

**Transcript: EP 323 - Role of Strength Training in Hormone Balance with Sports Nutritionist  
Lauren Papanos**

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Dr. Taz: Hi, everyone, and welcome to Super Woman Wellness. I'm Dr. Taz. I've made it my mission throughout my career in integrative medicine to support women in restoring their health using a blend of Eastern medical wisdom with modern science. In this show, I will guide you through different practices to find your power type and fully embody the healthiest and most passionate version of you. I'm here for you and I can't wait to get started. This is a Soulfire Production.

Welcome back, everyone. Welcome back to another episode of Super Woman Wellness where we are determined to bring you back to your super-powered self. Joining me today is a guest who's hopefully going to shed light on something that we all have a lot of confusion about, strength training and what's good and maybe not so good for our hormones. Joining me today is Lauren Papanos. She's a registered dietitian, a published hormone health researcher, and a certified specialist in sports dietetics, and she's the founder of Functional Fueling Nutrition.

It's a virtual nutrition practice that offers lab testing and individualized nutrition and supplement protocols to help frustrated patients go from really upset about what's going on with their health to high functioning. She's got a master's degree in integrative nutrition and then more than 10 advanced educational trainings on hormone health and root cause medicine. She's cutting through the wellness noise, which I love, there's a lot of noise out there, to really help make this information digestible and easy to understand. Welcome to the show, Lauren.

Lauren Papanos: Thank you so much for having me. Excited for our conversation.

Dr. Taz: Exactly. This is a topic that I think women are so confused about. First of all, the whole hormone topic, a lot of confusion around there. What do I do? I'm not going to dive too deeply. I know my audience has heard me talk about hormones quite a bit. But we would love your perspective on the role of strength training and hormone balance. It seems to be a spot that you have done a lot of research in, you've talked a lot about, so give us a sense of what's happening. What do we have right and what do we have wrong when it comes to exercise and hormones?

Lauren Papanos: Yeah. Being a sports dietitian, I started my career working with athletes, and of course with different athletes. Sometimes they are strength training, sometimes there's just little doses of it that are happening for injury prevention type methods.

But that was really my first exposure to understanding the science behind strength training and the application as well.

As I started to work with so many women with endocrine conditions, I started to realize the importance of having a really sound exercise program and how that really does compliment some of the work that they're doing within their hormone health, whether it be through trying to improve upon certain low hormone levels or trying to improve their blood sugar for insulin sensitivity and how strength training really fits to be able to support that.

So I really see it as being a complimentary way to be able to collapse time when someone is trying to improve their hormones. I also see it having so many other benefits that a lot of women struggle with, such as low bone mineral density and issues with feeling fragile as they're aging. I mean, the benefits are honestly just... they're limitless.

Dr. Taz: I think that's so true. I have to be 100% honest, I haven't been the biggest fan of strength training over the years. I'll go through stops and starts with it. But definitely as I crossed that 40 barrier and now at 50, really understanding the importance of it when it comes to just maintaining metabolic markers like blood sugar and cholesterol and all of those things. What in your experience have you seen with hormones shifting for women over the different decades, 20 to 30, 30 to 40, 40 to 50? And what is the role of strength training in those hormone shifts, if you can give us maybe specific examples?

Lauren Papanos: Yeah, great question. I think that there's two different ends of the spectrum that I often see with women. We'll start with the reproductive years, which could be anywhere from 15 to 40 ish for a woman. During that age bracket, you've got one end of the spectrum, which is women who have very low hormone outputs, and that's because they're over-exercising and under-eating. That's a really common cause of that.

A lot of times, there's a lot of endurance training that's happening there or there is a lot of just what we call mismanagement of stressors. So maybe they're just not organizing their week, they're doing too much exercise and they're not eating enough, even if it's not intentional. I see a lot of women I work with, they're like, "I swear I'm eating enough. I eat so well." Then I take a look at that diet, I'm like, "No, you're not eating enough."

