THE MODEL HEALTH SHOW

EPISODE 731

The Secret to a Healthy Metabolism, Strong Immune System, & Aging Well

With Guest Dr. Gabrielle Lyon

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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. On this episode we're talking about resilience, we're talking about muscle, we're talking about this anti-aging reservoir that we all have the ability to build. Not only does this defend us from all manner of chronic and infectious diseases when we're talking about muscle, which is crazy, who knew? But we're also talking about the ability to bounce back faster should anything nefarious happen. There's something really special about muscle and you're going to learn why on this powerful episode with the muscle centric physician herself, Dr. Gabrielle Lyon. And she's got an incredible new project that's just like power packed with all this incredible new science, and affirming how remarkable our muscle tissue is, functioning truly as an endocrine organ. This is a hormone producing, and also communication, it's not just about producing the hormones, it's also about the receptor sites and the communication with other parts of the body. So there's this powerful muscle brain connection as well, and essentially her work has affirmed that we have a misguided approach when we're looking at weight loss, we're so focused on getting rid of fat when really we need to be focused on building more muscle because muscle is our primary site of glucose absorption.

SHAWN STEVENSON: It's a primary site of insulin response in association with blood glucose, and so we see this down regulation via our fat cells with insulin resistance taking place when we are putting on an accumulation of more body fat, absolutely. But our muscle is really the secret, it's a sponge, it's a storage system that healthfully can manage our blood sugar and really help to heal so many different things. So I'm really excited about this, because there is nobody better on the planet to help us to understand this than Dr. Gabrielle Lyon. Now another thing that she's really brought to public awareness is the importance of providing our body with the building blocks that actually makes our muscle. Yes, we do the activity to build it, to create it, creating those microtears in our muscle so they heal back and grow and become stronger. But we cannot do that or we'll have a huge deficiency in doing that if we're not providing adequate amino acids, and we put this overarching label of protein, but we're really looking at our body is using the amino acids that we break protein down into. And there are certain foods that are backed by tons of science that are dense in the amino acids that are most essential in building muscle. Now obviously real food sources, dense protein sources of real food are critical, but sometimes we're not getting in the adequate amount of protein that our bodies need to get the results that we want.

SHAWN STEVENSON: And so a lot of folks look to protein supplements, and there are a ton of protein supplements available on the market today, from plant source to animal source. But the vast majority of clinical evidence supporting the benefits of

using a protein supplement are from studies done on whey protein. A randomized double-blind study published in the Journal of Nutrition, found that overweight test subjects who are instructed to consume whey protein daily for 23 weeks, lost more body fat, had greater loss in waist circumference and had a greater reduction of circulating ghrelin levels. That is our major hunger hormone, compared to test subjects who were taking soy protein or an isogenic carbohydrate drink. What's really interesting about this study is that the test subjects were not instructed to make any other dietary or lifestyle changes, they just started losing more belly fat by adding in whey protein. That's really something remarkable to pay attention to, and by the way whey protein is not a new invention, Socrates the father of modern medicine utilized whey protein, it was called serum. In their particular dialect, of course, but effectively that's what the translation is. So this has been around for a very long time and it's the most science-backed form of protein, so whatever protein you subscribe to, just make sure you get the best quality possible.

SHAWN STEVENSON: And you're gonna find the best quality possible whether it's grass-fed whey protein or a plant-based protein from Onnit. Go to onnit.com/model, that's O-N-N-I-T.com/model. And you will find the highest quality protein supplements in the world. Onnit is a health and human performance focused company that even puts their supplements through clinical trials, through randomized controlled trials to see their efficacy. So they're going above and beyond, go to onnit.com/model, check out their grass-fed whey protein, it's amazing and of course, if you're subscribed to a plant-based protocol their plant-based protein is just the best, it just is. My oldest son actually he utilizes it, it's his favorite protein when he's doing a plant-based protocol, some people just their body jives better with certain things and we have to honor that. But we wanna have delicious experiences and we wanna have things that taste good and also feel good in our bodies. So Onnit is that deal check them out, go to onnit.com/model. And now let's get to the Apple Podcast review of the week.

ITUNES REVIEW: Another five-star review titled fantastic podcast by one Miss Brazil, "I love this podcast. Sean is so down-to-earth and knowledgeable, I learned something with every podcast. I leave at the end of the podcast feeling like I can do it. So inspiring, keep up the good work. Now I have to find some steps to use to keep me healthy along with my jump rope, I can do it, one step at a time."

SHAWN STEVENSON: Oh, that is so good and that's referencing an episode we did recently, looking at what are some of the most effective exercises for long-term fitness, for fat loss that are often overlooked and we shared some of the science on a simple jump rope and all the benefits there. And also stair climbing and we talked about the science behind why it works and why it is actually bringing benefits faster as far as like physical transformation versus other forms of cardiovascular exercise. So we'll put that episode for you in the show notes, but I love that shout out and that powerful segue, that's really awesome. Thank you so

much for leaving that review over on Apple Podcasts and without further ado let's get to our special guest and talk of the day.

SHAWN STEVENSON: Dr. Gabrielle Lyon is a board certified family medicine physician, and fellowship trained physician in nutritional sciences and geriatrics. She's the author of the new hit book Forever Strong: A New, Science-Based Strategy for Aging Well. Dr. Lyon completed a combined research and clinical fellowship in geriatrics and nutritional sciences at Washington University, in my hometown of St. Louis, Missouri. Dr. Lyon is also a subject matter expert and educator in the practical application of protein types and levels for health, performance, aging and disease prevention. And she's also a proud mom and wife and somebody that is very passionate about family health and wellness, and she's part of the Family Health and Fitness summit.

SHAWN STEVENSON: That's coming up in just a couple of days, and you get access to this incredible event. We're talking about a dozen of the world's leading experts in fitness, in nutrition, in wellness, that have families, that have kids and they found ways to create a culture of health in their household. You get access to this very special event for free when you go to eatsmartercookbook.com. Make sure that you've got your copy of the Eat Smarter Family Cookbook and you get this event that would normally cost several hundred dollars to attend virtually, you get it for free. Alright, so get this powerful resource into your hands. The Eat Smarter Family Cookbook is taking the nation by storm and this is gonna be a staple in your kitchen, and such a valuable resource for family wellness, incredible recipes. But also getting access to this incredible wellness event to learn from experts like Dr. Gabrielle Lyon, about how she's created a culture of wellness in her household with all the stuff going on in her life. And so being able to pick up these tips from people who figure some things out is incredibly valuable, so very pumped about that. And now without further ado, let's get to this powerful conversation with Dr. Gabrielle Lyon.

SHAWN STEVENSON: Alright, I've got my incredible friend Dr. Gabrielle Lyon sitting here, it's good to see you again.

