Introduction and Guest Credentials

Hey, ladies, welcome back to Mastering the Menopause Transition Summit. I'm still your host, doctor Sharon Stills. Beautiful to see you all here. And we are going to have a great conversation.

I have a, menopause expert in the house. And we are going to talk about your cardiovascular system and things you need to know to help you on your journey.

So this is going to be a good one. Grab a pen, paper. You're going to learn a lot. You might want to take some notes. And so I have with me today Felice Gersh who is an MD.

She's a multi award winning physician with dual board certifications and ob gyn and integrative medicine. She's the founder and director of the Integrative Medical Group of Irvine, a practice that provides comprehensive health care for women by combining the best evidence based therapies from conventional naturopathy and holistic medicine.

For 12 years, she taught obstetrics and gynecology at Keck USC School of Medicine as an assistant clinical professor, and she now serves as an affiliate faculty member at the Fellowship in Integrative Medicine through the University of Arizona School of Medicine.

I didn't know that Felice is a prolific writer and lecturer who speaks globally on women's health and regularly publishes and peer reviewed medical journals.

She's the bestselling author of the PCOS S. O. S series, and her latest book, menopause 50 Things You Need to Know, which is available on Amazon and was also rated in like the top five of all Menopause books by Good Housekeeping.

So we've got an expert in the house. So welcome. It's so great to have you here. Well, it's just wonderful fun to join you and have a chance to talk to your very interested audience.

I mean, I know everyone out there cares about women's health, women's healthy aging, and menopause. So you have quite the impressive bio and I'm sure that's just a little bit of it.

So how how did your journey get you to being a women's health expert. Did you have a personal story or how did how did this end up being your passion?

Well, I went into medical school because that seemed like a wonderful career. And, I only knew about three careers growing up. You can either be a teacher, a lawyer, or a doctor.

So when you have a limited menu, it makes life a little simpler. And I thought I definitely of the three I choose doctor. So, but I didn't know what kind of doctor, but I figured that out as I went to a medical school because I loved my ob gyn rotation.

I said, this is for me. You have adrenaline rushes when you're doing like obstetrics. And they say, you know, emergency you needed, you know, to come and do this emergency delivery or C-section and you got to have continued long term care of patients.

You had relationships, you got to do surgery. I mean, it's like you had to know lots about everything if you're going to do a good job. So that was for me.

And so in terms of how I progressed into like integrative medicine, it was I always knew from the very get go that there had to be more to maintaining and optimizing health than just pharmaceuticals and surgeries.

So from the very beginning, when I opened my practice, I incorporated what I called my ancillaries. I had a Chinese medicine practitioner and I had a nutritionist, a psychologist, a biofeedback specialist, massage therapist.

So I just brought in a team that could augment my skill set, and it was only though after about, oh, like about 15 years ago when I decided it was my time after thousands of deliveries to move on from obstetrics, it was hard, you know, giving up skill sets.

But I added new ones and I decided, you know what? I'm not doing obstetrics anymore and I'm going to become more knowledgeable about all the things I've been using my ancillaries for.

I'm going to go. And I ended up doing a journey, trying to learn more, ended up doing the fellowship, the two year fellowship at the University of Arizona School of Medicine and Integrative Medicine that I'm now affiliated with, and I've never looked back.

Why Menopause Affects Heart Health

I finished that fellowship now a decade ago. It's hard to believe, and I've just continued on my journey to help women at every stage of life to optimize their health in a in a medical system that really, neglects a lot of unique issues that women face.

And so it's challenging for us women. And so I'm here, hopefully I can help. I know you can. So so let's we we said we were going to talk about there's so many things we could talk about.

But so we were saying before we went live that we I haven't really we haven't really dug into the cardiovascular system. We talk about hormones and how they're protective.

But I'd love to have that deeper conversation with you to really educate the listeners about what they need to know about their cardiovascular health.

Well, it happens that the number one killer of women remains cardiovascular events, and this is not really understood so well. When women are asked what is the biggest killer of women, they usually choose breast cancer, which is bar for far down the line.

