



Conscious Life presents

Hormone Harmony: Fat, Fitness & the Female Brain

Guest - Dr Stephanie Estima

Disclaimer: The contents of this interview are for informational purposes only and are not intended to be a substitute for professional medical or psychological advice, diagnosis, or treatment. This interview does not provide medical or psychological advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical or psychological condition.

[00:00:09] Dr Anu Arasu

Welcome, everybody. I'm Dr Anu, co-host of the Hormone Super Conference, and today I'm joined by Dr Stephanie Estima. Stephanie is a doctor of chiropractic. She specializes in body composition and metabolism and female physiology. She's also a bestselling author, creator of the Estima Diet, and host of the Better podcast. Welcome, Stephanie.

Dr Stephanie Estima

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

Dr Anu Arasu

Such a pleasure to have you on today. So let's kick off by asking you a little bit about metabolism, and what on earth happens to our metabolism as we enter those years where our hormones are starting to shift, for example, in the years leading up to perimenopause, or in perimenopause itself.

Dr Stephanie Estima

Yeah, this is a phenomenon that many women notice in their 40s, that what they were doing in their 20s and 30s is not working as well, maybe as effectively as it once was. And there are several reasons why that's happening in terms of metabolic processes. As we age, just as a natural function of aging, if we are not being strategic, we can start to become more insulin-resistant.

So just as a back of the envelope, a quick crash course in insulin. This is the hormone that is released by the pancreas in response primarily to carbohydrates, either usually exogenously. So when we consume carbohydrates in the diet, it's broken down into glucose, and then the beta cells in the pancreas detect that. They release insulin.

And then the role of insulin is to bring the substrate, glucose, into the cell. All the cells in the body, so that those cells can create energy to function. So as we age, if we're not being strategic, and I'll make sure that we talk about some ways that you can be strategic and some ways that you can

take action, we can become more insulin-resistant as we age. And in particular, most insulin-resistant... The concept of insulin-resistance starts at the level of the muscle.

[00:02:16]

So when we think about our musculoskeletal system. So that's the muscles, that's the tendons, the ligaments, cartilage. This is the scaffolding of the body that allows us, obviously, to be ambulatory. It allows us to walk and move and jump and support... In many cases, it supports our other organs.

But it's also a metabolic system as well. So as we are aging, I hope we'll get to this. I think we'll get to this in our conversation. Taking care of our musculoskeletal system, making sure that we are, at least, at the very least, preserving muscle mass. But ideally, adding onto our lean muscle mass over time is going to help to circumvent or even stop that process of insulin-resistance.

Because when you're insulin-resistant, of course what happens is now you have some carbohydrates, let's say. It's broken down into glucose, and now the cells are not responding to insulin, right? So when the cells are not responding to insulin, of course we start to see things like a higher blood glucose. Even just in a fasted state, our blood glucose levels can be elevated.

So maybe in your 20s or 30s, if you happen to be paying attention to your blood glucose levels, you might have seen them in the mid-80s, and then that's milligrams per deciliter. And I know that we measure them differently in the UK, and I apologize, I don't have the ranges off the top of my head. That's my North American showing. I can't do the conversion quickly.

But maybe for the show notes or something, for this podcast, we can make sure that we put in some healthy ranges. I know it's milli mls that it's measured in. But for Americans, for Canadians, for North Americans, we look at it usually in milligrams per deciliter. And so somewhere between, call it 75 to 85 milligrams per deciliter would be like a nice resting, fasted glucose level.

When we get into our 40s, of course, now we can see that glucose levels start to inch higher and higher and higher. So all of a sudden it's in the 90s when you wake up, or maybe it's at 100. And even though the standard of care still talks about somewhere between 60 and 100 milligrams per deciliter, as quote unquote normal, the higher you are...

I mean, that's a huge gap, right? That's a huge range. So the higher that you're getting now at 100 milligrams per deciliter, and then maybe even 110, 120. This is like prediabetes and then eventually diabetes. So we want to be doing everything that we can to keep those blood glucose levels lower. And part of the strategy there, of course, is to add on to our lean muscle.