So it's not always just based off hunger response. I think that's really important for women to understand, that you don't just go by hunger. So that's one end of the spectrum, is that by utilizing strength training, we're able to improve upon issues like low testosterone levels that might be happening in that population or we're able to maybe start implementing more strength training. So maybe that population is dealing with low estrogen issues and those are causing low bone mineral density, which can happen even in young women, right?

Dr. Taz: Right.

Lauren Papanos: So strength training is helping be able to improve their bone mineral density to be able to reduce injury risk factors. That's that one end of the spectrum. Then on the other end of the spectrum is women who maybe are dealing with something like insulin resistance-related issues, whether that's polycystic ovary syndrome, PCOS, or it's insulin resistance, or they are dealing with just a high androgen environment where they've got really high levels of testosterone and these male-like hormones.

Strength training can be really helpful because it's going to help make us more, what we say, insulin sensitive. So it's going to make us be able to utilize carbohydrates more effectively, become like a sponge to carbohydrates when we eat them. That's going to help in turn reduce our A1C and our fasting blood glucose, our fasting blood sugar, and reduce insulin resistance. Then that in turn helps with a lot of other hormonal functions.

Those are the two ends of the spectrum. Very rarely are there women that fall in the middle. I really find in practice that they're on one end or they're on the other, and that's just within the reproductive years. Then as we start to talk about perimenopause and menopause, as those hormone levels start to drop, you're going to start to see more insulin resistance issues, you're going to start to see more issues with low bone marrow density because estrogen levels are dropping. And now strength training is really helping do a little bit of both of what we just talked about for the benefits on those two ends of the spectrum and the reproductive years.

Dr. Taz: That's such a simple way to look at it. You've got the low hormone, low output because you're under-eating and over-exercising, and then you have the insulin-resistant community, which is the PCOS, perimenopause, menopause community. Then as we get older, we're dealing with a little bit of both. I think that's brilliant to think of it in a very simple way like that. What about hunger? Can we talk about hunger for a second?

I do find that women on both ends of that often don't eat enough. So what is happening to their hunger hormones? Is it stress that is doing something to it or have they just trained themselves to not eat? Tell us what the impacts of not eating are because so many people continue to believe that if they don't eat, they're going to lose weight, and if they eat, they're going to gain weight. We know metabolism works very differently than that simple formula of calories in and calories out. So what's happening with hunger?

Lauren Papanos: It's a good question. I think both of those thoughts are correct, and that, one, I see a lot of women who are not eating, they're not eating breakfast, they're just drinking coffee, and they're running off of stress hormones, mainly cortisol. Because of that high cortisol environment, their body's like, "I'm running from a tiger. This is not time to rest and digest." So they don't feel hungry. Then they say, "Well, I can't eat in

the morning because I'm not hungry." And when you're hungry, you're not hungry because you're running off stress hormones. We have to break that vicious cycle.

I think that that's really a bulk of women that I see. But absolutely, we know that if you go to the extreme side of the spectrum, with eating disorders, with anorexia nervosa, that there's a huge impact negatively on hunger hormones and that a lot of women that are dealing with disorder eating or eating disorders, they no longer feel hungry because they overrode those hunger hormones for so long. That ghrelin that tells us that we're hungry, they've overrode that for so long that their brain no longer senses hunger.

So when I'm working with someone who's maybe on that side of the spectrum, it's like, okay, we've got to start to get the body into a place where it's starting to understand that it's time to eat and that we're sinking our body's natural clocks to know that this is breakfast time, this is lunchtime, this is dinner time, so that we can habitually start to fuel these hunger hormones.

Dr. Taz: I think I always tell women nowadays that hunger is no longer our friend. So many people use hunger as a queue of when to eat and when not to eat. But if we're really talking about hormone balance, we want to talk about a four-hour hormone system where you're almost eating every four hours, at least that's what I'm telling folks. And then keeping that 12-hour overnight fast because that way you're not dependent on hunger, but you're clued into it's time to eat, it's time to eat, it's time to eat.

