



Episode 371: How Eating More Protein Will
Transform Your Metabolism
With Dr. Gabrielle Lyon

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This podcast is brought to you by Cacao Bliss, a delicious superfood drink created by previous podcast guest, Danette May. Many of us like chocolate, and certainly nothing feels better than being able to enjoy rich creamy chocolate and knowing that you're doing something good for your body. But that isn't the case with every type of chocolate. When it's sourced well, chocolate and especially cacao can have many health benefits. It's a great source of magnesium, can be very anti-inflammatory and even help balance hormones. In fact, some experts speculate that this is why we crave chocolate at certain times of the month. Cacao Bliss is one of the best sources of this that I have found. They start with 100% organic cacao beans that are naturally dried in the sun, maintaining their miraculous health benefits. And then they blend this with turmeric, MCT oil, coconut, sea salt, cinnamon, and black pepper. So not only does it taste delicious, but it makes you feel incredible as well. The result is this truly decadent healthy, but guilt-free chocolate that helps with cravings, it can be great for weight loss, for boosting energy, reducing inflammation, all in one simple drink that has become a relatively regular part of my life. And for those who are wondering it is paleo, gluten-free, keto, vegan and vegetarian safe. They have been making this for eight years. I'm a big fan. And as a listener of this podcast, you get an automatic 15% discount by going to earthechofoods.com/wellnessmama and you will have an automatic 15% discount.

Katie: Hello, and welcome to "The Wellness Mama Podcast." I'm Katie from wellnessmama.com and wellnesse.com, that's Wellnesse with an E on the end, my new line of personal care products for your family. You can check them out there.

And this episode is so important for anyone listening, but especially for women, and this was a big key in part of the nutritional side of my weight loss over the last couple of years and my continued body recomposition that is still continuing to change. And it's all about protein and how it relates to everything from longevity to heart risk factors, and especially to weight loss.

I'm here with Dr. Gabrielle Lyon, who is a Washington University fellowship-trained physician in nutritional science and geriatrics, and she's board certified in family medicine and osteopathic manipulation. She also walks the walk. She is in incredible shape. She's also a mom. She has what seems to be endless energy. And she works closely with special ops military, and also, in her private practice, with leaders, innovators, and executives in their perspective fields.

I've researched her work extensively, and she brings unparalleled results to her patients with her personalized approach. And part of her message is the importance of dietary protein and how most of us, me included, for many, many years, are simply not getting enough. If you are listening to this, there's a very, very high chance, probably upwards of a 90% chance that you are not getting enough protein. And she explains how much you need, how to get it even if you are a vegetarian or a vegan, and why the timing and the amount per meal is so important. If you have ever struggled to lose weight, struggled with hormone issues or just low muscle density, this episode could be life-changing, and I cannot wait to jump in and share Dr. Lyon with you. So, without further ado, here we go. Dr. Gabrielle, welcome. Thanks for being here.

Dr. Lyon: Yeah. Thanks for having me.

Katie: I'm excited to jump in because I think you have amazing expertise on a topic that is not talked about enough, especially for women. So, to start broad, and then we can dial down from there, can you explain your concept of what muscle-centric medicine is?

Dr. Lyon: Yeah, absolutely. So, the concept of muscle-centric medicine is that muscle is actually the largest organ in the body. And we often think about muscle as it relates to locomotion and looking good in a bikini, but it's actually so much more than that. It is our metabolic currency, it's an endocrine organ, it's responsible for so many functions throughout the body, and it is really at the cornerstone of health. It really is the most important organ system to get right to prevent aging.

Katie: Yeah. I feel like that was definitely not something I understood well until recently. And like you said, this crosses over into so many areas of life and I feel like, especially for women, maybe guys naturally have a little bit more of an inclination toward this, but it's often overlooked for women. And I see women often doing like extended cardio, but being a little bit afraid of anything resistance training or strength-based for fear of putting on bulk. But walk us through some of the ways that muscle as an endocrine organ affects literally everything

Dr. Lyon: It does. So, it's really interesting when I started, you know, this came about when I was in my fellowship at WashU. I really started to see the importance of muscle because, you know, I would see patients... You know, I did a combined fellowship. So I did obesity medicine, and geriatrics. And there was one defining moment and I'll never forget this. I was doing clinical research and we were imaging women's brains. And it was women that had body composition issues. And by body composition issues, I mean that they were overweight and had excess adiposity. And I imaged this one woman's brain and she was in her late 40s, maybe early 50s, and I saw the flattening of her white matter. So, essentially, I saw brain destruction in her 40s. And that was a clear indication that she was going to have Alzheimer's or some kind of cognitive impairment subsequently down the line. And what was so profound was that this was a body composition issue. So, this was really about being under muscled. So, it was the fact that she didn't have high-quality skeletal muscle, yet she had a lot of extra adiposity, right, because we imaged the brain, we imaged other parts of the body, and she had a lot of fat that had infiltrated into this tissue. And it was at that moment that this concept of muscle-centric medicine was born. And I realized that muscle was so much more than just this organ of locomotion. It was really important and really the key for our metabolic currency.

