Episode 480: Sara Gottfried on Women, Food and Hormones (Calories Matter but Hormones Matter More)

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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. And this episode is all about women, food, and hormones. I'm here with Dr. Sara Gottfried, who is a board-certified physician who graduated from Harvard and MIT. She's also a personal friend. She practices evidence-based, integrative, precision and functional medicine, and is the clinical assistant professor in the Department of Integrative Medicine and Nutritional Sciences at Thomas Jefferson University, and director of the Precision Medicine Institute. She has written several best-selling books. I have interviewed her before. She is a wealth of knowledge.

But this episode goes deep specifically on women and hormones. And we go a lot of different directions from how doctors are trained to gaslight women about weight and metabolism to new studies and looking at when metabolism actually changes, a better model of health for women and how to reverse the negative diet mindset, why BMI is a poor metric, the reason that hormone-related problems are on the rise right now, and why hormones are more important than calories, what the most common endocrine abnormalities are and why this is important, why women are more sensitive to stress, how testosterone is the most abundant hormone in the female body, which I didn't know, and so much more. Very, very informative episode as always when talking to Dr. Sara. I know that I learned a lot and you will too. So let's dive in. Dr. Gottfried, welcome. Thanks for being here.

Dr. Gottfried: Hey, Katie. So happy to be here.

Katie: I'm excited to chat with you. It's always such a fun conversation. And I think you are one of the top experts I know in a topic that seems increasingly important right now. Which is the topic of hormones and specifically for women. I think a lot of women seem to be having more hormone-related issues than in the past. This seems to be on the rise. And, certainly, it seems like the last couple of years, perhaps, has expedited some hormone problems for some people. So I think there's a lot of really, really relevant stuff we can talk about today.

But I would love to start broad with what you... I have in the show notes, and note that if you were going to do a TEDx talk, it would be about how people and, especially, doctors are trained to gaslight women about their weight and metabolism. And this is something I feel like I experienced directly from numerous practitioners and I've heard from other women who have had similar experiences. So I would love to start here and to get your perspective on that both as a doctor and as a woman, and seeing, like, years of working with women. And what brought you to that topic?

Dr. Gottfried: Yeah. You know, I see this all the time. I see it with patients who come to see me and talk about how, you know, they've struggled with a thyroid issue, they've struggled with their periods, and, maybe, with their weight. With, you know, fat that just won't budge. And yet they're dismissed by their physicians. They're told that their thyroid tests are within the normal range. And I just think that, unfortunately, the system is set up so that women get gaslit. We're training doctors to do it. And so, to me, the solution is to change that conversation and to change the way that we're training doctors because we're also training the larger culture to do this.

You know, there was just an article that was published in Science about metabolism and how metabolism doesn't change until you're over the age of 60. And I felt like this was, yet again, a way that we are telling women, "Oh, no, you're wrong. You know, the fact that you're over 35 or over 40 and the old tricks just don't work anymore to keep you in the clothes that you want to wear." We're telling them, "You know, that's not happening." That is the nature of gaslighting. You know, this study was done in disease-free individuals. And I don't think a single patient in my practice would count as a disease-free individual. So that's just one example. I think many women listening to this can relate to that idea that they've been dismissed for way too long. We've got to stop it.

Katie: Absolutely. I certainly had that experience. Actually, both of those, in being told by doctors for a long time. Until I found a specialist, Dr. Christianson, who knew what he was talking about. That my thyroid levels were normal and there was nothing to worry about, and all of those hormonal changes are normal postpartum, etc. And also by being told by doctors, even just six weeks postpartum, that I needed to really focus on weight loss. And, ironically, being told that by doctors, men who were hugely overweight themselves. And just feeling like I was dismissed and/or told like I think women are often told, "It's a willpower thing." Or that we're just not working hard enough.

And to your point, data like that can be confusing. And if it's misinterpreted, I think you're right, it puts that on a character flaw, potentially, in people. Versus giving us insight to really look at what's going on a root level. Which I know is what you, very much, specialize in. But what do you think is the reason for that mismatch in data, why are women being told that?

Dr. Gottfried: Well, I think there's a few reasons. I think the nature of it is related to sexism, to a patriarchal culture where women are valued for, kind of, the smallest amount of space that they can take up on the planet. You know, the thinner that we are, the more that we're revered. And so that has led to diet culture, it's led to... You know, in some ways, medicine is set up to drive us to be as thin and lean as possible without this acceptance of, "Okay. Well, what is health?" In some ways, health has less to do with weight and more to do with your hormones, you know, the specific choices that you make each day, the food that you put on your fork, the way that you sleep, the kind of morning light that you get that I know you love to talk about and I agree with. So I think that the key to this mismatch is really patriarchal society.

Katie: So then that brings up such an excellent point. How do we start to dismantle that as women to own that and understand that more clearly ourselves? And from the health perspective, what is a better version of optimal? Like, what would be a better way to think of that? Because I think, often, at least in my own journey, it was helpful, I had to break that diet mentality. And instead of, like, thinking of food as bad, or just of calories, or even a macros, I shifted it to think of nourishment. And I had to move into a place of acceptance and love for my body. And then it became easy to choose things that were nourishing versus feeling like I was depriving myself and having that whole guilt relationship with food. But, what should we hold as, kind of, a better ideal of health and what we should be moving toward?

Dr. Gottfried: It's a great question. And, you know, the work that I do is precision medicine. And the very nature of precision medicine is to understand what is health for the individual, and how do we help someone achieve it? Not in a way that's outsourced to the physician, but it's collaborative. So I think the way that we dismantle this problem is related, first, to empowerment. I love how you talk about, you know, being able to see in full relief, the diet culture, the way that it's assumed that we have some sort of character flaw and that's why, you know, our body mass index is elevated. This is not a moral failing. So I think the place that we start is with ourselves. With, we're seeing, "I'm not going to put up with us anymore. I'm going to find the physicians who think the way that I do. I'm going to find the physicians who don't see this as some sort of character flaw or moral failing and, instead, have my best health in mind." So how do you define that?

