the CDC's latest report, who passed away, with SARS-CoV-2, in regards to SARS-CoV-2 on their death certificate had an average of four co-morbidities and/or pre-existing chronic diseases.

We don't talk about the four. You don't hear nothing about the four. You just hear about SARS-CoV-2. Let's address the four. Wasn't it a TV show, the four? Yes. Pretty dope. But we get to address it, we get to change it, we get to change the conversation to reduce the susceptibility because the next thing is coming, the next infectious disease... It's just going to get into a loop. If we allow it to, it's just going to get on to a loop. We're going to keep doing this stuff over and over again. Pandemic endemic epidemic. We've been experiencing epidemics and pandemics for decades now. We have an epidemic of heart disease, still the number one killer by far. Do you know how much heart disease deaths jumped up this past year? The average is somewhere around 630,000 a year. We had about 700,000 last year. But you don't hear that.

And we'd also don't talk about the fact that a huge percentage of the folks who pass away in relationship to SARS-CoV-2 hypertension and heart disease was one of the comorbidities. So wow, that number jumps up even more if we give some credence and give some credit to the pre-existing chronic disease that created the condition and susceptibility to SARS-CoV-2. So in this particular study, 60,000 IU was utilized daily for that short period. Now for a normal day... So how much do you use... Where should we be with the vitamin-D for normal day-to-day health maintenance and disease prevention, anywhere from 1000 to 5000 IU a few times a week. Just a few times a week is likely sufficient for most folks, and this is a far cry from where people are at right now. So somewhere in that range, and this can be a combination of some is going to be made via sunlight... We're going to talk about all those pieces, supplementation and food. Alright. But somewhere in that frame is going to enable your body, again, we're talking about...

We're going to be influencing what your genes are doing. So we're talking about your genetic expression, we're talking about vitamin-D's association with human health. It's at the very core of the out-picturing the proteins getting printed out, the copies of you that are being made. It is that important. Now, moving on, this is a great pivot in talking about the obesity epidemic and vitamin-D and vitamin-D deficiency and how these two things tie together, because what the researchers were indicating as well, even in relationship with COVID-19, is that we're having higher rates of vitamin-D deficiency in folks who are clinically obese. And so there's a study, and this was published in 2019 titled "Vitamin-D Deficiency Consequence or Cause of Obesity." And it's analyzing the complex relationship between vitamin-D and body fat. So what's going on here? Well, in the process of usable vitamin-D being made in the body, once the sun's rays, convert 7-dehydrocholesterol in the skin into vitamin-D3, or we take a vitamin-D3 supplement, that D3 actually gets stored in your fat cells. It's getting stored in your fat cells. Alright. So that D3 before it even gets to the other steps, unless those steps are available, until the D3 gets cleared for deployment to be shipped to the liver and converted into its usable form so once it reaches the kidneys, it is getting stored in body fat.

Now, excessive body fat appears to create a clog in this conversion process. Essentially the fat cells appear to be calling for more vitamin-D to be distributed in the expanded fat cells in this fat cells community and less being able and viable to be sent off for conversion. So to reiterate this point, it appears that our expanded fat cells, the more body fat that we're carrying, the more it's kind of hungry and holding on to the vitamin-D that we might even be making via interaction with the sun. So vitamin-D3 or taking in from our nutrition, the fat cells are strangely trying to distribute this to all the different fat cells rather than shipping it to the liver for additional conversion. This is one of the theories. They're still trying to figure out how this is all happening, because there appears to be this relationship with obesity contributing to vitamin-D deficiency and vitamin-D deficiency contributing to obesity. In this study, they're looking at lacking usable vitamin-D could be blunting metabolic processes and encouraging obesity, and obesity is blocking the availability to create more usable vitamin-D.

So these two issues are feeding into each other, and we've got to look at the underlying mechanisms here and what we can do to actually reduce our rate of body fat, because vitamin-D is a player in that. That's what it really appears to be, that it's actually helping to modulate and control our rate of obesity, but it's not the only thing. There are so many other things that we can do to help to reduce the body fat, so the vitamin-D conversion happens more normally and effortlessly. And also the same thing in regards and this is where this is going in regards to our immune system function. Even though we might be supplementing with vitamin-D, it still has to get converted. So this is calling forth another call to action for us to...