I think it is something. Initially, when you're stressed, ghrelin goes up, which is the hunger hormone. It goes up and usually makes you overeat. But I think over time, it's a... kind of that biofeedback thing, you override it and it just kind of blunts. I think that's then why women start to just not be hungry, and then they keep gaining weight or keep having issues and they get so frustrated. Which is a good segue to just nutrition in general.

When you were talking about hormone balance, trying to improve metabolism in general, as a registered dietician, what are you telling some of your clients? What have you seen the most successful in women when it comes to hormones?

Lauren Papanos: It just so depends on what's driving their hormone condition, because as you know, there's so many hormones and there's so many different variables. So what I'm going to recommend for someone that has an insulin-resistant hormone imbalance like PCOS versus someone who has hypothyroidism versus someone that has hypothalamic amenorrhea or no menstrual cycle, they're going to be so different. So I think we have to always remember that there's always context within any of these ways of eating.

I would say overall, some of the overlapping trends within any type of hormone imbalance is we have to make sure you're eating enough because the body needs to feel safe. If the body feels underfed and it's starving, then of course we're going to be

running on stress hormones and we're going to see negative impacts to our whole endocrine system. So we've got to ensure that that box is checked.

That sounds so simple, but it's really something that I see happen so often, is that women aren't, and a lot of it is like you said, is because they're so focused on this external factor of, how do I keep losing weight? Then eventually they've overrode these hunger hormones and now they're down this whole rabbit hole of where they're just no longer eating enough. That's number one.

The second thing is, you already alluded to this, but is that eating pattern, is that we have to ensure that the body is working on this schedule within our own circadian clocks so that we're eating when the sun's up, that we're giving our body adequate time to rest and digest during the evening time. We're giving ourselves adequate time in between meals for blood sugar and insulin levels to come back down.

So many women are not eating enough and then they're getting this big blood sugar response because they're just having a banana, and then that's driving an insulin response, and then they're eating again an hour later, and now we are continuously creating more hormone issues. I love what you said about just allowing four hours between meals.

That's typically what I try to structure for women too, is that I think it's so important that you're eating regularly enough, but that we're not overwhelming the body with this constant feedback of food, that we're telling the body, "Look, you're going to get food often, and this is what it's going to look like," but you're also understanding that the metabolism needs to work to be able to really make sure that our body's metabolically flexible and that it knows how to tap into energy and use that as an energy source.

Dr. Taz: I think that's so, so true. What would you tell the woman who is into calorie counting or the reverse who has gotten so fatigued with calorie counting? They've maybe done the point system with Weight Watchers, or they've done an app where they've tried to do everything themselves. We've established the intervals, but what's the best way to know that, hey, I'm eating too little or I'm eating too much?

Lauren Papanos: I don't really think calorie counting works for most women. I think that a lot of women are busy, they've got families, they don't want to be counting calories in front of their small children. It's kind of creates havoc in your life. Then it also can create disorder eating patterns and take you out of tune with your body. I think it's really important to focus on, like we said, the eating patterns of how frequently you're eating, and then what that composition of that meal looks like.

Because if you have just a salad by itself, say it's just vegetables, you are eating something healthy, but you're going to be hungry an hour later because that meal did not have protein, it didn't have fat to satiate you, and it also didn't give you any carbohydrate to be able to give you a little bit of a blood sugar rise. We don't want to have a huge blood sugar skyrocket after we eat, but we need to have a little bit of a

blip so that the body's like, "Okay, I can bring down cortisol, I got food in my belly, and hunger hormones can do their thing."