I think there's a lot of different inputs and outputs with optimal health. You know, if we... I'm just going to riff here a little bit with you. Maybe we can do it together. I think that it has to do, I always think of hormones first, because I think the hormones drive what you're interested in. So as you were describing framing food as nourishment, I totally agree with that. We need to eat in a way that regulates our hormones. So, for me, for instance, I went on a Mediterranean diet when I first started to learn about it in medical school and I gained

weight. I had really stubborn fat that I couldn't lose. It was, for me, at that point in my life when I was carbon tolerant and really stressed, it was too many carbs and the wrong types of carbs for me.

So with what you're describing with nourishment. That was something that I had to personalize and, kind of, figure out what my carb threshold was. I had to figure out the right amount of protein to keep my blood sugar stable. I had to eat more fat. I wasn't eating enough fat at that time. And this was still the days of Dean Ornish and like, "Ten percent of your calories are from fat." So I had to figure out what works the best for me. And I think that's really the path of understanding optimal health. To know what works the best for you.

So it starts with experimentation. And I imagine you also went through some trial and error like I did. And the way that we do it in precision medicine is to do N-of-1 experiments. Where, for instance, you know, I used to have pre-diabetes. And so when I started to wear a continuous glucose monitor three years ago and I could really dial in the food that was the most nourishing for me, that made a big difference in terms of my hormones. Especially insulin, cortisol, testosterone, growth hormone, thyroid, estrogen. So I think it's that personalization that really is the key. And it's part of this empowerment that we need.

Katie: Yeah. I resonate with so much that you just said. I think it's so good that we're having more awareness about the personalization aspect. Because, even when I get asked, like, "What did you do to lose weight and to heal your thyroid?" I'm like, "I can tell you what I did. But you have to keep it in a frame of reference of, that's what I did. Because, following that exact template with a different body, and different metabolism, and different genes is not going to yield the same results." And that's what I had to learn very hands-on was, I had tried all these different systems. And there was beauty and wisdom and all of them, but those were the systems that people had found that worked for them. And if I tried to duplicate them, it didn't work the same in my body. I think my lesson in that was that the best outcomes come when we each become our own primary healthcare provider and find doctors to work with who understand areas that we don't but who are collaborative. And who, to your point, respect the patient, and see them as a human, and don't try to fit them into a template or, you know, project that it's just willpower or that we should all be doing the same thing. I think that's the mark of a great doctor, is one who is listening to the patient as well, and there's that inherent collaboration.

I also love that you mentioned body mass index, BMI. Because I think this is another thing I would love for us to debunk just because it's used as this metric and I think it's a really poor metric. Because the outliers are actually often the best-case scenarios in that. And if we can learn more from the outliers than from the people, sometimes, who fit that standard. Like, for instance, I have a friend who is an athlete. Who, on the BMI index, is obese because of muscle tone but who is 5% body fat. But the BMI index would say, "Oh, this person is obese." And I'm like, "Well, there's no fat for this person to lose." So the metric falls apart when you have people who are in some realms of the optimal health.

But I think what really struck me in what you just said is that idea that you can't battle your hormones. And that's what I did, I think, for a lot of years. And had to realize, "At the end of the day, if you're trying to out

willpower your hormones, you will eventually lose because they're there for a reason." And like, when we look at hormones as a whole, they're all how they are designed for survival. And they're beautifully designed. And when we're fighting them or we're not supporting them in the way they're meant to work, we're fighting a losing battle. And so it's like stepping back from the calories, stepping back from the diet and the macros, and looking at the whole body and the hormones.

So to, kind of, go deeper on the hormones. I know that it seems like, statistically, we're seeing a rise in hormone-related problems. Especially over the last two years. I'm hearing from a lot more readers and listeners who have things like PCOS, endometriosis, anxiety. Just weight gain thanks to COVID. Are you seeing this as well? And, kind of, walk us through a primer of the hormones that are involved there, especially for women.

Dr. Gottfried: I definitely see it. I think that the pandemic has made a crisis that we had with hormonal balance even worse. So we know that depression is three times what it used to be, we know that anxiety rates are much higher. I haven't seen data, so much, on PCOS but I believe what you're seeing about what your readers are reporting. I mean, we know right now that PCOS is the most common endocrine abnormality that we see in women. And it's not just a problem when you're trying to get pregnant. A lot of people focus on fertility, which is important. They don't focus on how so women with higher testosterone levels and androgen levels, once they go through perimenopause and menopause, they have the greatest cardiovascular risk. So we, especially, need to pay attention over the entire life cycle to these hormonal issues.

So what I'm seeing in my practice, I'm definitely seeing, you know, the quarantine 15, people who have gained weight and they're really struggling. You know, I think there's a lot of comfort food that it went into our experience of COVID-19. But it's also not just that. I think there's, if we circle back to this issue of sex and gender differences. Because I think that's so important when it comes to hormones. What we know is that women going through the pandemic often we're dealing with childcare as well as a working life in a way that was not sufficiently supported. So I think this is another place where some of the differences... You know, sex differences are the biological differences between males and females. Gender differences are more, those socio-cultural constructions around them such as having more care taking responsibility for children. And I think women were hit by both.

You know, we also know that, and what I can tell you from taking care of patients for 25, 30 years is that women are exquisitely sensitive to stress. As you said, this is part of the survival mechanism of our hormones. You know, we're designed to get stressed about once a quarter. You know, that's how often our system is designed to deal with a problem. You know, like a tiger or some other threat from the environment. We're not really designed to have stress on a daily basis. And when that happens, what I see is that women have more hormonal disruption. So cortisol is the main stress hormone, but that can disrupt almost every other hormone in the body. It can disrupt your thyroid, it can disrupt your testosterone production. So these are some of the things that I see pretty commonly.

If we just take testosterone for a moment. A lot of people think that testosterone is the male hormone. And that's partially true but testosterone is the most abundant hormone that women have. It's more abundant than estrogen. We always think of that as, kind of, the quintessential female hormone. It gives us for us breasts, and hips, and keeps our joints lubricated. It's got about 400 jobs in the body. But testosterone is something that we're exquisitely sensitive to. And when level starts to decline or if they're too high like they are in PCOS, you really feel it. So it can lead to metabolic problems.