So women have significant issues as they age with their cardiovascular system. And what is the cardiovascular system? It's the high way for getting nutrients and oxygen to every cell in the body.

It's not like an, you know, optional system. And it's very simple. And it's sort of, you know, when you think about it, you just pump a heart, you know, part pumps the blood and then it travels through all these vessels.

And the liver is the oxygen, the nutrients. And then it travels back, picks up more oxygen, picks up more nutrients. It just goes around and round. But when you get down to the detail, it's very complex and very, very inter related to female hormones.

And when women go through this inevitable universal stage of female life, we call the menopausal transition and menopause. It has a huge, huge effect on the function of the cardiovascular system, and it's so important that women understand what this all means to them.

And then, of course, the first step is to define the problem, understand it, and then of course come up with viable, effective, safe solutions. So that's what we want to talk about.

And so everyone can lower their risk of having a heart attack or a stroke. All right. Well let's, let's let's do it. Let's, let's give them this information because it's so important.

So what are the women need to know. What do they need to be. Okay. Well first of all I like to. Make it very clear the sex hormones which would be called, you know, estrogen.

Well done. One sexual. And then one second you froze. Oh, no. Yeah. So let's start. So start with first of all I'd like to make it very clear okay okay.

How many. Yeah. Weird. Oh goodness gracious. I have usually a very good connection. Okay. The first thing I want to make sure that everyone understands that what are labeled the so-called sex hormones that are produced by the ovary, you know, estrogen and progesterone.

And we're not going to talk too much, but we can touch on if we have time, testosterone. But that does not change at menopause. So we're just going to focus on estrogen the dominant and then progesterone.

It's very helpful. Sidekick. But they I have renamed they're called sex hormones but I have renamed them myself. It hasn't caught on quite yet but this could be the beginning.

I changed it to life hormones because they are the essence of life. Because the human body, the female body is very designed, very well designed for pregnancy.

Now, fortunately, we as human females can actually hopefully choose when we want to have babies or not have babies. And we love that as our prerogative, because in most animals, like, it's hard to think of any animals besides humans that can actually say, you know what?

This is a good year to have a baby or this is not a good year. You know, they just have them. Right. But the thing is that to understand that the female body evolved for fertility and pregnancy.

Now being pregnant is a very complicated, stressful time for a woman's body to go through. And you need a healthy organ system, basically, like every organ system in the body.

And particularly we need to have a very powerful and healthy cardiovascular system to enable successful fertility and pregnancies. So every organ system in the female body has hormone receptors for estrogen and progesterone, not just the female organs like the uterus and the fallopian tubes or the vagina.

Of course, they have hormone receptors, but so does every artery in the body, every vein, the heart, the heart muscle, and all the nerves that feed the heart.

We can go through every organ system in the body. They all have hormone receptors, because all the organ systems of the body have to be working together in synchrony.

And, you know, with the in the same time zone, you know, so you have to have the circadian rhythm being together for every organ, which is also very much controlled by estrogen, the form that comes from the ovary called estradiol.

So every organ system is linked through estrogen and the reproductive organs because you need a healthy body to have a successful pregnancy. That's why I call them life hormones.

And once you understand that all these organs require adequate amounts of estrogen and not just having it, there's also rhythms. You know, we live in a very rhythmic body that's linked to our solar system.

It's like so amazing how we evolved on Earth. And we have, you know, circadian daily rhythms. We have seasonal rhythms, we have lunar rhythms. It's like just amazing.

But so we have the rhythm of hormones, we have having hormones. And all of this is essential for having a healthy female body, the totality of the female body when we lose our ovarian hormones.

And that's really what menopause is. It's not about the loss of periods. That's just a manifestation of the loss of the female hormones. It's about loss of metabolic homeostasis.

It's about having everything sort of properly regulated and functioning at an optimal kind of, of a level. And the cardiovascular system is heavily involved with estrogen.