So it really is this beautiful blend of all of these macronutrients and their right ratios to create this hormonal response that is going to help us be able to go that four hours and it's going to be able to help you feel satiated from that meal. Because ideally, after a meal, we want to be able to get to somewhere around a seven or an eight on a scale of one to 10 on a hunger scale. A lot of women are getting to a three after breakfast or a four after lunch, and then they're getting to a 12 after dinner, right?

Dr. Taz: Right.

Lauren Papanos: So that in itself is a huge area that we can improve upon just by creating a better semblance of composition with how we pair those specific foods together when you do eat.

Dr. Taz: I think all of us want to be healthy. We want to be able to do all the right things, and some of us even know what to do. But trying to find the time to really merge healthy habits into our busy lifestyles, well, that's a whole different story. And I'm right there with you. How many times have I walked by my own supplements? I have access to everything. And just because I'm in my brain, forget to take them or forget to do what's right for me.

Really coming up with a routine that's easy, simple, and sustainable is the key. That's why I love taking and recommending Athletic Greens. Athletic Greens is my daily micro habit that makes it easy to absorb key nutrients, lead a healthy lifestyle, and feel my best no matter what the day holds. It's one scoop, one minute, once a day every day. Now is that simple or what? Right now it's time to reclaim your health and arm your immune system with convenient daily nutrition.

It's just one scoop and a cup of water every day. That's it. No need for a million different pills and supplements to look out for your health. To make it easy, Athletic Greens is going to give you a free one-year supply of immune-supporting vitamin D and five free travel packs with your first purchase. All you have to do is visit [athleticgreens.com/DRTAZ](https://athleticgreens.com/DRTAZ). That's in caps. Again, that is [athleticgreens.com/DRTAZ](https://athleticgreens.com/DRTAZ), again in caps, to take ownership over your health and pick up the ultimate daily nutritional insurance.

So how do you advise women to do that though? Are they counting macros or are they just looking at their plate? What's the best way to do that?

Lauren Papanos: I don't typically recommend macros because it's essentially very similar to calorie counting. I work with women on teaching them what a portion size looks like of these specific foods and then how that looks on your meal. Then I'll have them journal on that for a little bit, give them feedback, "Okay, let's fine tune these couple of areas within that plate." Then of course, providing meal ideas and things so they

can see what that looks like in action for recipes and such. But I think that percentages are really helpful.

For example, okay, your vegetables on a regular dinner plate should take up 50% of that total meal, or your protein should take up 25% of that total meal. I think even just starting with percentages, that's a really great place to start. I usually will have people start there, and then once they've started to become more skilled at using more of this visual recognition of what those percentages look like, okay, now let's talk about what those portions actually look like when you are plating these different types of food items.

Dr. Taz: Got it. So what is the biggest misconception women make? I can give you one. I'm curious to see what you see on your end. I'll tell women about protein, like, "You're not getting enough protein. You're not getting enough fat." When I tell them they need about 20 grams of protein, they think it's a full chicken breast, whereas I'm like, "No, it's actually about a third to a half roughly of a chicken breast gives you that 20 grams of protein. So there's always a big light bulb for people, like, "Oh my gosh! That doesn't feel like so much food." Right?

Lauren Papanos: Yeah.

Dr. Taz: What do you see on your end where people are like, "Oh, really? I didn't realize that."

Lauren Papanos: Yeah, I would say people typically overplay protein. And I'm really big on... especially because we're talking about strength training, is we know that muscle protein breakdown is happening about every three and a half hours when you are strength training. So you really want to be eating protein often throughout the day. It needs to be present in an equal quantity each time you're eating, not only to support that muscle turnover, but also to support insulin.

So I'm really big on, okay, that protein source looks consistent every meal. And I think that, like you said, yeah, a lot of people are going by what you would get at a restaurant, which maybe typically is closer to six ounces, which is 50 grams of protein, and mostly we don't need 50 grams of protein per meal, right?

Dr. Taz: Right.

