THE MODEL HEALTH SHOW

EPISODE 883

Using Science to Build Muscle Faster + Truth About Sleep & Fat Loss

With Guest Dr. Bill Campbell

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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. This episode is truly a privilege to be able to be a part of today. I got to interview one of the foremost experts in the world in building muscle and burning fat. He's a research scientist who's in the lab. He's also a professor and digging through the research, conducting experiments, and really identifying what are the most effective ways to shift our body composition, and to my pleasant surprise, one of the things that he talked about, and he sent me a couple of papers on, is the connection between our sleep quality.

And our body composition. So we're gonna cover that. We're also going to talk about a way to build muscle that is not related to exercise, that is not related to what we superficially think is required in order for us to build muscle. And this one really tripped me out. Like to hear it from, as they say, the horse's mouth, that if you do this certain thing, it can actually stimulate muscle growth without exercise. Incredibly powerful, and we all need to know this. Plus we're gonna be talking about the emerging and important science around menopause and weight gain and what he referred to as weight loss resistance. What are some things that women need to know to help to circumvent and healthfully manage the process of menopause and maintain a healthy body composition and maintain your valuable muscle tissue, which is gonna talk about the science around that and how menopause, if you're not educated about this, can negatively impact muscle and contribute to more muscle loss.

And also how to manage fat loss and fat gain as your hormones are changing. So, so much incredible knowledge, and I'm so grateful that I got to be a part of this today and that I get to share this with you. And my special guest was headed to another really big media appearance and was looking for something nutritious and protein dense to take with him as a snack. And I had him, I had him hooked up, I had him ready. I was armed and ready to go. And what I provided him with and his team as well, are the superfood bars that I keep here at the studio for my team and for my guests. And these are real food bars, and not only do they contain eight plus organic superfoods and collagen rich, 100% grass fed bone broth protein.

There are no added sugars or sugar alcohols. And I'm talking about the incredible superfood bars from Paleo Valley. Head over to paleovalley.com/model and you're gonna get 15% off their incredible food bars. Also, their protein packed grass fed, grass finished meat sticks are available at 15% off as well. You know they've got some of the best supplements in the world. No binders, no fillers, no nonsense. Their essential C formula is something that I utilize on a regular basis with a real vitamin C dense superfood like Caou, camel, berry, like amla berry. Again, no binders, no fillers, and tons of science to back them up. You get all of this and more at 15% off when you go to paleovalley.com/model. That's P-A-L-E-O-V-A-L-L-E y.com/model for 15% off, take advantage. And now let's get to the Apple Podcast review of the week.

ITUNES REVIEW: Another five star review titled "Unbiased, Fact-Based, and well-researched" by Ms. Driver. The Model Health Show is amazing. Shawn Stevenson puts his heart and soul into his passion for getting information to people to improve their health. He supports his episode topics with well-researched data and articles. His open-minded approach motivates you to take your health into your own hands by researching data to make informed decisions that are right for you. Thank you, Shawn, and keep these great episodes coming. Your passion, fire and humor make the Model Health Show so enjoyable to watch and to listen to. You are killing it!

SHAWN STEVENSON: Thank you so much for leaving that review over on Apple Podcasts. I truly do appreciate that. And if you have to do so, please pop over to Apple Podcast and leave a review for the Model Health Show. It really does mean a lot. And without further ado, let's get to our special guest and topic of the day.

Dr. Bill Campbell is the author of over 200 peer-reviewed studies and manuscripts on topics related to sports nutrition, physique enhancement, and exercise performance. His research is focused on improving exercise performance and physique enhancement within a maintainable lifestyle. His pioneering research includes dietary protein intakes to optimize body composition, rapid fat loss strategies, and weight loss resistance in women going through menopause transition. He's the creator of Body By Science, a comprehensive research review summarizing the latest and best research relating to building muscle and losing fat.

Let's dive into this conversation with the incredible Dr. Bill Campbell. Dr. Bill Campbell. Thank you for coming to hang out with us today.

DR. BILL CAMPBELL: Yeah, thank you for having me.

SHAWN STEVENSON: Well, I'm grateful to have you here today because obviously our nutrition has a huge impact on our health. Obviously, you know, exercise and you're an expert in exercise. We're gonna talk about. But there's an aspect of being a human being that impacts our metabolism far more than people realize. And that's our sleep quality. And you've got some great data on how our sleep quality can impact our metabolism, our ability to lose weight and more. So let's, let's dig in. Let's talk about some of this research.

DR. BILL CAMPBELL: Absolutely. Oh, can I thank JJ Virgin and Gabrielle Lyon. I think they, they put me in touch with you, so I wanted to acknowledge them. So thank you guys for, for.

SHAWN STEVENSON: Big hug to those guys.

DR. BILL CAMPBELL: Yes. Thanks. Thanks for putting me in touch.

SHAWN STEVENSON: Yeah, yeah. It's my honor. It's my honor. So let's start with the, I think it was University of Chicago study.

DR. BILL CAMPBELL: So that study was, in my opinion, and the, the best sleep study I've ever read. A lot of sleep studies have people sleep deprived for one day, maybe two days. In this study, they lived in a facility for 42 days under different sleep deprivation conditions. So one time they were sleep deprived, one time they were not sleep deprived. And what they found, and, and in that study from what I can remember they, they had un unfettered access to food. So, hey, eat, eat as much as you want and the nice thing, again, this is day after day, you can beat hunger for a day. You can be hunger for a few days, but when you're, when you're hungry for multiple days, you, you don't beat that generally. So what they found in this study was when they were sleep deprived versus not sleep deprived, they gained a significant amount of body weight.

And I know you know this, we, we know that visceral fat is associated with a lot of adverse health outcomes and we know that sleep is, it's also associated with a lot of adverse health outcomes. So this study was the first one to report that not only did sleep deprivation, not only was it responsible for them eating more food and gaining significantly more body fat, but significantly more visceral body fat. So this was the first study where they had under controlled conditions. So this was an intervention. This wasn't just an association study where they linked sleep deprivation to increase levels of visceral fat.

SHAWN STEVENSON: Mm.

DR. BILL CAMPBELL: And now we have, we, we have this data. And again, this study was such high quality.

SHAWN STEVENSON: Yeah. It's, yeah. Just to even volunteer to stay in a metabolic ward essentially, you know?

DR. BILL CAMPBELL: Yep.

SHAWN STEVENSON: For like, basically, you know, let's just call it what it is. You're a prisoner, you know? And you're gonna be, you know, locked in and getting all, but it's such great feedback that you can get under those controlled conditions because obviously a lot of studies are just, people are reporting back.

DR. BILL CAMPBELL: Yes.

SHAWN STEVENSON: So that was, that was really fascinating. And so there was another study where, so this one is giving people ad lido access to food, right?

DR. BILL CAMPBELL: Yes.

SHAWN STEVENSON: Seeing how much people eat based on whether or not they're sleep deprived. Another study put the test subjects similar conditions under a calorie restricted

diet to see what happens when we are sleep deprived versus when we are getting adequate sleep. Let's talk about that.

DR. BILL CAMPBELL: Yeah. Now this study, 'cause I'm a fat loss researcher, this study made a huge impression on me. There has, there's far reaching implications when I read this study about weight loss resistance, which most scientists don't believe that really exists, but it exists and this study demonstrated that. So what they did in this study, similar, they had subjects have two different conditions, a sleep deprived condition and a non-sleep deprived condition. And they put them on the same caloric deficit. I think they reduced their calories by 33%, and this was over several weeks. I don't remember how many weeks, but it was like eight weeks, 10 weeks, something like that. And what they found was a couple things. When the subjects were sleep deprived, eating the same number of calories, they lost significantly less body fat, and they lost significantly more lean mass.

So the way that I have interpreted that, if you are a fitness professional or nutrition professional, and you're help, you're working with people on losing weight, and I know you've done this in your, your career. As much as the focus is on the nutrition, there needs to be an a, an equal amount of focus on the sleep. Because what this study taught me, you are literally spinning your wheels if you think you're dieting and trying to lose body fat. If you're not getting adequate sleep, don't, don't diet, don't waste all of that, that, that energy, that those resources and again, it's not just that they didn't lose as much fat, they lost significantly more lean mass.