DR. GABRIELLE LYON: Good to see you my friend.

SHAWN STEVENSON: This is round three, alright, and in trilogies one of them jumps to mind for this particular conversation, Rocky III. Alright, this is when he fought Mr. T aka Clubber Lang, and there was an interviewer asking him about the outcome, what's his prediction for the battle that was going to ensue, and he said "Pain." So we're gonna talk about pain today in relationship to our health, in relationship to muscle, muscle function, and let's start off by talking about this study you highlighted in your phenomenal new book, “Forever Strong”.

Looking at this question, what is more impactful negatively to our health? Gaining fat or losing muscle?

DR. GABRIELLE LYON: The answer might surprise you, the study that you're talking about is by a man named William Evans, he was actually on my podcast, I was so excited to have him on. And he started identifying the fact that we weren't directly measuring skeletal muscle, and just to paint the picture before we go into the study is just from a broad perspective, everybody has discussed how muscle strength is much more important than muscle mass. So we've now built this concept that muscle mass is really not important, but when you look at the literature and this study looked at elderly men and it compared looking at a DEXA, which is what we commonly use versus a way of tagging muscle through something called a D3-creatine. Basically, you simply take a pill the Deuterated creatine tags within your skeletal muscle, you pee and you can measure the amount of skeletal muscle mass. What he found was the loss of skeletal muscle was much more impactful on overall morbidity and mortality than the gain of body fat. So the body fat was essentially irrelevant, but the loss of skeletal muscle was really dangerous for these older individuals, and that's for a number of reasons.

SHAWN STEVENSON: That's so interesting because again, in our culture we're so tied to body fat being the major culprit in all these poor health outcomes, but really the loss of muscle trumps that. And you highlighted this in the study, the loss of performance, obviously, loss of function, poor metabolic health as well is gonna be one of these outcomes. And I wanna talk specifically about pain and inflammation, because some of the insights that you're sharing in this book regarding muscle and inflammation and just our body's ability to handle itself in the face of damage or infections and things like that. So let's talk a little bit about that.

DR. GABRIELLE LYON: Yeah, well first I have to say thank you so much for bringing up that study, there are hundreds of studies in that book and for you to pick that one is something that is really important, is commendable, because it really changes the way that we think and understand skeletal muscle. And what you said is also very insightful in this way that skeletal muscle has multiple impacts on the body, and when we think about mobility and we think about it as a metabolic sink, in the face of obesity which that's what we all talk about. Is this concept of how obesity is driving all these illnesses and again obesity is a side effect of unhealthy skeletal muscle, and again, we're gonna begin to see that more and more. Skeletal muscle in and of itself as an endocrine organ is very valuable especially when we think about pain and inflammation and contracting skeletal muscle, allows this interface with the immune system through these hormones called myokines.

DR. GABRIELLE LYON: And there's hundreds of different myokines and some of the original research on this came out of Petersen's Lab in Copenhagen, and still to this day she is a immunologist, an exercise immunologist. So she's an immunologist, an MD as well as a PhD in

Exercise Immunology and she looks at the interface between skeletal muscle and the immune system. The more healthy skeletal muscle mass an individual has, the more that they are physically active, the more myokines they secrete, to help temper the immune system and to help limit inflammation over the long term.

SHAWN STEVENSON: So number one, there's a high probability that we're carrying more and it's not just about strength as you pointed out earlier.

DR. GABRIELLE LYON: No.

SHAWN STEVENSON: It's about actual muscle mass on our frame. We're going to have increased resilience not just against injury, but also things like infections, things like chronic diseases as well. You mentioned our muscles being like a metabolic sink.

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: Let's talk a little bit more about that. So we've got myokines, what about the amino acids?

DR. GABRIELLE LYON: Yeah skeletal muscle is number one, it is absolutely your metabolic sink and I think that we all appreciate that, we say, "Okay, well, I'm gonna exercise so that I can eat more." And this is really a common way individuals think about it, but skeletal muscle, especially in the face of obesity, insulin resistance, it is the pinnacle, the pinnacle place to begin. So let's think, what does skeletal muscle do? Skeletal muscle is your site for glucose disposal.

SHAWN STEVENSON: Right.

DR. GABRIELLE LYON: For the carbohydrates that you eat, skeletal muscle is the site for glucose disposal not just at rest, but when an individual exercises, it allows for glucose uptake of the muscle without insulin. You're leveraging your body's own capacity to move substrates or foods that you eat out of the bloodstream into skeletal muscle. What happens when an individual doesn't have a lot of muscle? Like these elderly studies that the loss of skeletal muscle becomes so detrimental, the question becomes what are the outcomes? The outcomes that we're worried about, they are cardiovascular disease, they are cancer, they are Alzheimer's disease, they are immobility. This way of not being able to maintain your activities of daily living, all directly relate to the quality of skeletal muscle and arguably and people are gonna push back on this statement, the amount of skeletal muscle mass you have. People will push back on this and I just want to mention that it's because the research is young. These first group of studies coming out where they will begin to actually directly

measure skeletal muscle will change the paradigm of how we begin to think about muscle mass as important. And just to circle back, it's your place for glycogen storage. The more healthy muscle mass you have the more you have places to put glucose, when you lose that blood glucose goes up, when you lose that insulin levels go up, all of which in the long term become very detrimental.

SHAWN STEVENSON: This is so powerful, there's so many pieces of this, just the fact that we can absorb or draw that glucose out of our bloodstream into muscle without the activity of insulin, that should just change the game right there in and of itself. As you know, one of the big issues we're struggling with as a culture is insulin resistance and muscle supersedes that in many ways. And not only that being a reservoir for these powerful myokines, basically, I'm just gonna consolidate it stress, if we're talking about stress resilience, our muscles, our really a reservoir for anti-aging compounds.

DR. GABRIELLE LYON: I would agree with you. And I think that we're still learning so much more about it, and we do need to shift this to become the focal point. You mentioned something else that's really important, is that it's an amino acid reservoir, and basically, there's data to support that the more healthy muscle mass you have the greater your survivability, against nearly any kind of morbidity and mortality. And let's just take cancer, one of the reasons individuals die of cancer is because of cancer cachexia, which is muscle wasting, this highly catabolic state directly related to the amount of muscle mass you have. So when you are younger, like I look at your son he's been training forever, he is doing and taking care of the actions that set him up for a much stronger trajectory of aging.

SHAWN STEVENSON: Yeah. And the crazy thing is this used to just be a part of our culture, we would develop muscle, we were active, we were lifting heavy things, we were moving, doing a lot of activity through the day, but we've become more and more and more sedentary, especially in the last few decades. And again the big ramification, yes, we see the outer appearance of fat gain, but your research indicates clearly the biggest villain in this whole equation is our loss of muscle.