So, really resting metabolic rate, the amount of carbohydrates that we utilize, the, you know, skeletal muscles, one of the largest sites for glucose disposal, all these things like diabetes, hypertension, cardiovascular disease, these are all diseases of metabolic dysregulation. And for decades and decades, everyone has been focusing on excess adiposity being over fat, rather than the reality is being under muscled because all these diseases actually start in the muscle tissue first. And I know that that's a totally new paradigm of thinking and it's probably the most important concept to understand is that we're not over fat. It's that we have unhealthy muscle because muscle is at the foundation for all these diseases of chronic aging.

Katie: Yeah. That makes so much sense. And especially, I know there's been more and more data that's come out over the last few years about cancer as a metabolic disease, and, of course, the heart disease connection there and diabetes, like you mentioned, and it's certainly no secret that these are all on the rise. So, the metabolic factor is really drastically important. On just a broad scale, can you explain, like, from an exercise perspective, I've always heard, and you can verify this, but, like, with cardio, you're burning calories, kind of, in the moment, but with strength training and adding the good kind of muscle, you're actually over the long-term burning more calories because muscle burns more at rest. Can you, kind of, explain that a little bit?

Dr. Lyon: Yeah. So, muscle is actually one of the ways in which we can change our metabolic use. And when you think about metabolism, that's the caloric energy expenditure that happens at rest. It's also when you exercise and you build muscle, muscle burns a particular amount of calories, and you can increase, you actually can have input into your resting metabolic rate. It's one of the only ways in which we can change it. You really can't change the amount of calories that your kidneys are gonna burn. You can't necessarily change the amount that your liver is gonna burn, but muscle, as this malleable tissue, you can actually change the amount of energy that goes into it. And you can actually change the structure of your tissue, whether it's increasing in mitochondrial density. And when you think about mitochondria, you think about a lot of utilization of the substrates. Muscle is a large site for fatty acid metabolism. So, again, you know, at rest, you can impact your overall caloric intake by training skeletal muscle tissue. And you know, when you're doing

cardiovascular training, you are using, you know, largely carbohydrates or fat in that moment, but when you're looking at long-term adjustments in metabolism, muscle is that key factor.

Katie: That makes so much sense. And I love that you mentioned this as a metabolic currency because I don't think people necessarily think of muscle as an organ, to begin with, much less one that is related to longevity. But when you start really delving into the research, it seems like it's actually one of the most correlated things to longevity and we see the stats out. You know, women especially, like, reduce risk of heart disease, but also bone problems and hip fractures and... So, like, explain that a little bit more in detail.

Dr. Lyon: So, when you think about muscle mass, so, skeletal muscle mass, which we talked about previously is the most malleable tissue and the organ of longevity. Muscle is truly the organ of longevity. When you think about the impact of muscle, there's something that happens. So, truly when you're young, you have this flexibility to drive muscle. Your hormones are strong, you have testosterone, you have estrogen, but something happens around midlife. And it's really important that you change your dietary patterns and exercise when you go through these, say, midlife changes. And it doesn't necessarily mean directly menopause, although that really impacts muscle. That is one of the times in which women lose the most amount of muscle is around menopause. And then, of course, you can imagine that because of this muscle loss, you change metabolism. So, you decrease your metabolism, you decrease your carbohydrate tolerance, you decrease your resting metabolic rate around this time of menopause, but it's very insidious and really through 30s, you now, depending on your activity, even, you know, even the 30s, but really your 40s, and then when you begin to go into your 50s, this change in metabolism, the skeletal muscle becomes very resistant, resistant to dietary protein, resistant to exercise. You really have to be very strategic.

And what we know as it relates to morbidity and mortality, the higher muscle mass you have, the greater your survivability. So, from a practical standpoint, individuals should really work hard and really focus, not so much on the cardiovascular aspect, but really focus on building muscle while you have that flexibility to do so. We know that the higher the protein in your diet, the higher muscle mass, the better your bone density is. You know, fractures and falls are one of the things that really devastates our older population. I mean, the chances of an individual falling, there's a death risk involved in subsequent years which is really preventable. So, really midlife optimization of skeletal muscle is incredibly important as you think about changing the trajectory. So, during the hormonal changes, resistance exercise really needs to be a key component because as you age, you then get into this, kind of, sarcopenic type phase, which is the loss of muscle mass, and strength, and function.

Katie: That makes so much sense. And I love that you explain, it's not that we are over fat and, but we're under muscled, you know, that shift because I think that the focus often is on, I need to lose fat, but we've also all heard about the phenomenon of people being skinny fat, where they're thin, but they're still not necessarily metabolically healthy and they don't have muscle. And I think that shift in focus can be really, really valuable, especially for women. I'm curious also because so many things like scales, and even doctor's offices, and for me recently, life insurance, they measure things on BMI which doesn't really seem to take muscle into account. Do you have better metrics for measuring?

Dr. Lyon: You know, the gold standard is underwater weighing, and that's not really available for people. Calipers are also a possibility. BMI, really, nobody in the community uses anymore because of just what you said. It doesn't really account for muscle mass. That being said, what's very valuable is to track body composition changes. And, you know, in my office, we use bioimpedance, which is okay. And what it does allow for us to do is when you use the same machine for the same person, it allows you to actually track progress, which is the most important. You know, and on that note, I just wanna highlight to the listeners that we know that there's a percent of body fat that is detrimental for health, right? We can all agree, you know, when you're getting into the 30% body fat range, we know that this is unhealthy.

