Conquer Your Cycle at Every Age – Stephanie Estima, D.C., with Dave Asprey – #810

Announcer:

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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today is going to be an interesting and fun show because we're going to talk about functional neurology, brain metabolism and women specifically around keto, fasting and resistance training for women. Because I've heard this weird rumor, I might've even mentioned it in my book that women aren't just little men, and this was really groundbreaking knowledge for me, but we have an expert on the show today to talk a little bit and a little bit more detail about that. Dr. Stephanie Estima is a doctor of chiropractic, who's looked specifically at women's metabolism and body composition. She's got a new book called The Betty Body.

So we're going to learn a lot about when to eat what in your cycle, and we're going to talk about even transformative sex, balancing hormones, intuitive eating and stuff that applies really meaningfully because it's not okay. They say men and women should do the same thing because those studies were only done on men. And a lot of the older research was just for men. And as you've read in my book, and as you read in her book, there's a whole bunch of new research that says, "Oh, look, it's amazing women respond differently." And even some of the anti-aging drugs that I've mentioned in my book, they respond or they work differently for women, so I've got a real expert for you today.

Dr. Stephanie, welcome to the show.

Dr. Stephanie Estima:

I am thrilled to be here, Dave. Thank you for having me.

Dave:

You're welcome. I'm interested, The Betty Body, what's that all about? I mean, it's a great title, it sounds good for a book, but what is a Betty?

Stephanie:

So the Betty's, the Betty army, the Betty verse, really came from the name of my podcast. So I've had the pleasure of hosting you on, Better, with Dr. Stephanie, which is my podcast that I host, it's a weekly show. And the fans of Better are Betty's. So we started informally kind of secretly calling them our Betty's and I haphazardly dropped it on one of my, Ask Me Anything episodes, and it just sort of took off.

So when we would hear... When we would see reviews on iTunes, it's like, "I'm a Betty, I want to be a Betty." And so, it just sort of took on a life of its own and couple other things that really solidify the name was, when you look it up on the urban dictionary, we didn't know that this existed, but my partner looked it up on the urban dictionary and there's a definition for a Betty there and I'm paraphrasing it, but it sounds... It goes something like this, "A Betty is a modern day queen. She's a triple threat, she's intelligent, she's quirky, she's loving, she emulates intelligence."

And I said, "Well, this is exactly the type of woman that I aspire to be. I'm quirky, I'm loving, I'm intelligent," and I think that my Betty's, the fans of the show and the people who are drawn to me and my work also have those as core values. So the name Betty is really just symbolic for anyone who... any woman or any man, anyone who... the Betty and all of us, who really is aspiring to become more of who

we already are and to self-actualize and to continue the quest for learning and becoming our best selves.

Dave:

It's really powerful because if you're looking for the personal development angle, which is a part of what you do, getting your cells working, getting your metabolism working, getting your hormones working, they kind of make it easier to be who you want to be. But if those are all broken, you can push really hard and you get almost no progress, which is kind of the story of my life, right?

One of the things that you talk about in your book is art. It's different for women than it is for men, and you need to type into your or type into... You need to tap into your monthly cycle. And I think a lot of women might say, I'm already doing that. Isn't that something that's already done? Or what you're doing that's different for tapping into the cycle?

Stephanie:

Well, I think that a lot of the book. We start off in some of the earlier chapters talking about what a normal menstrual cycle might look like versus what a common signs and symptoms that you might experience in the cycle. So it's important and I'm a bit of a word nerd, so we had to almost dedicate an entire chapter to what is normal versus what is common. So we talk about some of the different hormonal patterning that we see over the 29 and a half days, which is the mean length of a cycle.

And then what are some of the permutations that can happen from that? And I think that when we look at society, a lot of times we have normalized menstrual pain. While you have menstrual pain, you should take this... We have a pill for every ill. And I think that when you look at a sign or a symptom, like a headache, for example, or a tender breasts or aching joints, or sleep disturbances or moodiness, and you ascribe that as normal, you're not really going to seek to correct it because you think that that is just part and parcel of being a woman.

Versus if you were to look at the aggregate of those symptoms and say, "Well, these may be common for me, and I know many other of my girlfriends experienced this, but I also want to seek a solution to this because I know that it's not normal." So we talk about what some of the parameters of normal might be. So what a common... the length of the cycle, which I mentioned. There's a range. It's not 28 days for everyone. We can have a cycle as short as 26 days, which is still considered normal all the way up to 32 or 33 days. The length of your bleed week, how long is that? The quality of your bleed? Is there clots in? And if so, how big are the clots and how often are you changing your menstrual cup or your pad or whatever product you're using to capture the blood?

What is the color of your blood? Does it change over the... So there's so many different things that we can learn about our menstrual cycle and really be able to distinguish between what is normal and what is common. And then we go into, in some of the later chapters of the book, what are some of the deviations from normal? So we talk about perimenopausal women, where we see often from about the age of 35, we start to see this attenuation, this slow lowering of progesterone. So we tend to, in our early forties, up to our mid-forties, there is a tendency for women to be more estrogen dominant in the luteal phase of their cycle, relative to progesterone.

So we talk about the signs and symptoms of what that might look like, how it might present and what are some of the solutions that a woman can go through. So that's how we begin as women to tap into our cycle. And the number one thing I would tell any woman to do, if she's not already, and it really shocks me that how many women don't, is to track your cycle. Like, download a free app and just get data, just start accruing some of this data, because over the course of several months, you are really

going to become, the book I sort of tongue in cheek, call, like a CPO, like a chief period officer of sorts, right?

You're going to really understand your individual constitution because a woman, if there was another woman standing next to me now, we have the same parts, but we are going to bring... We're going to have different genes, different epigenetic expression, and different ebbs and flows in terms of our hormonal cycle. So every woman really should understand her individuality.

Dave:

Are you a fan of progesterone cream?

Stephanie:

Am I a fan of... That is a loaded question. I think that there is a time and place for bio-identicals, like progesterone cream, estradiol. I do like to examine them after some of the foundational basics that we outlined in the book have been mastered. So I think that a lot of symptoms that women can experience in perimenopause and particularly in late stage perimenopause, as they're moving towards menopause can be ameliorated with some basic changes in our movement, in our supplementation, in our sleep hygiene, in our sexual health, in our nutrition.

So I do think that it is absolutely an option for women. I do tend to like explore that after some of the foundational basics have been mastered.

Dave:

So, you don't use it as a Band-Aid?

Stephanie:

No.