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: So I wanna ask you about this, there's something you mentioned throughout the book basically chubby muscles.

[laughter]

SHAWN STEVENSON: Alright, so we know about visceral fat and we know about subcutaneous fat, but there's an integration point I wasn't taught this in my university education. That fat and muscle are really kind of intimately connected.

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: We have this intramuscular fat.

DR. GABRIELLE LYON: Yeah, intramuscular fat.

SHAWN STEVENSON: Let's talk about chubby muscles.

DR. GABRIELLE LYON: That is, first of all, I have been reading this for a very long time and studying these things. I have never had someone say chubby muscle. So...

SHAWN STEVENSON: It's what I do.

DR. GABRIELLE LYON: Pretty creative there. Skeletal muscle. When you have healthy skeletal muscle, think about it as a filet. When you have unhealthy skeletal muscle, you think more about it as a rib eye. Unhealthy skeletal muscle gets elevated levels of intracellular fats. This really changes the, not just the composition of healthy skeletal muscle, but its ability to do its job. When muscle is infiltrated with fat, it changes its strength, it changes its connectivity over time, it changes its resilience. And that's from the physical architecture, the physical architecture of the muscle changes. And the trajectory of that is something that we see through this concept of sarcopenia or obesogenic sarcopenia. Sarcopenia is this idea that we lose muscle mass and function and less known. Which by the way, that ICD-9 code, that classification of disease only came about in 2016.

SHAWN STEVENSON: Super recent. That's crazy.

DR. GABRIELLE LYON: The identification and classification of the loss of muscle mass and strength came out in 2016. I mean that in and of itself in so impactful and this idea that chubby muscle is, it's not just one day you get chubby muscle. The changes in skeletal muscle will happen before you see any subcutaneous or visceral fat. Skeletal muscle changes at, there's some early data when this concept of insulin resistance and skeletal muscle started out of Yale and they looked at healthy sedentary 18 year olds, no excess body fat...

SHAWN STEVENSON: Healthy sedentary, already an oxymoron.

DR. GABRIELLE LYON: Yes, you caught it, the oxymoron. And what they found was those individuals were already showing signs of insulin resistance without any outward signs of gaining weight.

SHAWN STEVENSON: Yeah. It's happening below the surface.

DR. GABRIELLE LYON: It's happening below the surface. It's also happening before we recognize it.

SHAWN STEVENSON: Let's point to one takeaway already from this conversation for today, for everybody and this simple act of if post eating a meal, which I just had a friend that just got back from traveling in Europe and one of the towns that she stayed in, basically she said essentially like the whole town seems to get up and go for a walk together after dinner. Right? So our muscles being a site of glucose disposal, but what is it that's triggering this? Listen, where do we put this? Can we have pre-activity and absorb glucose post activity? You talk about that in the book too. Let's talk about this.

DR. GABRIELLE LYON: Yeah, I think that's a really great point 'cause it's so easy. It's just such an easy takeaway, this idea that you get up and you go for a walk. Glucose disposal utilizes insulin at rest. And when you think about how you're going to move carbohydrates out of the blood into skeletal muscle, it does require insulin. There are transporters, GLUT4 transporters. When you get up and when you move, let's say you go for a 10 minute walk, you do not require insulin to move glucose out of the bloodstream into the cell. You are augmenting your body's ability to manage and regulate not just insulin, but blood glucose. So simple.

SHAWN STEVENSON: So basically just contracting our muscles. This doesn't even need to necessarily be a walk.

DR. GABRIELLE LYON: It doesn't.

SHAWN STEVENSON: So we could sit in our chair and maybe do some...

DR. GABRIELLE LYON: Well, you and I should do some more pushups. We are doing it. He beat me last time.

SHAWN STEVENSON: Listen. Barely, barely. You're about that life. So there's something really special about this book and it's really helping us to shift the paradigm and look at what's most important here. And one of the things, again, it's really, it's shocking that this was just 2016, as you mentioned, where this kind of revelation is coming forward and to have a work

like this at this time and for us to start to shift focus. Because what you're doing is really putting the power into our hands.

DR. GABRIELLE LYON: Yes.

SHAWN STEVENSON: Because what's so special about muscle is that we can make it.

DR. GABRIELLE LYON: I can't think of another organ system where you can consciously control through voluntary action. It's ability to grow. I mean, I cannot think about my liver growing and do something about it in a healthy way. I mean, maybe drinking, but...

SHAWN STEVENSON: Right.

DR. GABRIELLE LYON: But skeletal muscle is an organ system that we have direct control over through our actions and behaviors and arguably the pinnacle of health and wellness. And it has been so overshadowed by this bro culture by thinking about being jacked in tan and the guy in the tank that it's really turned people away from saying, that's for me, that life is for me. The person I have to become, to create these disciplines and do these actions to build this skeletal muscle, that's not for me. I'm not like a meathead, but it's that very tissue and that very organ system that is the focal point of all the issues that we're talking about. The CDC doesn't even list the loss of skeletal muscle or on, as a cause of death. It looks at heart disease, it looks at cancer, it looks at accidental falls, it looks at respiratory illnesses, kidney disease, diabetes, Alzheimer's. Those are all related to the health of skeletal muscle as an underpinning.

SHAWN STEVENSON: It's crazy. It's crazy. We're looking at the wrong thing. I want to ask you about this and I was happy that you brought this up, but it can be a little bit unsettling, which is, and I know you're like, what the hell is he about to say?

DR. GABRIELLE LYON: I already know.

SHAWN STEVENSON: You did share some data on it essentially being difficult once we venture into loss of muscle or having chubby muscles, it can be more difficult for our bodies to manage inflammation and also to having difficulty gaining muscle.

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: So let's talk a little bit about that.

DR. GABRIELLE LYON: Yeah. That was a really interesting area to go into this idea of some of these mechanics of healthy skeletal muscle. We talk a lot and I've talked to you about muscle protein synthesis, and that's really this incorporation of amino acids. It's this physiological biomarker of what we believe to be muscle health. When muscle is functioning in a healthy manner, it has the capacity to generate this muscle protein synthetic response. And again, it's this incorporation of amino acids, which is necessary for the accretion of skeletal muscle. That process can be blunted. Muscle protein synthesis. This process that is so critical to the health and wellbeing of our muscle can be blunted a few ways.