And I think part of what you're asking about here is, what are those hormones of metabolism? And, you know, the ones that I've written about in the past in "The Hormone Cure" and in some of my other books. Those are primarily what I call the hormonal Charlie's angels. So that's cortisol, estrogen, and thyroid. Those are the three that you really want to pay attention to. But when it comes to stress and difficulty with fat loss. If that's one of your goals for health. Then the idea here is that you want to broaden the scope. You want to look at insulin, leptin, testosterone, growth hormone. You know, there's a long list of hormones that interact with the cortisol, estrogen, and thyroid.

Katie: That makes sense that I didn't realize that that testosterone is the most abundant hormone even for women. I know there's a big difference in levels among men and women. So, obviously, it would also be the most abundant for men, I would guess. But I think, often, with women, I hear more about estrogen, and progesterone, and the hormones that shift more throughout the menstrual cycle. And so you said testosterone, being high, can be connected to the PCOS side. What might women see with testosterone being low?

Dr. Gottfried: Yeah. So when testosterone is low. And it can start to drop for women in their late 20s. I see a lot of women in their 30s, early 40s who have low testosterone. And this is one of those cases where, I was a total stress case in my 30s. I had a couple of kids. I struggled so much with my weight. Nothing seemed to work. And what I discovered was that my testosterone was on the low side.

So how does that show up? It shows up with physically decreased sex drive. So a lot of people, kind of, associate testosterone with sex drive. But I think the story is much more nuanced. You want to go deeper than just sex drive. It's also responsible for seeing a response to exercise. So I love the Peloton bike. It, sort of, saved me as a working mother. And when I'm on a Peloton, I want to be able to see a response to my power zone training, to the weightlifting that I'm doing. If you don't see a response, that often can be related to testosterone. Growth hormone also gets involved. There's some overlap between these two hormones. But testosterone is really responsible for muscle mass.

Now, as you said, men have a lot of testosterone. They have about 10 to 20 times as much as women do. And that's why they have this thing called the testosterone advantage where they tend to see a faster response to things like a ketogenic diet, or to carb restriction, or, really, almost any sort of dietary change. But women, I think, for psychological and emotional reasons, really benefit from testosterone being in that Goldilocks position where it's not too high and not too low. It's involved in confidence, in a feeling of vitality, in a feeling

of being willing to take risks. There was a really interesting study that was done in MBA students, business students, where they found that the women that had the higher testosterone levels were more willing to take financial risks. So it can be involved in entrepreneurship, in empowerment. We want to be thinking about it in this broader context.

Katie: That makes sense. Are there other guidelines? I know that it's very personalized. But for what women should aim for are good testosterone levels and ways to get there, do you advocate for, like, hormone replacement or are there more natural ways to get there for a lot of women?

Dr. Gottfried: Well, it's part of the reason why I wrote this new book "Women Food and Hormones." Because I wanted to give women an idea about some of the natural food-based and lifestyle changes they can make to improve their testosterone levels. So in terms of levels, what we're looking for is the top half of the normal range. So, you know, I think you've talked about this before on your podcast, Katie, where there's the normal range. Which includes a lot of people who are not normal, they're quite unwell. Including a lot of people with undiagnosed thyroid issues as well as testosterone dysfunction. And so I find that women do their best. They feel optimal as opposed to normal when they're in the top half of the normal range. So that's where total testosterone using the female range as well as free testosterone. I also, sometimes, look at bioavailable testosterone. That's the amount that is free to support yourselves in some of the goals that they have.

So in terms of how to do it, what I talk about in my book is some of the food-based ways that you can address low testosterone. I'll give you a few examples. This is one of those places where, I think you referred to this earlier. Where people on Instagram or on social media are like, "Okay, what are the three things I need to do for my testosterone?" It's not quite as simple as that. I think you've really got to read the book to know exactly how to approach this. But I can give you a few tips.

We know, for instance, that whey-based protein shakes are a way of raising testosterone. Not everyone can tolerate wheys. Some people have food intolerances. I couldn't tolerate it when I was in my 30s. I can now tolerate it so I drink a whey-based shake when I'm working out. Also, caffeine. Whether that's regular coffee or decaf. Both of those can lower testosterone levels in women. So, you know, there's also some exercise space things that you can do. I'm a big fan of weight training. I didn't do a lot of it until I got into my 40s. But that's another way that you can leverage exercise to support your testosterone levels.

Katie: Those are helpful to know. And I definitely will echo that to read the book because there's a lot more that goes into it. But I think, having some generalities as starting points can be so helpful. And, also, to your point, that idea of separating common versus normal. Like, with the thyroid hormones, you know, I always told you were within normal range. But who gets tested for thyroid problems? People who suspect they have thyroid problems or typically older population. So our ranges of what we consider normal may be common. That doesn't mean that they are normal for humans in that particular state of life or that they should be the optimal that we're aiming for. So I love that you brought up that distinction. I think that's really important to remember as well.

You also wrote in the book, I think on page three, that, "The solution to this also isn't just to count calories, or to clock miles, or do cardio." And I think that's another thing that women, kind of, sometimes, have to break that mindset of. Because we're told for so long in diet culture, that it's about calories and that we need to exercise more. And, at least, for me, I found out in my transition of losing weight, I actually didn't exercise that much. I just walked and let my body recover because I had dieted for so long. And then I added weight training in once my body had reached, kind of, an equilibrium. And I also found I needed to eat, actually, more food than I had been eating. I had to fuel my body because it had been in this starvation mode for so long. But that's just my personal experience. I'm curious to hear... I know that you talk about it in the book but what is the solution then? Especially for women. I know weight loss is one that is top-of-mind and very motivating for a lot of people.