Dave:

I had a guy on this show a while back, who'd been practicing for decades and he's sort of like, "If there's a problem, progesterone." And it was a pretty out there, but interesting interview because he was like, "Oh yeah, if you have neck pain, put progesterone cream on and it fixes it. And I've actually seen some ridiculous results sometimes where things just doesn't make sense," he adds that or recommends adding it. So I have on occasion used for progesterone cream, even though my progesterone levels probably are fine. But if you have a weird muscle cramp, it just goes away, but I'm not sure that I would do everything that he talked about.

And clearly if a woman isn't doing basic metabolic stuff and you use something that's a Band-Aid like that, you can have poor results, and also if you don't know your levels, right?

Stephanie:

Absolutely. Yeah. You really... It's one of the foundational principles of any sort of functional medicine practice, is to test and not guess. I mean, this is borrowing from a chapter from Dr. Mark Hyman. You really need to understand it particularly for women, even if you're feeling great right now, it would be an awesome idea for you to get a full workup in terms of... There's many tests that you can do, but get like a full lipid panel, look at your testosterone levels, look at your estradiol and all the metabolites from estrogen metabolism. And so, you have at least some sort of baseline now for that, for you to be able to compare to in two years, five years, seven years, 10 years.

So I think it's always a great idea to have some sort of baseline measurement, whether you are constantly updating it, and you're someone who continuously gets some of this clinical, this blood work or this salivary work or urine work done for you to have this understanding of where you are in in terms of your ranges.

Dave:

It's such good advices, for men women on that. If you know what your hormones look like when you feel really good and you're young and strong, you can target that when you are not as strong and not as young. So having the picture is great, and quite often people living in their late twenties, when you get your hormones, "Oh wow, they're already out of whack I just didn't know." So it's one of those things. It could be once in your twenties, if that's all you need, but then you know, and it's a target. Otherwise, you just won't know when you're older what the right ratio for your body was. So that's, I think, precious advice.

If for people who seem to show, you can say, "Well, look, it's going to cost me a few hundred dollars to do it." And yeah, it is. And the chances of finding something actionable are reasonable, but having that data it's something you can't get later. So I think it's a good long-term investment.

Stephanie:

Absolutely. Absolutely. And what's normal often we can talk about this in the context of men. When we think about testosterone levels, they can vary from 300 milligrams per deciliter, all the way up to like 1200 milligrams per deciliter. But someone who is sitting at 500... You know someone who is at 800 and now has come down to 500, might feel lethargic and can't do anything and is putting on fat versus someone who maybe was at 600 and has come down to 500 and they don't notice a difference and they're feeling great.

So just like you said, you can't get that data elsewhere, and otherwise you're just shooting in the dark because when you have such a large range in terms of what's considered normal you and your primary healthcare physician are just making stabs in the dark, if you don't have any of that other data.

So one of the first things I would love, track your cycle and then get a full... Get as much data in terms of your metabolic markers, your sex hormones as you can.

Dave:

Okay. So you'd have them do an advanced hormone panel and you would have them do a lipids panel?

Stephanie:

Yeah. I love lipids. And we'll talk a little bit about the ketogenic diet, hopefully today. But there's a... One of the things I've made sure that we talk about keto for women, we talk about keto cycling in the book, but there is... And just in the air of transparency, and not everybody does well on keto. And for some, there are some hyper responders where we can see LDL numbers go from, call up a thousand to like 4,000. It's crazy. Like their lipid levels go wacky.

So I love to get a comprehensive lipid panel. So not just the standard. So I know that there's a lot of places, the standard lipid panel might be total cholesterol, total LDL cholesterol, they look at your triglycerides, your HDL, but I would also want to be pushing for other things, LP little a which is a lipoprotein little a, which has been something that has come up more recently in the literature that has been suggested. It's a very good marker for atherogenic activity. I would want to... If it's available to

maybe get a coronary artery calcium score looking at LDL particle number, which is distinct from LDL cholesterol number, like I mentioned, a thousand or under is great.

Yeah, so I outlined all of these sort of things in the book, but I think it's really important for the listener to... When you're starting any new diet, you want to monitor how you're responding to it. You could be... Typically we see with... when we are applying things like carbohydrate restriction or caloric restriction in general, we typically, but 80% to 90% of the population are going to have a positive response to that. But if you're in that 10% to 20% population that doesn't, we have to think about what options are. Are we changing the saturated fat content in your diet? Are we taking you off keto in its entirety? Are we changing some of the nutrient composition of the diet? So yeah, I like data. I'm a data geek.

Dave:

One of the things that I really appreciate in your book is cyclical keto. And this has been the Bulletproof thing since 2011. Where you go in, you go out, you can be low carb, you can be moderate carb, but unending keto breaks women before it breaks men, but it breaks a lot of men too. And I want you to explain... Well, I'm going to tell you what I have observed in people, and also over fasting does the same thing as over keto. But I want you to tell me why this happens?

So usually within four to six weeks of going on a keto diet, and strict keto, 15 grams or less of carbs per day, lots of fats, the way you actually do keto, hopefully with good fats, not omega-6. It seems like the first thing that I've noticed and this is also in my book, but I want your medical perspective on it, is sleep quality goes down, pretty dramatically after amount of time, and then the cycle irregularities start to happen, right? Where it's not working like it was before, whether... how it changes, can vary all over the place, but it's less regular than you'd expect.

And then after that is hair shedding, and in men it's different, in men it takes a little bit longer if they're over ketoing, over fasting, but their sleep goes away. Then they basically wake up without a kickstand and then they also get hair loss. But let's go to the question about women specifically. So why do those symptoms happen when they're in keto for too long?

Stephanie:

Oh, we're going to have fun now. Okay. So first thing that we want to be considering for women is that we at any given level of BMI, so when we're thinking about any given weight, women will tend to hit the hunger signals faster than our male counterparts. So what I'm referring to here is when we're talking about leptin, so leptin is a satiety hormone it's created from our adipose tissue, and normally when it's working, it should go to some of the appetite regulation centers in the brain and tell you to put the fork down, that's what leptin does. Leptin says, put the fork down.

Now, women for a variety of reasons, tend to be more leptin resistant. So in the same way that we think about insulin resistance, the same can be applied into leptin where your adipose tissue might be secreting leptin, but there is an attenuation, there's a down... The appetite regulation centers in the hippocampus, and the hypothalamus are not picking up those signals. So what ends up happening is you don't put the fork down and you continue to consume calories. So in aggregate over time, your caloric consumption is higher, and of course, when we're thinking about... especially for thinking about weight loss, which a lot of women tend to think about, this is going to lead to weight gain in the long run.