DR. GABRIELLE LYON: It can be blunted through aging and inactivity. This concept of anabolic resistance, where the efficiency of skeletal muscle decreases, because I didn't mention this before, but skeletal muscle is also a nutrient sensing organ and it senses the quality of the diet. And one way skeletal muscle does that is through these amino acids, in particular, the branch chain amino acids. That ability becomes blunted as we age in the way that we think about traditional aging. Now, could it be overcome? It certainly can be. The other aspect is there is some evidence, and this was out of Bird's lab, there are some evidence to suggest that obese muscle can have a blunted response and people are not gonna like to hear that.

DR. GABRIELLE LYON: And there is evidence to suggest that that unhealthy tissue becomes blunted, that its capacity to respond becomes a bit blunted. Now that's not to say it's gonna happen to everybody, and that certainly doesn't mean that you cannot reverse your health of skeletal muscle, which is what's so empowering. You can absolutely generate healthy skeletal muscle. And then there's one more thing that I think you are going to find really interesting. Lack, one day of lack of sleep. So sleep deprivation can impact muscle protein synthesis. And I believe that that data, I'm not sure if that data has come out yet. I was speaking to the Galveston group and I believe it's around 30% of blunted muscle protein synthesis activity.

SHAWN STEVENSON: Just one night.

DR. GABRIELLE LYON: One night of sleep deprivation.

SHAWN STEVENSON: That's again, speaking to how all of this stuff is so interconnected and so logical as well. And you know, for years, even in my first book, I talked about the insulin resistance phenomenon happening very quickly on short sleep. But even at the time I didn't understand the interconnection with muscle. I was thinking about it through the lens of the pancreas, our fat cells. And you've really changed my life and my paradigm. And also, again, it just really is even more empowering as well. Because this is something that even with our brain, of course, like we could do things to try to like grow our brain in a way but that takes time. You can start building muscle like proactively right now. There's so many things that you can do.

DR. GABRIELLE LYON: And the moment that you choose a life, a muscle centric life, just when we do our pushup challenge, we will get immediate benefits. We get immediate benefits, we release myokines, myokines spread throughout the body, goes to the brain, it improves our mood, it improves our cognitive capacity. Also has physiological functions related to, again, glucose disposal. Just so many things that just choosing that physical activity, that movement, we are designed to be strong.

SHAWN STEVENSON: So people that feel better after exercise are not just crazy and making it up.

DR. GABRIELLE LYON: I mean, there's endorphins, but there's so much more that's happening. It is, it's just amazing.

SHAWN STEVENSON: We, again, we get that tunnel vision with these feel good compounds, endorphins, but there's so much more. It's just like, and also it's more of like a, it's not necessarily just like a temporary thing. It starts to create, it starts to change your minimum. It kind of raise, starts to raise the floor up a little bit.

DR. GABRIELLE LYON: And people are very concerned about HDL levels and triglycerides, skeletal muscle and exercise have, it has an impact on that. We know over time exercise improves HDL levels. Fatty acid oxidation, a large portion of that happens in skeletal muscle. We are just talking about statins. Just give someone a statin. Well, I think that a better opportunity would be adjusting diet and life style in a very impactful way. And I will say, I've noticed there's a lot of division when it comes to exercise. People are very into their group, whether it's whatever their modality is. But at the end of the day, there really isn't a replacement, in my opinion, for resistance training for a reason. Because we have to be able to exist within this space. God forbid something happens. You have to be able to pick up your kid, carry one kid here, the other kid here.

DR. GABRIELLE LYON: I mean, your kids are older, but you better get to work like chop chop. These, we live in an environment that is still very physical regardless of how domesticated we are. And we have to be able to be strong and be capable. You know, people will always ask me, well, what kind of exercise do you do? And do you recommend? And people will hear that some is better than none. I don't think that's the right advice. That's not the right advice. As a culture and as an asset to your family, you have to become strong. So the minimum amount of training you would do would be three days a week of resistance training. I mean, you gotta get in there, you gotta be able to do it. You need to be able to do some kind of high intensity interval and really output these things because the question becomes how do we wanna age? And we train for life and we also train for aging.

SHAWN STEVENSON: We've got a quick break coming up. We'll be right back.

SHAWN STEVENSON: Neuroplasticity, the ability of the human brain to grow and adapt and evolve and really to unlock our superhuman capacity is driven by our experiences, our practices, our activities, but also our nutrition. Fascinating new research published in the journal Neuron found that magnesium, this key electrolyte is able to restore critical brain plasticity and improve overall cognitive function. Again, neuroplasticity is the ability of our brain to change and adapt. Now, this is one key electrolyte, but it works in tandem with other electrolytes like sodium. Sodium is critical for maintaining proper hydration of the human brain. If you didn't know this, the human brain is primarily made of water. We're talking somewhere in the ballpark of 75, upwards of 80% water. It's so important because just a small decrease in our body's optimal hydration level, what's noted in the data, just a 2% decrease in our baseline hydration level can lead to dramatic cognitive decline, helping to sustain and maintain proper hydration levels in the brain.

SHAWN STEVENSON: Sodium is critical in that. And also researchers at McGill University found that sodium functions as a "off on switch" for specific neurotransmitters that support our cognitive function and protect our brains from numerous degenerative diseases. Right now, the number one electrolyte company in the world is delivering a gift for new and returning customers with each purchase of LMNT. That's LMNT, the number one electrolyte in the market. No binders, no fillers, no artificial ingredients, no crazy sugar and sweeteners. My friend's son was just over at our house and my son, my oldest son Jordan, was training them, taking his teammates through some workouts. And we opened the freezer and there's a bottle of Gatorade, that's a bottle of Gatorade in our freezer. And my wife's like, whose is this? 'Cause we know we don't roll like that. We don't mess with the gators.

SHAWN STEVENSON: All right. We don't mess with the Gatorades. And we knew who it was, it was one of his friends. And he came in, he's like, well, at least this is the no sugar kind. And then I go through some of the ingredients with him and I find those curve balls of like, here's where they're sneaking in these artificial ingredients and things that the human body has no association with. But you know, he's taken a step in the right direction by, by being in our environment. So, you know what I did? I put the LMNT in his hand. Alright, make sure that he's got the good stuff, the very best stuff. And also this is backed by peer-reviewed data in a huge body of evidence. When we're talking about the folks at LMNT, that's LMNT. Go to drinklmnt.com/model and you're going to get a special gift pack with every purchase, whether you're a new or previous customer to LMNT. So again, this is a brand new opportunity, free gift pack with every purchase over at LMNT. Go to drinklmnt.com/model. And now back to the show.

SHAWN STEVENSON: You just mentioned bit of a controversial topic and you said statins.

DR. GABRIELLE LYON: There's lots of controversial topics.

SHAWN STEVENSON: Of course, of course.

DR. GABRIELLE LYON: Especially in this book. No, I'm kidding. But they are.