What's so fascinating to me and really highlights the under-representation of muscle is that, Katie, I don't know the percent muscle mass you should have for optimal health. I don't know the percent muscle mass I should have for optimal health. It's been really under-appreciated as an organ for a lifetime, you know. So, we really focused on the problem. And, you know, in functional medicine, it's root cause approach. So, obesity is symptomology of impaired muscle tissue. Before you put on body fat, skeletal muscle is impaired first. Before you become diabetic, insulin resistance starts in skeletal muscle first.

Katie: That's fascinating. So, like having been overweight myself in the past, what are some of the first steps when someone's trying to break that cycle because I also wanna be very sensitive to the fact that it often is not quite so easy as, "Oh, you just eat less or you exercise more," which is what so often people are told. There's obviously, much more at play there. And I personally have seen from experience that when you focus on building muscle, that shift helps so much with the mindset. When I stopped looking at the number on the scale and I started looking at the number I could lift off the ground, that made a huge difference for me, but for someone who is new to this way of thinking, what are the starting points?

Dr. Lyon: The first thing that you have to do is you have to optimize your nutrition. When you think about building skeletal muscle, you think about two main factors that really don't require a physician. So, that is optimizing your nutrition and getting on a great resistance training plan. And right now, nutrition is very confusing for people. There is a lot of narrative involved that really persuades our decisions. And I think understanding the importance of high-quality animal-based proteins is of paramount importance because, you know, when we're young, we can make mistakes. We can eat a little lower protein and a little more carbohydrates without detrimental effects. However, as you begin to age, as these hormone changes happen, as the skeletal muscle becomes "anabolic resistant," which is just the inability to use protein efficiently and as effectively, you have to change your nutrition.

And, you know, I'm a geriatrician by training, which means I am trained to take care of the older individual. By understanding and optimizing dietary protein midlife, you can optimize skeletal muscle and ward off sarcopenia. And, you know, we've all seen our parents get tinier, right? Everybody's seen them lose muscle and body composition changes. You have to do your best to prevent that. And that starts midlife. And that means getting the right quality protein, with the right amount, at the right time. And I always tell my patients, it's a minimum of 30-grams of high-quality protein, which is around four and a half ounces of high-quality protein per meal. And that's a minimum. And you can go up to a more maximum to 50 grams of protein per meal. And most people think, "Oh my gosh. That's so much," but you have to understand we have a narrative

and a condition and you have to evolve past that to optimize health and really understand that there are things that you have to make up for with the changing hormonal milieu.

Katie: Got it. And you're right. I feel like protein is a misunderstood macronutrient and fat had its moment in the sun with keto and paleo and people shedding that, you know, fat, it necessarily isn't bad by itself, which I'm glad we talked about, but you're right on the protein. And I get the sense, I don't know the statistics, but I get the sense that especially for women, many of us are not getting enough protein. Is that true? Like, how close are people getting to that 30-gram?

Dr. Lyon: I love this question. And this is really from the NHANES data. And it suggests that average women have about 67 grams of protein a day. That's really the average. And then men are closer to 100. That's really, really low. So, if you think about it, from my perspective, I recommend one gram per pound ideal body weight of protein. So, the aging study, so, the RDA, which is Recommended Dietary Allowance is 0.8 grams per kilogram. That is grossly underestimating our protein need, especially for muscle health as we age because, you know, muscle is not just about locomotion. It's also about metabolic currency, and, you know, when you contract it, it acts as an endocrine organ, it does all this stuff. So, really, when you think about how much protein the individual needs and the average of what they're getting, it's no wonder that it's so hard to lose weight because the messaging is wrong. So, if the average female has around 67 grams of protein, and I told you, in order to stimulate muscle tissue, you need between 30 and 50 grams of protein per meal, then arguably, an individual would be stimulating their tissue maybe once or twice a day. And if you do that, then you really can get skinny fat. You begin to lose muscle tissue and gain bodyweight. So, strategically placing your meals and making sure that you get enough protein closer to, you know, at least 30 grams per meal. So, I recommend a minimum of 90 grams of protein a day and then titrating up. But it's very hard for women to get enough protein.

Katie: And you mentioned, you said one gram per pound of ideal body weight. So, in other words, if someone wanted to lose weight and their target was like 145 pounds, they would aim for 145 grams?

Dr. Lyon: Exactly. And let's say they were 200 pounds, but their goal was to be 145 pounds, I would say that 145 grams of protein would be great because when you think about it, dietary protein allows for hunger correction. We know that it is one of the most satiating macronutrients, and, in fact, it also takes more energy, "more metabolism," to burn protein, to utilize protein because of its structure than it does for carbohydrates or fats. And people will say, "Oh, well, that's so much protein." And I would say, "Well, it's just more optimal." And for every 100 grams of protein that you eat, 60 grams of carbohydrates are generated through this process called gluconeogenesis. So, when you think about it, there is no downside and only benefit to increasing your protein while keeping your calories and carbohydrates in check.

Katie: I can attest to that. I, over the last couple of years, lost a little over 80 pounds and that was one of the few things that I changed. I actually didn't work out hard at all while I was losing weight because I realized heavy workouts made me really hungry, and I did better just walking, and swimming, and playing with my kids, but I did drastically increase and really pay attention to my protein intake and also the variety of

micronutrients I was consuming. So, I was eating a lot of protein and then, like, a wide variety of plant foods just to try to rebuild my body because I realized for years, I had been dieting and actually depriving my body of what it needed. And so, I eat now much more than I've ever eaten before, and I still continue to lose weight. And I think protein is a big, big key on that. One thing I've seen and I'm hoping you can actually, kind of, dispel or at least explain is the idea that if we eat too much protein, that it gets converted into glucose in the body or that we shouldn't eat too much protein for that reason.

