Introduction and Guest Credentials

Welcome back. You're watching the Restore your mitochondrial Matrix summit. I'm your host, Laura Frontera. I'm bringing you experts to help you boost your energy and fix your health so you can build the life you love.

And today, my special guest is Doctor Felice Gersh. Hi, doctor Gersh, welcome to the summit. Oh, welcome to everyone out there who's, you know, we're here because this is such an important topic.

So I am so thrilled to join you for this summit. I am so excited you're here too. And funny thing, you're just right up the road for me. We only live about 40 minutes apart.

Such as it goes with the summit. You do them online. So let me introduce you to our audience because you've had quite a career. So, so far. You are a dual board certified ObGyn and integrative and an integrative medicine.

So both. Right. And you're still are working in clinical practice. In fact, you're in your sitting room right now, right? You had a full yeah. You had a full clinic day to day I did I'm still very old fashioned.

I have a brick and mortar practice where I do hands on and, and actually see patients in my office, but also I do telemedicine, you know, just like everybody else.

Now, sometimes people don't have the means or the time or whatever, and we can do it through the magic of the internet. Yes. And so amazing that we have that.

Now, your, your practice. You are the director of the Integrative Medical Group of Irvine, and it is pretty much comprehensive health care for women, combining evidence based therapies from conventional naturopathic and holistic medicine.

So combining it all perfectly. And, you are also an affiliate faculty member at the fellowship in Integrative Medicine through the University of Arizona School of Medicine.

And you've written a couple books, you're a bestselling author of the PCOS S. O. S series and your latest book, menopause 50 Things You Need to Know. So we're going to, of course, connect mitochondria and estrogens essential role.

Right. Because that is your zone of genius right there. So can you start us off? Well, you know, I really love to know why functional medicine. How did you go from being a Western trained physician, Ob-Gyn and integrating what what happened there?

Well, from really almost the very beginning of my practice, I knew that there was more than just pharmaceuticals and surgeries to keep women optimally healthy.

But I didn't have any additional special training. But I brought into my practice really early on, a nutritionist and a Chinese medicine practitioner who did acupuncture, Chinese herbs.

I had a psychologist, massage therapist, biofeedback, so I knew I needed to have all of these wonderful teammates. But I didn't actually learn anything different myself.

I would just, you know, incorporate them into my treatment plan. But then I finally, after 25 years, thousands of deliveries, it was my time to move on from doing obstetrics.

So after that, maybe I had a little more sleep, a little bit more time. I insisted on having all the pharmaceutical reps

that paraded through my office on a very regular basis to actually sit down with me and show me the study said aloud their pharmaceutical to become FDA approved.

And it was quite shocking. Some of the medications that I prescribed regularly had very low efficacy when you compared them to placebo, but quite a large array of side effects.

How Integrative Medicine Changed Her Practice

And I felt, oh my gosh, what the heck am I doing now that I'm not doing deliveries? These pharmaceuticals are offering very little in terms of, you know, benefits.

And they're really they're not curing anything. Maybe they're a little bit relieving symptoms and even not that much. And there's no exit strategy for these drugs.

What is supposed to be on them for the rest of your life? And I love surgery. I taught surgery for many years at USC to the residents, but that's all end stage disease.

I didn't really want to just feel like I have to clean up the pieces after everything's fallen apart. So I wanted to be more proactive and I didn't have the tools.

I really didn't know what to do. As you know, we talked about this before we came up. Like, they don't teach you these things. You don't know how to prevent disease, and you're not that great at fixing it either.

You know, cutting out organs is not really our goal in life or, you know, caring for women. So I went on my own little journey, like everybody else who ends up in this field, and I started taking courses with just people I never even heard of, like natural person.

I didn't know what chiropractor did and a nutritionist. So I just was roaming around taking all these courses, and I ended up at a naturopathy conference, and there just happened to be one other MD who was doing lectures.

And I went up to her at the break and I said, Doctor Lo, Doug, you and I are the only MDS in this room, and I have no idea. I have like no real path. I'm just sort of randomly taking courses.

I'm learning a lot, but it doesn't feel very organized. And she said, you know, talking to you, I know you're qualified. We have a new course starting in two weeks at the Integrative Fellowship in, you know, in integrative medicine at the University of Arizona School of Medicine.

So I went home from the conference on Sunday night. I filled out the application, and two weeks later I was in Tucson. I did the two year fellowship, and I never looked back.

I became one of the very early group that actually became officially board certified in the new field of integrative medicine, when very few who are actually also Ob-Gyn.

And that was the start of my own personal journey as an integrative and functional medicine doctor. So from that point on, I educated myself. I, I've now been the proud author of multiple articles that have been published in major print, you know, prestigious, peer reviewed, journals like, I had a new article that just came out this past December, and it was the featured article chosen by the editor of Mayo Clinic Proceedings.