So one thing I always do when I look at studies, I always look to look at out of the weight that was lost, how much came from fat tissue versus lean mass tissue. And the sleep deprived group, it was half of the weight loss came from lean mass stores. And that's the thing that has the long-term repercussions. That's why people gain weight back quickly when their diet is over. So that, that, when I say that there's certain studies in my career, and I've been doing this for about 20 years, there's certain studies that that have been profound in, in how I counsel people and how I, you know, when I write research, this was one of those studies.

SHAWN STEVENSON: Yeah. It's just something that in our modern society, we don't, we just don't think about, you know, we don't think that sleep is impacting our metabolism. And again, just to reiterate this, the weight loss between the two groups was similar, but what they were losing. So the, the group that was getting adequate rest lost 55% more actual body fat, and they retained their lean muscle tissue during the weight loss versus the other group, they lost less body fat but lost more muscle. Right. So that sleep deprivation is creating an alteration in how their body is using energy and it starts to just basically burn off some of the most valuable tissue that we can possibly make. That it takes a lot of work to make muscle tissue.

DR. BILL CAMPBELL: Oh yeah, yeah. And you made a really good point. If you stopped reading that study at just the weight loss, you would say, oh, okay, well it really doesn't matter. And that's one thing I I, with my university students, I always say, if you're gonna read any weight loss study, always pull back the curtain on body weight. What's the body fat and the lean tissue responses to this. Yeah. And, and to be honest, I was guilty for years myself. Like, you know, I heard about your book and how important sleeping was like, ah. And, and then I'm reading these studies, I'm like, man, I have not done, I've not done a good job as a, as an educator.

But then again, when you, when I, when I read these studies, you know how it is, like you can hear things a hundred times and until something clicks. But now literally when I work with fitness professionals, I, I, I, I already said it once, but I'll reiterate. You have to make, you have to prioritize their sleep as much as the weight loss diet. Otherwise, and again, I'm thinking of people going through like a divorce loss of job. If we know there's times when people are gonna have really high levels of stress that likely are gonna impact their sleep quality, maybe this isn't the best time to also to try to lose weight because it's, it's, again, it's, you're not gonna get the results.

SHAWN STEVENSON: Yeah. Thank you for that. And this is the cool thing of having you here. I'm so excited. I'm just holding back my excitement a little bit is talking about weight loss, like in, in a, in a real sustainable way because a big part of this. And if we could matter of fact, what we should do first and foremost, is just set the, the template for your expertise. You

know? Because people that I respect highly see you as like the guy when it comes to building muscle and understanding the metabolic impact of muscle. So if you could, can you start with a little bit of your background and, and your expertise and how you got into studying muscle and all things related in the first place?

DR. BILL CAMPBELL: Yeah. So I got my PhD in exercise, nutrition, and preventive health. And my background was a bodybuilder, like I loved bodybuilding when I was younger. And I said, I, I wanna have a bodybuilding lab. I wanna help people build muscle, lose body fat. And I was told, well, you know, there's no grant funding and you're not, the government's not giving any money for bodybuilding. I'm like, well, I don't care. Like I want to have a lab where I study muscle and fat. And I've been very, very blessed. Like I'm living a dream life. I'm, I'm so blessed to be able to do what I've, what I've done. And I guess my career started, I also do a lot of performance based things. So earlier in my career it was a little more performance based.

And then I really got into, what I like to say is I help people optimize their physiques within a maintainable lifestyle. And what that really means is I'm helping people lose excess body fat. And the, I'd say what my lab is known for is fat loss research, but prioritizing the muscle tissue during this, during a dieting phase because there's, there's a lot of bad ways to diet that you just. It's, it's sad because people think what they're doing is working 'cause they see the scale going down, but they don't have any, any understanding of what's gonna happen two months from now, three months from now, when they're gonna have more body fat on their bodies than what they had before they started because they lost so much muscle tissue.

So early in my career, did a lot of studies, I was one of the first researchers to really just focus on females in, in fitness. Like, so most of my research is, is on women. In women, losing excess body fat or even just women in fitness trying to lose body fat. And then my career in the last year or two has shifted. I'm still protecting muscle, still trying to help people lose body fat, but it's, my population has shifted to a middle aged woman, particularly going through menopause. So that's where I'm at now. That's phenomenal. Sounds like an awesome job, right?

SHAWN STEVENSON: Yeah, man, it just, for me, of course. It just sounds so fun and just, you know, these are things that, again, so many of us simply don't know. And you're providing us. The cool thing about it, and even the studies that we covered earlier, a lot of this stuff is kind of difficult for the average person to kind of sift through and find the, the application for us in our lives. And you do this great research review for people, you know, going through this data. And can you share where people can get access to that research, research, reading?

DR. BILL CAMPBELL: Oh yeah, yeah. Thank you. It's Bill Campbell PhD and what I do there as, as I think is what you're, you, you've, you've been created to do as well. It's just taking research that's really hard to understand and it's, it takes a long time to read research. And what I do is I just, I try to break it down so that fitness profess really a lot of fitness professionals that subscribe. But, and, and as we were saying earlier, I have, I just, I love fitness professionals.

They have a passion for what they do and it's time consuming. And I know they, they try to stay on top of the research, so I didn't wanna do anything I can to just help them. Here's the latest study on this, or here's the best study on that. Let me do that heavy lifting for you. And it's very niched. It's the research review is, the studies that I review are always about losing body fat or building or maintaining muscle. So it's very specific. So if fitness professionals work with weight loss clients, of course I think it's the best thing they should read.

SHAWN STEVENSON: Awesome. So in the URL is?

DR. BILL CAMPBELL: BillCampbell phd.com.

SHAWN STEVENSON: Perfect. Got it. Got it, got it. Now, you mentioned already what we're gonna dive in on right now, which is you prioritize taking care of the muscle. And fat loss.

DR. BILL CAMPBELL: Yes.

SHAWN STEVENSON: Right. And these two things, you know, for the average person's mindset, especially if they're tuned into health and fitness, are kind of dichotomous. You know, like you're doing one or the other. But you mentioned also, again, with muscle, what I

wanna do is I want to talk about what muscle really is and what it does for us. And I wanna ask you the big question, which is, how do we get strong and maintain our muscle and lose fat?

DR. BILL CAMPBELL: Yep. Okay.

SHAWN STEVENSON: So let's start with muscle.

DR. BILL CAMPBELL: What the hell is it? So muscle is it, it is our ability to move. Without muscle, we do not move. It's, it's what, you know, allows us to run from danger and it allows us to protect our families. And again, I'm a fitness guy, so it allows me to run and jump and lift weight. So I, I, I love muscle.

SHAWN STEVENSON: What does it do for us?

DR. BILL CAMPBELL: Well, it's, it's..

SHAWN STEVENSON: Biochemically.

DR. BILL CAMPBELL: Well, one thing in terms of our metabolisms, it's, it has the largest role in our metabolic rates. Now, of course, our bodies have a lot of, a lot of skeletal muscle, but your muscle really does, your metabolic rate follows your muscle mass. So the more muscle you have, the more, the higher your metabolic rate. Now it, we used to think it, we would improve our metabolic rate a lot more than what we actually do. But in my research, whenever my subjects, the subjects, if they ever lose muscle mass, we pick up on that. Alls I have to do is look at their metabolic rates and I can say, yep, they lost muscle. And then I go look at the actual muscle data and it's like, yeah, it's very, very predictive of one's metabolic rate.

SHAWN STEVENSON: Hmm, fascinating. Okay, so we got a little bit on what muscle is. So why do you prioritize protecting the muscle or getting your clients and patients stronger in conjunction with fat loss.

DR. BILL CAMPBELL: Okay, so I'm gonna take that through two different lenses. I've, I've learned that if, if a lot of people want to and need to lose excess body fat. And what I've learned is if you, if you don't protect your lean mass during your dieting phase, and what, what I've learned is you will not be successful for long. You might lose body weight in the short term, but as soon as your diet is over, in many cases, you will gain the weight back. And sadly, people will, if they lost a lot of muscle in this process, they'll gain more body fat back than they initially had to start with. So we, in the scientific world, we call this body fat overshoot.

So the, the enemy here is crash dieting. Crash dieting is, it looks great on the body weight scale. But what people don't appreciate is if you do crash dieting for extended periods of time, yes you're losing a lot of body fat, but you're also losing a lot of lean mass. And we have several pieces of evidence. One of them dates back to the Minnesota starvation experiment. I don't know if you're familiar with that study, but essentially what they found was that, or there was a debate for many years and the debate was, once people lose body weight, they, their body now starts to work against this weight loss.