SHAWN STEVENSON: I want to ask you about this. And I wasn't planning on talking about this, but we'll put up a study for folks to see who's watching the YouTube version. But there's a really interesting analysis, there are several other studies like this, but this particular one found about a 30% increased incidence of developing diabetes for folks that are taking a statin. What the hell? Like again, this is looking at it through another lens for me now. Do you know what might be going on there?

DR. GABRIELLE LYON: Well I haven't seen the study, but I am guessing it's the impact on skeletal muscle. And that's not to, is that what the study, did they identify that as a...

SHAWN STEVENSON: No, of Course not. They just, that was just the outcome.

DR. GABRIELLE LYON: Oh, Interesting.

SHAWN STEVENSON: They're not Looking at muscle like you are.

DR. GABRIELLE LYON: Yeah. That's so interesting. And it's not to say that statins are bad for everybody, but it certainly shouldn't be put in the water.

SHAWN STEVENSON: Yeah. We've talked about this before. It really came to the market as a secondary prevention method for people who've already had a cardiovascular event, but then it's kind of been given to everybody who might have some different biomarkers and also that that floor and ceiling has been changed quite a bit recently to get more people on it. And of course, there's a spot for everybody for different things. It just depends on you and where you are in your life cycle, your various lifestyle factors, your genes, whatever, all this different stuff. But it's become one of those things that's been like a real blanket treatment. And so what's happening at its core, even in this conversation with cholesterol and these different compounds being moved and shipped throughout the body and the interplay between our muscle and our fat and these compounds that are needed to build things like our sex hormones. By the way, if we're talking about cholesterol.

SHAWN STEVENSON: Like what is that really impacting? It's probably impacting your muscle. And that's really what's at the, at the heart of that increased incidence of diabetes.

DR. GABRIELLE LYON: Yeah, we should, I'm gonna take a look at it. You send it on over. Let's see if we can contact them. And I'm sure they've got some kind of metrics.

SHAWN STEVENSON: Chances are they're not looking at that... They are not looking at the muscle. They're not.

DR. GABRIELLE LYON: Oh, they're definitely not. Definitely not.

SHAWN STEVENSON: It's just like, yeah. So this is a game changer because as soon as you started talking about this, um and bringing in this, the portion with the statins, I immediately thought about what is that doing to our sex hormones? Right? Testosterone, other things that, let's talk about that a little bit. What about hormones that we typically identify in building muscle? Like testosterone, like HGH. What do you got for us on that front?

DR. GABRIELLE LYON: Well, I will say that the use of anabolic hormones has been so controversial and it's so fascinating. I'm gonna just lay this out for you. I'm gonna blow your mind one more time. A patient could come to me and I could easily, depending if they meet a criteria, prescribe them anti-obesity medication. No problem. If someone came to me and said, my numbers are normal, but I wanna be stronger and I want stronger, healthy skeletal muscle, do you think that I would have the same liberty to prescribe testosterone or an anabolic agent to them?

SHAWN STEVENSON: Probably not.

DR. GABRIELLE LYON: So it is much more common and accepted to be able to treat obesity rather than, for example, testosterone is not FDA-approved for women yet. And there are so many restrictions on anabolics, and listen, I'm not saying everyone should go and be on anabolic steroids, but I think it gets a really bad rap. And I think our perception and the way that we are having this conversation is incorrect. This idea that it's completely okay to treat obesity, and it's not under massive scrutiny. But the second a physician would go to bat and say, well, why can't we use other anabolic steroids to improve the health of skeletal muscle for sarcopenia, for a under-muscled 40-year-old? You write that script and you're in trouble. That is mind blowing. Hopefully I've explained that significance well that...

SHAWN STEVENSON: Yeah, that's really powerful.

DR. GABRIELLE LYON: That there is serious legal ramifications.

SHAWN STEVENSON: Yeah. Especially with the just absolute immersion into our culture so quickly with these anti-obesity and related anti-diabetic medications, Ozempic, Wegovy and the like and not just even the fact that they're being normalized so quickly, but really trying to get it integrated as like standard of care, even in childhood obesity. And again, we're missing the point. And also looking at, are we really addressing the root cause?

DR. GABRIELLE LYON: No, no. And it is shocking in that way. And I've actually spoken to many lawyers, and I have one, he's an anabolic steroid lawyer, and we have gone back and forth about this in this way that shout out to Rick Collins, he's amazing. Definitely would be an incredible guest, so knowledgeable. In this way that yes, we can normalize the treatment of obesity and we can do that through medication. Okay. But we cannot normalize, there is a real role for hormone replacement, and there is a real role for the potential use of anabolics, especially as it relates to skeletal muscle. And it's heavily restricted. It's more restricted than any kind of anti-obesity medication. And then the question becomes, why? Why? Because it was used in sport. And somehow that translates over, which it doesn't.

SHAWN STEVENSON: We're so weird. Humans are so weird. You know, because again, it is that cheating aspect, right? That's what we're looking through that lens. You know, even hearing about HGH, we start to conjure up ideas Jason Giambi, Barry Bonds, Marian Jones, all these folks who were looking for a competitive edge. What about a life edge potentially just for everyday folks and aging more healthfully and finding a way to extend not just our lifespan, but our healthspan in that...

DR. GABRIELLE LYON: Just what is much more critical.

SHAWN STEVENSON: So having that on the table is one thing. Absolutely. And I'm glad we can crack that conversation open a little bit, but let's talk about just for all of us right now and the connection between our muscle and all of us produce testosterone and human growth hormone and the like. Of course we see that decline as time goes on, but one of those things noted in the data is how much sleep deprivation even on young men, one of these studies they put, they just sleep deprived them for like a little under a week and their testosterone dropped as if they were suddenly like 20 years older or 30 years older, just by that sleep deprivation. And what about what happens as a culture when our young people are not getting enough sleep? Because you know, of all the technology and you know, I'll sleep when I'm dead and they're trying to make stuff happen. Let's talk about the connection. What is the real connection between the testosterone that we produce and muscle?

DR. GABRIELLE LYON: Yeah. I think it's a pretty complicated interplay. But one of the things that we do know certainly is that testosterone is an anabolic stimulus for skeletal muscle. And

again, testosterone levels have the potential to decline. Do they always, is there always this cause of what we call andropause, which would be, which is not a real term, but this idea of andropause, which is a decrease in testosterone as men get older. Does that have to happen? I would say that it doesn't. My dad's 74, I checked his testosterone, did a full blood panel on him, and he's close to 800.

SHAWN STEVENSON: Wow.