So leptin resistance is one reason why the keto long-term is not necessarily a great idea. Another thing that I've noticed in practice. So I ran a ketogenic program when I had a brick and mortar practice. And one of the things that I would notice is about two or three weeks in, first... I mean, I should say, within the first two weeks, especially if it was like a husband and wife couple, right? The guy would

come in and he was like, "This is the best doc, I've lost like 20 pounds, I feel great." And the woman will be like, "I hate him. We're eating the same food, I've lost two pounds, I can't sleep," as you were saying, and one of the things that I noticed, particularly with women is at about week three, it's like week two or three, it doesn't matter, they just want carbs. They just want the pizza, they want the chips, they want the cookies, the crackers.

And when we started you and I talked about this on my podcast. When we started supplementing with resistant starches, these prebiotic fibers where we are now giving the large... So what a resistant starch is, for the listener, just as if you've heard this before, just can't remember, it's basically a starch that resists digestion. So most of our food is broken down in the small intestine and absorbed as substrate for energy. But the resistant starch, the carbon chains are too long, so they bypass the small intestine, they reach the large intestine where they serve as a food source for the microbiome here. And the microbiome chows down on these resistant starches, these prebiotic fibers, and they release a short chain fatty acid called butyrate.

As you talked about this in your book, and I was like... When I was reading and I was like, "Yes." We are very, very similar.

Dave:

Women do so well on prebiotic fiber, even during fasting, right? It's such a big thing.

Stephanie:

Yes, they do so well.

Dave:

So that helps to fix keto for women.

Stephanie:

Absolutely. Because one of... The cravings that women get, these carb cravings is a distress signal from the microbiome. It is a microbiome saying, "You've restricted carbs now for two weeks, I'm hungry. I need my substrate." So the resistance starch it ameliorates that.

Dave:

And I'm going to do a quick shout out there. Bulletproof InnerFuel is the prebiotic fiber blend that I put together-

Stephanie:

Oh, wonderful.

Dave:

... that I recommended in the book. So for listeners, you've heard me say prebiotic fiber a lot, resistant starch and prebiotic fiber. We're big, we can use those interchangeably in this conversation.

Stephanie:

Great. I actually have to try yours, that's wonderful, I didn't realize that you had a product like that, so that's good.

Dave:

Oh, cool. Do you have one as well?

Stephanie:

I do not have my own product.

Dave:

Okay. Cool.

Stephanie:

I usually go to the grocer and get raw potato starch or green planting flower.

Dave:

You'll like the InnerFuel, it's acacia gum and hydrolyzed guar and all clinically studied ones. So it works really well.

Stephanie:

I see.

Dave:

Yeah. Green plantain, or green banana and potato starch, if you don't have a lectin issue those can work for a lot of people. So that starch... It's magic during keto and a lot of people miss out on it, men and women, but I think even with fasting it reduces that stress signal from the gut bacteria, which is largely a lipopolysaccharide, right?

Stephanie:

Right, right.

Dave:

And what about activated charcoal? That's one of the hacks that I'm a fan of because it blocks, do you use it with women during keto?

Stephanie:

I typically, if I'm going to use... if I'm going to recommend activated charcoal, it's because I'm suspecting some sort of toxin overload or digestive issues, and we usually will do it in the evening. So it has to be away from any food, and it's maybe right before they go to bed or 45 minutes before they go to bed, something like that.

Dave:

I usually use it a half hour before a meal. So it's right where the bile duct is, right, when you eat and then your bile gets expedient than it binds to toxins. Or I do it with a meal if you're eating something you shouldn't eat. But yeah, anytime your stomach is empty and nighttime is a good time for that, right?

Stephanie:

Yeah, yeah.

Dave:

Okay. So for women you're saying that if they're going to do like the 20 day keto that you talk about in your book, that they can use resistant starch while they do that, and then they don't get as many of the symptoms, but it's still only for basically four weeks, you're not going longer than that?

Stephanie:

Yeah. I chose 28 days, it could be 30, but I feel like 28 is a female number. So 28 days, and then from there I move into sort of the second part of that, which is where we are moving in and out of keto.

Dave:

Everybody listen to this, you move in and out of keto, you don't stay in it forever. Thank you for saying that message, yeah.

Stephanie:

Yeah, no worries. I think that and I know that this runs contrarian to a lot of the die hard. There's a lot of people in the... And I'm not super popular in the keto community.

Dave:

The keto bros, they just like to fight. They're going to always argue about stuff. And if you eat a carb, you're a bad person. I'm so tired of that, it doesn't work. It also makes you angry.

Stephanie:

It makes you angry. And you're just happier, and like also, PSA, that carbs... Vegetables are carbs, right? So it's not just the breads and the cookies and the chips and the crackers that we're talking about here, we're talking about strategically, when we're thinking about adding carbohydrates, we're thinking about adding in plants that have polyphenols and other compounds that are going to help with liberty toxification and they're going to help with bowel movement, then insoluble fiber and all of these beautiful things. So-

Dave:

I'm laughing because I posted something on Instagram earlier that said, "Macronutrients are dumb. It's a carb. Well, broccoli is not the same as corn syrup, but they're both carbs, so let's stop talking about carbs and let's talk about which carbs," and some people got really offended, like, "Macros matter." But what you're saying there is, pick the right macros and it changes things.

Stephanie:

Right. Absolutely. Yeah. The other thing, when we think about, you had mentioned... I would just want to circle back for a moment to butyrate. One of the things that we noticed with women, a lot of women would come to me and say, "I can't sleep." So we know that butyrate has potent effects on our ability to both fall asleep and to stay asleep as well. So really, really important just to kind of tie up that resistant starch.

Dave:

Do you like resistant starch at night?

Stephanie:

No, no. I usually have a cold either in water or I'll have it sort of in a... like hidden in a smoothie. Like if I'm putting-

Dave:

I'll put in my coffee.

Stephanie:

Yeah. Oh, that's a good idea too.

Dave:

Because you can't taste it. At least the stuff that I make it's very neutral. So then any hot beverage, it goes in faster.

Stephanie:

See, I like black coffee. I love a strong black coffee. Or sometimes I'll put a little MCT oil, but yeah.

Dave:

If you put just a scoop of resistant starch in, in black coffee, if it's a neutral tasting starch, you don't taste it, it's still a strong black coffee and it doesn't change the consistency. The ones that have flax seeds in bulk fiber, that's like coffee soup, it's gross. But ones that go in fully liquid it's actually quite drinkable. So I'm with you, I drink a lot of black coffee, I drink some Bulletproof coffee too. But the reason I was asking about timing is that there's emerging evidence and I've noticed this myself, if you take probiotics at night it actually doesn't help with sleep quality, it can reduce sleep quality. I think because your microbiome is adjusting at all.