And one of the things the body does is it elevates or increases its drive to eat. And the debate was, our bodies are gonna keep, are gonna have an elevated hunger until one of two things happen, either until we gain the body fat back that we lost, or until we gain back the muscle mass that we lost. And. It seems that most of the research points to the fact that it's not really the body fat. So if we lose muscle mass, our levels of hunger are going to be elevated and there's even a condition called hyperphagia, which is a, like an uncontrollable sense of hunger. And when your diet is over, you're gonna have a strong drive to eat until you gain back the muscle that you lost.

And that's where again, this situation comes up where a lot of times, by the time you gain back your muscle, you've already gained a lot more body fat. So I've taken that, that, that research seriously. And I said, okay, if this is true, we need to design diets that protect muscle from the very start. So what my lab has done, and I think pretty successfully, we designed diets that strip fat, excess fat off the body. But right from the start, we are also having, in the

back of our minds, we're protecting every gram of muscle that we can because again, this is the long game.

SHAWN STEVENSON: So with this being said and the body wanting to get back to that place that it was at, are you talking about something like a set point? Is this something that's real as far as our weight is concerned?

DR. BILL CAMPBELL: Yeah, I think it's very related to that concept. I, I don't, I don't, I don't have an opinion or I don't have an informed opinion on the set point. I do know if you lose muscle, we have several lines of evidence that says you will, you will gain that weight. You're much more likely to gain that weight back.

SHAWN STEVENSON: Mm-hmm.

DR. BILL CAMPBELL: And that does tie into that set point theory, which the way I understand it is your body has this given amount of body weight, and if you try to lose weight, it's gonna fight you to get it back. And, and I guess in the sense of this research, I think that is true if you lose muscle, but if you maintain muscle, it seems that you're not gonna struggle your, your body's not gonna fight you as hard.

SHAWN STEVENSON: Okay. So how do we protect our muscle and as you said, strip the fat away?

DR. BILL CAMPBELL: Yeah. Yeah. So this, you're, you're, you're, you're asking me to talk about what I love talking about. This is great. So I always ask people, let's prioritize your goal. Like, do you want to lose fat or do you want to build muscle? So I, I, I always like to start, start with that. And we can do both and we can talk about that later. But I look at dieting, so we're gonna, if we reduce people's calories, it's very, it's a very potent fat loss stimulus. And the way that I perceive a caloric deficit is that induces a catabolic stimulus on the body and a catabolic ti catabolic, meaning it breaks down tissue.

That's good. That's good for fat tissue. A reduce my calories. My body's in a catabolic state. I wanna break down body fat. Good. But that catabolic state is ubiquitous, and that means

there is also a stimulus to break down muscle, and we don't want that. So the way that I conceptualize this is during a diet, we have an overall catabolic environment. What can we do during this phase of fat loss to impose some anabolic stimuli and the two most powerful anabolic stimuli in an overall catabolic environment are resistance exercise. So lifting weights pro is it, it is a anabolic stimulus to the body and a relatively high protein diet. Protein is an anabolic nutrient, so it's, it's actually simple.

I mean, I've been studying this for 20 years and really when you go on a diet, two things that we wanna do is resistance train and match that with an optimal amount of protein intake. Those two things keep giving every time we lift weights and every time we're consuming protein, we're just, we're introducing these anabolic stimuli into this catabolic environment. And then there's other more advanced strategies that are a little bit newer, like diet breaks, refeeds, things like that, that actually take us out of this catabolic environment for a couple days or a week at a time. So those are some other strategies as well.

SHAWN STEVENSON: Fascinating.

DR. BILL CAMPBELL: So then the other reason why I'm really passionate about protecting muscle, and this goes with where my research is, is currently at, is helping women going through the menopause transition. One thing we've learned about this phase of life is not only do women start to have an accelerated rate of fat gain during the menopause transition, but for the first time in their lives they're starting to lose lean mass. So, and this happens without, I mean, this is not a dieting thing anymore. This is just the physiology of menopause. So this is why it's the same principles. I just encourage women, obviously throughout their life, but particularly as they get into their forties, as we're getting very close to this menopause transition, we want to resistance train to kind of give us as many defenses against this loss of muscle mass and relatively high protein intakes to also help protect the muscle.

SHAWN STEVENSON: That's so important, man. Like, again, this is such a, a service to get this education out because I, as you know, like there, there's a new, thankfully there's a paradigm shift taking place with the conversation around menopause. But foundational things like

making sure that you are really, really minding your protein intake during this transition to keep that anabolic stimulus that you've been talking about. And again, you know, right now, and if you could, I, I want to talk a little bit more about this because we talked about sleep earlier and now bringing this conversation around menopause. For me, when I think about these things, I think about hormones, right? When I think about sleep, I think a huge hormonal cascade.

And in my mind I see these things as sort of like epi caloric controllers, right? So they're calories are obviously an important factor, but something like menopause or sleep deprivation changes the way our bodies associate with the calories we consume and also our energy expenditure as well like things are changed. And so if we're moving, for example, we'll just stay on the same train and we're gonna come back and talk more about menopause. But if we are, if our goal is fat loss and, you know, and, and of course retaining our muscle and we are doing all this stuff to protect, and you said this earlier, to protect our, our, to get our results. And we're not minding our sleep quality. Like we're really kind of shooting ourselves in the foot. So with all this being said, when you said a high protein diet, for example, like, what do you mean by that? How, what, what should we be thinking about? It's like, can we figure that number out for ourselves right now, what we see targeting?

DR. BILL CAMPBELL: Yeah. And first for the midlife woman, what we know is that women in particular are eating very low protein intakes. The average protein intake of a menopausal woman is 70 grams per day. That is very low. So what I recommend, and I'd like to give recommendations based on one's goal, body weight. So this, this is a way to do this so that anybody can say, okay, this is my weight. Now I just need to do a, a quick multiplier to determine my optimal protein intake. And if somebody has obesity. That's why I like to say goal body weight. So the numbers that I recommend are 0.75 grams per pound of ideal body weight up to one gram per pound of body weight. And then for our European listeners, that's 1.6 to 2.2 grams per kilogram of body weight.

SHAWN STEVENSON: Just based on this alone, I would imagine, like you just said, the average woman is way off in her protein intake, and so what is that going to do for her?

DR. BILL CAMPBELL: I love that you asked that. Listen to this. We have multiple studies where they've given women, again, this is in this menopausal space when, when the only thing that researchers did was increase protein. No other intervention. Women have gained muscle lean mass and lost body fat. They're increasing their calories by only adding protein alone. And it's acting as a fat loss stimulus. And of course, it's probably not too surprising, but there's no resistance training here. Now, of course, resistance training is awesome.

I mean, we want people resistance training, but I, I read the, I read these studies and I'm like, this is, this is fat like protein is a powerful nutrient and it's anabolic. But it's actually catabolic to fat. Now, I also wanna say, I don't want people who are already eating a lot of protein to think, oh, I'll increase more. This seems to work when you are eating a low amount, and then you take it to levels that are in the optimal range.

SHAWN STEVENSON: Hmm. Awesome. Awesome. Okay. So what you're saying, and this is gonna be mind blowing for a lot of people, I'm just gonna reiterate, you're saying that by eating adequate amounts of protein, you're gonna stimulate muscle growth.

DR. BILL CAMPBELL: Yes. Without resisting, and I, I can send you the studies. Like, I, I don't.

SHAWN STEVENSON: I believe you.

DR. BILL CAMPBELL: No, but I don't want your listeners to, to believe me. I, I, I, I, I, yeah, I can.

SHAWN STEVENSON: Because that is like, you don't think ab when, when you think about building muscle and growing, growing muscle tissue, we think about resistance training.

DR. BILL CAMPBELL: Yeah. My whole, most of my life, I'm like, you can build muscle by eating protein like that. I was taught that. I'm sure I've taught my students that, but I, you read a few studies where it happens and, and I can't, that I can't, I can't teach like that anymore.

SHAWN STEVENSON: That's fascinating. It's as if the proteins have an intelligence, you know, it's as if the amino acids have an intelligence and your body, it's association with them is just like, I know what to do with this.