And that's like so sad that it's not recognized as such. So that when you have the loss of your ovarian hormones and I like I would rename menopause, but no one's asked me yet to ovarian senescence or aging ovaries because the menopause just so belittles what is really going on.

Estrogen, Mitochondria, and Heart Function

It's not just about loss of periods, about loss of ovarian hormone production, which means that you have this enormous metabolic shift in the body, like a real metabolic hit that affects every organ system, including our ability to make energy, which is so critical for proper heart function.

So I'm going to like go into a lot of that. But in order to understand the real significance of menopause on every system, and then we'll focus on cardiovascular system, is that all of these systems, organ systems, have estrogen receptors that we're all focus.

They also have progesterone receptors. But I'm going to focus predominantly on estrogen. That's like the master hormone. So we're going to have to like learn about how important estrogen.

And that's estrogen is key to female optimal functioning. And we lose that when we lose our ovarian production with menopause. Fortunately there are compensating ways.

And we'll talk about some of the things that we can do to optimize even in the environment of ovarian aging, how we can actually still have healthy functioning.

But we don't ever come up with all these solutions if we don't actually just acknowledge the fact they are what they are. Menopause is a huge metabolic shift and it affects every organ system.

And then now we'll talk about the cardiovascular system. Perfect, perfect. I'm totally on board with life hormones I will I will promote that. Yay. So, the one thing to start with as I began, is that the prime directive of life.

And I figured this out as I was delivering baby after baby during my peak baby delivering years is the creation of new life. And so in order to get through pregnancy and have a healthy, uncomplicated pregnancy, you need to have a really amazing, healthy cardiovascular system.

Now, what happens to the blood volume when a woman is pregnant? It doubles, so her heart literally has to pump twice as hard. So the female heart is very endowed with all of these little energy producing factories called mitochondria.

And estrogen is critical for the function and health of mitochondria. So few people even realize that even cardiologists so we have all these mitochondria.

They all rely on estrogen to work properly. And remember, when I say estrogen, I'm talking about the estrogen from the ovary, which is a type of estrogen called estradiol.

So estrogens are a family of hormones. It's not one type. You have several types. And they're also endocrine disruptors that are chemically made hormones that are never found in the human body.

And people call them estrogen well, because they bind to estrogen receptors. But technically they're actually endocrine disruptors. And that's like what's in birth control pills.

They're actually not human hormones. And they're really interfere with normal human hormone function. And that's their goal. But we need to understand what they are and what they can and can't do to both harm us and help us.

So what we have is a heart that is filled with these energy producing factories called mitochondria. And estrogen not only helps them to create energy through what's called the electron transport chain that creates all this ATP, all this energy.

But estrogen also helps to maintain the health of the mitochondria, because when you create this energy, you have a byproduct that's actually poisonous to the mitochondria.

It's, you know, like a metabolic waste product. And it's called superoxide. It's two oxygen molecules together. And that is poison. And it cannot diffuse out.

It can't get out of the mitochondria by itself. And if it stays in there, it literally will destroy the mitochondria and estrogen to the rescue. It actually involves an enzyme called superoxide dismutase that is very regulated by estrogen.

And that converts the poisonous superoxide into hydrogen peroxide. Now, hydrogen peroxide is kind of a poison too, but unlike superoxide it can diffuse out of the.

And once it gets out of and out of the mitochondria, it can be converted into harmless water. So but you've got to have that estrogen to make energy and to preserve the health of the mitochondria.

So after menopause you can see things are going to go down, you know, in terms of the energy of the heart being made properly. Not only is estrogen so critical in the form of estradiol, the ovarian produced estrogen, but there are actually receptors in the heart creating energy that are called estrogen related receptors.

What that means is the the substance they call it the ligand that binds to the receptor is not estrogen. It's something else that we don't even know what it is.

But that won't happen if you don't have estrogen. They're like a cofactor. So it's like a helper. And without proper estrogen that other whatever mystery thing is that needs to bind to this estrogen related receptor to create energy won't happen.