That's one thing that happens with our metabolic hormones, if you will. And obviously, many perimenopausal women can attest that their hormones, their sex hormones are also changing as well. So we are seeing a decline in testosterone. We are seeing a decline in our estrogens. We are seeing a decline in progesterone. And these can all contribute to mood and energy. Again, our ability to produce energy, our drive, our motivation.

And of course, testosterone, while it's famous for libido, is also very important again, coming back to that muscle mass story. Also very important for maintaining muscle mass every time. If you are someone who does any type of weight training or resistance training, depending on your level of

fitness, for anywhere between 10, and in the trained athlete, like 10 hours... To someone who's a bit more new to training up at around the 48 hours mark, you're seeing a rise in testosterone after that lift session.

[00:06:07]

Estrogens start to change, progesterone starts to lower, so we can feel more anxious, more out of sorts. Our sleep can be disrupted. That's probably the number one thing that I hear from my women in perimenopause, is that their sleep, they just can't either maintain, like initiate sleep or maintain it.

And so all of these things in the female, the picture of female-centric health starts to change in our 40s. And most people don't think about this, but I'll put this into our conversation as well. If we're not being strategic with muscle mass, we're not being strategic with our diet, we can also start to accumulate something called visceral fat.

So, visceral fat is the fat that accumulates in and around the organs. It's distinct from... Metabolically and physiologically distinct from the subcutaneous fat. So the subcutaneous fat is like the... We'll call it beauty, it's the aesthetic fat. It's the stuff that we all want to get rid of, right? So under the direction of estrogen, women will typically deposit subcutaneous fat in our hips, in our thighs, in our bums, and in the lower half of the body.

And if we're not careful in our 40s and 50s, we can start depositing visceral fat, which is different and distinct from subcutaneous fat, through the midsection. So a lot of women will start to say, I feel like my shape is changing. I'm getting more, let's say, we call it ectopic fat distribution, or just like a different type of fat distribution. Before, I used to be more bottom heavy, and now I'm thicker through the middle. And part of that can be attributed to visceral fat accumulation.

And there's different strategies to treat both subcutaneous fat and visceral fat. Even though they're both fat, they respond differently. So subcutaneous fat, for example, responds to a caloric deficit. So if you are eating less... The proverbial eat less and move more, even though I think that's a bit oversimplified. Your calories are really going to determine how much subcutaneous fat you are going to have.

Visceral fat, you don't necessarily need a caloric deficit to get rid of it. It can be treated nutritionally. So it can be treated through a lower carbohydrate diet. Through higher fat, higher protein, which we may get to today or not. But just wanted to just put a little asterisk there that there are different types of fat, and they respond differently, both to hormonal, nutritional and caloric demands.

Dr Anu Arasu

And that's a hugely important one, isn't it? Because these different types of fat have different effects on our body in terms of the signals they send out. Can you tell us a bit about that?

[00:08:50] Dr Stephanie Estima

Absolutely, yeah. So the subcutaneous fat, which is the... We'll call it the aesthetic fat, the stuff that we all want to get rid of. It doesn't necessarily correlate. I mean, maybe in the extreme, if you're morbidly obese. But generally, if you're holding on to an extra 10 or 15 pounds, let's say, in your thighs and your bum and your lower stomach, that's not really going to contribute significantly to all-cause mortality or the development of some of the diseases that we see later in life.

So the big four. I always talk about cardiovascular disease, which is the number one killer for women. So it's not breast cancer, it's heart disease. I was actually just on a podcast the other day. I was talking to this menopausal expert, and I had pulled up some data for our conversation. And in the data that I had pulled, heart disease kills more women than the next 16 diseases after cardiovascular disease in the States. And that includes cancers, it includes motor vehicle accidents, it includes stroke. Heart disease is the number one killer of women.

So what I was trying to say, there is subcutaneous fat, not so much related to the development of some of these diseases, the way that visceral fat is. And visceral fat is basically fat that is accumulating on our organs, the viscera.