Yes, vitamin D supplementation, mass administration in the study mentioned before, is a great idea, very low potential side effects, and your body will do more conversion if it has it available, period. But we also need to employ other things to support our immune system right now as well. And one of the things that I regularly utilize, and my family as well, we want to look at, again, more immunomodulating, immunoregulatory nutrients, like what actually has real peer-reviewed clinical evidence that it can help to modulate and support the immune system, because we might have this state where we have this "cytokine storm" where the immune system is overactive. That cytokine storm is not a virus that does the thing, it's our immune system response, our immune system is doing it. So bringing that immune system response where it needs to be, or if we're not having a proper response, helping to modulate and bring the immune system up.

One of the most noted, and this is published in the journal, Recent Patents on Inflammation and Drug Discovery, revealed that the medicinal mushroom reishi has potent anti-inflammatory action plus it possesses immunomodulating and immunopotentiating capabilities. Come on, reishi. Another study, and this was published in Mediators of Inflammation, noted that the polysaccharides in reishi were found to enhance the proliferation of our T cells and B cells. Immunomodulators, we have access, they work incredibly well with

keeping our bodies healthy. Plus, this is the great thing about real food and things that have a long history, not invented literally months ago and been in last week, "Here's the new one, we got a new formula for... “No. Thousands of years, documented history, it's been used for centuries.

If we're talking about reishi, it's not just going to be good for one thing, it's going to be good for many other things, when we're talking about what the human body really thrives on versus this drug being for this one use and it has all these negative side effects for everything else in your system. One of the reasons that I really love reishi is that it's so supportive of our sleep. And a study published in Pharmacology Biochemistry and Behavior found that reishi was able to improve sleep latency, meaning you fall asleep faster, improve your overall sleep time and improve your sleep efficiency. So folks were spending more time in the deepest, most anabolic stages of sleep and more time in their REM sleep as well. All happening from one great entity, but the key is getting the best source, because especially with something like reishi, you want to make sure that it's dual extracted, so that means there's two extraction methods to get all these viable nutrients that we're talking about here.

This is why I love Four Sigmatic's reishi. So go to foursigmatic.com/model, that's F-O-U-R-S-I-G-M-A-T-I-C dot com. Check out their incredible reishi. They also have a reishi hot cacao drink, which my youngest son is his favorite little thing to sip on. And so you got the benefits there with organic cacao, and that has immunomodulating capacities as well, one of the most anti-oxidant rich foods ever discovered, the ORAC is incredibly off the charts. We've got precursors like tryptophan, which is a precursor for serotonin, which is a precursor for melatonin. I can go on and on. It's a really, really great thing. And the thing that really stands out the most for me is the ease of use, like just these little packets, open it up, pour your hot water or hot almond milk and enjoy. Get these great benefits. So go to foursigmatic.com/model, you're going to get 10% off or maybe even more, depending on how many of their incredible mushroom products that you want to try out. So I'm a big fan of the reishi, especially at times right now, but it's just one of my favorite things overall that I utilize on a regular basis. Foursigmatic.com/model.

Now, let's talk about the number one way that the human body is making and using vitamin D. This is critical. The number one way, as noted earlier at the very beginning, is through this interaction with the sun, but there are several factors that influence our skin's ability to make vitamin D. At least one of these is going to be affecting you. The first one is one that we hinted on a little bit earlier, and it is our skin type. It's our complexion, dramatically can affect our body's ability to convert sunlight into vitamin D. An analysis published in a peer-reviewed journal, Nutrition Research, found that approximately 42% of Americans are deficient in vitamin D. Almost half of our population, I would say more.

But nearly 80% of African-Americans in the study were found to be deficient in vitamin D. Unbelievable. And about 70% of Hispanic Americans were found to be deficient in vitamin D. The darker our complexion, the more that the UVB radiation from the sun is not able to penetrate the skin and hit that epidermis, hit that cholesterol and start that conversion process. So the darker pigment, that melanin is a natural sunscreen, it's a natural sunblock, for just through our evolution, being in environments where we're getting constant access to sunlight. But now moving to environments where that sunlight exposure, number one, not being the same because we're moving up north, getting a little bit higher up on the globe, but also our lack of getting sun exposure in the first place, because most folks in our society today spend the majority of their time indoors. We're not outside anymore.