I've had articles in the British Medical Journal heart, and so I've really tried to spread the word beyond our little community of functional and integrative practitioners into the broader conventional world.

So I want to have I want to be that bridge to educate across all lines, you know, no, no barriers for me, no borders. So I want to educate the public.

I want to educate doctors who know nothing about this whole field and understand how women's bodies really work

so that women, no matter who they actually end up with as their health care provider, will actually get care that is designed to help them to really achieve optimal health, which is not the conventional approach as we know.

So it's an ongoing journey, and I'm so excited to to be part of this movement. It's really what medicine should be. It is. And wow, what a distinguished career you've had.

And still going, it's like you're just getting started, you know, with your mission to really help women understand their bodies and to really bridge the whole Western and functional and integrative medicine communities.

Could you start off by sharing with us just a quick review, perfect for you since you are a professor as well, could you review mitochondrial function and its role in metabolic and reproductive health?

Because I think it's really important for women to understand why are we talking about mitochondria when we're talking about menopause and estrogen and all of that?

So one of the things that distinguishes something that is alive versus something that isn't alive is the amazing ability of living creatures to actually produce energy.

I mean, it's amazing. Energy is what metabolism is all about. So people talk about I have a fast metabolism, I have a slow metabolism, metabolism. It's really the creation, production, storage, distribution of energy.

And as we age, all, you know, living creatures without any additional help. And of course, the natural course of things is going to be that their capability of making energy declines.

So if you go to a park on a nice day, you see all the children running around and having fun, the young people tossing frisbees and all the old people sitting on benches.

It's not because old people love benches, it's because they don't have the energy. And that's what mitochondria do. They are the energy producers, the powerhouses of the cells and different organs have different concentrations like the heart.

And we can talk about like why women's hearts are really different. Women have far more mitochondria in their hearts than do men. And this is like really critical for getting through a pregnancy health, you know, getting a good outcome.

And the brain is filled with mitochondria. Of course, every single cell that creates energy has to have mitochondria. And what is not well understood is estrogen.

So estrogen has to be present for mitochondria to work optimally. And it's so important that women really embrace and understand estrogen, not just as a hormone that's involved in pregnancy as fertility and menstrual periods, but as the hormone that really read late metabolism.

And it's really essential, of course, for a woman to be healthy in every organ system in order for her to be successful as a reproductive creature. And that's what it is, the prime directive of life.

I figured this out early in my career while I was delivering all those babies, whether we want to accept this, it is what it is. The prime directive of life is the creation of new life and remembering that only humans, they're the only species on this planet that tries to control their reproductive destiny.

Right? There's no other animal that says, you know, I'm actually going into heat, and this is my reproductive time, but I think I'll pass this year. It doesn't work that way, you know?

So we need to know that female bodies are really designed for optimal fertility, and that estrogen is like the glue that maintains metabolism, optimal metabolic health, which means optimal mitochondrial function and reproductive function.

Because you need a healthy body to be able to make a healthy baby. And that I try to spread this word. So understanding the linkage between all metabolic functions in the body and all of reproductive functions is critical to understanding how women's bodies work.

And that along with that, when women lose their estrogen production from their ovaries, they're going to have a huge metabolic hit. Every organ in the body is going to be functioning at a less optimal level because of this deficiency, insufficiency of estrogen in the form of estradiol.

And it's not just the end of reproductive life. It's really this major metabolic shift in the body. And changes are occurring at every level, including those critical little organelles.

The mitochondria, that create the spark of life energy itself. Wow. Okay. So you've just established how important estrogen is in mitochondria. And you know this loss of estrogen as we get older, I can remember, you know, back before 2008 or so when we were prescribing estrogen to everyone, and then of course the Women's Health Initiative, study came out and it came screeching halt.

Now I understand there's differences in estrogen, estrogen extra diol versus equine estrogen.

Mitochondria, Estrogen, and Women's Metabolism

So I want to get into talking about how estrogen helps facilitate optimal mitochondrial function. Yeah. You can you also lace in there the importance of estrogen postmenopausal for women and what your stance is on that.

So the mitochondria are little organelles that live within the cells. And different cells have different needs for energy. So that's why some will have more numbers of mitochondria than others.

So in terms of how mitochondria work in the role of estrogen, there's a multitude of ways that estrogen interacts with mitochondria. Within the mitochondria itself.

There's this whole process of creating energy that's through the electron and transport chain. And that is all facilitated by the estrogen that's made by the ovaries, estradiol.

And that's where we can get into it. I hope if we have time, the differences between different estrogens that it needs to be understood. Estrogens are a family of hormones.

And within that family, there's more than one type of estrogen. The estrogen made by ovaries, which has the optimal effect, is called Astra dial. Now, one of the interesting things about might okay, Andrea, is that they create energy.