So you might see visceral fat accumulation on the liver. That's called NAFLD or Non-alcoholic fatty liver disease. It can accumulate on any organ, the omenta. It can accumulate in any organ, anywhere in the body. And this fat accumulation is absolutely related to all-cause mortality, and especially the big four. So it's cardiovascular disease, cerebral vascular disease, type two diabetes and cancer.

And so when we're thinking about either preventing that or if we do have visceral fat accumulation to reduce that, one of the best ways that you can do that is actually to restrict your carbohydrates. Not a lot of people like to hear that. But it is what it is, right? So when we are in a moderate to low carbohydrate diet, sometimes called the ketogenic diet. There are more extreme versions of the ketogenic diet that I'm not a huge fan of, but we'll just...

The ketogenic diet compared to, let's say, an all beef diet. There's still like 20%, ten to 20% of your carbohydrates coming from plants and things like that, which I'm a big fan of. The whole point that I'm trying to make here... I know that I'm rambling a little bit here, is that visceral fat is associated with all-cause mortality and it is modifiable and treatable with diet. And we can see all markers improving.

So when we get into our 40s and 50s, if you're looking at your labs. You may have had pristine lipids prior to 45, let's say. And then all of a sudden, your triglycerides and your low density lipoproteins, your very low density lipoproteins. These are all measurements on a lipid panel, and might start to be creeping up and up and up and up, which is going to lead to increased inflammation, and there's going to be more trauma to the arteries and the cardiovascular system as a whole.

So treating that, let's say, with a lowered initial, at least a therapeutic intervention of a lowered carbohydrate diet. And then you habit stack. So once you've gotten that, then we can make sure that we're getting adequate protein. And then once you've gotten the nutritional piece, then you

can start adding things in, like resistance exercise and cardiovascular work and yoga and pilates and all these beautiful things that help to rectify it as well.

[00:12:52] Dr Anu Arasu

And I suppose so many women struggle with getting enough protein in the diet. Is that mostly from animal sources, vegetarian sources, supplements? What kind of recommendations do you make in your diet plans?

Dr Stephanie Estima

That's a great question. Yeah. So protein is very important and it becomes more important as we age. It's actually the only macronutrient, I would say, that our requirements increase as we age, whereas most with carbohydrates that we were just talking about, our requirements can decrease, depending on your lifestyle and your fitness.

So with protein, it is, as I mentioned, the only macronutrient where our requirements increase. And part of that is coming back to the story of muscle. Our muscles actually become more resistant again... That insulin-resistance, that sets in the muscle to grow. And when we consume a baseline level, or we'll just say enough protein for the individual.

General rule of thumb for everybody is about 1 gram per pound of body weight. So if you are, let's say you're 150 pounds, generally you want to be aiming for about 150 grams of protein in a day. If you are more active, like if you are resistance training three, four, five times a week, your requirements are going to go up from there. But that's a very good place to start. And in terms of... You asked about sources, I am someone who prefers animal proteins just because I'm lazy.

And that is to say that when we are consuming animal products, there's a full complement of amino acids there. We don't have to worry about food-combining. We don't have to worry about am I getting enough of this essential amino acid or that. You can certainly get there if you are vegetarian or vegan. I've certainly seen it done where you are getting enough protein as a vegetarian. It's harder for vegans, but it still can be done.

They're usually supplementing with a lot of protein powders, which is fine. I would just caution, maybe the vegans that are listening, that in order to meet your protein requirements, it usually also means that you have to increase your calories. So if you are someone who's looking to improve your body composition and lose weight, those two things are at odds with each other. And a lot of individuals are like, "Well, I just don't want to eat that much red meat. I just can't eat that much chicken. I feel like I'm going to sprout feathers and fly away."

So I like to also supplement with whey protein as well. So I will have a protein shake almost every day. One scoop. It's a whey protein, it is about 25, call it grams of protein. Two is 50. So it's very easy to get your protein requirements when you're supplementing with a protein source like that as well.