Dr. Lyon: So, well, first of all, you know, part of what you're saying is totally right. So, protein goes through a process called gluconeogenesis and can generate glucose. That is not a bad thing. In fact, it's arguably a better strategy to get your carbohydrates from, if that makes sense. It's a better way to generate glucose because your body is generating it, as opposed to taking in carbo, you know, excess carbohydrates or carbohydrates, and getting very robust phase two insulin response. So, really, when you think about it, first of all, there's never been a study where someone has ever shown that you actually can over-consume dietary protein. In fact, the overfeeding studies show an increase in lean muscle mass and a decrease in body fat. So, those are some of the overfeeding studies in the literature. And then when you take a step further and you think, you know, the protein that I'm eating is gonna go through a process called gluconeogenesis and generate glucose for the body, you'd arguably say, "Well, that's a good thing because the body does require glucose or is somewhat of a glucose need and the way in which to get it would be better through a process that your body generates, as opposed to eating it." So, there is some truth to that and I think that it's of more benefit

Katie: That makes complete sense. I'm so glad you were able to break that down. From someone who's just starting off from that perspective, if someone's new to this and you make a strong case for this, they're willing to start eating more protein, is that, on its own, can that be a great first step is just to start increasing protein even if they're not ready to jump into like big strength training workouts yet?

Dr. Lyon: This is actually a really great question. So, the question is can you just increase your protein? And I would say, this is the most important thing that you can do. However, you don't wanna add protein to an already calorically-loaded diet. So, you do have to adjust for total calorie intake. And that's really important to understand, that you can't eat your normal and then just add in extra protein. If you have metabolic dysfunction, you're then adding more amino acids into the bloodstream.

Katie: That makes complete sense. Okay. So, one thing I've noticed personally though, is, and you mentioned this a little bit, but protein really helps with satiety. So, if you focus on the protein first, I don't want anything else because I'm satisfied or I've, like, definitely had enough calories. I feel full. So, I'm not craving carbs, or sugar, or any of the other stuff that would add caloric density as much. What about, I'm curious because you mentioned, like, the timing as well. How can this work or does it with a system like I typically eat in like an 8 to 10-hour window during the day and practice some version of time-restricted eating. Can this work within a pattern like that?

Dr. Lyon: It actually is ideal. And the reason is, is because if you are looking for calorie control and time-restricted feeding, which I implement into my practice all the time so I have people feed in an eight to nine-

hour window, what you do is do think about your total protein intake. And you can spread that out in very robust amounts three times a day. So, let's say, you're gonna eat at 11:00, and then you're gonna eat again at 2:00, and then you're gonna eat again a 7:00. And each meal could have roughly 50 grams of protein in it. And you would really be optimizing the system. I mean, typically, listen, the literature would suggest that the processes of muscle protein synthesis may take four to five hours to reset. And so, perhaps, you wanna spread those meals apart, but I think if this is a way to control for calories, it's very valuable. And by getting those robust amounts of 50 grams, you can optimize your muscle.

Katie: Got it. Okay. So, I'm sure another question that comes up regularly is when it comes to protein about sourcing because there are so many options, everything from animal food to seafood, to protein powders, to collagen powders. What kind of guidance do you give to people regarding the sourcing of their protein and does it make a difference?

Dr. Lyon: I would say the first priority would be to get the dietary protein in. I get a lot of questions people saying that it's very cost-prohibitive to only eat grass-fed, grass-finished beef and I would agree that that can be cost-prohibitive. Because of that, I prefer that they just get their protein in either way. So, if they have to get conventional and they can't... You know, the majority of cattle is actually raised on small farms and then finished in a lot. You know, and I do believe that it's so important to get the dietary protein in that I'm not up for sacrificing an individual's health to say that it has to be grass-fed, grass-finished. So, that's one aspect. As far as protein powders, I definitely use whey protein in my practice. If you are beginner vegetarian, you can use a rice pea blend, but you just have to make sure that the amino acids are in enough robust amounts and you can easily just add in a scoop of branched-chain amino acids in to help raise the quality of that protein. And, you know, eggs and fish, those are all very valuable sources.

Now, collagen is an interesting one. Collagen is not a complete protein. I think it's incredibly valuable, and I would add collagen into a whey protein shake or into a plant-based protein shake, but I would not count that towards protein. I would count that towards calories because of it's, you know, it's completely devoid of tryptophan, it's very low in branched-chain amino acids. So, it's not a complete protein source.

Katie: That's fascinating. Okay. So, what about, you mentioned branched-chain amino acids, and I'm also familiar with several just like amino supplements that add the complete range of amino acids that are present in protein. Are those beneficial or could those be used because I've read and I don't know if this is true, that those are typically more bioavailable sources of protein or we're able to use a lot more of the protein and things like that. Is that true?