But as a side effect of the energy, I'm sure you've touched on this. It's ATP. And then as a side effect, it also produces sort of what we would call like free radicals and superoxide.

So it's one of those products. It's a byproduct of creating the energy. The ATP. Now superoxide that's two oxygens together is highly toxic. Now in small amounts.

It actually acts as a signaling agent. Like nothing in the body is just one thing. It has multiple purposes. We're like like the most useful things on Earth.

You know, everything has more than one function. So superoxide acts as a signaling, but also in large amounts as it accumulates in mitochondria. It's actually a poison and it will actually kill the mitochondria that produces it.

So nature has a way of dealing with surplus excessive production of this superoxide. And that's estrogen in the form of estradiol. It actually sort of operates this really important enzyme manganese superoxide dismutase.

So this this enzyme actually works to change this toxic product, superoxide into hydrogen peroxide, which can then

diffuse out of the cell. And then it's just turned into harmless water, H2O.

So this is critically important to keep the mitochondria from actually being poisoned by its own metabolic waste product. If you think of it that way, an extra dial is critical for the function of this enzyme.

In addition, estradiol is critical for the function of another enzyme system involving glutathione, that is, the production of glutathione. The function that is also key to detoxification issues to keep mitochondria functioning well.

And then there's there's even more critical and sort of like we'll say secondary ways that estradiol works to maintain mitochondrial function. It turns out that there are actually receptors in mitochondria for a metabolic byproduct of estradiol.

Call two methoxy estradiol. So even metabolic byproducts. So like when estrogen goes through the liver and goes through that detoxification like where it gets can't be, you know, conjugated.

It goes to this whole process. It makes different byproducts. So alterations of estradiol and one of them, it is so important. It actually has its own set of receptors on specific mitochondria.

For example, in the heart to actually help maintain proper mitochondrial function and energy production in the heart. In addition, it works in terms of the RNA production in mitochondria.

Estradiol works on the expression and translation of the genes involved in mitochondrial function. So estradiol is about creating mitochondria. And also this process called my autophagy, where my Condra can actually regenerate themselves.

That is actually also regulated through estradiol. And there's an enzyme system that some of you may have heard of called the sirtuins. And the sirtuins are a family of enzymes that are called histone deacetylase.

And there's a variety of there, like seven different types of sirtuins and one which is called sirtuin. Or we sort of shorten the name to Sirt three that is specific to mitochondria.

And in order for that enzyme to work properly, it also needs a dial for the rejuvenation or my autophagy creation of rejuvenation of of mitochondria and biogenesis.

My mitogen is its creation of new mitochondria to budding types of things and what we call fission and fusion. All these different processes that are involved in mitochondrial function and health are regulated to a large measure by estradiol.

And then there's this whole process of calcium transport, and you have to have proper calcium transport, or else you can actually have too much calcium coming in, which can be toxic to mitochondria.

That's also regulated by estradiol. So I mean, it just goes on and on about how important estradiol is. And I mentioned like the heart and and it's so crazy.

But most cardiologists don't even recognize the difference between the female and the male heart. So what happens in pregnancy? The blood volume of a woman doubles.

She actually increases her blood volume 100% doubles. So what do you need the heart to do? It needs to be super powerful to be able to pump that doubled volume of blood around the body.

So how is that going to do that? Well, it has many more mitochondria to create more energy and that's why we have these metabolic byproducts of estrogen that work on the mitochondria.

We have more mitochondria. We have all of these estrogen receptors. And that's why it's so critical to have a really

healthy heart. Well what happens when you lose it.

You know, when you lose that estradiol that's being produced from your ovary? Women have a different type of effect on their hearts that isn't seen in males.

They have what's called the development of mild diastolic dysfunction. And you can see that on an ultrasound of the heart, called an echocardiogram with a heart, actually has reduced energy production.

And it is stiffer looking and it doesn't relax in the portion, you know, heart. When it does, it sounds so simple it contracts and the the blood is pumped out, and then it relaxes and it refills.

So it's pump refill contract. Relax. Well you can actually see the relaxing part. That's called diastolic phase of the heart pumping mechanism. And the heart.

Instead of it being like smooth it's like stiff. And that's a sign, an early sign that you can pick up on an ultrasound of a woman in the early phases of menopause that she is mild, okay, drill dysfunctional in her heart, and she isn't making enough energy for her heart.

So she has energy deficiency, which we don't want because women then have higher rates of different types of heart failure. And this is not even recognized by most of the cardiologists how different it is in these, these mitochondria.

And of course, it goes in in terms of the brain, you know, that you can't have proper brain health if you don't have mitochondrial health. Women have 2 to 3 times the incidence of Alzheimer's, as do men, because they don't make enough energy in their brains.

And then it's of course, like everything, it's more complicated than just that. But that's a big part of it. You need to have energy in every organ system.