And I suspect, in fact, I've even noticed in my own results, if I take resistance starch at bedtime I experimented with this as I was writing fastest way, I was thinking, well, it'll maybe give me more energy or maybe it could, but I think it disturbs sleep and I'm not sure, but I think it's a morning noon kind of thing.

Stephanie:

Yeah. I agree. I tend to have it in the morning, but even if we sort of even peel back, like when is the ideal time, if we think about putting energy into the system late at night, now you're going to be messing with your peripheral oscillators. So we have... As you know we have this sort of central circadian clock, the sternal... I was going to say the sternocleidomastoid, sorry, that's my chiropractor.

Dave:

The SCN.

Stephanie:

The super... Yes. SCM, the suprachiasmatic nucleus, other SCN. So we have the SCN, the suprachiasmatic nucleus, master clock, but then when you are putting energy into the system, so even though your

body's not breaking it down as a substrate, you're still feeding the microbiome. There's still energy, and there's a revving up that can happen. So your liver is like, "Hey, there's energy..." That's a peripheral oscillator. Your gut is a peripheral oscillator. So I can see why it would mess up sleep. I would tend to just have it in the morning or the afternoon.

Dave:

I'm going to take a note on that, because I was like, I know this but I've never actually said it before, which is cool. So thank you for talking through the science on that with me. When women are doing keto they add some resistance starch, they do much better after 28 days, how often do they go back into keto?

Stephanie:

So it depends on whether she is... I sort of divide in the book women into two main cohorts, women who are still in their reproductive years or women who are menopausal. So we knew ones these protocols for menopausal women as well. And I'll just... Before we kind of get into the geeky details, I think that menopausal women generally are forgotten about. As we pass through 50, it's like, "Well she's washed up, so whatever, she can't have babies anymore, so let's just..." And we sort of see this on the big screens and the sensuality and sexuality of women who are over 50 is really not celebrated and it's... So anyway, I just... That's my own little feminist like stake in the ground that I think that women should, can and should be exploring and always looking to self-actualize no matter what age they are.

But in terms of metabolism, I love for a woman in her reproductive years, when she is in her bleed week, so when she's shedding her endometrial lining she's on her period, this is generally the first, actually the first two weeks of her menstrual cycle. The overarching term there is her follicular phase because we're developing the follicle. These are times to experiment and play with a carbohydrate restriction, a caloric restriction, a tool like fasting. These are great times if you've never done it before to play with it, because you are much more resilient in this first two week period to be doing things like carbohydrate restriction, protein restriction, caloric restriction in general.

So in her bleed week is when I typically will say, "Let's do keto, let's try keto this week. Let's bring down your carbs." Your protein is moderate, moderate consumption of protein. So anywhere between 20% and 25% of her total calories obviously as Dr. Mark Hyman says, "Food is information." So there is a difference between, as you were saying, like a candy bar and a broccoli. And in terms of protein, of course, we know if it's available to you financially or locally or otherwise grass-finished organic humanely raised and humanely killed beef or meat products. And then, of course a smorgasbord of the type of fats. Like I tend to have some saturated fats, polyunsaturated fats. You'll get that from the meat, anyway, you're going to get some saturated fat from meat too.

Dave:

So do you actually take extra polyunsaturated?

Stephanie:

No, no.

Dave:

Okay. Yeah. I wouldn't add seed oils.

Stephanie:

No, no, absolutely not. So what I mean by fats is if you're having fats, you might have some avocado, you might have some olive oil, you might have some coconut, you're going to get the saturated fat from the meat as well.

Dave:

Maybe butter, I mean.

Stephanie:

Butter. Yes, absolutely. So we have that constitution in her bleed week.

Dave:

What about fasting during bleed week? There's some controversy in the space right now.

Stephanie:

I think that there's... The way that I like to approach nutrition is to always have a lens of flexibility. If you feel terrible fasting, the number one rule of fasting is to listen to your body. So if you're on the floor crying, because you want food, then just stop the fast, cut the energetic cords, let's just get over... Like your body is always smarter than any algorithm you can run in your brain. So you have to really begin to attune to her signals. So I like the idea of fasting. I talk about a couple of different ways that you can fast in the book, so I sort of look at three different variables that you can manipulate.

One, is the type of fast. So you can do a water fast, you can do a caloric liquid fast, so that might be a bone broth fast. You can do fasting mimetic, like ketogenic diet would fall under a fasting mimetic. There's the fasting mimicking diet. So there's a lot of different types of fast. The length of the fast is also another variable that you can manipulate. So that can be a daily time restricted eating protocol. It can be a 24 hour fast, it can be a 72... So you can play with the length.

Dave:

During your period a multi-day fast?

Stephanie:

Not necessarily during your period, but sort of in explaining how you can begin to play with fasting, there are different variables that you can manipulate. And the other one is frequency. So how often do you do it? Is it every day? Is it once a month, once a quarter. But in your bleed week, usually for most women the first day or two, they're sort of a bit sluggish and crampy and achy, but as you sort of get into the rhythm of things, I love if you've never tried fasting before to try a 12 hour fast.

Dave:

I love what you just said, a 12 hour fast, not an 18 hour fast.

Stephanie:

No goodness, no.

Dave:

Because there is extra stress during that week. So doing the more stressful types of fasting is harder to do. And if you're going to experience faster, maybe it works. But in my book, I'm like if you're looking for the time when you might want to not fast, if you don't feel like it, it's when you're bleeding, right? Because you have enough stress, so it's okay to eat then, but if you want to do a fast, a shorter fast seems to make a lot of sense. And I think your advice is about intuition and all that, but a lot of women through the history of intermittent fasting over the last 10 years, it's sort of like, "I'm going to do it the same way every day or every week."

And it feels like shortening the fast or just saying it to them you're having breakfast. Because I wanted breakfast. And that's what creates the best energy. Is that directionally accurate?

Stephanie:

Absolutely. I would agree with that a hundred percent, another time to increase your fasting windows is a week before your period, right? So we talk about the bleed week being sort of a gentler fast. I also think in week four you are under now the influence of progesterone, which is a potent stimulator of your appetite. She is going to be slowing down your bowel movements. She's going to be increasing your temperature. So it's also, you're generally going to be hungrier, and I would also say that your caloric demands also go up that week, right?