Dr. Lyon: Branched-chain amino acids are really interesting. And when you think about it, branched-chain amino acids should be used in augmentation. So, branched-chains is leucine, isoleucine, and valine. And what makes them so unique is obviously the name, their structure is branched, but they have a very unique place in muscle protein synthesis. And you know, it's really been used since the '80s. In the '80s they've been talking about branched-chain amino acids, but leucine, one of the branched-chain amino acids, is really the defining factor of what makes a high-quality protein. And that's the difference between animal protein and plant

protein. So, leucine, it's not that these are more bioavailable. It's that they are essential amino acids and they are essential and required in a certain dose to stimulate muscle. And that is where the 30 grams of protein comes from because that would equal if it's a high-quality protein, two and a half grams of leucine. And that number is the number needed to, kind of, turn the key to begin muscle protein synthesis, which is muscle health. It really relates...then translates to laying down muscle tissue and muscle health. So, hopefully, that answered your question.

Katie: That does. And I'm sure this is a somewhat controversial question, but to get clarity for anybody listening who is plant-based, is it possible to meet protein requirements on an entirely plant-based diet?

Dr. Lyon: Not by itself. I mean, I suppose you could, but I'm gonna give you an example of what that would look like. It would be calorically devastating. So, for six cups of quinoa, which people say is the high-quality protein source of plants, it would take six cups of quinoa to equal one small chicken breast. So, could you do it? You could totally do it. Would the enormous quantity of carbohydrate food be metabolically devastating? Yes, because you have to understand the carbohydrate intake is really based on a meal-to-meal threshold. Insulin is a problem. Glucose, in and of itself, is cytotoxic. It can only be in the bloodstream for a certain period of time. If you are overloading the system with glucose to get your protein needs in it's a really bad strategy.

Katie: So, you've mentioned that a couple of times, kind of, the meal threshold idea, the threshold pattern. Can you go deep on what that means and how we can use it to our advantage?

Dr. Lyon: A meal threshold is really thinking about how many carbohydrates you can have per meal without creating this, what's called, a phase two insulin response. So, there's a two-phase insulin response, there's the insulin that's already preformed and exists, and then there's the insulin that your body has to make. So, protein causes a phase one insulin release, right? So, it just creates a little bit of an insulin spike to really allow for the muscle effect, but excess carbohydrates over, say, 40 grams of carbohydrates per meal will generate a much more robust insulin response. And that is not advisable because then you will have a subsequent lower blood glucose, and then you'll need to eat, and you might release cortisol. So, it creates a metabolic derailment of a kind. And then you're chasing your blood sugar all day long. So, a meal-to-meal threshold, if an individual wants to lose weight, you're really thinking 40 grams of carbohydrates or less. And if you're very active, that number changes. So, we know that physical activity over 120 beats per minute, you can burn anywhere from 30 to 70 grams of carbohydrates per hour.

Katie: Okay. That makes a lot of sense. I'm curious, so, you've mentioned like, obviously, we need to keep this within a caloric range and you don't wanna have too many carbohydrates. Are there any good guidelines for figuring out, for a given individual, what that caloric level needs to be, and what the macro should be within that?

Dr. Lyon: Great question and very applicable to the listener. So, the first thing that you determine is your protein need, right? So, protein determines everything about metabolic health. It's the most important

macronutrient. It is essential and really, really, really important. So, determining how much protein that you're gonna intake, and then distributing that throughout the day between 30 and 50 grams per meal, then you can decide how much carbohydrates you want, versus fat. And I would say individuals who are starting out, who are already eating carbohydrates that they could then tailor their carbohydrates at 40 grams or of carbohydrates or less per meal three times a day. So, that could be, you know, anywhere from 90 to 120 grams of protein...I'm sorry, 20 grams of carbs as a baseline. And then if they're doing physical activity, they can increase, titrate up their carbohydrates or titrate down. And then fat is it's totally personal preference. If somebody has issues with metabolic dysregulation, if they have elevated insulin, if they have elevated blood sugar, then you're gonna wanna go more fat-heavy. So, for the caloric intake, you're gonna wanna guide that more towards fat than carbohydrates, but as long as calories are controlled... And the caloric need for everybody's different, but you could easily start between 1200 and 1500 for women if you wanted to lose weight. You know, we use that all the time in my clinic and it really, of course, depends on their size and their activity. But the difference between the carbohydrate and fat question is it's personal preference and metabolic profile.

Katie: Gotcha. Okay. Another thing I'd love your take on, and I'm hoping that you maybe can debunk is there's a lot of dietary advice, especially for women that says that we should eat like little, small meals throughout the day and lots of snacks to keep our blood sugar stable and to lose weight. Is there any validity to that?

Dr. Lyon: No. So, it's really interesting. So, you know people talk a lot about cancer and metabolic dysfunction and protein and mTOR. And mTOR is this mechanistic target of rapamycin, which is why somehow protein gets a bad rap. The worst thing that people can do is be eating and grazing all day long because you're stimulating these processes that really should be stimulated in discrete meals. So, you don't wanna just be snacking on low levels of carbohydrates or just snacking and grazing throughout the day is a very bad strategy when it comes to the mechanisms of longevity and the body, in particular, as it relates to this concept of mTOR, which we don't have to go into too much detail, but just understanding that it truly is a myth that eating small meals throughout the day and, you know, number one is that's a myth, and number two, you'll never reach your protein threshold. So, you'll get skinny fat, right, because you're never gonna actually turn over that muscle tissue. You'll always be sub-threshold and the body will look at the protein as calories, as opposed to that triggering number of leucine, which is that amino acid that we talked about.