And once it's understood that estrogen in the form of the estrogen made by the ovaries, estradiol, not what was given in the Women's Health Initiative, not what's in a birth control pill either.

I mean, this is like really important that there are estrogen receptors of different types, and the type that's in the mitochondria is pretty dominantly beta.

So there's alpha. You know, we love Greek letters right. So there's alpha and then there's beta. And then there's membrane receptors like Jeepers. And there's a new ones that are being discovered in variants.

And different organ systems in different parts of of a cell have different concentrations of these different types of receptors. And they're dynamic. They interact with one another.

And you need to have that full like spectrum of the binding capability that you get with estradiol that you don't get with some of these other types of estrogens that allow proper mitochondrial function.

So all estrogen is not created equal. That's why we need the extra dial. And it's so important. And then, you know, I'm sure this has probably been touched on.

But we live in a world of chemical endocrine disruptors, these ubiquitous chemicals like plastics and flame retardants and pesticides that can literally interfere with the receptor function and of the estrogen, the estradiol in the mitochondria.

And that's why we have and this is not recognized, this explosion of diabetes, diabetes and obesity. It's partly not in substantially like significantly related to endocrine disruptors, all these chemicals that are interfering with the critical estradiol and its relationship to the mitochondria, so that when you have this mitochondrial dysfunction is going to increase all of the metabolic diseases that we associate with modern society and aging, like diabetes and

hypertension and cardiovascular disease, dementia and so on.

So you've established that it is absolutely critical, critical to have estradiol for mitochondria health. And you also just establish that we have a toxin problem that's making it hard for mitochondria to survive.

And you also establish that without healthy mitochondria we have chronic health problems like heart disease, like diabetes. So you see it's this big circle.

Here's my burning question. What is up with the female body and menopause. It almost feels like a design flaw that we lose as it's funny. It's so funny. You say it's a design flaw.

That's how I looked at it. I said, how did nature do this? How come it linked reproduce action of all things to this critical hormonal system so that when we lose our reproduction, we lose these vital hormones that are critically important to every organ system functioning.

Oh no, I just want to get a side note in case people like to research things that the uterus and the ovary are about the only organs in the body where the mitochondria actually are predominantly alpha.

And it's just so amazing. You know, that's why you can't just pick and choose what form of, of receptor you want to have. You know, that's why they try to create these designer drugs that work on certain receptors.

That's like the ticket to, to trouble because you need them all you need. That's why you need estradiol. So this is what I figured out with this nature's, like, inherent flaw.

Yeah. Please tell us, because it's very painful to say this. Yeah. The grand scheme of life is the creation of new life. Now, as humans, we are lucky compared to many species on this planet, because we don't die as soon as our reproductive capability ends.

There are many, many creatures on this planet that it's like painful when you think of it like the salmon they swim upstream, they spawn, they die. The, octopus, which is a highly intelligent creature, or so I'm told.

A many species of octopus, the female lays the eggs and then just dies. You know, the black widow eats its mate. I mean, we just have this thing where nature is about creation of new life.

And then depending on the species, you have to raise that new creature, that little baby, to its reproductive viability. If you're like a mammal, you know, you got to get that.

You got to do some raising. That's why you have to breastfeed and you have to raise. And humans have a long adolescence. It takes a while and then, you know, you you're around for a while.

But the problem is nature doesn't want to waste valuable resources on non reproductive creatures like women for too long. So it's just really sad. But you know, like nature doesn't really want us to be around after we reach our early 60s.

That's about it. So there's I consider sort of like a little bit of a halo effect, if we are leading healthy lives and we're not spending our entire reproductive lives on hormonal contraception, which gets rid of our natural hormones, rhythms and cycles and so on, so we don't have that.

Menopause, Aging, and Healthy Longevity

We end up that we hit menopause and we have, I call it, a good health savings account. So we're really healthy at the point we start losing our ovarian function.

We have this, what I call a halo effect, where for about the next decade, we can kind of like sail for a while, you know, like things are happening like with our mitochondria and that affects our bone or brain or cardiovascular

system, but it's not really overt, you know, it's not so obvious.

You know, night sweats and hot flashes are kind of obvious, but many women are still pretty healthy. Like there aren't a lot of heart attacks and strokes in the average set of women in their 50s.

Let's say, have, you know, other metabolic problems that predate getting into the menopause. And then things really start to escalate in terms of the metabolic complications, by age 65, women surpass men in high blood pressure, strokes, ruptured aneurysms.

We're tied for heart attacks, but we die more from our first heart attack. So you know that once you get to around 65, it's not the greatest outlook for women's metabolic health.

And that's when nature says, bye, ladies. Like I don't buy into that. You know, I don't care about nature saying like, time's up. But that's really kind of what it is.

Nature linked. It because it really wants us to go into this kind of decline and then goodbye, you know, because, you know, there aren't resources and food for it.