Dave:

Mm-hmm (affirmative).

Stephanie:

Because it's like a peak week, of sorts.

Dave:

Of course, you're hotter. Where does he come from, calories?

Stephanie:

Exactly. Right, exactly. So there is a caloric requirement for you to be eating more. I actually like women to eat more this week, but also to be a bit gentler in terms of the in terms of the fasting window that they have. So 12:12 is where I like to start. You can move up to 10:14 if you're sort of a seasoned faster. I think that a lot of women, I would say humans in general love to jump to the 16:8, and I think that that's okay, but it's also... As you've also said in your book, I think that you need to really be able to modulate this on a day-to-day basis.

And I've actually found I used to not eat until 12 and I would do sort of the 12 to 6 or 12 to 7. And I don't if that doesn't work. Like I usually eat, do my workout in the morning, and I'll have my protein and my carbs and whatever I'm having after the workout. And then I'll have breakfast shortly thereafter. So I find that I like actually eating earlier in the day and cutting off my eating window in the afternoon to evening, that sort of works a little bit better for me.

Dave:

The cool things that COVID has done, because a lot of people are cooking now they're at home. So I know, just based on circadian biology, the ideal time to eat if you were to eat once a day would be 2:00 PM. But if you're in an office there isn't a lunchtime there, and then you don't get the business dinner, like it doesn't work, right. So then just eat dinner as early as you can, you're fine, but now quite often

I'm doing exactly the same thing where I will just have one or maybe two meals a day, but earlier in the day, and I really don't like eating after five, but sometimes with family, I eat at 5:30, but after that, no. But if you're eating at 7:00, it changes everything, right?

Stephanie:

Totally changes everything. It changes your ability to fall asleep, to maintain sleep, changes your... It's almost like the... I'm totally revealing my age here, but I remember watching Bill Cosby when he would go and get that hoagie sandwich on the Cosby Show. And then he would have these crazy dreams, and that's exactly what happens, right? You have these crazy dreams and if you are with someone who's wearing a wearable overnight, you'll also see things like your heart rate variability is going to lower, so it's not going to be as variable as it should be. Your heart rate tends to be a little bit higher as well. Like your body's working harder to get back to that homeostasis and to balance that allostatic load.

So I definitely am in agreement with you. I like to cut my eating off at least three hours before my bedtime to allow for the stomach to empty and to allow some of those peripheral oscillators, like we were talking before to say, "Okay, yeah, there's no more food here guys, we can shut her down for tonight."

Dave:

Right. I would just say, guys if you're listening to this and thinking about it, if you've never tried having dinner at 3:00 and just not eating after that, it's not as hard as you might think. And it's strangely relaxing, it actually works. In your book, you talk about the luteal phase as the get shit done phase with its own little GSD hashtag, why is that the GSD phase?

Stephanie:

So there are... And this is sort of like the over lying premise of the book as well. I want women to not look at their period as a curse, as I did every... I used to think that I was getting punished every month for being a woman for decades. And you know, once you actually tune in to the ebbs and flows of your hormonal milieu, this is really your super power. So for example, we talked about the luteal phase, being your GSD, get stuff done time. And the reason why that is, if we think about the influence of estrogen. So estrogen is a trophic hormone, it's an anabolic hormone. It's the reason why it gives us our breasts and our hips and our curves and our pumps lips, our cheekbones, and it also bathes our brain, our verbal articulation centers.

So this is a really great time to launch a book, which is what I did. I launched my book in my luteal phase of my cycle. I could predict it because I knew when it was all going down. And it's a really great time to give a presentation, to be on podcasts, to ask for a raise because you have a better handle on your vernacular. You are going to be able to pull words out and you're going to be able to effortlessly express yourself. So that's one reason. And the other reason of course, is that we see progesterone towards the end of our luteal phase.

So we talked about some of the metabolic impacts that progesterone has on our appetite, slows down our bowel movements, but she also helps with stimulating some of our neurotransmitters like GABA. So she chills us, she brings down the anxiety levels. So you're able to have more clarity of thought for you to be able to think through problems and to be able to get things done.

Dave:

So you anthropomorphize hormones does mean that testosterone is he?

Stephanie:

No. And that's just...

Dave:

It's interesting, right?

Stephanie:

No.

Dave:

That's when someone... When a woman has her testosterone, he will... I wasn't...

Stephanie:

Oh, that's so funny. I didn't even realize I was doing that. So testosterone actually, fun fact, is actually the most abundant. I know we phenotypically ascribe that to men, but it is the most abundant sex hormone that we have. We actually have more testosterone.

Dave:

Yeah, in women too.

Stephanie:

Yes, in women. So testosterone, I guess, I should probably not gender-

Dave:

No. I wasn't criticizing. I think it's kind of funny. Estrogen, she does... It is a female hormone it makes sense. Okay.

Stephanie:

Yeah. And the other thing that's really great about the luteal phase is the couple of days right before you begin your bleed. So a lot of women will say, this is the worst time of their cycles. Like their boss is getting on their nerves, that their husband or their partner can't do anything right. They chose the wrong nail polish, the food is wrong, the clothes are wrong, like everything is wrong, but what's happened here is now we've seen a sudden drop in both progesterone and estrogen.

So now we've had the... There's been no fertilization of the egg. And so now progesterone drops, the endometrial lining is becoming a ischemic and now we are going to... we're getting ready to shed. But what's really beautiful about these three days, and this is where a lot of women will say, "Oh, this is when I'm really moody, and I'm really upset, and I'm really emotional, and really crying." What your body is allowing you to do is to evaluate the things in your life that are not working for you.

So maybe the boss that is sucking your soul or the career path that is driving you nuts, maybe this is a really potent time for you to reevaluate that. Maybe this is a time to reevaluate your personal relationships. Maybe you need to set better boundaries, or you need to have difficult conversations, or it's a time where you are able to have a journey inward and say, "These are the things that I'm still not happy about in terms of what's happening." Whether it's my metabolism or my energy, or whatever

health goals. So it's an actually a beautiful time for us to feel our feelings, all of all the dark stuff and to be able to make change on it into the next cycle.

Dave:

One thing we haven't talked about here is there's probably two days that are the biggest GSD time of all, which is ovulation. Tell me about what's going on in the brain and the body and the pheromones, and how to work with that?