Katie: Okay. So, it really does depend on how much protein you're eating at a given time versus the...

Dr. Lyon: It's the most important thing. So, if your listeners could come away with an actionable item that would be making sure you're getting a minimum of 30 grams of protein per meal, this will change their metabolism. If you can correct your protein per meal, you can have such an incredible impact on the way you age, your overall health, your brain function, your metabolism. It's really key.

Katie: From a practical standpoint, can you give us some examples of what like 30 to 50 grams of protein looks like when it comes to, kind of, maybe more common protein source?

Dr. Lyon: Yeah, certainly. So, for every 1 ounce of protein... So, let's say we have a, I don't know, a burger. So, let's say we have a beef burger. For every 1 ounce, there's 7 grams of protein. So, if we have a 5-ounce burger, 5 times 7 is 35 grams of protein. So, for every 1 ounce of protein, there's 7 grams of protein, roughly. You know, fish has a little bit more and, you know, beef might have a little...or fish has a little less and beef might have a little bit more, but really a great way to think about it is for every 1 ounce equals 7 grams of protein. So, if you have a 3-ounce chicken breast, you're at 21 grams of protein, which is low. So, that's an example of something that would be too small per meal.

Katie: That's really helpful to understand. Are there any supplements that can go along with this that are helpful or is this...like, would you actually recommend people do this without adding in any extras?

Dr. Lyon: So, I think compliance is really key and when you create compliance, then your body can have competency. So, really making it simple and getting the foundation nutrition right, rather than doing more stuff. So, do I recommend supplements? Totally. Do I use them in my practice? Yes, but you have to get the nutritional foundation right, then you can add in things like creatine for muscle health and brain health, branched-chain amino acids if you're largely vegan or vegetarian. So, there are supplements that you can add in, but really getting that foundation right is key.

Katie: And having seen pictures of you and also getting to see you on video for a minute before we started recording, I would say you are in incredible shape and definitely walk the walk of this. And I'm always so curious, and I know that listeners ask these types of questions too. What does this look like for you? So, what is your normal daily routine, maybe some example meals, and how you incorporate this and maybe some workouts as well?

Dr. Lyon: Yeah, certainly. So, for example, today I eat in a time-restricted window. And this morning, we had five eggs for breakfast and...five eggs for breakfast, I had a tiny bit of avocado. And then for lunch, I had some bone marrow, which is low protein, mostly fat. And that's what I've had this morning. And then for my next meal, we'll probably have rib eye for dinner and some salmon, and that will be it. You know, maybe I'll eat another meal in between that time and that will easily be five ounces of some protein stores. And we just keep it really simple. And if we add in veggies, they're typically cooked. We do a lot of herbs, a lot of cilantro. I cook that in with the eggs. And I keep it very, very simple. And, you know, my husband is a little bit different. He's former military, runs a lot. So, he earns his carbohydrates and that's a great example of an individual who can increase his carbohydrate meal threshold because he exercises so much. And for workouts, if, you know, I include that in my weekly newsletter, I always add in...I do a lot of kettlebells. So, I do a lot of functional movements, and a lot of kettlebells and everything is well designed. I believe in well-designed programs.

Katie: I'm a big fan of kettlebells as well. And to go a little deeper on the workout side, that's a thing I hear a lot from my listeners and my readers. Most of them are moms and time is always at an...you know, kind of, a hard thing to make, especially extra time. I've personally been really focusing on really short but incredible

workouts that seem to have the most bang for the buck, things like high-intensity workouts, sprinting, or using a bike that's designed specifically for that. And then I use a lot of kettlebells and also just lifting really heavy weights. I've noticed I feel better the heavier weights I lift. Are there any resources, or tips, or places you'd point people for starting with that if they've been more, maybe in the cardio world where they wanna start?

Dr. Lyon: Yeah, absolutely. So, I use Melissa Paris. You guys can find her on Instagram and her name is Melissa Paris. I include her in my emails because she curates all my workouts and she actually has some courses on how you would go from a beginner kettlebell person and you can increase that to be more advanced and I think that's incredibly valuable. I also use people as resources. So, Kara Kilian, she's an amazing former Titan Game athlete, a very well designed program, and someone who's gonna get on there with you and teach you is incredibly valuable. You know, we lift three to four days a week. I lift three to four days a week with kettlebells. And then my cardio is actually kettlebells. And you had mentioned, Katie, high-intensity interval training. That's fantastic for changing body composition. You can accomplish a lot in a short period of time. It improves insulin sensitivity, it improves lipid levels, it lowers body fat. You know, there's a process that happens post-workout in which your body continues to uptake more oxygen and utilize more fuel when you push it in that way. So, there's a lot of benefit to that.

Katie: I completely agree on that. And just to put it to rest for women who are worried about it, because that was actually something I worried about when I was a lot younger was that lifting weights would make me bulky. And now, I can deadlift. I'm very close. Okay. I wanna get it soon two times my body weight in a deadlift and...

Dr. Lyon: Amazing. That's incredible.

Katie: ...and I'm not even close to being bulky. It's been so fun to watch, but I think a lot of women still have that fear. So, I'd love for you to just, kind of, put that to rest once and for all.

Dr. Lyon: So, Katie, how long have you been training?

Katie: I honestly, intensively, only about the last nine months.

Dr. Lyon: So, you've put in nine months of training. And how bulky at nine months of intensive training with increasing your protein, how much weight have you gained, and do you look bulky?