DR. BILL CAMPBELL: Yeah. Well, and our muscles are amino acids, so it's, it's, it makes sense, right? But yeah. What, what is shocking is there's no stimulus such as resistance training on the muscles, which is what I used to think you had to do. Now again, if somebody's eating adequate protein, I don't want you to think, oh, I can double my protein and I'll build more muscle. I don't think that's gonna happen. But if you're currently not eating an optimal amount and you increase it, that. Yes, and, and again, I'm, I'm aware of four, possibly five different studies in humans where, and this is from sedentary people to resistance trained females. This study was in my own lab where we increased calories only from protein and body fat has been lost.

SHAWN STEVENSON: That's powerful.

DR. BILL CAMPBELL: Yeah, it's, it's, it's protein is no joke.

SHAWN STEVENSON: Got a quick break coming up.

We'll be right back if you want to dramatically reduce the frequency of you getting sick and accelerate your recovery. If you do, I wanna make sure you and your family are utilizing what was highlighted in a meta-analysis published in the Annals of Clinical Biochemistry. The study was titled Electrolyte Imbalances in Patients with Severe Coronavirus Disease and it analyzed five studies with nearly 1500 patients with COVID-19 and found that both sodium and potassium were significantly lower in patients with severe COVID-19 and improving people's electrolyte balance dramatically improved their recovery.

Now this is known in the hospital setting, but we don't need to be severely ill to get the immune system support of electrolytes. In fact, a peer reviewed study published in the European Heart Journal titled Sodium Intake Life Expectancy and All Cause Mortality Reveal Quote, observation of Sodium Intake Correlating Positively with life expectancy and inversely with all cause mortality. Shocking to the researchers and the scientific community at large, higher sodium intake than conventional beliefs about sodium is associated with a longer average life expectancy and reduced all cause mortality, and this was a huge meta-analysis.

By the way, this is the data from 181 countries. But the question should be why? Well, sodium is required to help conduct impulses of your nervous system. It's required for work, muscle contractions. It helps all of our cells, tissues, and even your brain maintain proper fluid balance. It's deeply involved in every aspect of our immune system function. The generation and utilization of energy and the list goes on and on. But the most important factor is getting the right ratio of these key electrolytes, sodium, potassium, at magnesium, and that's what you get in the number one electrolyte supplement in the world. It has no sugar, no artificial dyes and results that you notice.

And right now, not only can you try their popular drink mix, that's now being used by dozens of professional sports teams. They also have an amazing new electrolyte sparkling water and with every purchase you get a free sample pack to try out their classic drink mix flavors. I'm talking about the amazing electrolytes from LMNT. And as always, LMNT has a no questions asked money back guarantee so you have nothing to lose and only better hydration, performance, immune system function, and overall performance to gain, go to drinkLMNT.com/model to take advantage of this right now. That's drinkLMNT.com/model to get your free sample pack with any purchase, including their new electrolyte sparkling water. Again, go to drinkLMNT.com/model and now back to the show.

SHAWN STEVENSON: Now you, you know this as well as anybody. The past couple of decades we've been hyper focused as a culture on either fats or carbohydrates. Right. It is been like either bashing or loving one of those, and protein's just been sitting on the sideline the whole time. Like, Hey, I'm kind of important here.

DR. BILL CAMPBELL: Yep. So go, go, go ahead. Well, I, you're, you're, you're asking all the things in my wheelhouse. It's almost like there's this big fight between the carb people and the fat people. Have you ever heard of the protein leverage hypothesis? Please share. You're gonna like this. So there's a theory, a hypothesis, and I think this was, the researchers are Australian, and I think this was first observed in grasshoppers. And what this theory demonstrates or what this theory supposes is, we have a natural protein threshold each day. And until you get enough protein and meet this daily threshold, you are going to have a drive

to eat. And if you don't get this, if you don't meet this threshold of protein over a 20 hour, 24 hour period, you're gonna keep wanting more food.

You're gonna keep getting hungry. And in our culture, in the United States, in, in this, let's just call it in a, a ultra processed food environment, because people are hungry, they're reaching for the foods that are the most convenient because that's quick food and I'm hungry. And the, so the foods that they're eating are, you know, processed fats and, and high sugar, high salt foods. But that's when you're getting them, you're getting more and more calories. But they are, those foods are also low in protein. So that's not getting you to your protein threshold. So you keep, you keep this hunger until you've reached this threshold. And I'm gonna discuss a study now that, again, best study I've ever read on this.

And they basically set out to either validate the protein leverage hypothesis or to invalidate it. And the first thing they did was an entire other study where these researchers basically got a bunch of food scientists and they mastered the art of disguising the protein in different, in different foods. Because one of the problems with protein food research is it's hard to hide protein so people know, yeah, that was a lot of protein 'cause it's usually not as good. And so they, again, awesome study. They were able to disguise whether it was a low, moderate, or high amount of protein. Then in the second study, they brought subjects in and they gave them the exact same meals, same number of calories.

But the only difference was, and this was for breakfast, lunch, and dinner, all disguised. But one had very low protein, one had a moderate amount, one had a higher amount of protein. That was the only difference. So they basically gave them tr and they were living in the research lab again. So this is where, what I like to say, there's no Taco Bell temptation here. Researchers could monitor everything. And basically what we're asking is if they were eating, oh, so they gave 'em their trays of food, they could eat as much or as little of these trays of food as possible. If they wanted a second tray, here's a second tray. If they didn't want to eat it all, they took it away and they had access to snacks.

And basically what they were asking is when the subjects are eating high protein, are they eating less overall calories or to stay it the other way? If they're eating low protein, are they

going to eat significantly more calories? And one of one of these outcomes will either validate or invalidate the protein leverage hypothesis. And what they found was the subjects not knowing high versus low protein intake. The, when they were given low protein intake, they ate significantly more calories, mostly from snacks, and I think the dinner meal. Which again, I, I don't like to say proves as a scientist, but that study really added a lot of credibility to the protein leverage hypothesis in humans.

And just for, just for a side note, the moderate and high protein feedings foods, there was not a difference between them. But, and that actually makes sense because once you meet the threshold, there's not an, there's not a greater advantage. So, and if you think about this, this just ties into everything we know about a high processed food diet, which is low protein. So a lot of this stuff makes sense when you can start putting the pieces together of, of like general nutrition and, and, like an obesogenic environment.

SHAWN STEVENSON: Yeah. Now what is it about protein that, that does this for us, that, that really supports our metabolic health?

DR. BILL CAMPBELL: Yeah, so one of the things is it's the most satiating nutrient, so it makes us feel the fullest. The other thing is, is metabolic. So a term to describe this is called the thermic effect of food. Some people will refer to that as dietary induced thermogenesis. So what that means is. When you eat protein compared to fats or carbs, it doesn't take your body much energy to digest and absorb fats and carbs. But protein is the only macronutrient that has nitrogen bonds in it. So nitrogen atoms, and that's hard to break, like that's not easy. So the body has to really work hard to break apart these amino groups or these nitrogen bonds. And not only that, but once you break it apart, your body has to digest, absorb, and transport the the amino acids to the body.

And then we look at, well, when amino acids go to the muscles, they will generally increase muscle protein synthesis. Carbs don't do that, fats don't do that. And that's also an energy demanding process. So think about it like this. If we have a hundred calories of carbs, protein, and fat, I always, when I teach this to my students, I say a hundred calories of butter fat, a hundred calories of Skittles carbs, and a hundred calories of chicken breast. Out of those a

hundred calories, 25 of them are being used up in the protein just to do the work of digesting it. Only seven calories are being used to digest and absorb the, the Skittles, the carbs and 2% are being used to digest and absorb the the fat. So this is another reason why I tell people, if you're going to overeat, overeat on protein, because there's gonna be less body composition damage.

SHAWN STEVENSON: It's like a net gain.

DR. BILL CAMPBELL: Well, I wouldn't, you're still getting 75 calories..

SHAWN STEVENSON: Right.

DR. BILL CAMPBELL: .. From the protein. So I, I wouldn't say that it's, I, some people would say it's a free food. I, I, I don't say, I don't think it's a free food, but I'll say this, I've never seen a study where people that have over eaten on protein, where they've gained body fat.

SHAWN STEVENSON: Mm-hmm. Fascinating. So again, a hundred calories, if we're doing that with a protein dominant food, like the chicken breast, we're going to be, "absorbing" like 75.

