Colibri Healthcare

Podcast Transcript

Women's Health: Menopause and the Brain

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Guest: Carrie E. Levine, CNM, IFMCP

As a certified nurse midwife and an Institute for Functional Medicine Certified Practitioner, Carrie evaluates and treats most common women's health concerns, incorporating gynecology and functional medicine. Previously, Carrie practiced gynecology and functional medicine at the world-renowned Women to Women health care clinic in Maine from 2006 to 2014. Prior to that, she practiced full-scope midwifery at Miles Memorial Hospital, now Lincoln Health, in the beautiful mid-coast Maine town of Damariscotta. Carrie is known for her ability to listen to and relate to women. For more than twenty years, she has been working with her clients to identify personal health goals and then to break those goals down into attainable steps. She looks for the underlying causes of illness, seeking to connect the dots of seemingly unrelated symptoms and emotions. By supporting women in setting and achieving their own health goals, Carrie helps her patients thrive emotionally, spiritually, and physically. Carrie earned a Bachelor of Science degree in Public Relations and Women's Studies from Syracuse University. She went on to earn her RN and MSN from Case Western Reserve University. Her certificate in Nurse-Midwifery is from the Frontier School of Midwifery and Family Nursing. She is a member of the Maine chapter of the American College of Nurse Midwives, the Maine Nurse Practitioners Association, and the Institute for Functional Medicine.

Host: Candace Pierce: DNP, MSN, RN, CNE

Dr. Candace Pierce is a nurse leader committed to ensuring nurses are well prepared and offered abundant opportunities and resources to enhance their skills acquisition and confidence at the bedside. With 15 years in nursing, she has worked at the bedside, in management, and in nursing education. She has demonstrated expertise and scholarship in innovation and design thinking in healthcare and education, and collaborative efforts within and outside of healthcare. Scholarship endeavors include funded grants, publications, and presentations. As a leader, Dr. PIERCE: strives to empower others to create and deploy ideas and embrace their professional roles as leaders, change agents, and problem solvers. In her position as the Sr. Course Development Manager for Elite, she works as a project engineer with subject matter experts to develop evidence-based best practices in continuing education for nurses and other healthcare professionals.

Episode 1: Women's Health - Menopause and the Brain

Transcript

Candace Pierce: Did you know that up to 60% of women report cognitive changes during their menopausal transition? Today, we're going to explore the science behind these changes and discuss evidence-based strategies to support our patients through these transitions. Hello, I'm Dr. Candace Pierce with Elite Learning by Colibri Healthcare, and you are listening to our Elite Learning podcast, where we share the most up-to-date education for healthcare professionals.

I'm so glad that you could join us as we take a deeper look at how menopause affects the brain, specifically around cognitive function and mood. You know, with approximately 1.3 million women entering menopause each year, understanding these neurological impacts is really crucial for being able to provide comprehensive care in women's health. Joining us for this discussion is Carrie Levine, a nurse midwife and functional medicine practitioner. Carrie, thank you so much for being willing to share your expertise in this area.

Carrie Levine: Thanks for having me.

Pierce: Yes, now I noticed that before you got started in women's health, your undergraduate degree was actually in public relations and women's studies. So how did you pivot over to be a nurse midwife and a functional medicine practitioner?

Levine: Hmm. That's like, there could be a very long answer to that question, but the short version is I was interested in gender communication largely, and that funneled me weirdly somehow into public relations. And I was pretty clear early on that I was never going to go to New York City and be a PR person, that I had a longstanding interest in and experience in working with women. And I just wasn't really sure how I wanted to do that. And I talked with a mentor, and she said, what about a nurse practitioner? In the state of Maine, we're licensed to practice independently. And I was like, Hmm, that's interesting. And then when I was applying to school, I wanted to take care of women through the entire lifespan, including the childbearing year. I didn't want to be a women's health nurse practitioner and skip the childbearing year. So that was how I ended up in midwifery. And I, you know, the functional medicine piece, nurse midwifery was not a great match for my personality in terms of sleep deprivation and the rigor of all of that. And during my time practicing, I also had my own children. And so, it was tough, it was really tough. And I found a job at Women to Women, which was a pioneering women's health clinic. And when I got there, there was a language for everything that I had sort of understood about health and found interesting, and it was within the functional medicine model. And so, then Women to Women really supported my early training, and then from that sort of seed went on to get certified and then ultimately start my own practice.

Pierce: I love your story and functional medicine. I have so much interest in functional medicine in that model outside of our regular patient care model, just the things that it offers and the care that it offers holistically. So, I love that you're combining the two together. And for this podcast, I know that our focus is really going to be on menopause, but what we do hear is the term, you know, perimenopause, which I think I'm close to, menopause and post-menopause. And can you just start with breaking those down? Is there a marker that, I know I'm in perimenopause, and now I'm in menopause? Like, how do we know? Can you break those down?

Levine: Of course, it's such a good question because the terms are used interchangeably, not accurately. And so, it really, some of the language around this stuff can be challenging and misleading. So, perimenopause, I like to say, is all of the nonsense that happens after the age of 35 up until a year until we've had our last period. And so, I would say most women start to notice some change to their menstrual cycle, whether it's the cycle itself in terms of how many days it lasts or how heavy or light it is or skipping periods or closer together or further apart or more mood changes or whatever the issues may be, and that can go on for, I hate to say it, but it is true, for decades.

Pierce: Well, I have a personal perimenopausal question, but I'm sure that so many other people have this question too as women, but do your periods get more painful as you get older?