Lauren Papanos: So I think protein is typically over-plated. I mean, vegetables are always under-plated. And I'm really big on plants because I see food as being medicine and that a lot of plants have vitamins and enzymes in them that are helping shift different processes in our body. I just don't think a lot of people are eating enough variety of plants and herbs and things in the diet that help provide that.

So I think that's typically something that's underrepresented on the plates. Or maybe it's like they're just doing broccoli, and I'm like, "No, try to get some more depth into this because not only is that going to give you more of these fibers and vitamins and enzymes, but it's also going to give you more flavor into that meal." Right?

Dr. Taz: Yeah, definitely.

Lauren Papanos: Then of course, I mean, starch is always over-plated because restaurants gave you four times the amount of starch that you need. Then some women will say, "Well, then I'm just not going to have any starch." No, no, no, no. You want to have some because then the thyroid will be underactive, but just a little bit. It's such a Goldilock situation with a lot of this whole system. Even when they are eating so healthy, I think it really does have to challenge them a little bit to rethink what their intention is behind their meals. It's not just about ingredients, it's about how this meal is being put together and how our body is responding to all those components joined together.

Dr. Taz: That's so true. I want to do one more food thing real quickly. Beans. What is an appropriate serving to get 15 to 20 grams of protein of navy beans, pinto beans, black beans? If you're looking at your plate, what's an appropriate serving?

Lauren Papanos: Beans are a protein source, but I would consider them more of a starch source because that's actually what they're higher in. They're higher in carbohydrate than they are protein. If someone is plant-based and they're using it as a protein source, they need to have at least a cup and a half to be able to get to close to 20 grams of protein, which is-

Dr. Taz: Wow!

Lauren Papanos: ... a lot.

Dr. Taz: A lot. Yeah.

Lauren Papanos: You have to have three, like a third of your plate, right?

Dr. Taz: Right.

Lauren Papanos: A couple palms worth. So if you're eating beans as your protein source, you do not need to add any starch to that meal because you're already probably over what we would consider a good starch portion for really good insulin sensitivity. But you do need to add vegetables to it. We do need to add a fat source because beans don't provide either of those. So that is a good question, that when someone is eating a plant-based meal, it does change the way that these meals are put together.

Dr. Taz: Then for plant-based folks that are strength training, what do you tell them? How do they prevent that muscle breakdown and muscle recovery and all that other stuff?

Lauren Papanos: Yeah. I mean, really important that they're getting enough protein of course throughout the day, which a lot aren't. So making sure that they understand what that portion size should look like and that it's relative to everything else within their meal. I mean, typically, if someone's eating vegan, then they're not getting very much creatine into their diet because that's coming mainly from animal sources. So it is helpful for them to supplement with creatine monohydrate, which a lot of women fear because of a lot of bad information about creatine monohydrate.



But there's so many benefits not only to our liver's detoxification, but also to our cognitive function and to our muscle recovery. If you're eating an animal-based diet, you are getting enough of that, but if you're eating a plant-based diet, you likely do need a supplement with that. That can be something helpful for women to also consider. Then I think it's just important that you're not strength training in a fasted state, especially if you're in those reproductive years.

We really don't want to send the body those signals like, "Hey, I'm asking you to do this really stressful thing like strength training, and I'm asking you to do it on an empty stomach," where your blood sugar's really low. That in itself is just going to create a negative hormonal response.

Dr. Taz: Oh my gosh! That's important because I know a lot of women do that, so they'll go straight into strength training. What do you recommend eating before going into strength training?

Lauren Papanos: We just want a little bit of protein, a little bit of carbohydrate. The protein functions to help mitigate that muscle breakdown and then the carbohydrate functions to help lower that cortisol response you're going to get from strength training. I mean, it could be something as simple as... I love these little... They're called NOKA Pouches. They're just like a smoothie essentially that has a plant-based protein in them. You can get them at the store and they're really easy to digest.