DR. BILL CAMPBELL: Yeah. You're only getting 75 net gain.

SHAWN STEVENSON: So of those of 75.

DR. BILL CAMPBELL: Yes. Yes. But instead of 98.

SHAWN STEVENSON: Right. Which comes with butter and the carbs.

DR. BILL CAMPBELL: Or 93 from the butter. Yes. Yep.

SHAWN STEVENSON: And also another thing is like, what are those things, you know, the carbs of Skittles, for example, what's the influence it's having on insulin?

DR. BILL CAMPBELL: Oh yeah. Well, yeah, and I, let me just say, this is just an example. I'm not, don't test this, but yeah. Insulin's gonna go high or it's not gonna do anything for your very little, for your hunger. I, I got another study that, actually, my wife is not into this at all, but she was like, is that true? I'm like, I'll, I'll show you the study. They gave subjects two meals of the same calories. It was a cheese sandwich. One of them was a processed cheese sandwich. So white bread and processed cheese, I think like Velvita. Some maybe mar some, some kind of processed cheese. The other food meal was whole grain bread and cheddar cheese, same calories, and also the same subjects. One time they got the processed sandwich, the other time they got the whole food sandwich, and what they did was they had 'em eat both sandwiches, same number of calories, and then they measured their metabolic rate for the next six hours.

And your body does increase your, the amount of calories you're burning after we eat food because again, it takes, takes energy to digest and absorb this, this, these foods. What they found was after eating the processed food sandwich, the subjects burned approximately 75 calories over six hours. The whole food sandwich, they burned double 140 calories. 150 would be double, I'm just gonna say double to make it easy. That's calories that nobody think, we always think calories in, calories in. Well this is calories out and that's one meal. If you eat three meals per day every day and you're eating ultra processed foods versus whole foods, this adds up.

SHAWN STEVENSON: Yeah.

DR. BILL CAMPBELL: So I'm, this is something else I didn't use to really take sleep as seriously as I should, and I used to be fairly lenient to say, yeah, go ahead. If you want some processed foods, it's not gonna. But the more I'm learning the, the more I'm, I'm, I'm hearing myself say, Hey, let's really try to reduce our processed foods as much as possible. And, and lemme just say, I like processed foods. So this is, this is a battle for myself. Like I, I'm, I'm not. I struggle with that. So.

SHAWN STEVENSON: So this would be more the, you know, the paradigm of if it fits your macros, it's all good. Yes. But what was really interesting about that study was that the macronutrients were all the same as well.

DR. BILL CAMPBELL: Yes. Minor differences. The whole food did have 10 more grams of protein. And of course, and this is what I talk through with my students.

SHAWN STEVENSON: On accident. It's kind of what I mean is, is like, it's, it's accidental because it's supposed to be the same sandwich as one is processed, one's not.

DR. BILL CAMPBELL: Yes.

SHAWN STEVENSON: The real one accidentally has 10 more grams. What do you, you know what they.

DR. BILL CAMPBELL: They did everything they could.

SHAWN STEVENSON: Real cheese versus the craft.

DR. BILL CAMPBELL: Yep. Yep. So we would expect a higher protein meal to increase calories more. So there's a limitation, but let me say two things about that. The other sandwich had 20 grams more carbs than the other one. And I think fat was almost identical. So that offset this a little bit. But what this study did was it actually made the processed food sandwich actually closer to the whole food because which processed foods do we eat that are high in protein? So the reality is in, in our, the reality is in our world, it's actually gonna be worse because people aren't choosing Cheetos that have high protein or Takis or you, you get my, you get my point. In the real world, ultra processed foods don't have much protein at all. So, it would've been nice if, if the, if it was exactly the same amount of protein, but it was a little different. But I, I, again, that's to me, and, and again, I analyze studies. That's how I do, to me that was a marginal inconvenience.

SHAWN STEVENSON: Yeah, well that meant it so powerful because again, on the surface you would think they're the same. That's that, that's my.

DR. BILL CAMPBELL: Same calories.

SHAWN STEVENSON: You know, you would think that they're the same because it's the same stuff. This is cheese and this is cheese, this is bread and this is bread. But the very nature of them being one's ultra process and one is more of a quote, whole food version of that thing. It changes what it's made of. And that's really, you know, at its, at its core, the big difference and how your body's associating with it. So that real food is gonna naturally come along with the satiating benefits of the protein.

DR. BILL CAMPBELL: Yeah. And how many more micronutrients and phytonutrients are we getting? And, and, and just a, a thought that comes to my mind, and I'm not, I don't have knowledge on this, but I hear this all the time, in fact, just heard it yesterday. People travel out of the United States to go to Europe, somewhere else. They eat similar types of foods, breads, cheeses, whatever, and they lose weight when they come back. Now I always, you know, I appreciate you might be doing more walking or something, but it could be more to that. Again, I, this is not an area that I've studied, but I hear it a lot.

SHAWN STEVENSON: Yeah. It's something to it obviously, you know? So now I gotta ask you this, because there are a lot of people who feel that eating too much protein or even, you know, moderate to high amounts of proteins is bad for you. All right? Have you experienced pushback on that? Like it is, is eating too much protein? Bad for you. Isn't it gonna kill you?

DR. BILL CAMPBELL: So I, I don't think so. And what, what I wanna do, when I hear that I, I don't take that lightly because I'm a scientist and, and I write papers on high protein. I encourage my, my children, my daughters to, to eat higher protein 'cause they're active. And the last thing I want to do with, with, with my position as a, as a nutrition researcher is to, to tell people to do something that's harmful. Like that's the, that would, that would be horrible. So one thing I've done to kind of check that in, in, in real time, specifically on this issue, and I've done this for years, I tell my students, so I've, I've taught sports nutrition.

I teach a class called the Science of Weight Management. So what I do on the first day of class, and this is no joke, I. I say, if you, I'm gonna tell you this semester, I'm gonna provide you

evidence about high protein diets. If you can give me one study that has to be done in, you know, healthy people. Like I don't, I, I don't want somebody like on end stage renal disease. So in healthy people where they were given higher protein intakes and there was a negative health outcome, you give me that research paper and you get an A and you don't ever have to come back. 'cause they've given me a lesson that I will never forget. I've done that for at least 10 years and I haven't had one, you know, and I've taught, you know, hundreds if not thousands of students in that time.

Plus I'm looking for research now. There are studies that are associations like. Hey, these women had, or these men had higher protein intake and they also had higher, whatever, negative health outcome. But that's not an intervention study. So I, I do make it, I know I wanna study where they gave one group higher protein, one group lower protein ' cause that's the highest quality of evidence. So, and that, that study has not been produced yet, or my students haven't gotten an A from that yet.

SHAWN STEVENSON: Awesome. Awesome. I wanna circle back to talk about your research regarding health overall and in particular, being able to manage weight, body fat muscle in relationship to menopause. So what do women need to know? Because also, again, for, for the people that love women, you know, I love my wife very much, but what, what are some of the things that women need to know? Because this conversation, thankfully, it's, it's emerging. And women are getting a lot more support. But your research in particular is shining a bright light that this process, you know, the way that our culture has, you know, framed this to, to look, there's, there's so many resources and things that we can do to support this process. So let's talk a little bit more about this.

DR. BILL CAMPBELL: Okay, and thank you for letting me talk about this. One, I will say, I, I released a YouTube series on menopause, fitness and nutrition. It's a, it's 15 episodes, so it's Bill Campbell, PhD. It's my YouTube handle. So if people want to watch this, and I, I, I wanna start with saying, why is a middle-aged male scientist interested in menopause? Like, that's not common. And the reason for that is I was very ignorant of menopause. And my wife and, and my wife has allowed me to talk about this publicly. She has, she went through a very bad

menopause transition experience. I mean, it, it, it was not good. She didn't know what was going on. I didn't know what was going on.

One thing that was going on, and this was not the most serious of, of her being in a bad place, but she gained a lot of weight, a lot of weight for her. She's been very fit her whole life. So she's gaining maybe 15 pounds of body weight. And I would say, well, luckily you're married to a fat loss researcher, and, and she's dieted in the past, and I've always helped her with that. So I'm like, well, this will be easy. And I couldn't help her lose weight. And again, there were other things going on. Anxiety couldn't like talk about sleep deprivation. I mean it, and, and just not good. But it was, it was like, look, I've published, you know, more studies on weight loss in, in fit people than I think anybody else ever has.