Levine: It varies. It really varies. It's really like labor. You know, every labor is different, and every woman's perimenopause largely is different. There are some universal experiences, I think, but I wouldn't say that all women across the board have a period that gets more painful in perimenopause. I would say for some women it goes the other way. So, menopause is the anniversary of having your last period, and it is a day. And you only know that day looking backward. So, let's say someone had a period on January 1st, 2024. When they got to January 2nd, 2025, they were in menopause. On January 3rd, they're considered post-menopause. So that's the technicalities of the definitions and around the language. I mean, I think you know, and certainly public media people will say menopause, I'm in menopause or I'm menopausal or even the name of this podcast, right? It is like menopause is actually a one-year anniversary. So, we could rename the podcast Post-menopause and Brain Health.

Pierce: Yes. And we would still have the same objective.

Levine: Yes, and it doesn't mean that the brain changes don't happen during perimenopause because for sure, absolutely positively, that is one of the common experiences that women have, which are some of the brain changes that start to happen. The word retrieval, the memory issues, the difficulty multitasking, the mood lability that happens over the course of the cycle or the skipping of the cycle, like all of that can start peri-menstrually.

PIERCE: Now, are there lab markers that can be used to determine how far out you are, how close you are, or if you're there?

LEVINE: Absolutely not. And that is part of what makes me crazy about some of what I see happen in conventional care, right? As someone will get their primary or whoever may order an FSH and estradiol. And generally, if the FSH is higher than 80 and the estradiol is less than 20, that is thought to be the diagnostic criteria for menopause. However, the hallmark of this time of life is chaos. And so, no cycle and the absence of cycle. And so, you really have no idea when you're testing someone's labs, where you're catching them. Are you catching them in a place where they consistently have low estradiol and high FSH, or was it just that moment and tomorrow, the body's going to ovulate, and those hormone levels are going to be different, and you just never know? So, I like to say, if I could create a crystal ball that would tell a woman when the baby's going to come and when she would have her last period, I would not have to work. I would still work because I really love my job. But there are things in women's health that remain a mystery. And I'm grateful for that mystery that we don't get to know at all, and we don't understand it all. When and why does a baby come? We still don't know. Isn't that beautiful? And when and why might a woman have her last period? Don't really know. We know some things that can be indicators, right? Family history, mom's age at menopause, or last menstrual period, age of menarche. These things can be indicators, but they're not certainties.

PIERCE: Right, so going back to those cognitive changes, really, we're going to be seeing those cognitive changes in perimenopause, right?

LEVINE: For sure. I mean, I would say many women probably see them even through the course of a menstrual cycle, right? Any sort of hormonal punctuation or, how about menarche? How about teenagers and hormones and brain changes and mood changes, right? I was reading The Menopause Brain as this podcast was just really a good prompting it and, on my list, anyway. And Dr. Lisa Moscani, who's a neurologist, talks about the three Ps, which I think is sort of fascinating, it's a little bit like, how come I never thought of that? She talks about these three giant hormone events in women's lives when we go through a lot and part of what we go through is cognitive. And so, she talks about periods, pregnancy, and peri and post-menopause. There are just giant things happening to us, and our brain is not left out of that equation. Our brain is part of that equation. And part of what I love about what she talks about, and I really can't recommend her book strongly enough because she just has such positive framing of these cognitive changes. I think for so many women, it's terrifying. And women will come to the clinic and say, I feel like I'm losing my mind. And she talks about these three Ps as being sort of times where there's system overhauls or system upgrades to our cognitive function. And she talks about what we need cognitively as new moms or as moms is really different from what we need when we're a teenager and we get our period, which is also really different from what we need menopausal or post-menopausal. And we lose cognitive connections, but that that isn't necessarily a bad thing. I think about this a lot because I see it a lot in the clinic. Women come in and they're like, I cannot multitask like I used to. I cannot juggle things the way that I used to brain-wise, cannot manage it. And I think about myself, I'm 54, and I think about my own sort of hormonal journey and professional journey. And what I am finding personally is that I have to have days where my brain is not on like it is at work. I need days when I'm not having to think critically, and problem-solve and take in

information. It's just like, my brain needs a break. And just this idea of like, yes, okay, so you do kind of lose part of your mind. You lose the part of the multitasking that is necessary if you choose to be a mom and have children, or at least you're biologically wired to do that, and you don't actually have to do that later in life when kids aren't home. And so, the pathways change. And isn't that a beautiful thing? We let go, our brains let go of some of those pathways that help us survive and do our jobs and develop new ones as we need them. How beautiful and positive is that? As opposed to, I feel like I'm losing my mind and I'm afraid I'm getting Alzheimer's.

PIERCE: Yes. So, speaking on that piece of it, what are those common cognitive changes that are associated with this time in our life?

LEVINE: I mean, sort of the ones that I've alluded to, right? So, there is definitely a challenge with word retrieval. There is difficulty with memory, short term, and long term. Like, where did I put my keys? What did I come into this room for? I cannot remember. What is that person's name? What was I supposed to get at the store? Did I write it down? Where's my list? I can't find it. All of that, along with, oh, it just left me. There it is. Memory, cognitive function, word order. Oh, just like mood, right? Like a decline in mood. Some would say depression. That I think is a super tricky word. And like menopause is used maybe too frequently and possibly inappropriately. Some women experience an incredible increase in anxiety, particularly with declining levels of estrogen.

PIERCE: And that was my next question, though, was about those hormonal changes and how they actually play a role in affecting brain function. Like how are those hormonal changes that we're seeing? What are those hormonal changes that we're seeing? And then how is that affecting our brain function? Why is it affecting our brain function?