[00:15:52] Dr Anu Arasu

What about other things like coffee for example? That's another question. I hear from a lot of people that when we hit our 40s, we can become more sensitive to things. What would you say about that?

Dr Stephanie Estima

This is a big topic. I think that the scientific community every couple of years flip-flops. So for five years, coffee is just like, "It's an antioxidant. And it prevents Alzheimer's. And it's amazing." And then five years later, "It's dehydrating. And it causes jitters etc."

So I would say this. It would be helpful for each individual listening to know their genetic predisposition to metabolizing coffee. So there's fast metabolizers, slow metabolizers, medium metabolizers.

I think a general rule of thumb is if you can find coffee without mold in it, that's always a good thing. And then general consumption of coffee, I would say... I love coffee. I have a cappuccino every morning. Well, depending on how much time I have. It's either cappuccino or an espresso in the morning. Espressos are faster for me because I just push the button. But the cappuccino, I have to froth the milk, blah, blah, blah. So, depending on how much time I have, it's one or the other. But I don't have anything else other than that. So let's say I wake up at 5:45. I have my coffee in whatever form, at about 6:30.

And that's about it for me for the day. Some people will have two cups of coffee. They might have something at six or seven, then another one at ten. Let's say a general rule of thumb is like two cups of coffee. Your last cup of coffee should be finished by about noon. And I think that you're ticking off all the boxes in terms of... You're giving your body enough time, whether you're a fast, medium or slow metabolizer of coffee. To actually process it and get rid of it from the system.

You're giving yourself some of the brain benefits. We do know that coffee does have a stimulatory effect on the system. Where I think you are coming from is that women in their 40s do seem to notice that their resilience to stress is lower. So that coffee might really give them the jitters, or that it might really throw them off, whereas it might not have in their 30s or in their 20s.

And I think part of that is because most women in their 40s and 50s... They're in this, I like to call it the stress sandwich. They have pressure from above where maybe they are seeing their parents age, or their caregivers age. And they're helping take them to doctors' appointments. They're helping them with medications, or maybe they're helping them deal with diseases or what have you. So that's this pressure from above that's new for a woman in her 40s and 50s.

And then she has pressure from below. If she's had children, her children are now teenagers, depending on the age in which she had the kids. And at least for me, where my children now are in their teens. For me, this is where I feel like parenting really starts. They were really cute little blobs up until they were about 13, and now they want to go out with their friends and they want more freedom. You're waiting up at night and hoping that they're going to come home all in one piece, that kind of thing.

[00:19:12]

So there's this environmental.. this position in their life where there's a lot of stress, where a cup of coffee you add on top. When you are consuming coffee, of course you're releasing all these catecholamines, and of course there's going to be adrenaline and cortisol and all these stress hormones that are released.

So the advice here is, if you are finding that you are not processing the coffee the way that you were, understand what your genetic blueprint is. And then maybe you want to switch to a tea. There's lots of people that drink matcha. I don't know if this is available everywhere, but I know it's in the States, something called dandelion tea. It tastes just like coffee. I love it. And then there's a lot of mushroom coffees as well that help, that actually taste... Again, if it's the taste that you love, it tastes just like coffee. But then you're getting lion's mane and chaga and all these brain-boosting, like the brain-boosting benefits that coffee would give you anyway.

Dr Anu Arasu

Great to talk a bit about the brain. I know that the neurology aspect is another part of your interest. But we talked a bit about the pressures and the emotional side of what women of this age are going through. And that can cause such difficulty making changes. I mean, even with the exercise. What if women want to do yoga or they need to do something to calm down? They may not have enough time to be going at it with resistance training. What would you say to the women that are struggling psychologically in this period of time?

Dr Stephanie Estima

Well, there's a couple of things. I think, when we're thinking about fitness, there's a couple of different levers that you want to be, or a couple of different verticals, if you will, that you want to be checking. So the first is resistance training, whether or not you like it. And I'm sorry, ladies, but it needs to become part of your health routine. You can get a pretty good workout.