DR. GABRIELLE LYON: 74 years old. 800. That's... Just goes to show you that it doesn't have to change and exercise can improve testosterone levels. There's... It does improve body composition. We know that testosterone obviously improves body composition. It's also protective against heart disease. The TRAVERSE trial came out, I don't know if you saw that. And that was Mohit Khera at Baylor. There has been a lot of stigma around the use of testosterone in skeletal muscle for, again, these sport performance purposes. So much so that we have not changed our way of thinking about it. For the longest time, individuals will say, well, testosterone replacement therapy is not ideal because it's gonna cause heart disease or testosterone replacement therapy is not ideal 'cause it's gonna cause prostate cancer. Those have all now been challenged and we see individuals with prostate cancer on testosterone replacement therapy. We see individuals with cardiovascular disease on testosterone as a protective mechanism. And why and where is testosterone in and of itself protective at a reasonable dose? But the next layer of questioning is what is its primary target organ group? And I would say with 40% of the body being skeletal muscle, it's likely skeletal muscle and the improvement in the health of skeletal muscle.

SHAWN STEVENSON: This is very inspiring because even hearing about your dad, for example, and but again, we have these, like a lot of social stigma and beliefs about what aging is supposed to look like. We've been... We are immersed in a culture where aging has become something very different. But there are places all over the world right now where people are aging differently. And we have the opportunity to really tap into to this at a entirely different level. And I, right now I'm conjuring up ideas about like ancient Greece and Rome and all this different stuff, and where it was a really valued or prized physical culture and into advanced age as well.

DR. GABRIELLE LYON: We have to get back there. If I have something to do with it, we will. And even children, there is this idea that children shouldn't be exercising or even lifting weights, that does not hold water.

SHAWN STEVENSON: Who made that up.

DR. GABRIELLE LYON: It's... They said that it affects growth plates and there's all kinds of information out there. And we're not saying go do a max deadlift or bench or whatever it is, but to be able to move against resistance is perfectly acceptable at any age.

SHAWN STEVENSON: All right. So we've got the expert here. And my son plays AAU basketball. We've got teammates and other parents and stuff that we talk to on different teams. And when sometimes when we talk about my son training with his older brother, like we just did a workout together, all of us this past weekend we did. I'll walk, I'll take you through our workout if that's cool.

DR. GABRIELLE LYON: Amazing.

SHAWN STEVENSON: All right. So we did some core work. So I had everybody do a variety of different planks. My son's a trainer too, so I'm just like trying to compliment him, let him put his input in as well. And so him and I were doing planks on with a stability ball, just kind of getting that region fired up a little bit. My wife and my son were using a mat. And then we did some farmer's walks.

DR. GABRIELLE LYON: Perfect. Love that.

SHAWN STEVENSON: Grabbing some... From the on it. We've got the primal bells, the chimp, the howler monkey, the orangutan and the big gorilla. I had my son do the big gorilla.

DR. GABRIELLE LYON: I love that.

SHAWN STEVENSON: And walking down to the end of the block and walking back with the other hand. So, and my wife, she was just like her the next day her obliques were so sore and dah dah dah. She's like I'm playing when I'm not working out with you guys. And then we went from there to, we did some offset lunges, so we're using a mace going one side.

DR. GABRIELLE LYON: Amazing.

SHAWN STEVENSON: You know, flipping it over. And then we pulled the sled out and started doing some forward pushes. And then walking backwards with the implement so we can use the handles one arm as well. We dragged it back with one arm. So all of this core work was happening. A lot of lower body integration. Upper body.

DR. GABRIELLE LYON: You were training exactly how I would train. So we do that workout on a Sunday, something very similar.

SHAWN STEVENSON: And you know, to share that with a parent, you're like, oh, my youngest son just did, isn't that gonna affect his growth? My son's the tallest kid on the team.

DR. GABRIELLE LYON: No, no.

SHAWN STEVENSON: Like, it's crazy. He's the tallest kid on the team. And not just, but it's not just about that. It's about us addressing this. What is it? A myth. This myth.

DR. GABRIELLE LYON: It's a myth.

SHAWN STEVENSON: Can we talk a little bit about that to help to free parents' minds.

DR. GABRIELLE LYON: And I put some of the data in the book, some of the recommendations and a little bit about where that came from in the book. This idea that individuals shouldn't be lifting weights when they're younger 'cause it's gonna stunt their growth. None of that's true. In fact, if anything, when you are younger, you are priming the muscle that you have, you are priming its health. It is extremely important to do that. And it can actually be done with weights. I have a little over two and a a four-year-old. They have their own little weights. They're moving them around, they're doing yoga, they're doing pushups with us. They are doing squats, they are running with us, they're training with us. And that is very valuable because the tissue is very... It's like plastic. It's highly pliable. It's a highly pliable, I suppose plastic isn't pliable. It's a highly pliable tissue. And the health of that can really be leveraged over time. This idea of muscle memory, sometimes they talk about motor recruitment and neurological training, but healthy skeletal muscle that has been trained will always be easier to get back those gains than to have never have done it before. And doing it when you're young, you build a reservoir of this tissue, really important. And it's a narrative that does need to change. Certainly.

SHAWN STEVENSON: Thank you for this. I'm so happy that I get to ask you about this, because again, this is one of those things that we are so worried about the wrong thing. Instead of worrying about insulin resistance in our children and the ultra processed food and all the things that are really hurting them, we are like, oh no, I shouldn't have my kid lifting weights some weights.

DR. GABRIELLE LYON: Lift some weights.

SHAWN STEVENSON: But we've evolved... Our children as well, evolved lifting heavy things, carrying things. And doing a ton of squats each day. But we've created a culture where their lifestyle is now largely sedentary as well. You know, just the fact that we take our kids who are just teeming with energy and making them sit down all day for hours a day in order to learn

and fit into society, which we know the data now, we're churning out a lot of unhealthy unadjusted people recently in these recent generations. And not to mention this skyrocketing rate of chronic diseases.

DR. GABRIELLE LYON: I was just gonna say, even with children. I think it's tripled...

SHAWN STEVENSON: And it happening early and earlier.

DR. GABRIELLE LYON: It's tripled since... I have to look... I put it in the book, but I think it's tripled since the last five, maybe 2018.

SHAWN STEVENSON: That is insane. It's insane.

DR. GABRIELLE LYON: In our children.

SHAWN STEVENSON: And then we're worried about should my kid be doing a pull up, you know. But again, even that, just being able to handle their own weight. Right? And I love the implementation and I'm not having my youngest son do things that are like, again, a max deadlift or anything like that.

DR. GABRIELLE LYON: No.

SHAWN STEVENSON: But he is challenging himself. And you see it, you see the change, the development that's taking place with him, and it's just making him feel, and we can't overlook the mental benefits. Right? And just seeing him having this stronger presence and feeling more capable. Right? That happens for us too. Let's talk about that.