LEVINE: Yes. So, you know, I think one of the little-known truths about estrogen is that it is anti-inflammatory. So, when we have estrogen on board, we have a layer of protection against inflammation. And when that, when estrogen levels start to decline as we age, which is completely normal, physiologic, developmentally appropriate, nothing pathologic with that process, but women experience more inflammation. And that can be in the joints, that can be in the skin, that can be in digestion, that can be in cognition, that can be in overall immune system function. And so, like the incidence, the incidences, I'm not really a statistics kind of person. Maybe you know this information, but the number of midlife women diagnosed with autoimmune disease is it's like, there's a statistical significance to that. Right? And I think of that as lower estrogen, more inflammation. So, you know, the estrogen is going to affect, you know, our immune system, it affects cell growth. It affects plasticity, which is the ability of neurons to communicate with each other and regenerate each other. I don’t know if people know that neurons will reach dead neurons and resuscitate them. This is one of the things that happens with exercise. And one of the reasons why exercise is so crucial to brain health and protecting cognition and particularly during the post-menopausal years. You know, estrogen has a role with serotonin, which is that neurotransmitter, that antidepressant neurotransmitter, and it affects cardiovascular health, right? So, vasodilation is big, heart health, you know, the

cold fingers, the cold toes, all of that and energy. You know, estrogen has a role in glucose regulation. So, it's everywhere. It's everywhere.

PIERCE: And why does it impact our memory and our concentration so severely? I mean, it feels like for me, I know it feels so intense, you know, like you're saying, where we come in and we're like, I think I have early onset dementia, I'm not sure what is happening. But why is it so intense?

LEVINE: I think that there's a couple of factors at play, you know, and I would be remiss if I didn't at least nod to the HPAG axis or the hypothalamus pituitary adrenal gonadal axis, right? And the interplay between the brain and the adrenals and our stress hormones and our ovaries. And, you know, what happens for midlife with cortisol levels is its own special thing, right? A lot of us, there's a little bit of a perfect storm. There's an accumulation of not having taken great care of ourselves that we can't really sustain anymore. It's sort of a beautiful and neat mechanism where the body is like, yes, no, actually, you will take care of yourself now so that you survive. You will take less care of other people. You will put yourself on the map. You will give yourself some of the time, energy, and money that you have given to family or careers or whatever. And so, the body is pretty much like, hi, I'm over here and I'm going to get some, or I'm going to take you down. So, there's, I think, a complicated relationship between stress, cortisol, and estrogen in terms of cognitive function. There is also a change in the gray matter of the brain, according to Lisa Mosconi. And that has to do with function. But one of the things that I think is so interesting about her research and yet another reason I'm plugging in her book, this isn't like a pro Lisa Mosconi plug or book, but she I learned from reading, so I like to share what I learned. She takes pictures of a young woman who hasn't started menstruating yet, a teenage woman who's just gotten her period, a pregnant woman, and a post-menopausal woman and looks at what happens with the gray matter. But one of the things that she does is she looks at women's brains post-menopausal and the loss of gray matter that happens during this transition, it comes back. And I feel like that message is so important and is so not being talked about that this is a period of transition, and we adapt, and our brains adapt. Our brains are really good at adapting. They just need some time. And so, if while we're in the turbulence and we're in the muck and we're in the fear and we're in a mess of it, if we can just hang on to the knowing that we adapt and our brains adapt, do we get back to what we were? I'm not really a big fan of this idea of going back, right? Like women are like, I want my pre-pregnancy body. I'm like, it's never going to happen. You had a baby, your belly is never going to be the same, your breasts are never going to be the same. If you had a vaginal birth, your vagina, it's never going to be the same. So, let's, can we free ourselves from this idea of going back? Can we move forward into a new place of strength that is different and shaped by some of these pivotal life-changing experiences? I think we can.

PIERCE: Absolutely. There's so much to think about. There's so much change. Going back to why is there such a stigma, do you think, around menopause? Why are we so scared of menopause, all these changes that are coming?

LEVINE: Hmm. Well, now that's complicated to answer, isn't it? I think one of the biggest challenges is the expectations that women have of ourselves. We expect ourselves to operate at the same way, at the same level, no matter if we are pregnant or we're postpartum or we have small children at home. Or we're working full time and morning full time, or we are perimenopausal and not sleeping because we're hot flashing and night sweating and worried and anxious. And we expect the same thing for ourselves. I do think that there is an entire movement happening around looking at the cycle, a menstrual cycle within the course of a month and the cycles of that happen over a longer stretch of time in women's lives and beginning to acknowledge that those hormone fluctuations really do affect us. They affect what we eat, they affect what we want to eat, how we metabolize what we eat, what we drink, how we move our energy, our weight, our digestion, and our cognitive function. And I feel like the place to start first is with ourselves and allowing ourselves some variability. Like, can we be okay with the fact that we can no longer multitask? Can I accept when I'm not in the clinic, that I need to be not engaged in intellectual things. I need to be more engaged with my emotions and my body and my creativity. Can I create space in my life for that? Can I create a life where there's room for that? Do I work too much so that's not even possible? And so, there's that aspect. And then I think there's what the people around us get accustomed to us doing and managing, right? Like in so many ways, so often we are our own biggest problem in terms of over-functioning and other people acclimating to that. And when we're like, yes, no, I don't actually want to cook Christmas dinner anymore. Or yes, no, how about you do your own laundry for a change? People are like, what? You know? And like I say to women in the clinic, no, nobody is going to roll out a red carpet for you to make time to exercise. You have to claim it. And you have to figure out where in your week you can plant it. And if you can't figure it out, you may need to change your life. And that's, you know, I have the luxury of being able to have those kinds of hard conversations and those kinds of process conversations, those nitty gritty lifestyle conversations with women because I'm not bound by a seven-minute or a 15-minute or a 20-minute visit.