Stephanie:

Well, this is actually the main reason that we have a cycle. So I know that everyone focuses on the period. She's the popular girl at the party. We all focus on the period, but ovulation is like the geeky girl off to the side. Like that is the main reason why we have a menstrual cycle. So what happens immediately before ovulation is we have a really big spike in estrogen. So estrogen will go from... I've seen labs anywhere from five picograms per deciliter, and it will go within a matter of days up to like 500 or 600 picograms per deciliter. We also see testosterone. She is also peeking with time. So testosterone is also peeking.

So this is a time where you feel flirty, you feel sexy, you feel extroverted. I always make the joke that I'm chasing my husband, Giovanni, around the dining room table. Like this is the time, right?

Dave:

Right.

Stephanie:

And these two hormones in particular, we've talked about estrogen and how it's an anabolic hormone, so is testosterone. So testosterone is of course involved in our libido, it's involved in our lean muscle mass. And I talk about in the book, how we can really profit from their trophic effects by changing... We talk about changing the macronutrient composition of the diet, but also how you can change how you train. So this is a really great time for you to be doing heavy weights. How you are lifting really, really heavy weights because your tendons are also a lot stiffer here.

So under the influence of estrogen, your tendons will stiffen up. So that means that when you are lifting a weight, now that force that is being generated in the muscle can actually pull stronger on the tendon, which is going to be able to move the bone. Also fun fact, terrible time for hit, like high-intensity.

Dave:

Oh, interesting. When you're ovulating, it doesn't work?

Stephanie:

It's a terrible time for it because by the same, when estrogen starts to elevate, we see that tendon stiffening. We also see our ligaments become much more lax. So this ligamentous laxity, our ligaments become more like loosey goosey. So if you are thinking about burst or like explosive types of activities where, whether you're sprinting or you're on a bike and you're like, "It's all up balls to the wall." You are really setting your ligaments up for injury. And we actually see this in the literature that women who are involved in some of these explosive types of powers tend to injure our ligaments around ovulation. It's been studied in the ACL joint, the anterior cruciate ligament in the knee.

Yeah. So there's good and bad times for hit for a woman who's menstruating. And right before ovulation is a terrible time really to do it. So I actually will counsel women to do if they want to do, they can still have their resistance training that week because they have stiffer tendons, it's a great time to lift heavy, but maybe they want to do some steady state cardio during this week. And there are other times in the cycle where we see estrogen not as high, not having that loosey goosey that, laxious effect on our ligaments where a hit training is absolutely appropriate.

Dave:

Another fun fact about ovulation, my wife likes to remind me of this. And she's a medical doctor and she says, "Well, there's studies that smart women, their IQ goes down for two days and women who aren't as smart their IQ goes up for two days, right? When they're ovulating."

Stephanie:

Mm-hmm (affirmative). I've heard that our voice goes up, but our voice gets a little higher, like we get a little higher pitched around ovulation.

Dave:

I've heard that one too, but I haven't seen the study, but I'm believing it because my wife said it. And if I don't believe it she'll beat me. But also she's kind of, well-trained on this. But it's fascinating because all these things going on, she says, well, it's to make women more attractive. It's our biology to try to make us the most attractive mates, right, when we could get pregnant. And I was like, "Wow, that's interesting, but we'll say it's true."

And also you were talking about best time to do a podcast. If you're going to go to a stage presentation and you're ovulating, it'll be the best stage presentation you ever did, because everyone in the room's locked on you. And they don't know why, right? But it's a very... Several of my close women friends have told me that too like, "Oh my God, the best speech ever," I think this was why. And so there is a super power that comes from that, that's all subliminal, but it seems like it's a real thing.

Stephanie:

Mm-hmm (affirmative). Absolutely.

Dave:

We've talked about keto, and we've talked about fasting. We've talked about when you do it, when you don't do it, what are some of the most common mistakes that you find that women make, when they start messing with their diet? The number one thing you see.

Stephanie:

Oh, that's a good question. I would say in general, when someone is first starting any type of diet, I like data, so I will ask them to track what they're eating, and most women hate this. They're like, "Uh, it's so annoying to put it into an app every time." But I think that most people have no idea what the macronutrient composition of the diet is. And I agree that we can't really make policy from the macronutrient comp... We can't say everyone should have a 40:40:20, like you can't make gross...

Dave:

Because gluten is a protein, right? Obviously.

Stephanie:

Exactly. Exactly. Exactly. You can't, you can't make that. But I think that we have absolutely no idea A, what the macronutrient composition of our diet is and B, how much calories we're taking in. I think that when you're not tracking and you're not measuring, we've seen this in the literature as well, we tend to underestimate our caloric intake from anywhere from 30% to 50%. So if you're a woman, who's like, "Okay, I got to get my inflammation under control." I have brain fog or maybe weight loss or fat loss as a goal, that's a lot, that's a lot to be off, right? So it's really important to have data.

So that's probably the number one thing that I see is that people don't really have a handle on exactly what they're eating, and when I ask them to journal about their foods or to track their foods, usually they're like, "Oh my God, I can't believe how much calories I was actually taking in, versus how much I thought I was taking in." And of course your calories are going to change as they should through your menstrual cycle. As I was saying in that fourth week, I actually like women to take in more calories that week, like anywhere from 10% to 15% more calories, because it's really going to help with the building of the endometrial lining and you need it.

But to have a handle on what it is that you're taking in generally, I think is really powerful information.

Dave:

I feel like there are a good number of women and some men too, who are under-caloried all the time. Just because you go to the restaurant, they serve this tiny little plate, and I'm like, "I know my basal metabolic rate is 2,997 calories a day, I'll have three of those things," right? And I think, "What's wrong with you?" I'm like, "I actually eat."

Stephanie:

Look, I like a meal, I like an actual meal please. Yeah.

Dave:

How much do you see women under calories? Because like I had a big salad for lunch, and that was 140 calories because you didn't put dressing on it or whatever. Is that a common thing in your practice or is it less common?

Stephanie:

Well, I would say that what I tend to see in terms of being under-caloried, is that women have just been on a diet for decades, right? They've been employing some sort of caloric restriction over some crazy delta T, over some crazy amount of time.

Dave:

That's called a famine.

Stephanie:

Yeah. It's called a famine, exactly, exactly.

Dave:

It's from epigenetic signaling.

Stephanie:

So I do, I do see that. And in the book we talked about... I was looking at some literature and I granted, it was looking at rodents. But they were looking at the effects of intermittent fasting and or calorically restricting these rodents, for I, it was a six month stint, and they either did a 20% CR or they did a 40% CR. And of course they were looking at male and female rodents, and what they found, of course, was that the male rodents, better testosterone and better fertility, their sleep was better. And for women, of course, the opposite was true. They had abnormal menstruation, they had sleep disturbances, they saw a shrinkage in their ovaries.