Like, if you're doing it twice a week, you're at least maintaining it twice a week. I would advocate for more, but if you absolutely despise it, twice a week. Full body, you can build on that. You can either maintain the structure, or depending on how you're structuring the routine, you can also build on that as well.

And then that also leaves a lot of time for recovery. So that's the other thing with a woman in her 40s, is that her recovery becomes of the utmost importance, because we all know that muscle doesn't grow in the gym. That's actually when we become weaker. We become weaker in the gym because as you're going through the workout, you're tearing more and more muscles. It's the time in between the gym and when you're sleeping where your recovery is happening.

So just building on that example of two times a week, you're giving yourself ample time for those muscles to heal and recover and get stronger and hopefully get bigger. For a woman who loves to do yoga... So there's that vertical, which is like the resistance training piece. There's also a flexibility and mobility piece, which is, to your point, around the yoga and the pilates. I think, a very important part. And I'm just going to call myself out here for a moment. I have also ignored that for many years.

[00:22:23]

And now in my 40s, I'm like, no, I got to get it. I have to have a regular yoga practice, or at least a mobility practice that I tack on to my resistance. At the end of my resistance training workouts my ligaments are nice, and... Everything's kind of warm, and I can push my flexibility and my mobility of the joints a little bit.

So flexibility and mobility is another piece that becomes very important for us as we age. For women in particular, as our sex hormones decline, estrogen and testosterone in particular. This can lead, if we are not being... If we're not doing the resistance training, we're not getting enough protein. It can leave the bones relatively frail.

And then the information that's coming up from the tendons and the ligaments to the brain to tell our brains where we are in space. When we walk we don't watch our feet. We just walk because our joints are telling us what's going on down there. That declines if we're not careful about it. So I think that yoga practice is important.

And if you don't have time, if there's not a good yoga studio or it's too expensive or no time, even something like Non-sleep deep rest can be incredibly helpful, which is called Yoga Nidra is the official name of it, which... Nodding your head, sounds like you've heard of this before, maybe practiced it. But you're basically lying down, listening to prompts.

I often for clients, for patients that I've cared for... There's a couple of YouTube videos that I really like. Honestly, if you go on Google or on YouTube and just Google "yoga nidra 10 minutes". There's a 20 minute one that I really like as well. It's just lying down. The only challenge you have is trying not to fall asleep. Because it's very restorative. So it's a nice little pick me up at about two in the afternoon or three in the afternoon, when things start to feel a little... When you start to see your energy starting to fall off.

And then the third lever. So that's like, we've talked about resistance training. We've talked about flexibility and mobility. And then the third lever is cardiovascular work. So this is where the cardiovascular, or the cardio, which many women will know that name, comes in. And again, coming back to that story of cardiovascular disease. Cardio is, let me tell you, it's a terrible strategy if you're using it for fat loss.

And I say this as a former cardio bunny who used to spend hours on the elliptical machine, hours on the treadmill, because I was told, "Hey, eat less, move more." And my "move more" was like running forever or being on the elliptical forever. It's a terrible fat loss strategy. It doesn't do much in the way of fat loss insofar as you're going to burn calories while you're doing the activity.

But as soon as you stop, the output stops. And typically, depending on whether you're fed or fasted and what the macro-composition and the caloric intake is of the diet, you may also be... If you're not doing it properly, you may also be sacrificing muscle. So I do like, if you are doing cardio. You can do it fasted, if that's your preference. But it doesn't actually make any difference. It's not superior to doing cardio after you've eaten.

And I would even argue that maybe even doing it fasted... And this is where I've changed my opinion, ever so slightly. Maybe even doing it fasted is slightly more detrimental to muscle tissue if

you haven't been fueling in that peri-exercise area in the 12 hours or so prior to engaging in the exercise.

[00:26:00]

So those are the three main verticals that I think about. When I think about fitness, I have a strong bias towards resistance training. I love it. It makes me feel good. I feel strong, I feel powerful. So those are things that I like to feel.