PIERCE: Right. That's what I like about functional medicine. But as we're talking about these hormonal changes and these, you know, as you're talking about those neurological changes that are happening and those symptoms that are happening, does that increase the risk for neurodegenerative diseases?

LEVINE: There is an increased risk for women and neurodegenerative diseases, but I think that that's first of all neurodegenerative diseases very poorly understood in my opinion. And functional medicine has, I think, a lot to offer in terms of the genetic predisposition and the doomed and destined kind of trajectory. There is a whole line of thinking around neurodegeneration that has to do with mitochondrial function, and it has to do with inflammation and brain inflammation. And that's where I go back. And yes, is estrogen a piece of that? Heck yes. Absolutely. And that's part of the new and revised findings around hormone therapy. I think we'll probably talk more about that later, but there is thought to be some protection against Alzheimer's. And but, it's worth asking oneself or one's patients, are you doing what you can? There's also a lot of brain production that comes from exercise. Are you doing it? There's also a lot of brain protection that comes from

eating the rainbow, right? Eating foods that are a variety of different colors. Are you doing that part? Right? Like, you are doing the parts that you can, not in a way of being perfect and sort of being obsessive and compulsive about it but like in a way that acknowledges that how we live also plays a part in whether or not we develop neurodegenerative disease.

PIERCE: But even though we are losing this piece of it, we're losing these protective hormones and things, we still have other areas and avenues where we can continue to do what we can to be healthy, nutritionally, exercise, and weight. So, yes.

LEVINE: You know, I think about, there's an exercise physiologist named Stacey Sims. She focuses on women, and she's written two books, one called Roar, and one called Next Level. I had the good fortune of hearing her speak last June and she had some amazing slides on how estrogen affects myosin and actin, which are the muscle fibers that create a contraction. And she was able to show visually how estrogen promotes that. And strength training and interval training do the same thing in the place of estrogen. So, while we're like losing hormones, there are ways to replace them that go beyond just hormone replacement therapy, right? And that's where like the strength training and the interval training kind of a non-negotiable for midlife women, in my opinion. Like we want to do that. We want to do that for brain. We want to do that for bone. We want to do that for heart. We want to do that for body composition. And you can't actually put all of that in a pill because the estrogen, the hormone replacement therapy doesn't actually affect body composition the way women hope it will affect body composition.

PIERCE: Right. Well, we are out of time for this first episode, but Carrie, I just want to say how much I appreciate your view on menopause and perimenopause and just really flipping that switch to say, you know, it might be chaos right now, but it's going to be okay on the other side of it and just really taking time to remove that stigma that so many of us, you know, have. I don't really know where that stigma came from. I've known for myself, but I just really appreciate you flipping that mindset today.

LEVINE: Absolutely. I think there's a lot to look forward to.

PIERCE: Yes, listening to you talk about it. I'm like, do you know what? It's going to be okay. I mean, it is, it's going to be okay. So, thank you to our listeners and to you, Carrie, for joining us for this episode as we have explored that neurological landscape of menopause. In episode two, we're going to build on this information, that neurological landscape, and Carrie is going to be back with us to discuss how we can support brain health during menopause.

Episode 2: Women's Health - Menopause and the Brain

Transcript

PIERCE: Welcome back to our series, Menopause, and the Brain. Last episode, we explored the fundamental neurological changes we see during menopause, and in this episode, we're really going to focus on how we can actually apply a lot of this knowledge in clinical practice. Carrie is back to continue this discussion. She's a nurse midwife and functional medicine practitioner. Welcome back, Carrie.

LEVINE: Thanks, Candace.

PIERCE: So, one of the things that you said that really stuck with me in episode one was when we were talking about how menopause is really such a significant milestone in life for us—it's kind of that hallmark point in our life. And honestly, this is really something that I say almost everyone who is born with a womb is going to experience because I feel like there's always an exception. You just never know what exception is going to be. But it really marks the end of your reproductive years. So, I could see some kind of grieving that would come into play as we enter this transition as well.

LEVINE: For sure. I mean, women respond in a whole range of ways to this time. For some women, it's deeply, deeply sad. For other women, they are like, hallelujah, why did it take so long? And I think that for most of us, our monthly cycle is like a North Star, right? It's like, we can have this whole range of physical and emotional experiences that we're like, what is going on? And then we get our period and we're like, oh, now that all makes sense. Of course, I got my period and now everything feels different again. And without that punctuation, it can feel really disorienting not to be cycling in the same way. Although I will say that many women still cycle even in the absence of having a period. If they're paying attention, they still feel all the things, you know, they feel sexual, they feel fatigued, they feel super energetic or super fatigued or wanting good food or not good food or digestion is this way or that way—they can, many, many women will say they can still feel themselves cycle through the course of the month even if they're not bleeding. It's pretty cool.

PIERCE: Thanks. That is interesting. But what I also find so interesting about menopause and perimenopause and post-menopause is that it really just kind of seems to remain a mystery with the stigmas and those misconceptions attached to it, not just for us as women, but also for providers. And I saw a study here recently that stated about two-thirds of healthcare providers feel undertrained in managing menopause symptoms. But 60 to 80% of women will seek medical advice for these concerns, but nearly three-quarters of them are left untreated, undertreated, or mistreated. And I don't mean treated terribly. I mean, you know, just they're not treating it correctly. And why do you think that there's such a gap in that understanding and in that confidence in treating it?