So we're lacking one of the most critical vitamins as well, vitamin N. This might be a new one for you, it's vitamin nature. You heard it here first. We're largely lacking vitamin nature. And remedying that, number one, understanding how important this is, and so how do we address this piece here? Well, if we have darker skin, we need a little bit more time in the sun. So that's just one thing off the bat if we're just specifically talking about the interaction between the sun and our skin. But there's going to be coming up the apprehension, "Well, what about skin cancer? What about damage from the sun?" I'm not talking about getting burnt, I'm talking about getting adequate sunlight, which is how we evolved. It's how we have life on planet Earth, but now it's been so framed to be, "The sun is going to kill you." The sun literally enable you to have a life.

The sun isn't just outwardly trying to kill you and take you out. We've developed these powerful interactions where sunlight interacts with our genes. If you're not getting that, we're not human. Alright. I'm not saying to go out and get roasted toasted broasted, especially if you have incredibly pale skin. That is silly. Alright. The sun can hurt you. But living in a natural setting, it's difficult for it to do so. But we're not living in a natural setting. Many of us, when we finally do get some sunlight, we get sun-burn 'cause we're spending so much time indoors and we go out and we go on vacation, we got to lather up. But we should be getting some adequate sunlight on a regular basis, if at all possible. We'll talk about that more about where you live and those kind of things in a moment. But in general, if you have lighter skin, you're not going to need as much sun exposure, so maybe 10 to 15 minutes a day. And we're going to talk about some specifics coming up next on what that looks like, and then... But maybe if you have darker skin, maybe you might need 30 minutes which this isn't even a lot.

Go outside. There's a whole world out there. Out those doors. Go and experience it. Alright. This isn't even... When I'm saying these time recommendations, it's just like, that's not even a big deal, 30 minutes outside, because I feel it in myself as well. 30 minutes. That's the old me still present, still traces, remnants of the Shawn who did stay inherently indoors. But just we can make that time more valuable. Get outside, you could do your workout, combine two

things together. Go outside and work out, have a walking meeting with your co-workers, or if you're doing a meeting call with somebody, put on the headset and go for a walk, get some sunlight while you do your meeting, maybe this is a good time to just go outside and play a game, hang out with your family or your kids. Go outside and play a game, or at least let the kids go out and play a game, you go sit and watch them. Get a little bit of sunlight. We can stack conditions and find a way. Alright.

So that's the big thing. Number one is the skin type. We've got to be more adamant and intelligent about getting that exposure. Almost 50% of our citizens are deficient in vitamin-D already, but much higher levels in African-American community, and we're also not coincidentally seeing higher rates of severe symptoms in regards to this current infectious disease, but also many other infectious diseases and chronic diseases as well. Vitamin-D is an important facet. If you've got that pigment, you've got that melanin, your genes are much closer to the mother-land, alright, in an environment where you would be getting more sun exposure, and now the environment is much different, but the genes, it's just a few generation separation from that.

And so that change in environment is so harsh. This is one of the reasons we're having such high rates of chronic disease in our communities. Sun exposure is one of those major culprits. Of course, being inundated with poor food, stress, all these things matter. We got to take each piece back into our power. Take control of the things that we can control. And one of the things we can control for free is getting a little bit more sunlight intentionally. So that's number one is skin type. Other factors that can affect your skin's ability to make vitamin-D, number two is the time of day. You're going to make vitamin-D more readily, depending on what time of day it is. And so the optimal time where you're going to get the fastest conversion of that UVB into vitamin-D in your body is the mid-day sun, when the sun is at its peak. The midday sun is the most apt to contribute to that conversion. So when it's highest in the sky. So the time of day. It's not the only time, but it's just the most efficient time. Pretty much any time you're getting the sunlight, if the sun is touching you, you're getting...

When you... You can literally see it. If you see it on your body, even if you can't see it, that's the thing. If it's an overcast day, the sun is still shining through. Alright. Different... We've got UVA, UVB, that's a whole different conversation. But the sun is still touching you, and when it's doing that, it's interacting with your body and DNA changes are happening, genetic changes are happening. Or let's be clear, your genes don't necessarily change, it's the expression, the reading of those genes, epigenetic influences. Alright. So the time of day. Next up here, other factors that affect our skin's ability to make vitamin-D. The next one is your location or your latitude, where you physically are in the world, where are you located on the globe, where are you located on planet Earth, determines whether or not you're getting sufficient UVB. Depending on what time of year it is, there's something... A lot of folks know this term, but it's

the 37th parallel, it's also known as the sun-belt, or the vitamin-D belt. It's basically like a high-rise gene belt around the globe that below this, the 37th parallel, you're getting adequate UVB coming through all year. But above the 37th parallel, generally, especially the winter months, but it can be pretty much half the year, you might not be getting adequate UVB actually coming through in the first place.