Every like, what would you do in an ancient society if you had a bunch of people in their 70s and 80s who contributed relatively little, but they would put them in a retirement home someplace, you know, that's just not what they're going to do.

And they were nomadic. They couldn't, like, keep up with the tribe moving around, you know, and doing all. So it would be like, okay, there's a rock, you know, go have a seat and then, you know, good luck, you know, and that's just it.

But we don't accept that. So what modern medicine has done is, has enabled people to live well beyond that 60 something or rather, when nature expected us to leave the, you know, leave life.

And we've enabled women to live longer. And statistically, women live a few years longer than men, but women lead the pack. Male and female women are the leaders of chronic disease.

So it's not a pretty picture of women in aging. Now, of course, it's a few exceptions, but we're talking generalities here. Women have 80% of all the osteoporotic fractures I mentioned 2 to 3 times the Alzheimer's.

They tie with heart attacks once you hit 65 and beyond and they have more strokes, they have more high blood pressure. They have more joint replacements for osteoarthritis joints.

They have 2 to 4 times as much anxiety and depression. They have more acid reflux Gerd than do men. I mean, this is not great living. Women suffer from more chronic pain than men.

The greatest users of medicinal cannabis are postmenopausal women trying to deal on their own with all their chronic symptoms. So it's not great being an old lady.

And, you know, they just, you know, like replace joints. You know, they they give them pain pills. How many women have been put on anti-depressants. And they became narcotic addicts because they got so many opioids for so many years because they had chronic pain in their joints, or they kept giving them high doses of NSAIDs, which created their own set of horrible problems.

So my thing is like just because we have figured out ways to live longer, that's not where it's at. We want healthy longevity. We want to stay out of the health care system.

Absolutely. We don't want surgeries. We don't want drugs. We don't want procedures. We just want to live our lives and try to be as optimally healthy, which means we have to have functioning mitochondria, you know, like the like the secret sauce, the missing ingredient for optimal health is the creation of optimal amounts of energy.

And we can't, like, be the same at 21 when we're 71. But we can do so much better than what we've been doing as a conventional medical world of simply giving pharmaceutical, pharmaceutical a procedure and so on.

So what we can do is give physiologic doses of the human bioidentical hormones. That would be estradiol and progesterone, which we haven't touched on, but progesterone matters too.

And then sometimes testosterone, sometimes DHEA. You know, those are you know, other related hormones, but those don't go down specifically with menopause.

They're just part of the aging process, you might say. And then on top of that, that's necessary in my opinion, but not sufficient. You have to do everything lifestyle to optimize gut health, to optimize levels of, you know, inflammation to keep it at bay, to optimize your immune function, to maintain your musculoskeletal system.

You know, you go to every single organ system that requires proper nutrition and sleep and stress control, reducing the toxicities of our environment as much as possible.

You know, fitness, which is so critical we forget in conventional medicine the importance of, for example, exercise and exercise of course, has a role with mitochondrial function.

And what's not understood is that when you don't have enough estrogen in the form of estradiol, you lose your muscle. I mean, that's like sarcopenia, which happens in aging women, which causes frailty is really prevalent.

So you don't want to lose your critical lean muscle mass. And of course, that's that muscle has so many middle condra. They without adequate muscle you're going to become insulin resistant.

Your glucose and insulin levels are going to rise. And that's not good. So you definitely want to maintain estrogen for your musculoskeletal health, which is really important for metabolic health as well as locomotion and strength and so on.

So what I'm hearing is estradiol is very important. So, I'm going to be 50 this year. And I'm thinking I need to like get up to your office some. So tell me, what is the ideal age and what is the ideal time to start estradiol in a perimenopausal woman?

Oh, that is the big question because we have no data. I mean, you know, after the Women's Health Initiative, that unfortunate study, I could say much worse adjectives and unfortunate, but I'll leave it at that.

You know, it really shut down research and recognizing that menopause is universal, it's not avoidable. You know, the best you can do is delay it by eating lots of vegetables and antioxidants and polyphenols by a little bit.

And, you know, a few other things, but you know you're not going to avoid going through menopause. So people have looked at it. Well, why why are you making it into a disease?

You know, it's a natural event. Well, just because it's natural doesn't mean it's good. Women and men get a lot of cataracts. I mean, I have a lot of ophthalmologists who are friends, and they have like, they've like, run them through the the, you know, new cataracts, new cataracts, you know, replace the cataracts with new lenses.

I mean, nobody says, well, cataracts are natural, so you should be blind. That doesn't happen. So I don't care that it's natural I am going to go for optimal.

So once we understand that menopause as well is a process, unfortunately the word menopause doesn't do justice to what this is because it makes it sound like it's about the end of periods, because men know.

I mean, it's kind of pretty mellow. Is the Greek word for moon, and pause is first stop. So it's about stopping your lunar cycles. You don't have periods, but it makes it sort of minimized.