Now, while this is a rodent study, you can't completely extract it to humans. I can also say from a clinician's point of view, I've also had many women talk about sleep disturbances from being on diets that were like 800 calories and they were supposed to work out two hours a day or whatever it was.

Dave:

That's just mean. No one should do that.

Stephanie:

It's mean. You're right. It's mean. And no one really should be doing that. So I think that, we often think that health is this really difficult full-time job that we all need to hire the personal trainer, and we need to hire the body worker, and we need to hire the nutritionist, and the chef and I think that once we sort of step into the intuitive nature that our bodies already have, if you can begin to decode her signals or his signals, then you really become more attuned with your body rhythms and you'll be able to respond appropriately and you'll be able to... The way that your body requires and the way that it expects you to.

So caloric restriction is definitely something, particularly with women, because societally we're taught that our worth is... The losing weight is like the most important thing that a woman can ever do. You have stars and they lose weight, and they're all over the gossip rags, and that's the only thing that people ask them about. They don't ask them about their achievements, or their thoughts or their opinions. So I do think that there is a really big focus on the appearance of women. And that's not to say that if you're someone... It's not to poo-poo a goal that you have. If you're somebody who wants to lose, if you're someone who's like, "Listen, I want to have a bit more of a robust metabolism. I want to change my body composition." You should absolutely be proud in making a goal like that, but I would love for you to love yourself for where you are, and then begin to start at the top and then go up from there, right?

Start where you are appreciative for all of the things that your body has ever done for you, has ever survived, and then begin to slowly unpeel some of those layers and get back to, as I say in the book, closer to who you already are.

Dave:

I really like that. I feel like there's a smoking gun in the room that we haven't talked about. Birth control pills.

Stephanie:

Oh, okay. So I don't love them. I'll just start there. I think that they are over prescribed. I think that they are the off-label prescription for everything from acne to headaches, to peri-menopause like, hello, I think is inappropriate. And I think that women in general, when we look at women's medicine, we

typically, as we are attaching ourselves to the promise of what it's going to give us, we often divorce ourselves from the risks. And I think that for me, the idea here is informed consent.

If we were to tell a man, "You know what, we're going to put you on this pill, it's going to chemically castrate you. And once you come off of it, your fertility... we don't know if you guys are going to have any swimmers left. You're going to very likely be depressed. Your metabolism is going to go awry. You're probably going to gain weight. Your interest in sex is probably going to go down."

Dave:

And there's that cancer risk thing? Yeah.

Stephanie:

And stroke, an all. What do you think?

Dave:

I think that you don't love them. I'll just straight up say it, hormonal birth control is a pharmaceutical crime against women.

Stephanie:

Mm-hmm (affirmative). It's chemical castration.

Dave:

And there might be a few medical cases, but there are many other safe forms of birth control, which is a basic human right. But to choose that one without knowing what it's doing, because all of the stuff we are talking about, the cycle assumes you have a cycle, and if you're on the pill, your cycle is kind of broken and maybe you can apply your techniques when you're doing... when the pill is mimicking, whatever cycle you have. But I feel like that's a big thing, that's messing with women's minds and with their metabolisms. That oftentimes just isn't talked about, and 85% of women at some point in their life are on the pill, and it has long standing consequences.

Stephanie:

And the literature backs up everything that you're saying. We know that women are more likely to be put on an antidepressant as a result of... well, maybe not as... the literature doesn't report it as a result of, but most women who are on the pill are also, will be prescribed at some point in antidepressant. We know that the pill gobbles up CoQ10 and B vitamins and causes this metabolic derangement. So if you're a woman, let's say you have a bit more of an androgen dominant predisposition, and then you get put on, let's say a statin, which we know gobbles up CoQ10 and all your B vitamins, you are potentially causing mayhem. So I think that... I have one of my colleagues, who I believe you know, Dr. Jolene Brighten has written a book on this.

Dave:

I think she's been on the show. Yeah.

Stephanie:

Yeah. And she outlines it very, very well. And she's been on my podcast, as well, talking about it. So I think that... And we've had other experts that talk about like, I've had OB-GYNs on the show, and the

general consensus is women just will take this stuff. And there's this sort of... When I was researching the pill, I remember coming across this sort of joke in the contraception community that there's like this male pill that's five years away from being on the market, and it's been that way for the past 40 years. So it's like this idea that it's like never... A guy would never, never subject himself to these things, but women, we cut out our organs, we cut off our organs, whether it's physical or chemically, without really looking at how we can get to some of the more, like the root cause or underlying issues that are causing some of the symptoms that she's experiencing in the first place.

Dave:

All right. I like your approach of tracking your cycle, recognizing your cycle and working with it, to get the results you want, instead of using hormones to turn it off, basically. So I feel like in the world of fasting and keto, and cyclical keto more specifically, no one to my experience, including me, has really done a lot of research or a lot of writing about how you would apply those things, if you're using the pill versus what I would say, as well, maybe she got off the pill first, and then start doing those things. Is that good advice? Is that the same that you would share?

Stephanie:

Yeah. I would always want you to be working with your primary healthcare provider in terms of what the best thing is for you, but in an ideal world, we would be able to say, "All right, let's teach you some of these other ways." I love fertility awareness method around. What are some alternatives for contraception? Because I think that women we've been taught to fear our fertility, but we've just never been taught how they work. Like I used to think that going into a pool, I could get pregnant, you know? And the truth of the matter is, there's only like a really short period of time in your cycle where you are fertile and that you become, you can be pregnant, become pregnant.

There are other times in your cycle where it is physiologically impossible for you to be pregnant. So I think that if we are able to really hone in to some of these rhythms, and learn what it looks like for us, through whether it's basal body temperature, looking at your cervical mucus, all of these different things where you're learning about your own signals around fertility, I think that we can help more women get off of hormonal contraception and use some of these cyclical tactics around nutrition and training and supplementation that we've been talking about today.

Dave:

And there are to be like... There are times like severe endometriosis where, "Hey, it's a lifesaver." So I'm not talking about specific medical conditions. I'm just talking about, oh, as a lifestyle thing, or you turn 16, you might get pregnant here, and take these hormones that mess with your brain. No, don't do that. There's better ways.

Stephanie:

That's such a great example, because around the age of 16, we know that a woman, like a young girl's menstrual cycle is actually going to become dysregulated. Just because of her growth, what's happening with her estrogen and her testosterones, she's actually going to look a bit more androgen dominant. She's going to look a bit more PCOS, polycystic ovary syndrome, ask around that 16, 17, 18, and that's actually, when we first see that first prescription for the pill given.