I understand and recognize that we're all built a little differently. And some people just really love... All they want to do is to be able to do a handstand. All they want to do is progress in their yoga practice, which is awesome. And you need to do resistance training and some cardiovascular work. And even within cardiovascular work, there's high intensity interval training. There's zone two, there's steady state, low intensity, steady state. There's all these different kinds of permutations. I like to do zone one, zone two. So, like lowish movement.

This is not going to work for everybody, but this works for me. So we had a cleaner that would come to the house once a week, and she would work for, however... It was like 6 hours. She would go top to bottom, she would vacuum, she would mop, she would do the laundry, all the things. And I was like, you know what? That's really good. Zone two, zone one activity. Not zone two. Zone one activity. Just small movements.

So we stopped having the house cleaner come, and I do the housework. First because I love cleaning. There's nothing that makes me feel happier than cleaning my kitchen the way I like it. Yesterday, me and my sons, we were vacuuming the top level, and then we mopped the top level. It takes some time to do that. To clean the whole house properly. For me, it's about... I don't do it all in one go. I'll split it up into a couple of days, but it takes about 6 hours. So that's part of my movement practice, is actually cleaning my house. So there's that.

And then I also like to think about... For women who are 40 and 50, we also want to be thinking about some kind of speed training because we were talking about muscles. We lose muscles as we age. What we lose very quickly is our speed. Actually, if we're not careful, we can lose up to 8% speed a year. It's crazy how much we can lose in terms of our explosive power, our bursts, our ability to take off quickly and to maintain that speed for a certain amount of time.

So some kind of speed training maybe once a week. Doesn't have to be long. Properly form like a HIT style, like burst training. It can be on the bike. I do my speed training on the bike. It could be on a treadmill, it could be outside, however you like to do it. My speed training is about eight minutes. That's it. It's the worst eight minutes of my week. But it's still something that I do because I'm trying to, as much as I can preserve that... I'm trying to slow down that decline. I'm trying to slow down the decline of my speed.

So that's like the high level way that I think about exercise in general. Like three different buckets. And then within those buckets, there's a couple of different ways that we can be lifting, working on our flexibility to mobility and our cardio as well.

[00:29:15] Dr Anu Arasu

And how much time per week should one be doing on each of those verticals?

Dr Stephanie Estima

Oh, that's a good question. I would say... I know Andrew Huberman has talked about this, and this is not just Andrew. This is very well-understood in the literature. It's anywhere between 120 to 150 minutes per week of some type of exercise. So if you break that down into hours. It's about, what is that? Two and a half hours ish? Maybe a little bit more. Yeah, two and a half hours, something like that.

So I guess you have to look at your own schedule and say, okay, so I want to get in two resistance training exercises a week. I want to have some kind of low level of activity. And whether that's low intensity steady state. I'm cleaning my house, I'm gardening, I'm puttering around the kitchen, that kind of thing.

And maybe somewhere between eight and at the very most, 15 minutes of some kind of intense, high intensity burst like speed training, speed drill speed intervals. So for everybody, it's going to vary a little bit. And then each session at the gym, whether it's at your home gym or you are a member somewhere, I'd say a minimum of 30 minutes.

So if you're doing that twice a week, that's about an hour. And then you're doing, call it another hour or two of low intensity zone one/zone two work. And then the eight to 15 minutes on the top, whatever that is, for your speed training. And then your yoga, wherever else you want to fit in your yoga and your mobility practice.

Dr Anu Arasu

Fantastic. What about neurology? What kind of things should women be thinking of as they go into the perimenopause for their brain health?

Dr Stephanie Estima

Good question. Lots of things happen from a neurological perspective as well in that perimenopausal and into that menopausal transition. And it's interesting, too, because when we think about... There are lots of times in a woman's life where we actually see neural rearrangement based on what's ahead of her.

So, for example, when a woman or a young girl, I should say, starts menstruating. There's a neural reorganization there. There's a connection or a strong fortification between the brain and the ovary now. So there's lots of talk about the gut-brain axis. There is a brain-gonadal axis. So there's a brain-ovarian axis where the brain and the ovaries are constantly talking to each other.