LEVINE: I think there's quite a bit of data that is revealing that there is a real absence in medical education around taking care of postmenopausal women. Physicians and practitioners are just not trained. And hopefully that's changing. But I am still blown away. I am still so blown away by the number of women who show up on my doorstep who tried to have a conversation with their primary care or even OB-GYN. And either, I mean, to your point, to your statistical point, right? Like either the practitioner tried, but didn't really know what they were doing. Didn't really know the risks or benefits or what was needed or what testing to do or what is valuable or what are the parameters or what are the benefits? They just don't know. Women will come in and say over and over and over again, I just cannot believe the extent to which people are not talking about this, either my experience or how to take care of it, like what support to offer. And I'm like, really? Well, I don't know what your logarithm is doing because everybody in my feed is talking about it. So, there is information out there, but still women seem to be having quite a challenging time accessing it, which does, it surprises me.

PIERCE: So, in the previous episode, you really hit on a lot of those common symptoms, the effects on the brain from the hormone fluctuations. And can you start with helping maybe to talk about the appropriate lifestyle modifications that we should be making to really help support our brain health during menopause? And also, when I think about this, not just brain, but I also think about my bones as well.

LEVINE: Yes, for sure. There's an OBGYN named Joel Evans who teaches for the Institute for Functional Medicine. And when he teaches the hormone module, he says, or at least he used to, and maybe it's changed, but he says, adrenals, adrenals, adrenals, adrenals, adrenals, adrenals first. So, adrenals for listeners who don't know are small glands that sit on top of the kidneys, and they are primarily responsible for cortisol production, which is our stress hormone. Secondaries are epinephrine and norepinephrine. And then they also make some DHEA, which when you look at the cascade of hormone production is the biochemical precursor to testosterone, which is also the biochemical precursor to estrogen, and so there is this physiologic phenomenon when there is chronic and sustained stress that pregnant alone will get preferentially shifted to DHEA, the stress hormone. And then it's got to go through all of these pathways to get down to the sex hormone. And whereas when there's less stress, that pregnant person alone converts to progesterone and there's overall better hormone balance. So, stress is the first place to start. And that's like, that is part of why I think midlife is as turbulent as it is particularly for women in this country, is that there is that perfect storm. We've been raising careers or raising families. We historically have not taken care of ourselves optimally in an effort to be successful. And the body, with the shift in ovarian function of estrogen and progesterone, there is not the kind of resiliency that there was when we were 30. And so, we have to modulate stress. That is first and foremost. And it is the hardest, right? Like it's so much easier to say, pop this supplement than it is to change your life. So, you know, that takes a lot of courage, and it also takes a helping hand. And whether that's with a practitioner or it's with a therapist or it's with a coach or it's with an accountability buddy or a friend, that is huge, absolutely huge. And I like to say to women, I've never met a stressed-out woman who felt well and had hormone balance, like super stressed, like

super stressed and not taking care of herself. We can handle stress. We just have to leverage it with self-care, which is a term I really don't love, but I think people know what I mean when I say it, right? With rest and recovery and restoration and nutrient-dense food and movement and time in the natural world and sleep and care and fun and laughing. It's like you can work hard, but you got to play hard too. And not many of us do that.

PIERCE: We're very good at working hard. We're not very good at playing hard. No. And it's so interesting that you're talking, the first thing you're talking about is stress because when you think about stress, you think about the cortisol, but you also think about all these other negative effects like insulin resistance, weight gain. But now you're talking about stress in the view of we're losing these other hormones, these protective hormones. So now we're seeing more stress. So now you're getting more of that inflammatory response. And so just hearing how all of these interconnect is, it's a lot to take in, but to understand if we could just take some time to recover, restore, have fun, it would help to lower all of that.

LEVINE: That's exactly it, right? And that's the beauty of functional medicine and systems biology, right? For me, the metaphor that I love is that of the spider web, right? Everything is connected to everything. All you got to do is pull on one strand and the shape of the web changes. You can't do it all at once. And in some ways, you kind of want to pull on one strand and see what happens. The stress is huge. From there, there's food and nutrition, right? And so, they're really, you know, there's quite a bit of data that is, um, revealing that what works much better for postmenopausal women is high protein. And that protein count is so much higher than it was back when I first started practicing in this way. So, the current conversation is somewhere between 30 to 50 grams of protein three times a day, which is a lot. And what I encourage people to do is not weigh and measure their food because I don't think that's a sustainable practice at all. But to Google has 30 grams of protein and likes to look at some pictures of what that looks like and then just shoot for that. It's not even like you have to hit it. You just want to have that awareness. So, lots of protein and lots of vegetables and the vegetables are crucial because they support liver function, which supports hormone detoxification and can prevent the metabolism into four hydroxyestrone, which has been shown to cause DNA damage and be an indicator for an increased risk for breast cancer. That can be modulated. That metabolism can be modulated using things like large amounts of cruciferous vegetables, the broccoli, the kale, the collard, the Brussels, and those kinds of vegetables.

PIERCE: Things that look like brains, is that what you're saying?

LEVINE: You know in France they eat brains. I just watched a movie about this, and I was like, wow. Okay. I digress, but..

PIERCE: What is that word in French? So, I make sure I don't eat.