And so if you're watching this on YouTube, we have up an image for you to see the 37th parallel to see where you live, are you above or below the 37th parallel? And basically, we're talking about... It goes across about half of the state of California. So the top half is above the 37th parallel, not getting that UVB year-round, and then below that is getting the UVB year-round and then going across Arizona, just the top of Arizona and the top of Texas is just below Missouri, just below Kansas, just below Colorado. So those states are not getting that year-round. All the way is basically cutting off in between North Carolina and South Carolina on the East Coast, so the Upper East Coast states are not getting that UVB year-round. So we see the deficiencies the data shows clearly, you see the deficiencies are higher in the northern states, in particular for African-American community, more likely to be vitamin D deficient living in the states that are above that 37th parallel. But if you don't live below the 37th parallel and getting at UVB year-round, move. I'm just kidding. You don't have to move, you don't have to move.

There are other strategies here. You can, if you want to, but there are other strategies, alright? So of course, I lived in Missouri pretty much my entire life, and always found optimal vitamin D levels because the body can actually store, as we mentioned, vitamin D for a sufficient amount of time, if we kind of build it up and store it up in our system. And so it can kind of last a little bit through those darker months, however, this is the time where food becomes more important, and supplementation becomes important as well. I'm a big proponent of food first, and so we're going to talk about that, but this is definitely a spot for some smart supplementation, but that comes with some important caveat, which we'll get to in a moment. So that's the third one here on other factors that affect our skin's ability to make Vitamin D. So we got skin type, time of day, and your latitude, your location. Number four is the time of year. The time of year affects the amount of UVB that you're getting from the sun. No matter where you are, the amount of sunlight available is going to change depending on the time of year.

In the winter months, the days are much shorter, and this is the height, funny enough, of vitamin D deficiencies each year. So just think about this cognitively. During the winter months, during that time of year, when the days are a little bit darker, a little bit shorter, when it's cold and flu season taking place, just think about that. A brilliant pathologist named Dr. Ryan Cole said, "There is no such thing as cold and flu season, there is only low vitamin D season." And us truly understanding today in this vitamin D master class, how important

vitamin D is for regulating our immune system, our hormones, our DNA, and our genetic expression, we can start to understand how true that statement is. Because if you think about it, why suddenly am I just... Is the world making me sick? The rest of the year is cool, but now it's like cold and flu season. What changes? And we think, "Oh, it's because it's cold," so we called it a cold, it's because it's cold. No, you know about cryotherapy? You know about The Iceman Wim Hof? He's actually doing this cold, his immune system is being studied by all these scientists, all these documentaries are being made about him, because of his immune system's resilience. It's not the cold, the cold doesn't give you the cold.

"Put a coat on, you're going to catch cold." You don't catch cold, ma. How do you catch? You don't catch a cold, that's not how it works. It's deficiency that enables, a lot of times, most of the time, opportunistic bacteria, viruses, things that we're already carrying around on our bodies. We don't catch something, the majority of time it's something we're already carrying around with us, when our immune system gets compromised because we're vitamin D deficient. So again, he said, "There is no such thing as cold and flu season, there is only low vitamin D season." So the time of year matters, and that's going to a big concern that comes up is like, "Well, what about... I live in New York, I live in... I live in Michigan, and during the winter months, it's... Well, I can't even get any sunlight in the first place, I guess it's freezing outside... “When you can, during the months when the sun is shining, first and foremost, the most important thing is be more adamant about getting yourself access to real sunlight. And I've been... New York City is one of the coolest places in the world, but we've got all these skyscrapers literally just walking on the street oftentimes the sun is just being blocked out. So being more adamant about finding places where you can get some sunlight.

They actually got a lot of rooftop gardens jumping off, rooftop hang-out spots. So during the times of the year when sun is viable and the UVB is getting through, again, based on the time of year is going to determine the 37th parallel, how much sunlight is coming through, so during the times you can get sunlight, get sunlight. Outside of that, we've got to address our nutrition, which we're going to get to in a moment. So, be not alarmed. We're all going to be taken care of, but first and foremost, when you can get sunlight, get more of it. Alright, what else can block our skin's ability to make sunlight into vitamin D? The next one here is pollution. A study published in the journal Nature Reviews, Endocrinology, determined that air pollution can be a causative agent in vitamin D deficiency. Again, it's not so much what the sun is doing, it's our interaction with nature. And what we are doing, creating this symptom, we're creating the environment where... We're creating pollution where the sun isn't able to interact with our bodies normally. This could even potentially have certain rays of the sun being able to pierce through without the complementary rays.