It's the whole thing into just, well, you don't have periods. And then women say, hooray, I don't have periods. It's like, wait a minute, it's about ovarian aging.

Or like you might say, oh, variance senescence. And it's a process. So that's why in my book I talk about the three phases, because it's not like you cross the finish line.

It's a process. And that's where when do you like treat it. At what point. So we know that estrogen levels start to decline a good ten years before the period.

It's up to the official definition of menopause is 12 consecutive months without a spontaneous period. Totally made up. You know who says it's not 11 months or 13 months?

I mean, it's just made up, you know? But, the point is that you have to understand it's a process of ovarian aging, and it goes through this sequence of events where the estrogen can be all erratic.

Ding ding, ding. But the general trend is down. But it's kind of like a bad stock market goes up and up and up and down and down and down. But the trend is always down.

You know, we don't want it. But so and eventually it stops with the ups and it just stays down. But during that process, which we call perimenopause, it can be a crazy maker because you could actually go high, then you go low, then you go high and you could think you're, you know, you're not fertile anymore.

You haven't had a period in three months. And next thing you know, you're pregnant with twins. So stuff like that happens. So when do you treat well? For sure.

If you start having night sweats and hot flashes, consider that the canary in the coal mine, if you're getting night sweats and hot flashes, you already have neuro inflammation.

The thermo regulatory centers in the hypothalamus are dysregulated, so that's a clue. Things are not right in the brain. Things are not right in your hormones.

So that would be one thing for sure. But then you can look at other things that it could be more subtle, like you suddenly start having palpitations, sleep problems, mood changes.

So all those things are related because estrogen has receptors in the heart, in the brain and so on. So you could have more subtle things like you just not sleeping well, you keep waking up at 2 a.m., you know, you you suddenly start having, mood swings.

You feel depressed all the time. Like you don't even want to see your spouse. You have zero sex drive. People don't realize that estrogen estradiol is critical to sex drive.

They always think it's testosterone. Of course, it does have a role. But oxytocin, which is a really important you can call it a hormone or a peptide.

It's kind of like between the two. It is really important for sex drive, appetite, regulation, mood, you know, feeling love and bonding and having an orgasm.

All of that is related to extra dial in the brain. So if you notice, like your sex drive is, you know, plummeted, you can have orgasms, you start you get diagnosed with high blood pressure, which you never had before, or suddenly you're pre-diabetic, your blood sugar is going up and so on.

Oh my gosh, big clues that you are estrogen insufficient. So we want to get on it as soon as any of those things start to happen. For sure, don't wait until you have 12 months of no consecutive period.

That's a totally arbitrary made up thing. And think of this as a process and a process that is happen. Things happen

in you that you don't even see. They have shown that during this transition, the perimenopause, you're already getting vascular changes.

Remember, you need to have vascular health to have health of any organ. That's like the highways of the body. You've got to get oxygen and nutrients everywhere.

If your vascular system is declining, that's a big problem and that will start to go down and getting plaque and getting damage to the lining. We call the intima before your periods stop.

So definitely it's individuals and you can still have regular cycles. In fact, I do sometimes menstrual mapping where I look at, well, just because you're having cycles, what does that mean about how your hormones are doing?

Sometimes the progesterone, the estrogen, it's like terribly low and you're not getting good spikes. I mean, it's not like a normal good graph of a menstrual cycle.

And supplementing. So remember when we supplement with hormones it's not like giving a birth control. You're not suppressing the ovaries. You're just adding like a cushion of layer of hormones on top of what your body was producing.

When it's not producing enough and it's not going to stop you from producing. No, it's not it's not suppressed. That's like exactly important to know.

It's not going to like it's not providing birth control either. You know, like I said, you know, what happens is the perimenopause causal years are the most prevalent time for women to conceive twins, because they can have this dip in estrogen and the brain, which has all the sensors, says, oh, not enough estrogen in the body.

So it puts out the signal to the hypothalamus, to the pituitary.

When to Start Estradiol and Who May Benefit

So the pituitary then puts out a big surge of follicle stimulating hormone. That's what we give to women when we're trying to like do egg retrievals. We want to get a whole bunch of eggs out for, IVF, for egg freezing, you know, so we give them a lot of, like, the equivalent of FH follicle stimulating hormone to stimulate a lot of eggs to come out.

Well, nature can do that. It's like your own personal hyper stem, and suddenly you get a couple it 2 or 3 eggs come popping out, you know, because you still have a few left, you know, you're down to low numbers but not completely dried up yet.

You still have a little bit and suddenly you get twins. So that happens. I've even had triplets like, whoa, you know, because they had this big surge of FSA.

I think of it like like when you go to a fireworks show and you're waiting and then, you know, the sky goes dark and you think, oh, the firework show is over.

And then suddenly it comes back again with this gigantic, the whole sky is filled with fireworks. And you say, that's the big finale, right? That the other one was. But this is the real finale.