DR. GABRIELLE LYON: Yes. So muscle is a currency. I think muscle is a currency for life. What's interesting about currency is currency is usually something that can be bought. It can be sold, it can be traded for. Skeletal muscle is your body's wellness currency. It has to be earned. The person you become to forge muscle is a resilient, courageous, capable human in nearly all domains. I have never had a patient say, well, I feel worse off now that I have more skeletal muscle. This is an action that will never be a detriment. Having more skeletal muscle that is healthy will never be a detriment. And you think about how proud our younger individuals, our children can be because they earned something. This is something that it can't be taught or transmitted. They have to take the action in the arena to prove to themselves that they can do it. And that is just, it's so powerful. I mean I can't Botox my bicep. It's again, it's currency that has to be earned.

SHAWN STEVENSON: But you know, when it boils down to it, again, we're just becoming more human. That's what you're talking about. And giving us the science to direct our focus to something that is much more empowering. Really.

DR. GABRIELLE LYON: I wanna mention something that I haven't really spoken about on any podcast before, and that is the historical aspect of how we got to where we are. I had to edit a lot of this stuff out of the book. The book was already 400 pages, but after the Great Depression, the World was... The US was really malnourished. And that was kind of on the heels of going to World War II, at least potential World War II. And when they started to draft individuals, the first million soldiers, potential soldiers, 38% of those were unfit for war. They were either overweight, they were like flabby. They didn't say overweight. They said they had flabby muscles, or they had no nutrition. They didn't have teeth. They just were not physically capable for war. This was at a time where the United States was at risk for losing everything.

DR. GABRIELLE LYON: Their back is up against the wall. What happened next was they began to address diet. And again, right before this, it was kind of like, well, this vitamin deficiency, they knew about calories, but they didn't, they knew about macronutrients, but they didn't really know about the quality of foods. Their back is up against the wall. Everybody is unfit for war. Almost 40% of the male population is unfit for war because they have flabby muscles. Roosevelt did this whole big push. It was so serious that they started an initiative. This is kind of like around the RDA. They put up two posters. This was like wartime. One poster was, are you gonna help Uncle Sam? And the other was, are you gonna help Hitler? In the poster in the forties when they needed to help Uncle Sam, where this was real, it was, you needed to have a high protein lunch.

DR. GABRIELLE LYON: You needed to have liver and beef and chicken and eggs. You needed to have salt in your food and your water. You needed to limit processed foods. You needed to have fruits and vegetables. In the forties, it was all about muscle health. To help Hitler, it was eat processed foods, don't have salt, don't eat beef and liver. They were really into liver for lunch and they recognized that these foods really helped muscle. The goal was to have a capable society and a strong society. When the back... When their backs, when the US' back was up against the wall, when they were at risk of losing everything, they implemented strategies that tied individuals to be strong and moral humans to help the world. The recommendations that we have now completely thrown out.

DR. GABRIELLE LYON: And I encourage everyone to look at some of this history. They encouraged people to also do, there was a time where they, once they were healed, to do Victory Garden. So then there was kind of this transition to really maintain all this high quality food for the soldiers. And now we see a different narrative when we are not necessarily at war with other countries, but a financial war within ourselves of who stands to

profit. And that is a very fascinating, important conversation because we are no longer having an empirical conversation about data in general. We are having a conversation about morality and what does it mean to be a good human if, do you see, what's happened is everything is now very convoluted in kind of this processed food landscape.

SHAWN STEVENSON: Yeah. And of course, there's a lot of profits being made off of our ignorance and our suffering. Unfortunately, that was tying in a larger mission to what you're doing, right? Because for a lot of us, just it being about ourselves isn't enough. And that's okay because we're social creatures. And so that motivation of doing this for something bigger, for your country, for the world, we can use those same psychological leverages today, but those things are being leveraged.

DR. GABRIELLE LYON: Differently.

SHAWN STEVENSON: Differently today. That makes us, unfortunately, more disconnected, more disempowered, and more easily manipulated. And again, just I always like to have this moment of like, just look at the results. Look at our state of health right now. We're not doing well. Something is awry. Something is seriously wrong. And thanks to your work, we're getting something we can proactively focus on. And so I want to ask you about this as well, because at the end of the day, it's about what can we do? So let's talk about what we can do specifically to number 1, let's talk about the outcome that we're seeing. What can we do to prevent muscle loss?

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: Let's just lay it out here. What are some of the steps that we can take?

DR. GABRIELLE LYON: Here's the great news is so easy. It is so easy to prevent muscle loss and to optimize body composition. And that's ultimately why I wrote this book, because there is so much noise and so much confusion in this space that if I can provide this information and change the way we think and give you actionable steps, then you can change everything about your health and wellness. Two very simple ways to optimize muscle-mass. Number 1, nail your dietary protein. Everybody knows this. The RDA Recommended Dietary Allowance is 0.37 grams per-pound of body weight. That means if you are 115 pound female, the recommended amount of protein is 45 grams a day. That's the minimum to prevent deficiencies. Double that, shoot for 1 gram per pound. Ideal body weight. You need protein to protect skeletal muscle. And in fact, what's fascinating is you do need both. If, and I'm going to lay this out because I know that you really like data and your group really loves research. We do not age in a linear way. We age through a series of catabolic crisis. What does that

mean? A catabolic crises would be a moment in time where you get sick or have to go on bed-rest.

DR. GABRIELLE LYON: In those first five to seven days, an individual can lose 2 pounds of muscle-mass, whether they are 40 or whether they are 70. There's only 2 ways to protect that tissue, and that's through amino acids, dietary protein, and some kind of movement, which typically is not, if you're on bed-rest, you're obviously not moving. That is an extreme case. The idea that if you have enough dietary protein and you are moving around and not on bed-rest, you still have a capacity to protect skeletal muscle. Baseline recommendations and I put 3 tracks in the book. I put a longevity, weight-loss and hypertrophy for muscle health. Muscle building 1 gram per-pound ideal body weight 0.7 to 1 gram per-pound ideal body weight. Baseline and the protein hierarchy to protect skeletal muscle tissue. Really important. The next most important piece is exercise, doing some kind of resistance training. Again, if you're just looking to maintain, it doesn't have to be anything crazy. These are two baseline strategies that anybody can do. And then you go a level deeper, and that's a way in which you distribute your meals. That first and that last meal prioritized for dietary protein are the two most important meals.