So we get into that conversation. So pollution, so if you're in a place that has more pollution, your likelihood of vitamin D deficiency can go up. And right now there's talk, there's a really

big press by some of the wealthiest people in the world to deal with climate change and global warming, to effectively start to block out the sun by adding some components to our atmosphere, by adding some chemicals to our atmosphere, some synthetic chemicals to our atmosphere to block out the sun's radiation. This is a real thing. I'm going to play the clip for you.

Bill Gates is backing the first high altitude experiment of one radical climate change solution, creating a massive chemical cloud that could cool the Earth. It's called Solar geo-engineering, and it's highly controversial. It would look something like this. Thousands of planes would fly very high and use nozzles to inject millions of tons of light reflecting particles into the stratosphere. It would create a thin chemical cloud of those particles around the whole planet blocking some sunlight from reaching the surface. It would mimic a giant volcanic eruption, which we know cools the earth.

SHAWN STEVENSON: So the level of thinking behind it is the fact that a volcanic eruption has been known to help to block out the sun's radiation. How did that work out for the dinosaurs? Just... You got to be kidding me. And who's at the helm? Who's in the driver seat? Billy G. Mr. Gates, he's driving this... If he had his way, which he has his way with so many things that are affecting our world right now, he's having his way with you. But we got to stop this one, like ASAP. This is ridiculous, it's insane, because it's not looking at what are the downstream effects. Okay, we reduce global warming, what happens to the algae in the ocean? What happens to plants that are depending upon photosynthesis and the whole ecological cycle that feeds into that? What happens to microorganisms? What happens to insects? What happens to us? Our relationship with the radiation from the sunlight and our ability to make vitamin D, and vitamin D is just one thing. This is a thing, what we're talking about today and why this deserves a master class is because we have the data on this and people need to know it. But there is so much that we don't know. Sun exposure and its interaction with the human body, because again, the sun enables us to have life here on this planet, we don't even understand all of the things that is doing for us, and that delicate interaction. And now we're going to just...

Let's put some synthetic chemicals, coating around the earth to block the sun out. That sounds like some evil genius movie thing like, "going to block out the sun." Are you kidding me? This isn't a movie. We got to stop letting Billy G run... Are you kidding me? Come on. With the sweater? How? He seems super unthreatening, but those be the ones. So again, also greatest financer right now of the WHO, dictating so many things about mandates, so many things about this huge press to bring another pharmaceutical drug to the market, make sure everybody gets it healthy or not. Abandon your logic. He's in the driver's seat. I usually don't even... Microsoft is cool, whatever, but you're messing with my family, you're messing with my world family, and we're not going to have that. So anyways, let's move on. Billy G is not my lover. Alright, six. Another factor that can decrease our skin's ability to make Vitamin D by

interacting with the sun is age. So as we progress in age, we can have a reduction, we have photoreceptors in our skin that literally read and pick up light, and so just that interaction can get a little bit off.

But for me, the biggest culprit underlying that is our abnormal aging, alright? So the way that we age today and the data that we have is based on people who are not healthy, unhealthy aging. And so in healthy populations, this isn't that big of an issue, but for the average person today as we age, yeah, it's going to be an issue, alright? Not necessarily a big issue, it's going to add to that overall equation. But healthy aging, living an active lifestyle, eating healthy food, because our food is what's creating our skin by the way. This all starts from this route of the cholesterol in our skin as well, and cholesterol is a dirty word, or has been a dirty word, so all of these things matter, our nutrition matters. So, age is another factor here, and we'll share one more that can reduce our skin's ability to make Vitamin D, sunscreen. It's kind of Captain Obvious, and now we get into that debate, but we've got to look at the media inundating us with this idea that the sun is going to kill people, and slathering up with all of this sunscreen. Not that sunscreen can't be effective and safe and helpful, but number one, what's in your sunscreen? Because many of the most popular brands of sunscreen have notable, actually from the WHO, carcinogens in them, cancer-causing agents, ingredients in the sunscreen. You could slather up on this stuff and the sun is just baking cancer into you, but it's not that kind of cancer, it's a different kind of cancer.