LEVINE: I know. Huge amounts of vegetables, huge, huge, huge, huge for all the reasons, right? The liver detoxification supports that helps regulate hormone balance, it's real, that

are high in fiber, which fuel the gut microbiome, which helps keep our immune system healthy, right? And here's where, again, it kind of like it all comes together, and so the vegetable part is huge. And then the other thing that women will know is just a carbohydrate intolerance, right? Like we can't eat carbs the way we used to, the bread, the cereal, the pasta, or even the alcohol, the wine, which is pure carbohydrate. And part of that is in part because of what you spoke to, right? Which is high cortisol, high insulin, right? That also contributes to belly fat, by the way. It's not just the sex hormone imbalance. is the hypercortisolemia and the hyperinsulinemia that leads to the insulin resistance, and estrogen also, less estrogen contributes to insulin resistance. So, it's like a double whammy. And so, the amount of carbohydrates that we need is really much less than when we were younger, depending on your lifestyle. If you are an elite athlete and you are, you know, or you work outside and you live an incredibly active lifestyle, that's different than most of us who are sitting behind a desk, behind a computer for the better part of every day. And so, it's not no carbohydrates, but it is less carbohydrate and also focusing more on the complex carbs. And I like to tell women the easiest and the hardest place to slash and burn carbs is by reducing wine intake. And if you're not sleeping, that's also the easiest place to start the on the one hand and the last thing that women want to eliminate on the other hand.

PIERCE: Right, yes, because they're already in so much chaos that they're like if I could have this one glass of wine. But as something else that really stood out to me when you were talking about physical activity, but you're also talking about those stress and the high cortisol and not having that estrogen. But, you know, some exercises I learned through functional medicine are that I couldn't figure out, you know, why can't you lose weight when you're going through all these changes and all this chaos and stress, but it's because some of the exercises also continue to raise your stress, raise your cortisol, and so then you have the opposite effect of what you were trying to do through exercise.

LEVINE: Right. Which is why I have to be careful. Right. Which is why you have to be careful. You know, and women still, we still have this calorie in calorie out equation in our head. And there is an aspect of that that is real, but it is much more complex than that. Because let's be honest, if that worked, there would not be a bazillion dollar weight loss industry because women would do it. They would do it because that's how desperate they are because of the lengths that they go to lose weight, you know, if it were simple calorie-in, calorie-out, it would be done. So, it's true. And this also dovetails into the conversation around intermittent fasting, right? We could talk for hours about what about intermittent fasting and postmenopausal women and women who work out in the morning. You know, I just want to recap something we said in the first episode and just to make sure it gets set on this episode that the general recommendation for movement for a post-menopausal women is two 30-minute strength training sessions a week and three to five interval training. So, speed interval or high interval training that is low that zone to that long walk in the woods with the dog that brings people joy or the super moderate whatever is not going to get done what needs to get done what used to get done when we had estrogen on the strength training and the interval training is the estrogen replacement for muscle

mass retention, body composition changes, et cetera. So just want to make sure to recap that. And now I have last track of what your question was, if there was a question.

PIERCE: No, we were talking about high intensity versus high cortisol versus high stress.

LEVINE: That's the thing, right, is tired women will drive themselves and be like, just, I'm so exhausted, but I'm fat and I want to lose weight. I'm going to go work out. And then they're flatlined for four hours afterward. And so, if that's what somebody's doing, what I tell them is like, if you work out and you need to take a nap for four hours, it was too much. Sometimes women need to really give themselves a period of rest and restoration and back off from the exercise so the adrenals can recover so that they can then withstand an intense training session and not have it be compounding high cortisol.

PIERCE: Yes, and that is hard to understand how you're like, I'm doing all the things. Why is this not working? And this is why it's because you're playing your hormones, your cortisol against itself. Well, I want to also go back to talking about some of those mood disorders you kind of mentioned in the episode one depression, anxiety and, how is the best way for health care professionals to really address those mood disorders that are really associated with the chaos that's happening with what's happening in their body through this time.

LEVINE: That one's a little bit tricky for me to answer because I've taken care of women my entire career. When I first started it women to women back in 2006, every other woman was walking in with a diagnosis of bipolar. Really what she was experiencing was a cyclic mood change that was related to her hormones. Depression and anxiety, the frequency with which women are diagnosed, it is of concern to me. Which isn't to say I don't think it's real, I do, but I think that the conversation around it is often more complicated than what can happen within the context of a routine visit. And too often women are given a prescription without having the opportunity to talk about, well, are you sleeping at night? Because if you're not sleeping, your mood probably isn't going to be great. And what is the stress in your life like right now? How much caretaking are you doing? How is your relationship at home? Are you caretaking for your parents? How full is your plate? And there are some real things that lead to women feeling anxious, in which anxious would be an appropriate response to a circumstance as to as opposed to a certain pathology. Are there women for whom their mood defies reason? Of course, of course. But for me, depression and anxiety are always like I'm always working on the functional medicine matrix. I'm always thinking about why? Like, why? Why does someone feel this way? And what were the antecedents triggers or mediators? Like people weren't born that way for the most part. What happened? What happened? And when you have the opportunity to spend time with women, probably people in general, I just take care of women, women will say almost verbatim, I haven't been the same since dot dot dot. And they'll fill in the blank. And that could, that could be in relation to their mood that could be in relation to their digestion, that could be in relation to whatever it is that has brought them in through the door. I haven't been the same since. So, I think my first recommendation to clinicians taking care of women would be to ask why. Why is this woman depressed and anxious?

Are there really easy variables, easy, know, variables that can be modified, right? Like how much processed food is she eating? How much sugar is it? How about artificial sweeteners? How much alcohol is she consuming? These are foundation questions related to mood. If a gut is imbalanced, then neurotransmitter production is not optimal. Depending on who you read, 70 to 90% of neurotransmitters, serotonin being the primary antidepressant neurotransmitter and GABA being the primary anti-anxiety neurotransmitter are made in the gut. If we don't have a well-balanced gut, we're predisposed to a mood disorder. So, is it depression or is it a messed-up gut that needs to be addressed? Do we need to pull out those inflammatory foods and rebalance the gut microbiome, so she optimally makes serotonin Gaba and lo and behold, her depression is resolved?