And it's even more the estrogen metabolite. Well, estrogen old estrogen goes through the liver to become modified. We call that bio transformation. So it can be eliminated from the body.

You know you don't have the same estrogen in you when you're 30 that you had when you were 20. It's like it gets changed, right? So the old estrogen goes out.

But in the process of going through the liver, some of that estrogen is converted to another metabolite called dropsy methoxy estradiol. And that is so amazing that it actually has its own receptors in the heart.

It's that amazing that there are even receptors to estrogen metabolites to make energy. So what happens to women in menopause, which is not true for men, because men just don't have the same kind of a heart in terms of its energy capabilities because they don't go through pregnancy.

And so after menopause, if you do an ultrasound of the heart called an echocardiogram, you can actually see that the heart is energy deficient when it doesn't have enough estrogen.

And it shows up because the heart does two things. It contracts. And that's when the blood pumps out and it relaxes. That's when it refills. And the pumping part is the systolic.

That's what creates the higher number for your blood pressure. And the lower number is the diastolic. And that's when you're not pumping and the pressure goes down.

So it's out. Higher pressure refill lower pressure. The refilling is the diastolic phase of the pumping. The you know, pump out refill pump out refill.

The no one pays attention in men to diastolic the refill. We call like the resting phase. They only pay attention to the contracting phase. So if the contracting phase is weak, then that leads to what we call congestive heart failure.

And that's very, very dangerous and very bad. But the refilling, when the heart is just opening and relaxing and the blood comes back in the diastolic phase, not pays attention, but on an echocardiogram in a woman when that is should be like very smooth in the woman, it can be like stiff and it's like a stiffer heart, a lower energy heart.

And that is seen on an echocardiogram as mild diastolic dysfunction and left to its own and lower estrogen. Over time, it can actually proceed into more life threatening heart failure.

And this is like a major thing that every woman, in my opinion, when she goes into menopause, should have a simple, noninvasive ultrasound of her heart to evaluate what the status is of her.

The energy of her heart and estrogen can help, you know, to maintain energy production in the heart. So that's one of the really important things to think about because you don't.

Heart failure is not rare in women, and it's very underappreciated and under-recognized. So that's like with the heart. Now, in addition, estrogen is really important for the electrical conduction system.

So the heart is an electrical creature, right. And it has this, you know, electrical stimulus that causes the proper heartbeat so that it contracts at the proper pace, and women without enough estrogen.

And this is one of the most common symptoms that women have. They have altered not only the conduction system, but the neurological system for the called the autonomic nervous system that that triggers this.

Okay. So it's electrical and that's nerves right. So that becomes also more dysfunctional. And one of the most common symptoms as women transition into menopause are palpitations sessions.

You know a lot of women have palpitations. They go to the doctor. They're put on a drug called a beta blocker. Okay. So and I'm not saying that's wrong, but it has to be understood that why is this happening?

Okay. It's happening because they're losing their estrogen. And estrogen maintains the proper neurological stimulus to the heart and the electrical conduction system.

And as women get older, they're more apt to develop in an estrogen deficiency state and inflammatory state, which happens as well, which we'll talk about atrial fibrillation, which is a dangerous condition of the heart where it goes, you know, really, you know, the very fast heart rate that is not going to pump blood as well.

And you have it the blood doesn't flow properly out of the heart and increases risk of blood clots forming in the heart. That can then flow out into the brain, causing strokes.

So atrial fibrillation is pretty common in women. So these are like all related to estrogen deficient states. So the heart is really essential for health in a female body.

And it's really dependent on having proper estrogen present. And so in and we need to recognize that as well. The heart has a blood supply. Right. So of course what is a heart attack.

It's when the heart itself is not getting adequate supply of oxygen. That's to the coronary arteries. And the coronary arteries have some big ones, you know, and they have like the right and left, you know, main coronary arteries, circumflex.

And those are the ones that typically get involved in male heart attacks in women. Women are a little different than men in so many ways. They often have involvement of the little blood vessels of the heart.