And I can't help my wife lose weight. This is, this is troubling to me. And then the more that we started to learn the, the more I realized, okay, I, I, I need to, I need to, I have to, I have to study this. So it's where my, the rest of my career will be like, I am passionate about this, so I'm still a fat loss and exercise person protecting muscle. I just changed the population. So that's the reason why I'm, what has shifted in this, for me. You asked, well, what, what do women need to know? And, and I think the first thing is, and I think you may have mentioned this earlier, the first thing is to know, just have an understanding of what's happening to your body.

My wife didn't know. I didn't know. And essentially what's happening is her hor, their hormones are changing specifically. Well, let's list the three big players. Estrogen or estradiol levels are going down. Progesterone levels are going down. And then another hormone called follicle stimulating hormone is rising. So I'm gonna talk about these in the context of, of my expertise, which is body composition. So as these start to go down, and this hap, this starts about seven years before menopause where these hormones start to decline. And as this is happening and as we get closer to menopause, there's like about a four year period that I call the body composition menopause transition.

And that's where I mentioned earlier two things are happening. Women are gaining body weight, body fat, a little bit each year in their thirties and forties, but now there's an

accelerated. An inflection point, an accelerated rate of body fat gain, and at the same time, muscle mass is going up a little and then that starts to go down. So there's the body composition repercussions from this, plus all of the known vasomotor symptoms like hot flashes, night sweats, greater anxiety. Some women will have joint pain. No motivation, low libido. So there's a bunch of other o other side effects of this. So, I always wanna say, Hey, please get blood work.

Just know what your hormone levels are so that you can kind of know when this is starting to happen. I encourage people to get a DEXA scan because bone mineral density loss starts to accelerate during this time as well. So Dex is great because for me, I get body fat, I get muscle, and we get bone mineral density. So I think just to answer the question globally, find or be aware of what's going on in your body. 'cause we weren't aware, and my daughters will be aware.

SHAWN STEVENSON: Mm-hmm. All that's powerful. So what are a couple of the things that people are gonna learn in the YouTube series and just some advice for women to, that they can take away today? You know, whether it's perimenopause or menopause or just any phase of the life cycle to support this process. Because what I'm hearing is that that sharp inflection point, the sharpness of it, it doesn't have to be so excessive. There are some things that can be done to kind of mitigate, to support this transition. In particular, again, you being an expert in fat loss, so this is something that's on a lot of women's minds in general. But what about during this particular phase? Yeah. What do they need to know?

DR. BILL CAMPBELL: And one thing, not every woman is gonna have the experience that my wife had. So some women are going to go through this phase and they're going to, they're not gonna have nearly the negative consequences. So I do not want to give the impression, oh, it's horrible for everybody. But I do want to acknowledge the, the, the women who are struggling because, and again, I know it's getting better. Again, somebody like me studying menopause fitness, that's a, that's awesome. Like, that's, that's proof that things are changing, but not every woman is gonna have the same experience.

One of the things that, so the series in general is we're gonna talk about, the first thing I would like everybody to do is to embrace a fitness lifestyle. That is your best defense against anything that's gonna be adverse to their health. So if we can have them resistance training, that's gonna, that's gonna help prevent the loss of muscle. Maybe they still lose muscle, but they don't lose as much. Training using cardio to improve their aerobic fitness, their aerobic capacity, or VO two max. That's if you can improve your VO O2 max. The way that I think about that is that means you're gonna have healthier lungs. You're gonna have a healthier heart.

You're gonna have healthier blood vessels, you're gonna have healthier muscles that need to take in this oxygen that's in that we, that we're able to pump 'cause we have a healthy heart more. So embracing a fitness lifestyle is the, is the first thing. On the nutrition side, and I have a lot of questions on this, but the nutrition side is optimized protein that's, that's low hanging fruit. And along with that, let's try to be aware of lowering processed foods. And one of the first studies I'm doing in my lab is we're gonna study a anti-inflammatory. Mediterranean style diet. Anecdotally I'm getting very good feedback on this diet, helping women be able to lose weight. And I'm gonna come back to that in a, in a moment.

And then the other large area, and this is towards the end of our YouTube series, is be open-minded to the idea of hormone replacement therapy. So some women have contraindications and they, and they shouldn't take hormone replacement therapy. And I, I'll also say now that's this decision is between the patient and her evidence-based physician. So I'm not telling women to take hormone replacement therapy, but I am asking them to, to be open-minded to it. My wife that, that, that changed her trajectory immediately. And again, my biggest regret was that we didn't start earlier. So have those conversations be open-minded about hormone replacement therapy.

And then just back to a phenomenon that I can't point to research and say this is happening, but it's something I believe, and I would not have said this a few years ago, the the concept is weight loss resistance. I'm an evidence-based fitness professional, so it's the fact that I'm saying this. But I believe there is a subset of women going through this phase of life that despite being in a caloric deficit, cannot lose body fat. It, I saw it in my wife, but that's, that's

an n of one. That's anecdotal. But since I've ch been in this, this universe, I've had thousands, literally thousands of women.

Reach out to me and, and tell me this is their experience. I can, I've, I'm a fitness professional. I've put tracked every gram of food that's gone into my mouth for 15 years and something's happening to my body and I cannot lose weight. I always like to, I, I frame this as I can either tell you, well diet harder, or, you know, or stop being lazy, which is a message a lot of them are getting. Or I can believe them and just be open to the idea that maybe something's happening here and I'm choosing to say, Hey, maybe this is happening and, and let me use my lab and resources to try to figure out what's happening.

SHAWN STEVENSON: Yeah. Wow. You know, have you..

DR. BILL CAMPBELL: Did you come across this stuff?

SHAWN STEVENSON: Of course. Literally, I started picturing thinking about people who are coming in that I was working with, and they might be having a thousand calories a day or 900 calories a day, and the scale's not moving and nobody believes them. Right. Including me, like.

DR. BILL CAMPBELL: Yeah, yeah.

SHAWN STEVENSON: You know, and it's just like this. If for, for situations like this, it's important because the same thing, I'm very analytical. I want to, I wanna see the evidence. Is for us to sometimes take a step back and think about the intelligence of the human body and what it does to protect itself. Yeah. And what it does to adjust to circumstances and conditions and you know, and being able to, you know, literally slow our expenditure, expenditure of energy and where that expenditure is coming from. That's something we have a lot of data on is what, you know, whether it's burning fat or burning muscle based on inputs, but just understanding that there is something, and I call it again, a epi caloric controller.

DR. BILL CAMPBELL: I like that. Right.

SHAWN STEVENSON: That is determining what our body is doing with the calories we're associating with. And so being more mindful of this and as you mentioned like more, more is on the way for sure. And you also mentioned you are working on a study with the modified Mediterranean diet. Can you talk more about that?

DR. BILL CAMPBELL: Yeah. So we're gonna start, well first, right? Currently we're doing the first ever menopause fitness survey. So this is, so we have, this is crazy. We have thousands of study on thousands of studies on menopause. We have some studies in women that are, that embrace a fitness lifestyle. We, I could not find, and my team couldn't find, we couldn't find any study survey studies that murder, Hey, these women embrace a fitness lifestyle. They lift weights. And they're going through, or will be going through or have gone through menopause. So, Dr. Gabrielle Lyon is a, she's one of my colleagues on this study. I've, I've got a, an all-star team. So what we're doing in this initial survey is just getting stories like, what's your fitness routine?

What's your nutrition, what's your experience through menopause? Which, you know, are you open to the idea of hormone replacement therapy? So that's really gonna accelerate my learning curve in this space. And then one of the, this diet that we're looking at, we're gonna take a case series approach, which means it's only gonna be 10, 15 women initially. And we wanna validate that they truly are experiencing weight loss resistance. And if they are, we're gonna, we're gonna ask them to do a, well, I guess as a scientist, we're not asking. We're gonna prescribe a anti-inflammatory Mediterranean style diet, which is basically whole foods based, elimination of processed foods.

Do this for approximately four weeks and, and then monitor their health outcomes. So we'll get blood work, of course body composition stuff. And I do wanna go back to the, the weight loss resistance concept for a moment. If I, I guess I want to cut slack to the, the fitness professionals who, who don't believe this. 'cause I was, I had this mentality for years. When somebody says they can't lose weight, then usually the reason is because they're eating more calories than what they say they are. And, and we call that underreporting. And that is everywhere in the scientific literature. So we, we know that people underreport what they eat.