Dr. Gottfried: Yeah. Well, I appreciate you sharing your own story because I think that there's so many issues to unpack there. You know, first of all, when it comes to the thyroid as an example. We know that if you look at people who've got completely normal thyroid function, their TSH is typically about 0.3 to 1.5. So it's not that big a range that mainstream medicine uses. So I just wanted to emphasize that particular point. We know that when it comes to diet culture. I mean, you and I, we're exposed to the same thing. I was told in medical school, "It's simple math. It's, you know, exercise more and eat less equals weight loss." And I was even told that by my primary care doctor after I had my first baby and I was struggling with weight loss. And he was wrong. You know, calories matter, but hormones matter more. And so I think that in some ways, this is the central theme of this book, how do you eat for your hormones?

So when I was in medical school, I was describing how I really cut back on fat. You know, this was around the time of the popularity of the low-fat diet. I was in anatomy lab and I just couldn't bear to eat meat. So I cut way back on eating meat. I was eating about the same calories but I really reduced my fat. And I remember, Katie, I, pretty much, lost a couple of cup sizes with my breasts because, you know, your hormones are made from fat. Cholesterol gets converted to pregnenolone, the mother hormone of all of your sex hormones. That then converts to cortisol, to progesterone, to THCA, from DHA to testosterone into the estrogens. And so you have to eat healthy fat to make these hormones. So the answer is to eat for your hormones. It's not quite as simple as, you know, "Do X, Y, Z." But it comes down to a lot of the things that we know work for us such as making sure that you're getting plenty of vegetables, that you're getting the prebiotic fibers that can really feed your microbiome.

We know that the control system for your hormones, because it's not as simple as just hopping off all these hormones, and, like, taking some testosterone here, and getting a growth hormone injection. I don't think that's the safest thing. I think the safest thing is to work with your body, to work with getting your hormones back into balance starting first with food. So really making sure that you're getting the food that nourishes your hormones, that you have sufficient fat, that you're getting detoxification with, you know, the cruciferous vegetables. Plenty of those half-cooked, half-raw. Especially those of us who have thyroid dysfunction. Combining it with the allium vegetables, the ones that help us with detoxification, with making glutathione. The control system here is not just the HPA, the hypothalamic pituitary adrenal axis which is what a lot of

people think of. It's the hypothalamic pituitary adrenal thyroid gonadal gut access. So we want to be thinking about, "How do we take care of that whole system with our food and with our daily lifestyle choices?"

Katie: Yeah. And looking at it like that probably gives a whole different perspective because you're not hyper-focused on one aspect that's going to potentially throw other things out of balance. Like, when I started doing a deep dive into genetic research, for instance. I was like, "Oh, wow." As we learned about genes, we would latch on to something like MTHFR and be like, "Oh, I need to take a lot of methylfolate." But not consider other genes that were dependent on similar things and could potentially throw others out of balance. And so, I think that's, like, that whole picture is so important. Especially when you're talking about hormones because they can be so sensitive.

I also love that you mentioned cholesterol and the importance of fats. And I think this is another area where there's been so much misinformation for a while with the low-fat diet culture. And then, like for instance, as we started understanding the pitfalls of that and we realized saturated fat wasn't the enemy, I definitely got on that bandwagon. And was like, "Oh, if you look at the research, saturated fat is not bad for you and you need it. But there's a personalization aspect there as well." And I learned for myself, I have some genes that don't do well with super-high levels of saturated fat, so I need fats but I have to be careful where I get them. And so it just speaks to that there's always factors that go into this. And that's why you have to look at the whole person, and the whole patient, and all of these levels. And not just be like, "Oh. Well, you just need these three things or follow this one blueprint and everything will be fine."

Dr. Gottfried: Can I just say one quick thing? I'm really glad you raised that particular point. Because, you know, in some ways, genetics has, kind of, been a disappointment. You know, we went through the human genome project, we mapped the genome, we understand a lot about genetics. But then we had, sort of, those direct-to-consumer testing that became available. And you would do a test, you'd find out that you have MTHFR. One or two alliels. And then you would be advised to take a supplement for that. And that's not really the way that it works. You have to look in terms of pathways, genomic pathways, and how those interact with your environment.

Now, your genetics with saturated fat sound, in some ways, very similar to mine. So when I went paleo when I was... You know, one of my neighbors used to be Chris Kresser. And we would get together, we had a mastermind. And, you know, I shared a cow with him. We have, like, a freezer full of this grass-fed cow. And I found that it really got my hormones out of whack. Because, genetically, I don't do as well with saturated fats. So when I do, for instance, a ketogenic pulse for four weeks. Which is what I've done to correct my blood sugar issues and my insulin problems. And it's what I write about in this particular book, "How to do Keto Adapted for Women" What I found was that I really had to swap some of that animal-based fat for plant-based fat. I could also get away with seafood. So seafood was a good source of fat for me. But your genetics, you know, kind of, determine how you are best nourished. And so it gives us a blueprint, it gives us some guidelines that we then have to integrate with our environment like how stressed you are, you know, how much exercise you get, what the other levels of your hormones are doing. So we have to put this bigger picture together and to personalize it.

This idea that cholesterol is bad, I would agree that's totally wrong. You know, eating cholesterol does not raise your cholesterol. But we also know that there are some people, myself included, who have an elevation of the low-density lipoprotein, LDL. LDLP, the particle. You know, that I have too much the small dense particle size when I eat too much saturated fat. So that's the level of personalization that we want to do so that we really understand, "Okay, what is the most nourishing with your food?"

Katie: Yeah. Such an important point. And I definitely would defer to people who should read the book to understand it fully. But can you, kind of, give us an overview of what you mean by keto pulse? Because I think blood-sugar issues are a problem for a lot of women. I hear from a lot of people who are like, "Oh, I can't do this with this because of my blood sugar." And women seem to be more sensitive to blood sugar swings than men on average, it seems like. So explain how you figured out this and the system you recommend for women. Because I think keto has also become very popular. I see it all over Instagram. And you're right, it does seem to work really well for men. But, also, most things tend to work very well for men and they can adapt without the hormonal dysfunction. It seems like, to a lot more than women can. So walk us through what the keto pulse is and how you arrived on this as a better way for women.