You know how like a big highway breaks down into smaller roads, smaller roads, and ends with a little country lane,

perhaps? Well, the arteries in the heart, the coronary artery, start out with the biggest arteries, and then they feed off into smaller and smaller and smaller until they have the little small littlest ones.

The capillaries women tend to, unlike men, not have their biggest problem with the big coronary arteries, the ones that they stent all the time, but rather with the micro arteries, the smallest ones.

And they tend to be the ones that cause the most trouble in women. So it's a very different scenario. Women have this, you know, problem more with their very small arteries, and they can trigger just as much a fatal heart attack, even though they're little.

Because what kills people from a heart attack isn't how much heart is killed that can lead to heart failure later. Like when? Because you have damaged muscle, the myocardium of the heart doesn't get enough oxygen.

Then it won't pump well in the future. But that's very bad. But that's not what kills people right away. And women die much more commonly from their first heart attack than do men.

And they tend to get misdiagnosed. Women's heart attacks are not always exactly presenting the same way, which I can tell you about in a moment. But what kills people from a heart attack or fatal arrhythmias?

That's why when someone has a heart attack and they collapse, they don't say, let's go and get the blood clot out with something like, no, that's they do that for a stroke or dissolve it.

That's different. But in the heart it's an arrhythmia.

Womenu2019s Heart Attack Symptoms and Risk

It's ventricular fibrillation. The heart is like jelly. You know jello. It's not it's not pumping any blood. It's just like shivering, you know, like a little shiver kind of thing.

And they get out. What? The paddles. Right. It's like, stand back. And then they, like, no shock them. Right. So that's. And women get a lot of problems with that when they get their first heart attack and they die at a much higher rate than men because they have altered both blood flow to the heart, the small vessels they have, you know, altered, neurological system.

So they're more prone to getting arrhythmias. So these are like, really important things to know that are often not recognized. And also a lot of people think that every heart attack should be like the classic one, you know, where you grab your heart and your chest and you say pressure or pressure, you know, pain down my left arm and that kind of thing.

But women, one of the most common presenting symptoms of a heart attack is anxiety and nausea. And then you know what happens. Sometimes they really I just don't feel right.

I don't feel right, you know? And like, I just feel like something's wrong, you know, like this, like, ominous feeling and anxiety feeling and pressure, but not necessarily not in their chest, but like, maybe in their tummy, you know, and they just feel like my tummy doesn't feel right.

It's like a whole it's a different kind of a of a feeling. They go to the sometimes they do go to the emergency room and they're given like tranquilizers and sent home.

And sometimes when they die, they're misdiagnosed because. And they try to they're trying to educate you, your docs, you know, it's like women are different than men.

They can present with heart attacks differently than men. But it's important for every woman to take charge of her own health and know that, you know, just if you suddenly out of the blue, this like like what's happening, you know, could it be an anxiety attack?

Yes, it could be a panic attack, but it could be a heart attack, you know? So, you know, you got to make sure that, you know, you alert all family members to, like, don't let them just give me a tranquilizer and send me out the door.

And I've seen that actually in the hospitals where the, you know, the patient is now in the hospital and having a heart attack because, you know, things can happen.

They come in for, you know, gallbladder surgery and then they end up having a heart attack because of the stress. And, you know, the whole environment, they feel something's wrong.

You know, they keep buzzing the nurse. Something's wrong. I've had this like horrible, like feeling. I just feel anxious I don't know. And they just tranquilize them, you know.

So definitely, you know, be aware that these are differences, so many differences. And, you know, I'll, I'll pause here to see if you have any questions or like, you know, I can talk all day.

So I know like, no great interview. I'm just kicking back. Well, I want to make sure, you know, it's, you know, it's obviously, it's such a huge deal because women die all the time as the most common cause of death.

And people think that women are immune because it's like a male thing. And honestly, before menopause, the incidence of heart attacks in women is not zero.

Because, you know, we live in a toxic world now, but it's very low. It's very low. But once you get to age 65 and it's increasing as you go, but once a woman hits 65, she actually surpasses men in the incidence of high blood pressure and strokes, equal in terms of heart attacks and higher risk of death from the heart attack.