That's what, happens in our bodies sometimes. You have this giant, like the fireworks go up and you have all this fish come out and you suddenly your ovaries put out the last few eggs and they come out and lo and behold, they get fertilized.

So, you know, don't ever assume you're you're infertile or sterile just because you didn't have a period for a couple months. It's like I've delivered some of those, you know, kind of surprising when you're like, you know, 49, it's like, oh, I have twins.

You know, it happens. So, you know, we never know when it's over until you look backwards. You know, we never know. That's why you can't you can't say when the last period is until you look backwards.

You can't. Well, I think you have made the strong case for estradiol for all women watching right now. I know that they are wanting to get estradiol if they don't already have it.

By the way, is it ever too late? So what if you're 70 years old watching this and you're thinking, you know, I never took estrogen? My doctor told me it would cause breast cancer, so I didn't take it, you know?

So what do you do if you're not in that perimenopause, early menopause? Yeah. Is there hope? There is hope. Now, here's the thing. Once again, no real good data.

You know, using physiologic biogenic hormones because nobody's collecting the data. So what can we work from? Number one, it's not illegal. You're not breaking the law to go on hormones at any age.

That's good. Now we know that there's a big push in the ObGyn world to treat all women at every age, no matter how far they're out in menopause. You can give it to like 80 is 90s, which does matter for vaginal atrophy.

Now, they don't call it that anymore because they change the name to to make up new names. It's like a big career change, you know? Like, yeah, nobody nobody does that anyway.

But that's what it is. So now we know that you can give vaginal estradiol at any age. And guess what happens? The vagina improves, it gets better. Is it going to turn to like if you give vaginal estradiol to an 80 year old woman who has, like, a lot of vaginal infections, and maybe she keeps getting bladder infections because the vagina is the guardian of the bladder, you know, the the whole thing.

So the bottom line is it's not going to become a 19 year old vagina, but it's going to get better. So what does that prove? That the receptors for estrogen don't completely they they repeat they do.

We do know that there is a loss of efficacy and function of the hormone receptors that are not used for a long period of time. So it's not going to be as good as if you started at a younger age.

But why would we think the vagina is the unique organ of the body? It's the only one that can benefit from estrogen at any age. It doesn't make sense.

We know that the estrogen receptors are going to respond to some degree. We even have some data. It's been some data that you can actually even help rebuild some bone if you get physiologic levels of estradiol.

And that's, you know, really good. And I've seen it myself where cases with osteoporosis actually improved when they got bone density testing. So and it's not just about the mineralization which do you see on a like a Dexa bone density, but the protein matrix, the health of the inner portion of bone that because, you know, you did all that bone stuff, you know, that involves the protein matrix.

And not only that, it's about ligaments. And people don't realize about joints, joints and are involved with bone, but also with ligaments and cartilage.

All of these can to some degree improve with estrogen. They all have receptors. Now here's a really another interesting thing. In the 1990s, there was a tremendous amount of interest in estrogen, the form of estradiol and the skin.

And it all shut down, but with the Women's Health Initiative. But there were published articles in the 1990s showing that just two weeks of topical estradiol reduced wrinkles.

And in wound care, like, if you have a wound that's not healing, and it accelerated every type of aspect of wound healing of the skin because estrogen promotes new blood vessel formation, growth factors, the activation of

platelets, you know, people do all this PRP, you know, like the platelet rich plasma.

Well, estrogen activates platelets for the purpose of healing and growth factors for creating new tissue and collagen, all the different layers of skin.

So it's one of those like, little secrets that the French women figured out sometime ago that estradiol on the skin is actually very rejuvenating. And they had all these studies in the 1990s, and they all disappeared after the women's Health Initiative.

But, you know, like wound care clinics need to, like, get on this for women, maybe even for men. You know, that that and we know that, for example, Covid that women if you look at the statistics of death from the, you know, covet women died like of all the deaths, women were 40%, men were 60%.

So it's a real edge having having hormones and even that that halo effect, we also have that extra X chromosome like we're superior guys. I mean, it just is, you know, one more question.

One more question because, I mean, I it's not every day I get to have somebody with your level of knowledge and just answer all these critical questions for women.

What about what if what about the woman watching who's had breast cancer and oh, that's a problem. And she dial now if the breast can't? No, the official thing is like, there's a warning. Okay?

Now it's really important for breast cancer to understand that estrogen doesn't cause breast cancer. What causes breast cancer is inflammation leading to DNA instability and breakage.

And then you have cancer. And cancer is actually cancer. We're talking about metabolism. Cancer is actually now recognized. It's a metabolic disease. That's why when they link well, what group of people are more prone to breast cancer in postmenopausal women?

It's women who become obese are the highest risk group for for breast cancer. Breast cancer is a metabolic disease just like diabetes. Just like hypertension, like cardiovascular disease.