So there's this neural rearrangement that happens for young girls. So around... There's a large range, but let's say anywhere from eleven years old to 14 years of age when she's going to get her first period. And then there's that transition, the next couple of years. Mothers of daughters, take note. Your daughter might be incredibly moody, and it might seem that the drama factor is much

higher because her body is... She's trying to regulate this cycle of hormones that's happening for her every month.

[00:32:36]

So what we see in women... Young women, like 16, 17, 18. Sometimes, not always, but sometimes they can actually get very irregular periods. So they can be menstruating for a couple of years and then all of a sudden 17 hits and they've missed a period. Then they get it. And then they miss a period and then they get it.

They go to the doctor. And what does the doctor tell them? You should probably go on the pill to help regulate what's happening here. Even though this is normal for most women. It can be a very normal neurological and physiological pairing that happens. She can look a little PCOS, like a little Polycystic Ovary Syndrome ish, right? So there's that time in a woman's life where there's that neural kind of rearrangement when she starts menstruating.

We also know... To the moms here that have had children, there's also a neural rearrangement when a woman is pregnant. When she becomes pregnant and then becomes a mother, delivers, and then has this lifelong task of motherhood. We often talk about the mommy brain or the baby brain, all she can focus on is her baby.

And part of that is neurologically driven. Part of that is, from an evolutionary perspective, necessary so that she can make sure and she's ensuring the survival of her offspring. She's not thinking about... That's why it's so hard for women. I don't know how they do it. In the States they usually have... I think it's like six weeks, something like that of... Maybe eight weeks of maternity leave, which is insane to me because she's still bleeding at that point. She's still expunging and healing from the delivery.

But nonetheless, there's this neurological rearrangement that happens for a woman when she's pregnant. Because we are now focused on the survival of the baby. There's going to be sleep deprivation, which of course, is going to affect us neurally. We're learning new skills. We learn how to breastfeed. We're learning how to actually get by on less sleep.

We have toddlers that run out into traffic when they shouldn't. They have no concept of danger, right? So there's this change neurologically in pregnancy. And then when we move into perimenopause and menopause, there's another change, of course, that happens. Because by this time usually, the child is now not running into ongoing traffic.

They are hopefully verbal. They're a bit more self-sufficient. So all of the nerves, all of the rearranging that happened in pregnancy, where we are almost singularly focused on the survival of the child, we no longer need that anymore. As a 50 year old woman. For most women who've had children, let's say, in their 30s, or even early 40s, that's no longer necessary.

So there is a neurological, we'll call it pruning. We are now getting rid of these nerves and these systems that no longer need to exist. And I want to be very clear that just because we are getting rid of neurons doesn't make us lesser than. It just means that the brain is rearranging itself to become more efficient.

[00:35:52]

And this is why this transition, this perimenopausal and menopausal transition... For some women, I don't know what... I think it's maybe 5 to 7% of women, they just breeze through it like a hot knife through butter. It doesn't affect them, they don't get any of this. But for many women, there's like a two to upwards of ten year period where women really suffer. They really suffer during this neurological change.

The bright side, or the good news, is that it's not permanent. And on the other side of that, once we've moved through this menopausal transition. Once we are on the other side of the hot flashes and the sleep deprivation and all of the things that can happen in those perimenopausal and menopausal years, most women will report being happier than they ever have been.

That their response to negative stimuli that would once really bother them... So whether it's news or interaction with a family member or whatever. All of these negative stimuli that used to really activate the woman, that used to really upset her after that transition now are not as activating for her, because we've had this rearrangement.

There's... We'll call it less of a reliance on some of these emotionally primitive areas in the brain. And this is based on the work of Dr Lisa Mosconi, who is just... And many others, but she is just one of my heroes in the menopausal space, who is actually studying women's brains. Who would have thought that that would be an important thing. Rather than just assuming we're just little men, where she's looking at female brains and noticing this pattern that there's this time of...