So you know you're not home free. I always say there's like this little afterglow from all the hormones you've had. Hopefully, if you've had, you know, normal hormones and you enter menopause in a healthy state that you have this sort of like, I call it, like a halo effect, that you get to be pretty good for the first decade of menopause.

And then, you know, people think, wow, this, you know, I had some hot flashes. But, you know, this menopause is pretty easy, but they don't see what's happening under the surface that they're blood vessels or developing atherosclerosis, that, you know, their heart is not as energetic because nobody's looking.

You know, these are the invisible, the covert signs of cardiovascular changes in aging. And they don't manifest clinically, you know, like overt disease or issues or anything that really stand out often until into the 60s.

But it's but the the precursors are happening in the 50s. So it's just that it doesn't, you know, doesn't manifest yet. You know, they talk about and you probably have people talking about Alzheimer's that it can start, you know, three decades before it manifests clinically.

Well, it's not three decades, but it's like a lot of years can go by where things are subtle, they're happening under the surface. And then suddenly, you know, you have these conditions like, well, I tell people and they have diagnosis of high blood pressure, hypertension.

That's not an early sign of vascular disease, guys. That means you already have significant vascular issues going on. That's why I'm very big. And that's what we all have to be.

And integrative and functional medicine and being proactive because the best you know, every cliche is so true. You know, you know, an ounce of prevention is worth it because there is no pound of cure guys.

You know, that's the problem. So it's like a pound of prevention because, it's really hard to reverse a lot of things, like when someone has significant heart failure.

I mean, I can help stabilize with my approaches, but I'm not going to reverse it when someone has significant vascular disease, I can't just reverse it.

But when we take proactive steps early on and realize that things are happening, even when you don't feel anything, even in the Perimenopausal years, they've shown that five years before the period ends, there's already changes in vascular health.

You're already developing problems with the lining of the arteries. And by the way, there's significant bone loss even before you lose your last period.

That's an artificial marker. The last period that's, you know, the official definition. Menopause 12 consecutive months. No period. That's made up. Think of menopause as a process.

And the process is going on for years before that last period is happens. And that's the end of it. So you all the negative things that are happening, metabolic throughout the body are happening years before the end period.

Just like, you know, the brain is deteriorating years before Alzheimer's is diagnosed. It's only by being proactive that we can actually have a huge impact on the evolution of these cardiovascular conditions.

Just brilliant hair. Yeah. You ladies you just got a masterclass. This is this is what we go to conferences to hear. And you're hearing it here. So just brilliantly and eloquently explained.

And so I don't have much to add to that. Well I was going to say if we have time can I talk about artery health. Is that okay? Sure. And I also want to get to let's definitely talk about artery health.

And then I want to get to what are your solution treatments.

Artery Health, Cholesterol, and Plaque

Absolutely. But you know we've got artery. So the highways of the vascular system there's arteries and there's veins. They all you know, the arteries are the outflow system where the the oxygenated blood, the nutrition is going out to the tissues itself, pick it up and then the veins take it back and they're all estrogen related in terms of their receptors.

They need estrogen for proper function in terms of arteries. There's an enzyme that actually exists in artery walls that creates this very critical antioxidant gas that maintains the health of the arteries and the lining of the arteries, called the intima.

And that gas is called nitric oxide. And this enzyme is called endothelial nitric oxide synthase. And estrogen is like the, you know, the engine that keeps that enzyme functioning properly.

And it's so important to make plenty of nitric oxide. Some people actually have talked about aging. As you know, some people talk about aging. Well, it's mitochondrial dysfunction.

It's you know, other, you know, dysfunctions. And some people talk about it's nitric oxide deficiency evolution, you know, that gets lower and lower and lower because nitric oxide is really essential for everything that's functioning.

And the arteries are no different. And you need to have nitric oxide in an estrogen deficient environment. You're not going to make enough nitric oxide.