So, I'm complicating the question because obviously the topic for this conversation is around hormones and mood. And I will say that in general, low progesterone is what occurs premenstrual and immediately postpartum. So postpartum depression from a functional medicine perspective is a progesterone issue and that gets treated with progesterone not necessarily an SSRI kind of thing. And so, like all the sleep disruption hugely related to progesterone deficiency or fluctuations, the mood stuff, whatever that is for a woman premenstrual immediately postpartum and during perimenopause when ovulation is irregular, right, progesterone primarily being produced by the corpus luteum that is the remnant from ovulation. And so, if we don't ovulate, there's no progesterone. Well, that doesn't feel very good for many people. And then the estrogen deficiency in terms of mood, generally, I would say in my clinical practice presents as anxiety, like an anxiousness that is unfamiliar to women. You know, I will see women who say I've never been anxious in my entire life, and I am anxious now or women develop panic disorders as a result of low estrogen. So, I see both hormones having the potential for supporting mood during the post-menopause time for sure.

PIERCE: So, talking about replacing hormones, can you talk about the benefits and risks of hormone replacement therapy for brain health?

LEVINE: Yes, there was a big shift that happened last year with a revamping of the Women's Health Initiative findings. And so today, the current thinking is that the risks are primarily associated with uterine cancer and blood clot development, which can lead to stroke. The risk associated with breast cancer was rescinded last year. So that's a big deal. There's a lot of women and a lot of practitioners still coming out thinking hormone therapy is associated with an increased risk for breast cancer and that was rescinded last year. Benefits of hormone therapy are thought to be to the brain, the bone, the heart, genital urinary symptoms of menopause. This is a big one, GUM, didn't use to have a name. The menopausal woman who is sure she has a UTI, whose practitioner never actually makes her go in and do a urinalysis and gets treated over the phone over and over and over again, only to find that it doesn't actually work because it's actually an estrogen, a low estrogen issue. Any mucus membrane in the body is going to be affected by estrogen. That's going to include the eyes, the mouth, the nose, and the vagina, not to mention the lining of the urethra, not to mention the anatomy of the top wall of the

vagina being juxtaposed to the urethra. And so, with low estrogen, that burning sensation can persist. So, hormone therapy, well indicated for that. And then the less research valid findings of benefits to hair, skin, nails, mood, joie de vie, right? Many, many women will experience an apathy of like, I don't even care. I don't even know what I want to do. I don't even know what I like anymore. And part of that I think is that brain chemistry shifting and changing from like having to be in overdrive all the time, managing work or family or home or whatever it is. And like that intensity isn't necessarily needed anymore. And the brains is like, I don't really know what to do with myself. So, while that systems upgrade is happening, there can be that period of time that feels a little bit like a free fall.

PIERCE: So that's a lot to think about in deciding whether I should go the hormone replacement therapy route or should I forgo the hormone replacement therapy route? And if you have someone that's kind of on the fence and struggling, what would you, if you have a practitioner who has a patient that is kind of sitting on the fence struggling, what would you say to them to help them determine is this the right direction or is it not the right direction?

LEVINE: Well, I am about empowering women. And so, for me, it's about patient choice. Does she want to try it? Is she curious? Is she interested in her own math? Do the potential benefits outweigh the potential risks? And does it feel worth it to her? I have a lot of women who are like, with all the buzz around hormone therapy, they're like, I'm just kind of curious. I mean, I get that question a lot. Like, is hormone therapy right for me?

And my answer is, you know, unless there's something glaring in the personal health history or the family health history, I'm like, I don't have the answer to that for you. I really have no idea what is going to happen when that tiny molecule hits your bloodstream. And if you're going to feel amazing and you're going to sleep like a baby, and you're going to think clearly and feel energetic and be like, where has this been for the last 20 years? Or if you're going to feel terrified that you're going to get uterine cancer every day and that you're going to develop a blood clot like your best friend or your best friend's sister, do you know what I mean? We as women bring so much to the table in terms of our decision making. So, for me, it's really about meeting the woman where she is and trying to understand where she's coming from in her curiosity and then helping guide her toward at the very least a safe choice. Yes.

PIERCE: Absolutely. And when we're trying to make that decision and you're trying to guide your patient, what resources and support systems do we have available to help make that decision?

LEVINE: You know, I generally refer to people to a book by Avram Bloomberg called estrogen matters. I certainly send people to Mary Claire Haver's book, The New Menopause, but I have some concern about all of it. You know, I am now sending people to the menopause brain by Lisa Mosconi. I think she actually does a really good job at pro-ing and con-ing hormone therapy and addressing all the other parts and addressing herbs and supplements. She actually has a lovely section on herbs and supplements that have