Dr. Gottfried: Well, I arrived on this four-week keto pulse after failing keto multiple times. So the first time I tried keto was back in about 2016. My husband and I went on a ketogenic diet and he dropped, you know, 20 pounds within a month or so and I, maybe, lost 1 pound or 2 pounds, you know? And I don't think it was related to ketosis. So what I mean by a keto pulse is that I think of a ketogenic diet as a therapeutic treatment. And it needs to be addressed that way. So I'm a big fan of knowing whether keto is a good fit for you. And if you're female, I think you have to layer in a few pieces. You have to make sure that your detox pathways are open and working, you need to make sure that your methylation pathways are open and working. And that really helps you with making sure that you're responding to a ketogenic diet the correct way.

I also found. I think you found this too, Katie, if I'm remembering correctly. I found that intermittent fasting was a really effective way for me to, kind of, open the back door to ketosis. And we know that, you know, for me, for instance, when I first went on keto, it took me like a week to 10 days to get into ketosis because I was so carbon tolerant. I was so metabolically inflexible I just couldn't flip that switch from burning carbs to burning fat. So I think a lot of people have that experience and so we need to adapt to the ketogenic diet to address it.

Now, you asked about blood sugar. I just took out my little device. I'm going to hold it up for people who are watching the video. So I like a couple of different devices. I started with the Abbott Freestyle Libre if I can mention brands. I've also used the Dexcom. And there's a couple of things here that I think are important in terms of sex differences. So we know, for instance, that the mechanism of controlling your blood sugar is similar in men versus women. You know, it involves insulin. Insulin is that hormone that, kind of, opens the door to the cells so that glucose can go in. And, sometimes, your cells become numb to insulin. That's known as insulin resistance. So men and women develop that but at slightly different levels and at different times.

So women tend to have more insulin resistance when they go through perimenopause and menopause probably related to estrogen levels. We also know that women have downstream problems with high glucose at a lower glucose level than men. So the original number. You know, if you look at fasting glucose as an example to define diabetes. What mainstream medicine says is that you want your fasting glucose to be somewhere between about 70 and 99. If you have diabetes, the cutoff is 125 milligrams per deciliter. And that intermediate state between 100 milligrams per deciliter and 125 milligrams per deciliter, that's considered pre-diabetes. And that's where I was.

So, starting when I was testing myself in my 30s, I had pre-diabetes. I would test myself over and over again because I couldn't quite understand, "What is this, why do I have pre-diabetes? I'm, you know, a healthy woman in my mid-30s, I don't understand." And I think looking back now, a lot of it was, my cortisol was too high, I was eating in a way that was causing too much food stress, I just wasn't, you know, kind of, managing stress in a way that was helpful for me at that time. And I didn't know that a fasting glucose of 115 in a woman is associated with much more vascular damage and other cardiovascular harm compared to men. Because that original cutoff of, you know, higher than 125 milligrams per deciliter for a fasting glucose was defined in men.

So I think a big part of this is understanding how do we manage glucose? You don't have to use a continuous glucose monitor to manage it. Although, it certainly helps in terms of getting that immediate feedback that... You know, I think you can eat sweet potatoes. I spike with sweet potatoes. Apples spike my glucose whereas olives do not. So having that kind of personalization can really make a difference. But you can also use, you know, a $25 glucose meter that you can get at your local drug store or online to measure your glucose, to look at fasting glucose. Now we know that the optimal fasting glucose is somewhere around 70 to 85. And the 70s are a little better that 85. People who are above 85 still within that mainstream normal range, 85 to 99. A lot of them have insulin resistance. So we've got to be thinking, once again, about what's optimal versus what's normal.

Katie: Absolutely. I'm a fan. I'm wearing a glucose monitor now as well. I just, I love the data, being able to see in real-time, how my body is responding and see things like how stress affects things that would normally not have spiked my glucose or lack of sleep. I will be much more sensitive the next day. It's just, it's helpful to see those things in real time.

But to your point, I think this is a recurring problem in mainstream medicine. Is that the studies are done on men because men have less hormonal fluctuation so they're easier to control for in clinical studies. They're not going to get pregnant, they're not going to have variables that make the study more difficult. But when we start applying male data to women, we can have issues in some points. And so I'm so glad that this conversation is now happening where we're starting to understand the biological differences more so that we can give better care to women who do have hormonal fluctuations, who are supposed to have different hormone levels, and who are going to biologically respond differently to certain things.

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This podcast is sponsored by Joovv red light therapy. I've been a fan of red light therapy since researching it years ago, and have been really grateful for my red light devices the last couple of years as I get older and want to be proactive about keeping my skin looking young! With stress and travel, I felt my skin getting less smooth and elastic than it used to be, so I upped my red light use to help my skin feel its best! I also notice the benefits for recovery and sleep as I've gotten into more intense workouts. Light is such a vital part of the cellular energy equation in the body and red light therapy is an easy way to get this vital piece. Since many of us spend so much time indoors, we often don't get enough light. Spending some time outdoors each morning and using red light at night are my go-to's for making sure my body's light exposure is optimized. Learn more and see the light I use at joovv.com/wellnessmama. And they've built in an exclusive Wellness Mama discount at above link!

I also like your point about with ketosis cycling. I think this is a helpful tool that I've noticed, really, across the board. And it's, kind of, a cool thing because our hormones as women, signal the importance of things cycling at different times. And especially for women. But that something I've learned is, I don't do anything every day except for good sleep and sunshine. And I cycle supplements, I cycle food and calories. And with the goal of being metabolically flexible and adaptable. And also because I think it's good for our body to have different environments to adapt to at different times.

It seems like, for women, especially, cycling ketosis is important and refeeding to signal the body that there's not a starvation situation going on seems to be important. Same thing with fasting. If there's any kind of fasting or intermittent fasting, it seems important to cycle that with refeeding very intentionally, making sure nutrient levels are optimized.