So if somebody came to me who's 28 years old, they're relatively new to fitness and you know, they don't know a lot about nutrition and they, and they told me, Hey, I, I can't lose weight. I'm eating very low calories. I would say, I, I, I might not say it, but I would say, well, let's make sure that you're actually eating what you say you are. And then we have methods to do that. A 47-year-old women in midlife going through menopause tells me the same thing. Especially when they say, Hey, I've been tracking everything, or I'm a fitness professional. I, I don't dismiss that. I, I, I now believe that and, and I can't wait to do research to see what, what I can find.

SHAWN STEVENSON: Yeah. Yeah. A, a great example, we had Autumn Calabrese in here recently. And, you know, for her a a five pound weight gain is unheard of. You know, like, again, she's been in this field. She's somebody who's always tracking, very adamant, dare I say, she's a little neurotic about her stuff and tracking. And so that five pound weight gain just had her already, she was struggling with, you know, parts of, you know, her emotion and emotion stability. But when that hit, she was just like, I don't know what's going on.

DR. BILL CAMPBELL: And can, I guess she changed nothing about what she was doing.

SHAWN STEVENSON: That's it. Yeah.

DR. BILL CAMPBELL: And she hasn't changed her food. Hasn't changed her routine. Yeah. That's, that's the, that's, that's the very common story. And, and I will say it's very debilitating to hear people tell you, tell her, oh, you're, you're lazy.

SHAWN STEVENSON: And also, like, what are you, what are you upset about? It's five pounds.

DR. BILL CAMPBELL: Yes.

SHAWN STEVENSON: I, I saw somebody even said that, you know, why is she upset?

DR. BILL CAMPBELL: Yep. And that's why women that embrace a fitness lifestyle, it's, it is that, that's, that's a lot of weight for them. Five, 10 pounds and something else I've, I've appreciated. If we go through history, think of your mom. My mom. We've never had a time

where we've had women in a fitness lifestyle. Right. I mean, it's only been the last 20 years or so.

I remember when I was in undergrad, I remember to this day the number of females in the weight room. There were two and I remembered their names. That's totally changed. So now for the first time, we're getting this large influx of women who've been embracing a fitness lifestyle, lifting weights, tracking macros. But we don't have any research on this population 'cause it's, we haven't had it before. So it's, there's a lot we don't know.

SHAWN STEVENSON: Yeah. This, one of the big takeaways from this conversation is that we have an even greater emphasis on building muscle. And building it, is, is in particular, if you can get ahead of the curve and build muscle prior to menopause. But also in this phase building, focusing on building and maintaining your muscle mass and of course, later in life. And the big question now though is, and I got you here, how do we do it? What's the best way to go about building muscle?

DR. BILL CAMPBELL: That one, that's the easiest question I'm asked. And that is easy. It's resistance training, lifting weights.

SHAWN STEVENSON: How, what's the, what, what is the best practice? Can I, can I lift weights once a week and I'm, and I'm gonna be good to go.

DR. BILL CAMPBELL: Yeah. So generally we wanna lift weights. Well, let me say the most important thing is the intensity of our lifting. So we wanna lift a weight to near failure. So that means if I pick up a dumbbell and I'm gonna lift and I can lift it 14 times and I can't lift it 15. I wanna lift that weight about 13 or four. I, I want to take it to where I really can't lift it for more than a rep or two, so that we call that intensity. So you wanna lift un to the point that we call near failure. And we also wanna lift with what I, what I'll say is relatively heavy weights. Now that doesn't mean that you have to lift to something just one time, but it does mean, and, and in my YouTube series, I, I kind of shame pink dumbbells and I, and I don't apologize for that.

And this isn't my opinion, there's research that has reported that females rather than males choose weights that are too light for their capabilities. Men are actually, I'd say idiots because they, they choose weights that get them injured and have to go to the hospital, especially when they've taken a lot of time off. They go back to what they were lifting when they were 20. But, the message I wanna send is lift weights that are relatively heavy, and that can be, and I say generally between six and 12 repetitions. In terms of days per week, if you've never trained before, one time a week is awesome until you get comfortable or used to this per body part. Yes, yes. Yep. Yeah, if you're want, if you wanna get that specific. Yeah. So what we know about body parts, not, this is how I program. One day per week we know is not optimal for training a body part.

So let's just say I wanna work on my shoulders. If I'm gonna do 10 sets for my shoulders per week, I don't wanna do all 10 sets on Monday. It's better to do at 2, 3, 4 after you, after you get past one day per week. The research suggests that two's no better than four or worse than four, three versus six. We just know we don't wanna do all of the lifting for a body part on one day. We have enough, not a lot, but enough to suggest let's spread that out and it makes sense, right? If you are only getting one day per week, that's, that's an anabolic stimulus only on one day, then you go six days without any anabolic stimuli. But if you do it twice a week or four times per week, well that's more anabolic stimuli. Hmm. Now if you take that too far, you would think, well, six days would be better. Well, the research doesn't, doesn't advocate for that either.

SHAWN STEVENSON: It's fascinating. So you mentioned if people are, are beginning one, one session per body part a week is.

DR. BILL CAMPBELL: ust Yes. I, and I would call that maybe like a, a foundation stage. Just learn the movements and let me, let me also say I. If you're new to this, try to find a fitness professional like this. The fitness professional, they are the best people. They, they, they have a service mindset and they'll help you make sure you're doing the lifts correctly with good form. But yeah, beginners just get in the weight room one day per week for maybe a month or two. And then let's see if we can get you to two or three days per week, four days. Like my current routine right now is three days per week when, when I'm on my game.

SHAWN STEVENSON: Yeah. And I, i, I'm a big, this is the first time I'm saying this, but you know, I tend to be very much, again, just experimenting, researching, you know, figuring things out myself. But one of the greatest gifts that I had, it wasn't going and reading up on a certain machine or a lift, but it was having somebody to, to teach me. And that person he was mr. Caveman, Missouri, like some natural bodying building guy. Yeah. You know, who I worked with and, you know, he is a crazy fit, you know, and, but we started training together. This is 2000, all right. The year 2000. He had me doing creatine and doing super sets and all this stuff. This was 25 years ago. Holy shit.

DR. BILL CAMPBELL: Yeah. And Creatine\ was not that, that was only introduced to the market like three years prior. So he was a, he was, yep. He was on his game.

SHAWN STEVENSON: Yep, yep. So, you know, just being able to, to learn, like, and again, just my type of thinking, I wanna know why, right? And so him having those inputs and training volume and all this stuff, but those foundations, again, if you just work with a trainer or somebody again who's acclimated to educating you, just even getting a few sessions in to give you a foundation, you can of course, build on that over time. But I, I reiterate that advice to like, if you're getting started. Get a, get a trainer, get a coach to, to get you going.

DR. BILL CAMPBELL: Yeah. Yep.

SHAWN STEVENSON: Now let's take it to the person who is "trained", you know, who's been lifting weights for a couple of years. And they're wanting to really, they like, they know that I have more potential, I have more potential with building muscle to getting stronger. And they've been doing, you know, a traditional leg day, just going to destroy the legs on, you know, one day a week, a chest day back day. You've already reiterated the, the data is indicating, and again, like we were talking about Jay Farru a little bit earlier, and he's been talking about this for quite some time for years.

Uhhuh, you know, about training value, splitting it up and having more touch points through the week. And so I want to know where we're at as far as the volume. Alright, so you mentioned, alright, let's, we'll, we'll we'll take a, a major muscle group. Let's take, a back, let's

take back. What is the ideal or optimal amount of sets per week? Again, we're looking at six to, we'll say 12 reps, like weight that we can get near failure. What is the number of sets that we ideally are targeting each week?

DR. BILL CAMPBELL: So let me give a little context to the, just the general idea or categories of sets per week. So one to 10 sets per week is generally considered low volume. 11 to 20 sets is considered moderate volume. And then 20 sets or more is considered high volume. So when we look at bodybuilders, who step on stage, who are lean, and they're, every thought of every day revolves around building as much muscle as possible, they're typically doing 20, a little over 20 sets per body part on average.