So be aware of the type of sunscreen, get the most natural chemical free that you can, if you're utilizing sunscreen. But sunscreen does block out Vitamin D, so your skin's ability reduces it dramatically potentially depending on your complexion, but the sunscreen you're using all these factors. So keep that in mind. We do want to have some sun exposure without sunscreen, don't be... And I'm not saying to bake yourself, but that's the most efficient and effective and natural way to make Vitamin D. But also, check this out, low vitamin D is actually a major risk factor for skin cancer. You see how it goes together? So we need the vitamin D to defend us from skin cancer. Who knew?

We did, we knew, we knew. Alright. Now, let's dive in and talk about some specific food sources. So the number one way that we're making vitamin D is through its interaction with our skin and the sunlight. Food sources, food first. Vitamin D is obviously critically important, we've talked about that in depth. Here are some of the best food sources. Right out of the gate, one of the most notable, and these are just going to be based on peer-reviewed evidence. Wild-caught salmon is the very top of the list as far as vitamin D food source. Wild-caught salmon has an average of about 900 IU of vitamin D per 3 1/5 ounce serving. That's right up there. However, and this is important, farm-raised salmon contains only 25% of that amount. Still, one serving of farm-raised salmon... Again, just 25% of that, so we're still getting around 200 IU of vitamin D.

So still pretty hefty amount from food. Other types of fatty fish like halibut, mackerel, salmon, at the same ballpark, 200, maybe 300 IU per 3.5-ounce serving. But the one that has the most clinical evidence is cod liver oil. It has about 448 IU per teaspoon. And now, this has been used for generations, cod liver oil as prevention and treatment for vitamin D deficiencies in children. So this was the big thing if kids with the rickets, cod liver oil, cod liver oil for a long, long time. Moving on, egg yolks. A typical egg yolk contains about 40 IU of vitamin D, but a study published in The Journal of Nutrition found that pasture-raised chickens that roam outside in the sunlight produce eggs with levels three to four times higher. So if chickens get to do chicken things, being in the sun, eating chicken food, pecking around, higher levels of vitamin D in the yolk.

So what about some vegetarian and vegan sources? Well, the biggest one here is mushrooms. Mushrooms are another top source of vitamin D though, this is important, they're rich in Vitamin D2, not D3. D3 is coming from the animal forms, which according to data cited in the American Journal of Clinical Nutrition, vitamin D3 may be up to two times more effective and efficient for the human body than vitamin D2. So I want you to keep that in mind. So, where's the distinction here with the mushrooms? Wild mushrooms can easily contain 2000 IU of vitamin D2 per 3 1/2-ounce serving, but farmed mushrooms that are not grown in sunlight contain very little vitamin D at all. Now, another very strange source of vitamin D for the average American is actually through vitamin D fortified foods. So these are processed foods that manufacturers are adding vitamin D to in an effort to eliminate vitamin D deficiencies. Now this has have been going on for decades. And again, these are generally coming in heavily processed food, so like white bread, it's enriched, fortified with vitamins and minerals. These crazy breakfast cereals. I'm big, I was definitely a founding member of the Cereal Addicts Anonymous.

So the Lucky Charms, the Froot Loops, the Honey Nut Cheerios, these heart-healthy foods. Cheerios is heart-healthy, fortified with vitamin D. But number one, it's the less effective vitamin D2, first and foremost. Second thing, even though these low-quality foods are fortified with vitamin D2, why are most of our citizens still deficient in vitamin D? Just a logical question. Clearly, something is off here. So leaning on this fortification process, these fortified food sources of vitamin D is probably not effective. But I want to keep that in context, because foods that are fortified with vitamin D2 doesn't seem to be helping that much because the average person is eating a tremendous amount of these processed foods that are fortified with these nutrients.

So with that said, so food first, target some foods... No, sunlight first, then food, as far as vitamin D is concerned. But in this context of what we're ingesting, food first, and supplementation can be incredibly helpful for folks who live above the 37th parallel in

particular, and/or folks who are not adamant about getting adequate sunlight. So you've got four options when it comes to supplementing with vitamin D. You've got lanolin source vitamin D, you've got mushroom source vitamin D, you got fish oil source vitamin D, and you've got lichens source vitamin D. Now, mushrooms are a source of, again, vitamin D2 and it's not the same, it's not as effective as vitamin D3. Only lanolin, fish oil and lichen-based supplements provide you with vitamin D3.