But let's talk about that a little bit more with the idea of, like, cycling, and then refeeding, and nourishing. How can we think of optimally nourishing the body, getting enough, for instance, for a protein? Getting enough protein chronically for a long time. And I think, often, like we talked about in the beginning, we talk about the deprivation side or avoiding things. But, for women, often, it seems like we also need to focus on intentionally making sure we're getting enough of certain things often.

Dr. Gottfried: Yeah, I totally agree. I love how you and I have arrived at the same place through, you know, different paths. So after taking care of, you know, 25,000, 30,000 women at this point. I know that pulsing,

having that level of variation is the most effective way to create this sense of wellness, to create that sense of optimal health. And the body is not really designed to eat the same thing every day. Like, the same macronutrients, the same amount of protein and so forth. It's really designed to pulse. And I love that you do that, not just with what you're eating, but also with supplements because I think that's how supplements work the best as well.

So what do we know about this? We know that, for women... My book is basically about cyclic keto. It's how to do a four-week pulse of keto to get into a state of ketogenesis, and then to start to bring up your carb threshold so that you can really define what's the right amount for you. So it's not quite an elimination diet but it's a way of decreasing carbohydrates in a healthy way. So I use net carbs because I think it's really important to use plenty of fiber so that you're balancing some of these other hormones like insulin and estrogen. And not to use total carbohydrates which is what works really well for men. But I think, in some ways, men need fewer carbohydrates than women do. Especially for thyroid and adrenal function.

So when it comes to this idea of cyclic keto or carb cycling. I think that the key is to really understand what's going to work the best for you. So I have a protocol that can be used to define this. And I walk people through after the four-week pulse, how to bring back carbohydrates by adding about 5 grams per day at a time. And to notice some of, you know, the downstream effects of that.

I'm also careful as someone who has recovered from disordered eating. I had anorexia in high school and bulimia throughout my 20s into my 30s. I'm really careful about some of the language that we use like feast days or cheat days. I think, as you said, it's much more about nourishing. So figuring out, "Okay, I want to get enough protein so that I maintain my muscle mass. Maybe even grow my muscle mass as I get older. I want enough fat so that I'm making my sex hormones and I have enough of them unlike when I was in medical school. And I want to figure out the right dose of carbohydrates so that my thyroid, and adrenal function, and the rest of my hormones are doing what they're meant to do." So that's why I think this is really helpful, to think about it more in a cyclic way, to think about the variation.

Katie: I definitely agree. And to circle back to a little bit of what we talked about in the beginning and tie it in here. You talk about, in the book, how that women are not victims of the process of hormone flux. But we also do know, like, hormones do change throughout different phases of life. And that, certainly, like we have our monthly cycle, we have menopause and perimenopause. We have hormonal events that men don't have to manage. So what can we learn from this and how do we manage that to best support our bodies through those different phases, understanding that there's going to be those hormonal fluctuations?

Dr. Gottfried: Yeah. It's a good question. I think that if we just take mensuration for a moment. You know, we tend to focus with menstruation on estrogen and progesterone. The best way that you can balance your estrogen throughout your cycle is to make sure that you're getting sufficient prebiotic fiber. So, you know, I, especially, love things like asparagus, and artichokes, and Jerusalem artichokes. You know, getting the kind of fiber that feeds those benevolent microbes in your gut. We know that that's associated with balancing your

estrogen so that you don't keep re-circulating it. And stimulating some of those receptors that are... Say, you know, if you're someone with endometriosis. I have a lot of endometrioses in my family. If you have endometriosis, estrogen dominance, having too much estrogen in circulating can be a problem. If you have fibroids, I have a lot of fibroids it's in my family. I've got a couple of fibroids myself. Again, you want to limit how much estrogen is recirculating. Almost like bad karma.

Now, the other piece with progesterone is that a lot of women, starting around 35 to 40, their progesterone will start to decline. Vitamin C is really important for raising progesterone levels. And I'm a fan of getting it from your food. So getting it from citrus as an example. There's lots of different sources of vitamin C. But there's other hormones that vary as well in the menstrual cycle such as testosterone. It tends to peak around day 9 through 12 in a hypothetical 28-day cycle. That then, you know, is supposed to motivate us to have more sex right around the time of ovulation. And so you want to be thinking about lifestyle issues especially around testosterone.

I just was talking to someone who is leading this marathon training for men and women. And you want to go for your personal best right around the time of ovulation. So when testosterone is at a peak, estrogen is at a peak, it peaks around day 12, progesterone is relatively low. That's where you can really do your best, like, in terms of a fitness achievement. The week before your period, that's the time that a lot of women start to crave more carbohydrates. And that's part of the innate intelligence of the body. Because you want to have carbohydrates the week before your period because that helps you with making serotonin, it helps you with staying in balance in terms of reducing PMS symptoms. So we want to pay attention to it. Not, you know, so much that you're bingeing on sugar, but that you're getting healthy carbohydrates that really help you with making some of those brain chemicals like serotonin that can help you with feeling like you're in a state of balance.

Now, as you described in perimenopause and menopause, women go through very sudden changes. Same thing with pregnancy where our changes in terms of estrogen, progesterone are much more dramatic than men experience when they go through, you know, so-called andropause. So with the andropause, men have this very gradual decline in testosterone, it's not usually sudden. Women have these sudden changes that, you know, the more you know about it, the more that you are educated and informed, I think the better that you can surf those waves.

Another really important transition, of course, is pregnancy and postpartum. And when your postpartum and you deliver that baby, and you deliver your placenta, it's a preview of coming attractions in perimenopause. Because you go from the sky-high levels of estrogen and progesterone. Estrogen is different, it's estriol. To almost nothing. And for some of us. I remember when I was sitting in bed with my first baby, I am nursing her. I'm like day three. And I'm just sobbing. I'm just sobbing, I don't know why. And it was because my estrogen was so low. So we've got to be thinking about these hormonal changes. How we can support them, first with food and with lifestyle changes so that we really are able to live our fullest life and feel our best.