So there's the one end of the extreme. When I'm, when I ask or, or when I get this question, my analysis of the research says The best place to, to make that decision on the optimal number of sets per week is to make it individual to what the person has been currently doing. So I'll give an example if, what are you currently doing? So if you're currently doing, let's say, eight sets per week, the research suggests don't increase that by more than 20% at a time. So if you go from, I'm gonna go from eight to 16. That is likely going to, you're gonna have more of a stimulus to a lower stimulus to fatigue ratio, which is not optimal.

And that's not to say that 16 sets is bad. It just means you're, you're currently doing eight, let's go to 10, let the body adapt to 10, let's go to 12, let's go to 14, and then you're at 16. Does that make sense? So a 20%, if you're, if you're thinking I wanna increase my volume 20% more than you're currently doing on a body part or a, a muscle group per week basis is, seems to be the best approach. So I don't like saying, do this, what are you currently doing? And let's build slowly over that. And the other thing is, if, if I did have somebody just go to 18 sets. Well, what are they gonna be doing in three years? Like, you're gonna, you do, you want to be at 42 sets for, like, that becomes not very functional if you have a family. So the answer in short is go up slowly relative to your current volume.

SHAWN STEVENSON: Okay. And so ideally we're going to split it up into at least two days. We'll just say, you know, I'm at 15 sets, you know, for my back that I'm training each week. That's the volume that's really, you know, getting me the, the, the, the results that I want.

Ideally with a split that up in at least two days. But possibly three. But after, when do we get to like, not diminishing returns, but we don't see that much difference.

DR. BILL CAMPBELL: I, I've looked at this quite extensively, and there's, there's, once you, we know that one day per week is not ideal. You still build muscle on one day per week, but you, you leave some muscle gains on the table. So two to six, three versus four, five versus two. As long as the volume is the same, like, I'm not saying, you know, if volume is equal, we're asking now is this is now a frequency question. How frequently should we stimulate each muscle group? And I can't, I can't, based on the evidence, I can't say four's better than three. So one's not ideal. Anywhere from two to six. And I went, one of my favorite routines was I was doing six days per week, so very low volume each time, but every day I was doing, you know, something for my chest. Those were whole body routines.

SHAWN STEVENSON: Got it, got it.

DR. BILL CAMPBELL: So I was hitting, yeah, each body part, six days per week. And I, I like that for, for that time.

SHAWN STEVENSON: Now I'm, I'm really hearing why the big why behind it. That's the benefit of having you here. Because it's just like, if I can get all 15 sets in, in one workout and then just do it again next week, and of course I'm usually hammered and sore until, you know, yes. But why won't I just do it and, and get that stimulus and then heal, recover. And it's because of the stimulus, the anabolic stimulus more frequently is what we're getting.

DR. BILL CAMPBELL: That, that's what I think that that is. That is, that is my, and not just mine, but that's a lot of the scientists that are that study resistance training. That, that is what I, that would say, that's that a consensus. But, then why isn't four better than two? So there, there's a limit to this. And, and I'll, I'll phrase it like this too. Why not 15 sets in one day? Well, the goal here is to induce an anabolic stimulus on that muscle. It may be that after five sets or eight sets, you're really not getting any more of an anabolic stimulus for, for set 9, 10, 11, 12.

So why do that? And again, some people would call that junk volume. It, it's better to have higher, higher quality sets that are lower each time. So let, again, we don't know this, but let's say the optimal amount of the anabolic stimulus is after four sets per body part. Well, there's your limit. So there's an argument against 15 sets in one day. You, you're not getting, apparently you're not getting added anabolic stimulus after a certain number of sets.

SHAWN STEVENSON: Awesome. Alright, now I'm gonna ask you. The, what's the meaning of life question. All right.

DR. BILL CAMPBELL: Okay.

SHAWN STEVENSON: And fitness.

DR. BILL CAMPBELL: Okay. Okay. That makes it easier.

SHAWN STEVENSON: Can I build muscle and burn fat at the same time? Can I, sitting here in front of you, can this guy build muscle and burn fat at the same time?

DR. BILL CAMPBELL: Absolutely. Caveat, though, it is not the expectation and it's not common, but plenty of research that we have, bodybuilders who've been training for years can build muscle and lose body fat. So can it happen? Yes. Would I, would I leverage my business claims on that promise? Absolutely not. Clearly it's more likely to happen in a beginner, somebody who's never lifted weights. Not as common in somebody who's been lifting for many years. But it can happen and it happens in, it can happen in resistance trained people. Not as common, but it can happen.

SHAWN STEVENSON: Okay. Okay. Awesome. I would, I would just imagine just this general idea was that you'd have to be a lot more penny pinching and minding.

DR. BILL CAMPBELL: Oh yeah. Yes.

SHAWN STEVENSON: Yeah,

DR. BILL CAMPBELL: yeah. You've gotta, yes, you've gotta pretty much have everything dialed in. You gotta have your recovery dialed in, your protein intake, dialed in, your, your, again, your volume, your, your frequency, like.

SHAWN STEVENSON: Your sleep.

DR. BILL CAMPBELL: Yeah, yeah, absolutely. Sleep. Yes. Yeah. So that's, it's, that's when we adapt.

SHAWN STEVENSON: Yeah. So, with this being said, you would advocate for us to focus on one thing, like for example, if, you know, I know the value, like, especially, you know, if somebody is in their, you know, forties, we'll just say a guy in their forties or a woman in their forties. And this is like a prime time to leverage the anabolic capacity we have put on as much muscle so as we can for later in life. So I wanna prioritize building muscle, but I wanna burn fat too. You'd say focus on building muscle right now, which would generally you need to focus more on calorie surplus, focus on building muscle, and we can worry about the fat loss later.

DR. BILL CAMPBELL: Yeah. So the, the way that I answer, answer that, that's why I think when we started, what is your primary goal? If your goal is to build muscle, then dieting is not your friend. Everything about a caloric deficit works against your muscle building goal. So let's just, let's call that for what it is. If you're telling me you wanna build muscle, then don't diet. And this is more of a conversation in, in, in the females that I've worked with in the past, they tend to be more prone to, well, can I die?

Not you, if you're telling me your goal is muscle. Now, within that goal. Let's design a program, exercise and nutrition program where we gain as little body fat as possible. Likewise, if somebody says, my primary goal is to lose fat. Okay, we will design a program that will prioritize fat. But I mean, obviously you, you know, my philosophy here, let work also gonna design a program where we maintain as much muscle as we can, but the, the bigger sin here is people who tell me they wanna gain muscle and then they're dieting for five weeks in a row.

I'm like, your, your, your, your actions are not supporting what you tell me your goals are. And it's fine to tell me, it's fine to acknowledge I wanna build muscle and lose fat. And I, and I'd say, great, if that's what you want, just know that that's not gonna happen as quickly as losing fat. 'cause that that happens relatively fast compared to building muscle. But we can design a program that I think would, would facilitate that goal the best.

SHAWN STEVENSON: Amazing. I I could listen to you all day talk about this stuff. So where can people get access, more access to your work? Can you mention the study review again? And also the, the YouTube.

DR. BILL CAMPBELL: Yeah. So the YouTube series is on menopause, fitness and nutrition and hormone replacement therapy. That is Bill Campbell PhD. And my research review is billcampbellphd.com. And then lastly, Instagram, pretty active on Instagram. That's Bill Campbell PhD.

SHAWN STEVENSON: Amazing. This has been awesome. Thank you so much for sharing your genius with everybody. And you know, we've had this kind of parallel some, sometimes again, you meet people that's just like, I, how did we wait so long to get connected? So I'm very grateful that you guys, you know, came to hang out with us today. I really do appreciate it.

DR. BILL CAMPBELL: Yeah, I'm, I was so excited to be on the show, so thank you for inviting me.

SHAWN STEVENSON: It's my pleasure. Dr. Bill Campbell, everybody, thank you so much for tuning into this episode today. I hope that you got a lot of value outta this. This is one to share. Share and share generously. You can send this directly from the podcast app that you're listening on, right to somebody that you care about or of course, take a screenshot of the episode and tag me. Or better yet, take a screenshot of this episode and share it on social media. Share it on Instagram and tag me. I'm at Shawn Model and tag Dr. Bill Campbell. He's at Bill Camp Bell. Alright, camp spelled Camp Bell, PhD at Bill Campbell PhD on Instagram. And I'm telling you now he's gonna have his eyes out for these shares and it's gonna make his

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