So we can think of it differently. It's a metabolic disease. Having healthy mitochondria is going to help prevent breast cancer. It's really important.

But what happens is if you have breast cancer develop and you have inflammation in the breast. So estrogen is made in various tissues of the body separately from the ovary, because the same enzyme that's in the ovaries is present in different organs.

And it's called aromatase. Now in formation triggers the upregulation or turning on of this particular enzyme to produce estrogen locally in the tissues.

The problem is after menopause, the type of estrogen that's being produced is in from testosterone so much as from the adrenal produced androgens.

Breast Cancer, Contraindications, and Plant Estrogens

And it produces a different kind of estrogen as drone. And it turns out that Airstream doesn't have the balanced effect on all the estrogen receptors like estradiol does.

And it becomes more pro-inflammatory in the breast, which was not the intent, of course. And then what happens is breast cancer. That's estrogen receptor positive.

It's always for alpha. So it's like the the breast is making too much of this locally produced estrogen, which then can bind to the receptors on the breast cancer and promote its growth.

So you can think of it as an accelerant or a promoter of breast cancer that's already happened. Now, if you prevent that inflammation in the first place, if you maintain mitochondrial function, you maintain a low state of inflammation, then you won't even get the breast cancer.

And of course, endocrine disruptors, chemicals that interfere with estrogen signaling are the biggest risk factor for breast cancer in premenopausal women.

And so that's like a big problem. That's where, you know, we we can't ever be completely you can do everything right and still end up with breast cancer because we can't control environmental exposures we had when we were like 20 years old or something like that.

You know, like, who knew that they were spraying us with pesticides when we were someplace, you know, that kind of thing. It's just, you know what it is.

But we can do everything we can to lower the risk. But once you have breast cancer, it changes the way genes are expressed. It changes everything. So it actually like hijacks and tau.

You go into a chronic state of proliferation. It's like a different world. So we really do have to be careful about using estrogen in women who have breast cancer.

That's present now. Like say you had ductal carcinoma in situ. It's like this little speck of something that's even like considered maybe not really cancer like pre-cancer.

And it's been excised and there's like no sign of breast cancer. It's not metastatic. And lymph nodes, if they were even tested, sometimes they don't even bother testing them that worried about them.

But there's no evidence of lymph node involvement. You basically were cured. I mean there's like no breast cancer. Those are women after, you know, obvious discussion and talking about it, I am open to giving them physiologic estradiol because I believe by controlling inflammation, mitochondrial function, I'm probably lowering their risk for future cancers.

Can I prove that? No, because we have no data, but we have science. We know what these cells respond to. We know what estradiol does, but it's a very personal choice.

And of course, nowadays they're giving women, even many women who have no real breast cancer, like ductal carcinoma in situ, are they clearly cured? They keep putting them on anti estrogens, you know, like tamoxifen and or arithmetics, you know.

And so it's I can't give people who are on those drugs an estrogen and you know, so maybe if you wait 5 or 7 years out and then you could continue it.

But now fortunately, at least even most every oncologist is open to vaginal estrogen so that women can at least have a sexual life and have better bladder and vaginal health.

So at least that's that. And then here's another like miracle of life. We have plants that are phytoestrogens, and there's a whole world of plants that have poly phenols.

It's like magic sauce of plants that bind to estrogen receptors. And they actually can have serious benefits. So, you know, eating things like organic whole soy and flax seeds.

So the soy is and other legumes or the isoflavones and then like flaxseed or lignans and then you have like from pomegranates, ellagic acid.

Where to Find Dr. Gersh and Closing Remarks

All of these are polyphenols from red grapes is resveratrol. Resveratrol is a phyto estrogen. So by eating through the plant world and legume world, you can actually help with those estrogen receptors by putting something in them that's actually going to turn them on and do some good.

So there's always like a backdoor way of helping things along, even when giving estrogen is unfortunately contraindicated. Yeah. Thank you so much for sharing all of this, answering these questions.

I know that women watching now are just feeling so relieved to have this information. And you've got tons more information for people. So how can people get Ahold of you?

How can they work with you? Where can they find your books? Sure. Well, my books are all on Amazon and my office is in Irvine, California. That's Southern California.

I work here every day of the week, Monday through Friday, and as well I try to put out an Instagram Live most weeks and that's Dr. like doctor period.

Felice Gersh my name and my website is integrative medical group of Irvine and I'm sorry integrative mgi.com. And my medical group is integrative medical Group of Irvine.

And I also can do a lot of telemedicine. So anyone who wants to see me, I am here for you. I know that your phone is going to be ringing after this for sure.

For sure. Thank you so much, Doctor Gersh. I love this. I hope we get to play again soon because this was good. Oh, it's been fun. Let's have another play date.

Yeah, so we will. All right. Take care. Bye bye.