DR. GABRIELLE LYON: That first meal, after you're coming out of an overnight fast, your body is catabolic, your muscle is primed. And actually, all the data is done on that first meal. All the data to my knowledge in the literature is done on that first meal of the day as it relates to muscle health and muscle protein synthesis, all these mechanisms that we think about over the long term. And then that middle meal. If you are looking for longevity, it doesn't necessarily need to have a metabolic goal. It doesn't have to have a 30 to 50 grams of dietary protein in that middle meal. Again, if you are just looking to maintain your body composition or even improve it, then that last meal after the day is out and you are going into an overnight fast is the second most critical meal. Hit 30 to 50 grams, those, I would say closer to 40 to 50 grams of high quality protein. That first and last meal of the day. Everybody can do that. You'll protect tissue.

SHAWN STEVENSON: The work that you're doing is making so much of the data make sense when we see great results. There was a study done by some researchers at St. Louis University, my hometown, and they were looking at the impact of that first meal, whether it was an egg protein, fat breakfast or a bagel. And they did put people on a calorie restricted protocol for a little bit. But, and by the way, the calories were the same.

DR. GABRIELLE LYON: Yeah.

SHAWN STEVENSON: Right? Macronutrients through the day are the same. But the make-up of that first meal being protein, now I really understand why it had made such a difference.

There was like a 60% greater reduction in body-mass index, almost a 20% reduction in body-fat in the egg group versus the bagel group. And what it really is doing is it's targeting the muscles. That's what's making the difference.

DR. GABRIELLE LYON: Yes. So we worked on some of those early studies when I was in my undergraduate. We worked on some of those...

SHAWN STEVENSON: In St. Louis by the way?

DR. GABRIELLE LYON: Well, no, so I did my fellowship at WashU.

SHAWN STEVENSON: WashU? Yeah.

DR. GABRIELLE LYON: But when I was at the University of Illinois, my mentor.

SHAWN STEVENSON: Next door.

DR. GABRIELLE LYON: Yes, my mentor was the guy that really put together this idea. So they were, they originally did this work in rodent models. They knew that muscle protein synthesis was happening, but they didn't totally know why and what amino acid. And he put the work behind this idea that leucine, this high protein meal that you're talking about, actually stimulated the tissues. And then groups started doing it in human models, and we saw exactly that, that you could be isocaloric exactly what you're saying. The 2 calorie counts are the same. And all you have to do is adjust the macronutrients and primarily even adjust the macronutrients at breakfast. And you do see improvements in body composition, meaning you see less loss of lean muscle. And well, it's actually lean-mass. Lean-mass and skeletal muscle are different. Everybody talks about lean-mass, but lean-mass and skeletal muscle, they are two separate things. But obviously, using DEXA, skeletal muscle mass is extrapolated. And it just is looking at the lean-mass. So lean-mass is maintained, blood sugar is improved, blood pressure decreases.

DR. GABRIELLE LYON: And I'll circle back to that triglycerides, lower. All again, by just adjusting not the calories, but the macronutrients. I'm going to mention this because a listener might find this interesting, is that we talk about protein as this generic thing, but protein in and of itself is made up of these 20 different amino acids, all with unique biological roles that all do different things. The concept of protein as a macronutrient, as a generic macronutrient, I think is old school way of thinking. My prediction is that in the future, we are going to look at each of those amino acids as individual nutrients. Leucine, lysine, methionine. They're all individual nutrients with individual needs in the body, and particularly for muscle health. We talk about this amino acid, leucine, which is the whole goal of, again,

this breakfast meal that you're talking about. If there's 40 grams of dietary protein with that breakfast meal, it stimulates the machinery of skeletal muscle. And again, it's very clear in the literature. The importance of dietary protein. I think less clear, but is going to be coming to the forefront is this idea of these individual amino acids having individual needs and being specific nutrients that when we look at the back of a label, we can't just look at protein.

DR. GABRIELLE LYON: We look at the back of a label, it shows sugars, it shows fibers, it shows fats, it shows saturated fat. But you look at the label, it just shows protein. That's really doing it a disservice.

SHAWN STEVENSON: Yeah. We should be asking the make-up of that protein.

DR. GABRIELLE LYON: Yeah. Or at least the 3 major limiting essential amino acids that are important for health and well-being.

SHAWN STEVENSON: Yeah. So all, "protein products" are not created equal.

DR. GABRIELLE LYON: No. And there's ways in which the food industry can hide within the label. There's many ways to have a more robust amount of protein by adding urea or a nitrogen compound that changes the, what is in the food per se that comes out in the label.

SHAWN STEVENSON: What's so cool about this book, as well, of course, is you have us specifically, you're telling us what to eat, where to find the highest quality proteins that have the specific amino acids that are geared towards the result that we're looking for with muscle. And is there anything else about this phenomenal book that you want people to know?

DR. GABRIELLE LYON: Yeah, I think that there's a lot of history in this book, which is important because if we don't know where we came from, we don't know where we're going. And that is really important to understand. This book is very unique from the historical perspective. It also, I've been seeing patients for a very long time, since 2006. And the other component to this book, number 1, it is very evidence based. But number 2, it has a mental framework model that I haven't seen in other books of this nature. This book is a paradigm shifting book. It's a game changing book, but it's very applicable to the general population. What it also does is it tells you how to think about things. Being a good physician, you recognize patterns of diseases, you recognize patterns of things and systems. But being effective as a physician requires you to recognize patterns of people. When you recognize patterns of people, you can see what levers to pull and how they most importantly need to leverage themselves. And so that's included in the book with recipes and workouts and all the things. It's a book for everybody.

SHAWN STEVENSON: Love it. Absolutely. Forever Strong. Where can people pick up a copy? And also where can they just dive more into your universe?

DR. GABRIELLE LYON: Yeah. My website drgabriellelyon.com. They can also get it on Amazon. You can find me on my podcast, the Dr. Gabrielle Lyon show. And let's see, I have a great newsletter which has evidence based studies. Many of the studies from the book have been in the newsletter and will be in the newsletter, a YouTube channel, you name it, I'm there.

SHAWN STEVENSON: Awesome. This is an important addition to your library for your health, for your well-being, for your mental health, the list goes on and on. This is a very, very special book. Forever Strong. Make sure to pick up your copy.

DR. GABRIELLE LYON: Thank you so much.

SHAWN STEVENSON: Dr. Gabrielle Lyon, everybody.

DR. GABRIELLE LYON: Thank you.

SHAWN STEVENSON: Thank you so much for tuning into the show today. I hope you got a lot of value out of this. Please share this out with the people that you care about. You can send this out from the podcast app that you're listening on. Of course, you can share this on social media. Take a screenshot. Tag me I'm @Shawnmodel. Tag Dr. Gabrielle Lyon. And share this with your audience. Let people know to tune into this empowering information. We've got some incredible master classes and world-class guests coming your way very soon, so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon.

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SHAWN STEVENSON: And for more after the show, make sure to head over to the modelhealthshow.com. That's where you can find all of the show notes, you can 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.