hormonal aspects to them. And she looks at the research and she sort of rates it. So, I'm using that book now else do I send people? I will send people to the North American Menopause Society website, I do not, research can be presented with whatever bias somebody wants it to have. So, it's a little bit tricky. And it has been really helpful for me to be reminded that these professional organizations have recommendations, and they are recommendations. And I feel like it's easy to get scared as a practitioner of like doing the wrong thing or making a mistake or, and of course, none of us want to harm anybody, but I feel like that's where you really want your patient as partner so that she's weighing into the decision-making and you do the best you can and you document well and for all the concern that happened with the Women's Health Initiative findings and the pulling back of the hormone therapy, knock on wood. I have been prescribing hormone therapy since 2006. I'm so grateful, so deeply grateful for the way that I was trained, which was bioidentical only through the skin, except for progesterone when there was a sleep issue. It used to be the lowest dose necessary for the therapeutic goal that has changed. It used to be 10 years, then it was five years. Now there's no limits. And it's one woman at a time. Her personal concerns, her personal health history, her family health history. I have had one woman have uterine cancer since 2006. Now I have a very small practice. I'm not like trying to misrepresent myself. And the women that I see are generally well. They're, you know, they are not generally, they don't hit the other demographic characteristics for risks, right? They're generally not tobacco users generally not, you know, these are women who are generally speaking, educated, active participants in their health. And so, my population is inherently biased. And I have had one woman have uterine cancer in 19 years of prescribing hormone therapy. I tell women, do you carry a cell phone? I have more concerns about the risk of carrying a cell phone or like sticking it in your bra and the incidences of residents sticking your cell phone in your bra than I do around hormone therapy. When it is prescribed in relationship with an individual woman, right? And I feel like that's a big part of how I get to practice that's different than many conventional practitioners, right? Which is just like, we are in a relationship. I want to hear from you. This is not goodbye and good luck. If something doesn't feel good, if you've got a low-grade headache and breast tenderness and it's not abating, I want to hear from you. If you're bleeding, I want to hear from you and let's talk it through and let's troubleshoot. And if you need an ultrasound, let's order an ultrasound. And if you need a biopsy, let's do a biopsy. And if you need a consult with a GYN, let's do that. And if your heart, you're afraid of your heart and your heart palpitations, which is one of the biggest presenting clinical symptoms of perimenopause. If you're afraid you're having a heart attack, let's get a cardiac evaluation and make sure that your heart is well. And then let's talk about hormone therapy, right? So, like really mobilizing a team and not feeling like I have to or can do it all. I cannot, I am not a surgeon. I am not a cardiologist. I am not an endocrinologist, although I do a lot with thyroids. I mean, and you can't even in this data, I you can't even get into seeing an endocrinologist right now unless you have a tumor. It's incredible. I'm getting seven-page faxes from the endocrinology office saying, here's how to manage your typical hypothyroid. I'm like, okay. But what is the endocrinologist going to do really other than adjust meds? Which I can do that. And I can also talk about the HPATG access and solicit and elicit participation in someone's care so that it's not just about the medicine.

PIERCE: Yes, so much great information that you have covered today. As we conclude today's episode, I really just kind of want to take a minute to really reflect on why this matters and why we should be aware of menopause and how it affects women and how it affects their brains and what their symptoms are. And you mentioned heart palpitations and I just had a seven-day halter monitor because I was like, I'm pretty sure it's anxiety and they didn't find anything. But I'm like, but that's, and so, it's just kind of affirming what is happening. Yeah, I know, right? Nobody asked me. Nobody asked me where I was in my cycle. I'll have to call them when we get done here. you know, women spend up to about 40% of their lives in this post-menopausal period. And in the US, I saw the average age for menopause for women is about fifty-one. So, know, historically though, menopause related cognitive and mood changes and all these other symptoms like heart palpitations, apparently, they're undertreated and often dismissed. know, the numbers really tell us this compelling story because while I did see numbers all over the board, what I did see was that they were on the higher side of the numbers. I saw a survey the other day that said this was done in 2021 that said 73 % of women don't receive treatment for their perimenopausal symptoms. And the reasons were identified as lack of education of healthcare providers. So, they didn't know what to do, dismissal of the symptoms. And of course, that stigma and that their own perception that we talked about earlier of even validating why should I seek treatment for this? So, but what I found really sad besides the 73 % of women who are not receiving treatment was that 90 % of these same women that were surveyed said that their symptoms interfered with their daily lives.

So, when we consider that women who are moving into perimenopause and into menopause, they're dealing with these symptoms. They're often at the peak of their careers, caring for children and aging parents, making major life decisions supporting their cognitive and emotional health is going to be absolutely crucial. You hit on all of those things that I just stated of where we typically are in life and why it is so hard to rest during this time. So, I really think it's important for us to understand these neurological impacts that we see with. I want to say perimenopause now because you are really, we're seeing these symptoms and perimenopause moving into menopause and it allows us to really validate our patients experiences to provide the appropriate evidence-based treatment, which is going to help to maintain their quality of life during this transition. Because if it is affecting their life, it's affecting the quality of their life. So, it's not just about managing the symptoms, but as you said earlier, it's about empowering women to thrive during this significant life stage. So, Carrie, is there anything you want to add or want our listeners to remember as we close this podcast series?

LEVINE: I think I just want to reiterate that as practitioners, if people are listening, our practitioners, that there are some really positive things that happen for women leader in life. And that we want to talk about those things, right? That it's not that menopause or post-menopause is not like you know, be quiet and go home time of life. Like women do amazing things during this time of life. And there is tremendous potential, tremendous personal potential, creative potential, professional potential, and that we can live that. Some of us just need some support and some belief in that possibility along the way.

PIERCE: Yes, absolutely. Well, thank you so much, Carrie, for being a part of this conversation and just bringing your wisdom and your support and your knowledge to our listeners today.

LEVINE: Thanks for having me. It's fun.

PIERCE: Yes, to our listeners, thank you for taking time to listen to this discussion. And if you find this information valuable, please share it with your colleagues. And I also encourage you to explore many of the courses that we have available on EliteLearning.com to help you continue to grow in your careers and earn CEs.