Katie: Do you ever use or recommend hormone replacement directly for different phases of life for women, or do you think it's often achievable just through food?

Dr. Gottfried: I think you can go pretty far with food and with lifestyle changes, and so I like to start with those. Because if you just add hormone therapy to someone who has got a, somewhat, toxic lifestyle, it's not going to work as well than if you meet the hormone therapy in the middle. So I think that's true of any plant, any supplement, any medication. You want to maximize the diet and lifestyle changes first so that you can meet it in the middle. So whether that's taking Metformin for pre-diabetes or it's, you know, dealing with some of the medications for endometriosis, or, you know, dealing with some gut issues. I think we want to leverage and maximize those dietary lifestyle levers first.

Katie: That makes sense. And also to circle back to something we talked about in the beginning, the stress equation. And I know that some of these are topics that could be their own podcast and are big societal things to tackle like that gap between the division of labor and that woman end up still taking on much more. But we know that cortisol impacts all other hormones like you talked about. So I know solving stress is not a simple one-answer solution here. But what are some of the ways that women can start addressing that? Because I feel like often we don't even realize. Like, we think of stress as a mental and emotional state that we experience. But from the body's perspective, it is anything that we are interacting with that's creating stress within the body. So we may not feel stress but our body might still be in a state of stress because of environmental factors, or foods that we're eating, or any host of other things. So what are some of the ways to start addressing that?

Dr. Gottfried: The first way is to measure it. So I'm a big fan of measuring stress just to get a sense of whether it's an issue for you. I find that it's an issue for most of my female patients, less so for my male patients. But, definitely, women I think are more vulnerable. We can hold more and it's just part of, you know, the way that we live our lives. So I think measuring it is helpful. That includes, you know, measuring a serum level of your cortisol in the morning. You could also measure dried urine. That's my favorite way of looking at it where I like to look at cortisol awakening response in the saliva. I also like to look at diurnal cortisol which is four different points during the day. That pattern, the slope of the diurnal cortisol tells me a lot about the control system for hormones.

Now, if you don't want to do that. If you want to look at something like heart-rate variability, you could wear, you know, an Apple watch, or a Garmin, or a chest strap and measure your heart-rate variability. That's a really helpful measure of the balance between your sympathetic nervous system fight-flight freeze. Also defined in men in the 1930s and assumed to apply to women. Versus the rest and digest system, the parasympathetic nervous system which is where all of the healing and all of the hormone balance happens. So it's not that you never want to be in a sympathetic state, you just want to have this really fluid balance between the two. So measuring it is the number one thing.

And then I would say, come up with an A La Carte menu of all of your favorite ways to navigate stress. And what worked for me, you know, when I was in my 30s versus what works for me now is a little bit different. One of the things that I think is a big issue, and I saw that you've had some recent guests talking about this, is trauma. So a lot of women experienced trauma as children or in their 20s. Whether that's date rape, or incest or, you know, your parents getting divorced. Those adverse childhood experiences often come back and cause hormonal issues later. And, in fact, I would say it is the number one cause of women feeling overwhelmed. Not quite post-traumatic stress disorder like you might imagine with a male war veteran. Women tend to have more sub-threshold PTSD which is, you know, not quite the same criteria. So dealing with trauma, I think, is really important. I think that, in some ways, psychedelic assisted psychotherapy is probably one of the most effective ways of dealing with trauma. It's better than EMDR, it's better than, you know, integrated family systems. Some of the other forms of therapy. It's not that therapy is bad, it's just that some data, for instance, on MDMA is even better.

So, for me, I meditate every morning. I get up and drink electrolytes. I make my own electrolytes or I drink some commercial electrolytes. I sit outside. This is usually early in the morning like around seven before the UV index goes up. And I love to get that light on the back of my retina to help me with melatonin that night, and to kick off the circadian rhythms. I know you know all about this. And that's when I meditate. So I typically meditate anywhere from 5 minutes to 30 minutes depending on how much time I have. And that's where I just try to, you know, kind of, plan my day. Sort of, dump whatever is intrusive and bothering me. And to really set an intention. Like, a big part of my intention today was hanging out with you, Katie. And to really build to it so that I can show up and be present, and shower you with love, and, you know, be my best self in terms of serving our listeners. You know, for other people it's sex. So orgasm is a great way to manage your cortisol, it also helps you with thyroid function. For other people it's listening to Headspace, or an app, Calm. Something like that. So, to me, the key is not that you must do this. It's more, let's come up with the menu that really works for you. What works for you, Katie?

Katie: Well, I love that you mentioned how even here, especially, it's so personalized. For me, it tends to also cycle. I find sauna is really, really helpful for me personally because it's quiet and it's meditative. I have recently become much more consistent with meditation and breath work practices. And have seen a very profound change at HRV because of those. I'm such a data nerd. It's helpful for me to see, like, on the Oura ring and be like, "Oh, this is having a measurable effect. And now I will keep doing it because I see that it's having a direct impact." And, for me, that was pretty drastic. That was HRV going from like 30s and 40s to now, that and other changes. My HRV is like 140, 150 so it was a big...

Dr. Gottfried: Wow.

Katie: ...big jump. I'm also, right now, a big fan of cold plunges. And I know that those are not a favorite for a lot of women. But I find them meditative. Because it's like, when you're in the cold, you only can go to your breath. My brain is not everywhere else worried about dinner and kids. And I just can go to my breath and be internal. And I think there's some really cool data with the cold. For instance, on if you're eating enough protein to build muscle which is a phase I'm in right now, there's some concern with mTOR. I'm not specifically

concerned with that. But it seems like cold exposure at certain thresholds mitigates that and allows you to get the muscle benefits and fat loss without any potential there. So those are some that I'm doing right now.

I also love just sunlight. Anytime outside, outdoors, walks with my kids. And play. I think play is an underestimated one. Especially when we're adults and especially as women, we're so busy with all that's required of life that we forget play. And my kids had been my best teachers in that. But what about you, what are your go-tos? You mentioned a few of them, but...