Katie: Not in the least. I've actually lost weight. And my waist is the thinnest it's ever, ever been. And this is post six kids.

Dr. Lyon: Wow. You're my literal hero right now. So, that is an example of the myth of putting weight on and getting bulky. It just doesn't happen. It literally takes so much effort to build muscle and look like a bodybuilder. That's really a full-time job. So, what's gonna actually happen is when women start to lift weights, they'll actually get smaller. They'll get tighter, they'll lose body fat, they'll lose visceral fat. They'll actually become tighter, not bulkier.

Katie: It makes so much sense. It was funny even, like, logically understanding and I didn't fully believe it until I saw it happen to me. And it's amazing to watch, but that's definitely my encouragement to women as well. Not to mention that eating more protein seems to go along with skin tightening, and firming, and less likelihood of wrinkles. You mentioned the aging component a little bit early on, and I'd love to just delve into that a little bit more because I think a lot of women don't wanna age, or obviously, any faster than we need to age and don't realize the really important connection here with one, you mentioned longevity, but also just anti-aging and how you look.

Dr. Lyon: Absolutely. I mean the better your muscle tone, the tighter your skin. And we've all seen that. When you see an athlete, tell me you don't know that this person is an athlete. High-level athlete, they have a chiseled jaw, they're very lean, their skin is tight. I mean, anecdotally, I can tell you that this is what I see all the time. And, you know, protein is what makes skin. Protein, collagen, and making sure that you are getting enough nutrients, and also training the underlying tissue allows for tightness for everything.

Katie: That's definitely been my experience. And then to echo what you said, like, I think for a woman, it would be, like you said, a complete full-time job to try to look bulky and to put on muscle and the people who do that, it very much is their full-time job. It's a little bit maybe easier for men, but for women, it's not something you just accidentally lifted too many weights, and then now you're huge. It doesn't seem to happen like that at all.

Dr. Lyon: Right. And it's, you know, just definitely in terms of longevity, we know that the survivability is higher and also for the way people look, I mean, you know, a lifelong athlete, they look incredible. They've done what the body's destined to do and the body is destined to move. It's designed for it.

Katie: For sure. And I'm also curious about the hormone component that goes along with that because certainly for women, it seems like there's often a hormone link with weight gain, whether it's connected to something like PCOS where they've got just estrogen dominance...

Dr. Lyon: Absolutely.

Katie: I know from my little bit of reading on this that protein seems to be a very necessary precursor for every hormone, including melatonin, which is great for sleep.

Dr. Lyon: Correct. Yeah.

Katie: But what's the hormone link when we are talking about women and protein?

Dr. Lyon: I think that the biggest link is really body composition. So, excess adiposity can drive insulin, excess adiposity can drive estrogen. So, really, when you think about protein as it relates to hormones, what you said is absolutely correct, it is a precursor for hormones, as it relates to even the neurotransmitters and...so, that's very valuable. And from a physiological aspect, from the sex hormone component like estrogen, really keeping your body fat in check by optimizing skeletal muscle is incredibly invaluable. It's just incredibly valuable. When you do resistance training and you have healthy muscle, you can increase IGF-1. IGF-1, you know, the more optimized that is, the more optimized people's muscles tend to be, you know. You know, and I can't say that, you know, for sure what the scientific link, but I will tell you when individuals are younger, they have a more robust IGF-1. And it's not a bad thing that the stuff that you read, it's a lot of myths out there, but when we are younger and our hormones are the highest, our IGF-1 is also most optimized. So, really, making sure that body composition is in check and that directly relates to muscle mass, which also directly relates to dietary protein.

Katie: And then, like you said in the beginning because muscle then also burns more at rest, it's so much easier to maintain for the long-term.

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This podcast is brought to you by Cacao Bliss, a delicious superfood drink created by previous podcast guest, Danette May. Many of us like chocolate, and certainly nothing feels better than being able to enjoy rich creamy chocolate and knowing that you're doing something good for your body. But that isn't the case with every type of chocolate. When it's sourced well, chocolate and especially cacao can have many health benefits. It's a great source of magnesium, can be very anti-inflammatory and even help balance hormones. In fact, some experts speculate that this is why we crave chocolate at certain times of the month. Cacao Bliss is one of the best sources of this that I have found. They start with 100% organic cacao beans that are naturally dried in the sun, maintaining their miraculous health benefits. And then they blend this with turmeric, MCT oil, coconut, sea salt, cinnamon, and black pepper. So not only does it taste delicious, but it makes you feel incredible as well. The result is this truly decadent healthy, but guilt-free chocolate that helps with cravings, it can be great for weight loss, for boosting energy, reducing inflammation, all in one simple drink that has become a relatively regular part of my life. And for those who are wondering it is paleo, gluten-free, keto, vegan and vegetarian safe. They have been making this for eight years. I'm a big fan. And as a listener of this podcast, you get an automatic 15% discount by going to earthechofoods.com/wellnessmama and you will have an automatic 15% discount.

When someone starts making these changes and hitting those patterns of eating enough protein at every meal, how quickly do people tend to see results and what kind of results have you seen when you get people to make the switch?