So if you're like, "What the is lanolin?" Lanolin is often used for supplements, so it's probably the most dominant thing used for supplements because it's very cheap compared to fish oil. Lanolin, also known as wool wax, is a wax secreted by the sebaceous glands of wool-bearing animals. So it's coming up the glands of, primarily sheep. So it's used to keep their wool lubricated, get that nice fluff for their wool. And so that's the primary source of lanolin for supplement, it's coming from sheep's wool. The other source... So we've got lanolin, which, okay. We've got fish oil source, we've got mushroom source, which again, that's D2, but then we've got another vitamin D3 source, which is my favorite, which is from lichens. And lichens right now are being studied for a whole host of benefits. Lichens are a unique combination of algae and fungi that are one of the most resilient and abundant entities on planet Earth.

Now, this is a vegan source of D3, which is incredibly rare and making it one of the most popular D3 supplements in the world. In my family, we actually use a vitamin D3 spray, and so it's sublingual, you just spray it on your tongue. And number one, it's much more bioavailable and absorbed faster because taking these capsules and all these crazy fillers, but it's just you can lose some in the digestive process. But that sublingual spray under your tongue is awesome. And also, it's a lichen D3 source. And this is the one from Onnit, by the way. So it's the Onnit vitamin D3 spray. And I'm also, because it's a vegan source, I'm able to hand it out readily to friends and family who are vegan and vegetarian. But here's the key, this is the biggest part and why this D3 is important or any that you might find, but this is where it's a game changer.

Vitamin D3 is fat soluble. It's fat-soluble, you have to have the fats involved for you to absorb it and utilize it, and the most popular brands of vitamin D3, and I just went and checked on this just prior to this show. I was shocked. Most of the most popular brands that people are buying for D3 are encapsulated with horrendous, heavily refined soybean oil and corn oil. Because again, it's fat-soluble, let's just throw some soybean oil in there. Even though one of the peer-reviewed studies that I talked about in my book Eat Smarter, found that just smelling, just inhaling the fumes from soybean oil, corn oil, these very refined seed oils, vegetable oil, canola oil can damage your DNA just by inhaling them, alright? This data exists, the processing involved in getting oil from a soybean is incredibly abnormal. The refineries, like the odorizing process, all the chemicals added, it shouldn't even be ingested by humans. And so most vitamin D3 supplements are swimming in soybean and corn oil, but honest D3 spray actually is using a

base of medium chain triglyceride oil from coconut. So coconut-derived, natural tasty flavors, check it out. Go to onnit.com/model. That's O-N-N-I-T dot com forward slash model, you get 10% off the vitamin D3 spray and all their other incredible earth-grown nutrients, earth-grown source foods and supplements.

I love those guys. Onnit.com/model. Now, this is an incredibly important topic because our immune system right now is of the utmost importance in helping to increase our resilience and decrease our susceptibility to infectious diseases, and as you've found out about vitamin D3, also reducing our risk of chronic diseases. Everything from autoimmune conditions to cancer. Vitamin D3 in particular, is that important. So my mission today is to encourage more Americans to get the D. If more Americans get the D is going to solve a lot of our problems overall. So I want you to be a part of that mission, to get the D and also get the D as gifts to other people. And I think we can help to bring more love and connection to our world at large. But seriously, I appreciate you so much, and this is just one aspect of real food and real nutrition that needs to be the top conversation that's being had, alright? These are the things that our genes literally expect us to have. Our genes expect us to interact with the sun, to produce Vitamin D and also to extract Vitamin D from our food. It's one of the things that our genes are banking on us getting to turn on optimal performance.

So be more adamant about this. But this is the beautiful thing, oftentimes it's coming along with other benefits that we don't even know about yet. So I hope you got a lot of value out of this, and if you did, please share it out with your friends and family, and you can tag me. I'm @shawnmodel on Instagram, and I'm @shawnmodel on Twitter as well, and at The Model Health Show on Facebook. And we've got some epic shows coming your way very soon, so make sure you stay tuned. Take care, have an amazing day, I'll talk with you soon. And for more after the show make sure to head over to themodelhealthshow.com. That's where you can find all of the show notes, you could find transcriptions, videos for each episode, and if you got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome, and I appreciate that so much. And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.