Dr. Gottfried: Well, I love your list. You've got a fantastic menu that I think our listeners could learn a lot from. And I agree with you. I mean, I love my sauna, I love how it's an exercise of my medic, I love how, you know, almost anyone can do it. I have a particular gene that makes me incredibly stressed in response to cold immersion. So I haven't found that to be as effective for me. But one thing I do which I think is similar and also raises HRV is to walk in cold water. So, for instance, I've got a creek nearby. I go hiking with a girlfriend every Saturday. It's the best therapy possible. And we finish by walking in a Creek. So bare feet so that you are grounding. And I find that it consistently raises my HRV. Now, it could be talking to my girlfriend or all of these things together.

So, you know, what used to work for me in terms of, I used to do transcendental meditation. I learned it when I was in college. I still return to that sometimes. But what I found is, again, variation. So I'm someone who tends to be a little dopamine challenged and I like, sort of, trying new things. I'm doing a lot of visualization right now. I'm working with something called Buteyko breathing which is where you make your breath work really efficient. It's something I haven't done before. I'm a yoga teacher but never did Buteyko before. I'm doing it with a lot of my professional athletes. And I'm finding that really helps with HRV. I'm not quite to the level that you are with your 130, 140, but I'm well above where I used to be where I was traveling 50% and my HRV was down in the 20s. It was terrible. So now I'm, at least, you know, kind of, in the 70s to 80s range.

Katie: And I think that's another important point as well. Of like just how, whatever blueprint we use in supplements and dietary approach isn't a one-size-fits all. Same thing with HRV. Because I've seen people get discouraged when they start tracking it and it's lower than they want it to be. Remembering that there's a lot of variation among people. It's most important in relation to your own baseline. So like if you are naturally at 40 and then overnight, you're in the 20s. That would be more important to pay attention to than stressing over the fact that you're not in the 80s or whatever it may be. And then seeing trends over time versus, like, immediate spikes. We can learn a lot more, I think, from those trends over time. But also, not getting discouraged or comparing to someone else because there's going to be just inherent genetic variations in HRV as well. But I think it's really helpful metric and tool to have.

And I love that we have things like the glucose monitors and HRV trackers that give us this data. And, for women, also cycle tracking apps. We have this amazing window into our hormones that we can see every month. And we can watch over time, and see changes, and be alerted that there's something going on if we

see a dramatic cycle change. We have that data at our fingertips now thanks to technology. So I love that we have all of these tools.

And, as expected, this conversation, of course, flew by because you're so much fun to talk to. But a few last questions I love to ask. The first being, if there's a few things that people don't know or often misunderstand about your area of work?

Dr. Gottfried: I think the main thing that people misunderstand about precision medicine and, especially, women's health, is that you don't want to jump to a prescription for hormones. And, unfortunately, this is the way that our mainstream medicine system is set up. So when I was talking to that doctor when I couldn't lose weight in my 30s. He said, you know, not just exercise more and eat less, he also said, "Well, why don't you take a birth control pill because it sounds hormonal?" And he never talked about some of the nutritional levers or lifestyle changes. He never offered to check my cortisol, or my thyroid, or my estrogen, progesterone, testosterone. And yet, if I was trying to get pregnant, he probably would have checked those things. So I think we're way too quick to jump to the birth control pill, we're way too quick to jump to the hormone therapy. We want to do this foundational work first so that if you end up on those things like the birth control pill. I'm not a big fan of it. But if you end up on it, you, at least, are going to be in a much better place in terms of your micronutrients and your hormonal balance for it to be effective.

Now, I want to say also that, sometimes, hormone therapy, whether it's birth control pill or menopausal hormone therapy, can be lifesaving. It can really make a huge difference. So I'm not against it. It's just that, we've got to do this foundational work first. So I think that's the main thing that people misunderstand about precision medicine and women's health.

Katie: And I know that you do very specific precision medicine practice. And I'll make sure we put links in the show notes for you guys listening, wellnessmama.fm to find out more about that. And also to all of your books and to your website. You have so much information there as well. But, speaking of books. I always love to ask if there is a book or a number of books that had a profound impact on your life? And if so, what they are and why?

Dr. Gottfried: Yeah. Well, the first book that comes to mind is Christiane Northrup. So, she wrote a couple of books. They're very thick. But when I was studying bioengineering... So I was in college and then I was in graduate school in bioengineering, I saw Christianne Northrop do a PBS special where she talked about women's bodies. And she talked about how... This particular PBS was about women getting surgery. Getting unnecessary hysterectomies and how it was the ultimate objectification for women to be in the OR, you know, having medical students, like, come examine them without their consent, and then having surgery with or without the full informed consent that they deserve. And, for me, it just galvanized me. It, kind of, pulled together my love of biology, my love of how the body works and health, as well as feminism. So that, I would say, is probably one of the most influential books that I've read.

Katie: I love it. I will link to that in the show notes as well. And any parting advice for the women listening today?

Dr. Gottfried: I would say, this work is part of... It's not some big project that should be overwhelming. It's really much more about transmuting the struggles and the suffering that we have, and turning that into compost. Like, turning it into the best possible thing to feed yourself. So if you struggle with your hormones, if you struggle with pre-diabetes, if, you know, you feel like you can't lose whatever amount of weight, you feel like you want to lose... I'm really careful about talking about weight. If you don't feel like you're as healthy as you could be. I don't want people to get discouraged about that. I think that the struggles that we have are messages from the body that need to be decoded so that we really understand the intelligence in the body and can work with it instead of against it.

Katie: That's a beautiful place to wrap up that encompasses so much of what you explained today. Sara, it's always a joy to talk to you. I am a huge fan of your work. I highly recommend your books. For everybody listening, those will be in the show notes. You guys can find them. But thank you for your time today.

Dr. Gottfried: Thank you so much, Katie. I love what you do in the world. Thank you.

Katie: Thank you. And thanks, as always, to you guys for listening. For sharing your most valuable resources, your time, energy, and attention with us today. We're both so grateful that you did. And I hope that you will join me again on the next episode of "The Wellness Mama Podcast."

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