We'll call it metabolic mayhem and neurological mayhem. But then afterwards, when we get through that, we are much happier than we ever have been, because now we're not serving little babies. We're getting sleep. Maybe we've accumulated a certain amount of wealth and freedom, and we're able to actually get back to who we are and what we want to be doing. Did I answer your question fully?

Dr Anu Arasu

Totally answered it. And I'm really glad we talked about that, because it's almost this double-pronged thing that's happening, and metabolic health is going haywire, and we need to be making changes and being responsible and taking action. And at the same time, neurologically, there can be so many challenges that create this gap between information and implementation. Being able to do what we know we should. And you've explained that really beautifully, and it's nice to know that there is logic and a pattern to it all. And there's the other side.

Dr Stephanie Estima

Well, there's this evolution. I just want to say this really quickly. For the longest time, the messaging around women aging has been, "Oh, well, once you've reproduced, evolution doesn't need you anymore. Like, you're basically useless. And the only reason why we have 50 and 60 and 70 and 80 year old women is because of this fluke of modern medicine, because we have antibiotics and surgeries and this and that kept you alive. But really, you would have been dead otherwise."

And that's not actually the case. At least there are some researchers that have promoted this idea of the evolutionary viability and importance of grandmothers. So a grandmother, and maybe you've

had an experience with your own grandmother. You know, I was very close to my grandmother growing up. She was my second mother.

[00:39:48]

So a woman who is a grandmother is probably menopausal. So she is no longer fertile. She's no longer reproductive, but she's still a very productive member of society, meaning that she can help her daughter or her son raise the baby while the daughter or the son go off to work or have a break.

They've looked at, I believe it's the Hadza. I'm actually forgetting the tribe. I believe it's the Hadza where the grandmothers will stay home and they'll forage and they'll pick the berries and they'll prepare the food. Because the moms are tending to their little babies. The moms are tending to the babies. The men are out getting whatever kill they're trying to find. Whatever wild animal.

But we know that that success rate of finding a wild animal was something like 3% to 10%. It was very low. Most of the food that the tribe was having was being prepared by the elderly women. So all that to say is that there may be, in fact, an evolutionary... There's a reason why women live longer. It's to help support the community. So maybe we're not reproductive, but we're incredibly productive.

Dr Anu Arasu

I love that. Stephanie, any final tips for those listeners out there? I think we've covered so much, and I think we've given it a great perspective as well. But any take-home message that you would say to the woman listening?

Dr Stephanie Estima

I think the overall take-home is that your body is not working against you. I think that sometimes perimenopause, menopause in particular, is often looked at as a disease. So it's this disease state. These are all the things that can go bad. These are all the things that can go wrong. It's your loss of fertility. It's your loss of vitality. You're no longer a valued member of society because you're not 20 with an Instagram body or whatever. So that's the messaging that we can get from society.

So the big take-home is that your body is not working against you. Your body is just evolving alongside you. And what is necessary is for you to become an agent for yourself. So to be able to advocate for yourself and to be able to implement some of the strategies that we've been talking about today that are going to help you live a better life.

So the resistance training that we were talking about, or if we're wanting to prevent visceral fat. It's the reduction in carbohydrates, let's say a temporary therapeutic intervention of a ketogenic diet. Or it's the mobility work, or it's understanding that your value is not solely wrapped up in your ability to make little babies.

That your value extends across the arc of your life. And when you are through the perimenopausal and that menopausal transition, that there's just this end of the rainbow. There's the pot of lucky

charms that's waiting there for you, for you to be much happier, to be less aggravated or agitated by some of these negative stimuli.

[00:43:06]

And you can actually get closer to who you already are. You're getting just closer to yourself, and you're deepening your connection with yourself. Those are my final thoughts. Your body's not working against you. You just have to learn how to decode her signals.

Dr Anu Arasu

That's so beautiful to hear. I think a lot of people are going to be touched by what you've said. Stephanie, thank you so much.

Dr Stephanie Estima

It's been my pleasure. Thank you for having me.