Dr. Lyon: So, people will feel better within a week. And with correcting meal distribution, they will feel better, I mean, if not immediately. I mean, it is you make this change at breakfast, by lunch, you'll feel better. So, you implement immediately these meal distributions and you will feel better by your next meal. You do not have to wait long. When it comes to body composition, you should begin to see weight loss depending on if you're...you know, depending on how heavy you are, but you will definitely lose weight in the first week. Putting on muscles is a little bit more of a process and that, you know, that could take a month till you start to really see an improvement. I mean, in my clinic, I've seen, you know, it depends again on how much you have to lose, but I've seen people lose 10 pounds in a month and put on 2 pounds of muscle, you know. I mean, they were largely untrained and they had the weight to lose, but I have seen incredible results because people have been underfeeding protein and under-exercising in the correct way their entire life.

Katie: Yeah. It really is drastic. And that was one of those big, kind of, light bulb moments for me was realizing I had been essentially under-nourishing my body for a long time in an effort to lose weight, but I wasn't giving it the building blocks to be able to lose weight because it didn't have enough muscle in it. I think for a lot of people, it can be scary to start eating more because, you know, dieting is associated with eating less, but I definitely had that experience as well that I felt so much better almost instantly when I was getting enough protein and, I mean, essentially, just had like endless energy, even if I didn't drink caffeine, which again makes sense because you're feeding all of your hormones and your neurotransmitters more efficiently too.

Dr. Lyon: Yes, absolutely. And I'm so glad that you've had a direct experience with this because then it's really meaningful and you know how much this can help people. If they just knew the, you know, secrets that are well steeped in science, they can really see what kind of impact that would have.

Katie: Yeah. That's why I was so excited to have you on because you, I think, are such a good advocate for this, and especially most of my audiences are women and just for women, especially, we've not been told this message, many of us ever, and certainly not enough and seeing how drastic it was. I'm so glad that there are people like you who are bringing light to this, and explaining the science, and making it doable for women because it can seem overwhelming. And having been one of those women, my heart goes out to women who feel like they've tried everything and still have trouble losing weight.

Dr. Lyon: Totally.

Katie: And, you know, like, also the inner work was a very important aspect for me, but from the dietary side, I ended up eating more and I just wanted to, like, spread that message to everyone I knew of like, "You don't have to starve. You can eat more food and lose weight."

Dr. Lyon: And that's a really important thing to experience that you can actually eat more food, eat the right kinds of food, optimize your protein intake, and lose weight, and feel better, and have more energy, and not be chasing hunger, and blood sugar, and fatigue all day long.

Katie: Exactly. Okay. So, a couple of questions I love to ask as we get near the end of our time, although I definitely want to have you on for a round two, the first question being, if you had to identify a few of the things in your own life that seemed to be, kind of, the 80/20 idea of the things that provide the most benefit to you personally whether health-related or not, what would they be and why?

Dr. Lyon: Well, number one, and, you know, just to keep in line, obviously optimizing dietary protein. So, that's number one because then I can function. My brain can function, my body can function. So, that's one aspect and that's done very consistently day in and day out. The second thing that I would say has the biggest impact is I am an avid reader. I always make time to read and improve my knowledge base because science does change so quickly and there's so much information that I think by reading a minimum of, you know, 10 minutes a day...you know, and listen. I'm a mom too, it's busy, it's hard, but really reading is very helpful. And then making sure that you're training. You do have to put that time in to allocate towards yourself, which I never realized how difficult that is until I became a mom. I can't even imagine doing that with six children.

Katie: Yeah. I think that's such a key for women and moms is blocking that time and realizing you're not taking that away from your kids or your family. You're giving them a better version of you by having energy and by taking care of yourself, that you, kind of, put your own life mask on first, and they get a better mom as a result. So, I love that you mentioned that one. And in the note of reading, which I'm also a big fan of, I'm

always so curious if there are a book or a number of books that have dramatically impacted your life and if so, what they are and why?

Dr. Lyon: Anything... So, again, I read all the time. So, anything by Mark Divine. He's an incredible...he's a former commander of the Navy SEAL, and he has written some great books, one is, you know, "Unbeatable Mind" and he's written some great books that make you think about your personal ethos. And when you know your personal ethos, you know what you stand for, then you can know the direction in which you're going. So, that has been really, really valuable. Also "The Four Agreements." And I don't know if you've read that book, but it really talks about not taking things personal, always doing your best, being impeccable with your word, those kinds of things.

Katie: I love it. I'll put links to all of those in the show notes. I'm a big fan of "The Four Agreements," and it's probably the most mentioned book, which I love. I love that it... I hope everyone gets a chance to read it. It was very impactful for me as well. And lastly, where can people find out more about you, where can they work with you? And I'm asking for myself as well because you are such a wealth of information.

Dr. Lyon: Yeah. So, my website, drgabriellelyon.com, L-Y-O-N. I do have free information on there. I have a protocol, I have a quiz, I send out a great weekly newsletter that has a lot of evidence and a lot of resources. I put a tremendous amount of time curating that for people. I have a YouTube channel, I'm very active on Instagram. So, people can all find me there, Dr. Gabrielle Lyon.

Katie: I love it. This has been such an informative episode. Like I said, I love that you are spreading this information. I love your work, and I'm so grateful that you are here today.

Dr. Lyon: Thank you so much for having me.

Katie: And thank you as always for listening, for sharing your most valuable asset, your time with both of us. We're so grateful that you did, and I hope that you will join me again on the next episode of "The Wellness Mama Podcast."

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.