Or it could be something like a slice of some nitrate-free turkey meat with some oat-based crackers. So it can be something very small, but we're just looking to get maybe 15 grams of protein, so half a protein serving, and then a fruit's worth of carbohydrates so that we're just getting a little bit of that cortisol suppression.

Dr. Taz: I like that. Those are all really, really good recommendations. One more question before we get away from food. Plant-based protein powders, do you like those? The rice proteins, the pea proteins.

Lauren Papanos: Yeah. I'm not big on plant-based protein powders. I mean, we know it's really hard to get away from the heavy metal content in them because you think of about how many plants are going into that protein powder to be able to get that protein content. Anything that's growing on the ground is going to have really high heavy metals, and so that's one of the issues you run into with it. There are companies out there that are testing for the heavy metals in them, so that's a good place to start.

But I typically will say that if someone is more on the vegetarian side, they're open to using a different option, go with an egg white protein. It has a much better amino acid ratio to it that's better for muscle support. Go with a bone broth-based protein powder. If you're really anti anything animal consumption, then that's where I would use the plant-based protein powders, but definitely want to look for one that is tested for heavy metals.

Dr. Taz: Got you. Okay. Let's do one more quick point before we wrap here. All things hormones and strength training, really helpful information. Your favorite test for hormones, what do you like to test?

Lauren Papanos: I think the DUTCH test is super helpful to give us a really good overview of hormones. But one of the things that I will say is that I think that when you're trying to fix hormones with food and with exercise and supplements, it's more helpful to do the testing to understand why the hormones are imbalanced. Sometimes it's good to have that hormone testing so that we can understand, okay, how imbalanced are they?

But then really what I'm after is, okay, is there a micronutrient deficiency where we don't have the building blocks to make this hormone? Is there something in the microbiome that's causing this type of issue going on? That's really what I'm after because that's really where I can help someone to the best degree. I think that with the hormone testing, sometimes there's limits when we're not using hormone replacement therapy, when we're trying to balance things using natural methods.

Dr. Taz: I love it. So much great information. All right. Let's do the rapid fire ones real fast. These are just quick. All right, you ready? Number one, what's the best way to strength train for hormone balance?

Lauren Papanos: You want to do full body lifts. That engages your upper body, lower body, and core all in one workout. You want to keep them to around 45 to 60 minutes, somewhere around eight to 10 rep range, and you want to make sure that you have at least 24 to 48 hours between workouts. So ideally, you're doing them every other day about three times per week.

Dr. Taz: Perfect. All right. How do we keep our mind over macro when we're trying to balance our food on a daily basis?

Lauren Papanos: Focusing on what we talked about in terms of the composition of what that meal looks like and how frequently you're eating throughout the day is going to be able to help you tune in more with what your body needs and be able to focus on what you're eating in that meal rather than thinking about food nonstop throughout the day in between meals.

Dr. Taz: Here's another one. What are your favorite tests for assessing hormones and overall health in women?

Lauren Papanos: The DUTCH test is a really great overview of sex hormone levels. Then I love to do ancillary testing to see why there's hormone imbalance, and that could be through something like a gut microbiome testing, such as the GI-Map, or doing a full micronutrient panel that involves vitamins, looking at heavy metal levels, and also any type of omegas or essential fatty acids.

Dr. Taz: Perfect. All right. If people want to reconnect with you, what's a great way for them to do so?

Lauren Papanos: Yeah. My Instagram handle is @nutritionwithlo and my website is [functionalfueling.com](http://functionalfueling.com). Lots of resources over there. We've got a podcast, a blog, tons of free things that you can get your hands on.

Dr. Taz: Wonderful. Well, thank you so much for taking time out. This is an area I know so many women are just super confused about. So hopefully everyone is walking away understanding hunger and its role and how we eat, and understanding how to gauge a portion size and the importance of strength training overall when it comes to healthy hormone balance.

Lauren, thank you for joining us today. For everybody else, thank you for listening and watching this episode of Super Woman Wellness. We will see you guys next time.