So if you actually just let her ride it out, it's like anytime you do a new skill, right? Anytime you learn something new, you're going to suck at it. The same is true for menstruation. You're going to... You're not perfect at it in the beginning, but as you sort of get into the rhythm, get into the flow, then

you can really start to play around with the nuances. But to really throw young girls on the pill when that's sort of a natural tendency anyways, for it to become a little dysregulated in those few years, I think is a crime.

Dave:

Well, thanks for sharing that. And many other guests on the show have agreed with what we're saying here. So I don't think this is news, unless you're a new listener to the show in which case. Yep. There's good science behind what we just said. Now you said something else in the book, to change gears entirely, that I thought was really interesting. You talked about coronal plane exercises and brain health?

Stephanie:

Yes.

Dave:

Do share.

Stephanie:

All right. So this is really because we spend most of our life in the sagittal plane. So the sagittal plane, when you think of the two primary movements that happen in the sagittal plane, it's flexion and extension. So think about your day. You wake up, you walk down the stairs, you sit, maybe you have a cup of coffee or you have breakfast, and then you sit in your car and you drive to work, and then you sit at your office, or maybe you're at your home office and you sit in front of your desk and then you drive home, or you come back upstairs, you sit on the couch again, and we're just like, sit, sit, sitting all over the place, right?

So this is a flexed affliction dominant type of movement, and what ends up happening over time, is when we sit in flexion. So what happens of course, is that you're having a lot of the front muscles, so the chest, the sternocleidomastoid, which I messed up with the suprachiasmatic nucleus.

Dave:

There you got it. You've got to say that.

Stephanie:

Yeah. The SCN which is the dominant neck flexor in the neck. These are all going to become short and tight. This is going to lead to this anterior head carriage. You're going to sort of have this flip, this forward flex position. What ends happening is something called physiological creep. And no, I don't mean like the weird person at the office who's like staring at you, I mean, there's something that happens to your tendons, your muscles and your ligaments, where they will start to assume this flexed short, and like the flexor muscles will start to assume the shortened position, even when you're not in it.

And of course the opposite muscles, when we think about our extensors, are becoming long and weak. So what I love to talk about is coronal plane exercises. So these are exercises that move away from the midline or, so it's abduction, or they come back to the midline adduction. And what these are really important for, in particular, two muscle groups, we want to be talking about the proximal appendicular muscles, which is just like a fancy talk for the muscles that are closest to the spine, but not actually the spine. So the shoulders and our glutes. And I talk about these coronal plane exercises as a

medium for us to be developing the strength in our glutes. We sit on them all day long. So they're long and weak, right?

These are extensors for the most part, but they're also external rotators and rotators of the hip. So if we are able to develop more coronal plane exercises-

Dave:

What are a couple of the most common ones?

Stephanie:

Oh, sure. Yeah. So when we think about when we're moving, like a jumping jack, might be an example of a coronal plane exercise. Where your arms are abducting and legs are abducting. When you are doing, let's say a curtsy squat, where your leg is crossing behind you to do a one legged squat, where you're two pose. Where your arms are extended out, your legs are away from the midline, a jumping squat would be an example of these. So these are all developing the outside part, the side muscles, if you will, the muscles on the side of the body.

And why this is really important, not only is it going to help with your brain health, it's going to help actually maintain some of the lateral parts of your brain, but it's also going to help with your longevity. I actually just posted something not too long ago around this idea that getting up from the floor unassisted, so not using your hands or even lying down on your back and being able to stand up unassisted is one of the markers of longevity. So in order to do that, in order to sit on the floor and not use your hands, you need to have strength and power in the glutes, you need to have proprioception in the ankles, the joints and the ankle, the hips, the spine, the knees and you need to also... There's a whole other like the vestibular system and there's cardiovascular system, et cetera.

But what we're really working on, is the explosive power of the glutes from an elongated position. When your glutes are really long, they're at their weakest. They cannot generate as much power, right? So we want to be thinking about exercises that work the coronal plane, that work these proximal appendicular muscles for longevity. And I always like... I put this in the book, but I'm already training to be the favorite grandmother. Like I want to be on the floor, with my grandkids, playing with them. I want to be able to throw them and run after them, and in order to do that, I need to have strong glutes.

And I think I talked about this in the book. I've talked about this publicly before, the glutes are one of the muscles that are really great. Like their strength and integrity or lack of marbling, if you will, is a sign of longevity.

So these are very, very important to be considering when we're for women, for women and men. But when we think about women moving into menopause, we now are in a lower estrogen, a lower testosterone environment. So it becomes harder over time to build muscle. It's not like you can't do it, but you have more anabolic resistance in the muscle. So it's really, really important for women of any age, to be thinking about driving muscle protein synthesis and muscle growth, through things like jumping squats or just squats, or curtsy squats, or the things that we've been talking about to develop these appendicular muscles.

Dave:

The other good thing about having a good booty, for lack of a better word, is it actually increases the number of synopses in the brain. There's some studies around a number of neural connections and the strength of your glutes. So squats are good for the brain.

Stephanie:

Squats are good for the brain, absolutely. And we also know the opposite is true too, right? So when you... If you were someone who were to slip and fall, for example, and you were to fracture your hip, we actually know that the cognitive decline that follows that is quite stark, right? So to your point where we don't have that input anymore, when we're not able to do the squats because we're recovering and we're immobilized, it's also going to have those deleterious effects on the thickness and the juiciness and the bigness, if you will of the brain.

Dave:

Very well said. Well, I've enjoyed chatting with you today. I think we shared a ton of knowledge with listeners, about things that I actually haven't heard on the show before. So thank you. And there's a lot more in your book as well. So I thought you had a ton of references and just really good actionable advice. So especially for our women listeners, and there are many, if I look at the stats, I think you guys want to check this out. It's bettybodybook.com, Dr. Stephanie Estima. Stephanie, thanks for showing up and sharing so much knowledge.

Stephanie:

Dave it's been a pleasure. I've had such a great time with you today.

Dave:

If you guys liked this podcast episode, I have a favorite ask of you. When you buy The Betty Body book, leave a review, that's all you have to do. And this is like leaving a tip for a barista. So authors, we pay attention to those reviews and they help other people find the book. So if the book is of service to you and it was worth more to you than you paid for it, leave a review. And that's just a way of being nice.

And think of this, service to others puts you in a flow state and makes you live longer. So it's actually returning to you to leave a review. Have an awesome day.