That's just pure and simple how it goes. And it's so important to have nitric oxide that men who if you have men in your life or anyone out there who's male, that's listening.

Men should love estrogen too, because much of the benefit of testosterone, which we want men to plenty of testosterone, is actually from its conversion into estrogen, the form estradiol.

There are enzymes called aromatase all over the body. And many organ systems, many, many, many organ systems that convert testosterone into estradiol the same estrogen that the ovaries make.

But in men, it's produced on site. We call that Tarquin. Endocrine is where it's made in one organ and it travels to another by blood. So it's like produced here, delivered there, and it's made here, used here.

And that's what men do with their estrogen. They make it on site and then they use it on sites. So it's not circulating. So you shouldn't you won't measure it in the blood.

But it's very critical. The enzyme that converts testosterone into estradiol, called aromatase, is in artery walls. That's how important is so that men get the nitric oxide.

They need to have healthy arteries. So it keeps the lining very healthy. It also helps to keep the arteries dilated so they don't just become constricted.

You know that it of course is going to restrict blood flow and elevate blood pressure. And estrogen also controls the different little peptides that are involved in the immune system that so that you don't have like the inflammatory process ongoing.

So, you know, inflammation is what causes damage to the artery walls. So you know, you want to maintain it, but you also don't want to have a lot of inflammation going on.

Because when you get inflamed artery walls they'll crack and fissure. And that's how you develop plaque. So you end up having this all this problem with, with plaque, only when you have damaged arteries and nitric oxide and estrogen together work to maintain healthy arteries.

So it's amazing. And also, you know, cholesterol is always talked about as the evil like the evil cholesterol. Well, cholesterol is essential to life by the way.

You know, the body loves cholesterol. The body makes cholesterol. That's not an accident. 90% of cholesterol is manufactured in the liver on purpose. And and we even have a recycling system in the gut to pull it back in because it's so essential and, you know, makes up the steroid hormones, cell membranes, the brain.

But if you have inflammation, which, by the way, you know, because we'll be here all day. But estrogen functions on all the immune cells, the receptors in all the immune cells.

When you don't have enough estrogen, you become pro inflammatory. The gut microbiome changes and it becomes abnormal. We call this biotic. And you get impaired lining.

So we get leads to impaired gut lining which we call leaky gut. And the immune cells have a lower threshold to creating inflammation producing those inflammatory cytokines.

So they're like landmines waiting to go off when they get connected with the toxins coming out the gut. Well, you have a whole body that becomes low level, chronically inflamed.

So when you have inflammation that drives a lot of problems in terms of cholesterol. So cholesterol is harmless. It's only when it becomes rancid or what we call oxidized.

And then it becomes oxidized cholesterol. Now oxidized cholesterol is actually protected against guess what by estrogen. Estrogen controls an enzyme called peroxidase one P0 and one or pan one that actually reduces oxidation or acidity of cholesterol.

And when you have low estrogen, the receptors in the liver, called LDL receptors don't work properly. So the cholesterol in the blood can't get pulled out of the blood back into the liver for disposal, down the bile duct, into the colon to be pumped out or recycled when needed, because the body regulates what it needs.

But you can't eliminate cholesterol properly if you don't have enough estrogen, because the docking system doesn't work right. So the receptors are not working right, so the cholesterol can't get pulled out of the blood.

So virtually every woman after menopause, if she's not on hormone replacement. And even then, because we can't like replace the ovaries, she'll have elevated cholesterol.

And the liver also becomes dysregulated because gut and so on is dysregulation that translates into the liver that it produces too much cholesterol. So it's like all these things going awry.

So you have oxidized cholesterol. You can't get it out of the circulating ocean. And you keep making more than you should. And then the immune cells pick up the old oxidized cholesterol that's circulating, because the body has no other way to get rid of it.

So the immune cells called macrophages, which are like the trash collectors, they go around and pick up old yucky cells and dead cells and, you know, viruses and bacteria.

So they're like the trash collectors. They gobble them up and they gobble up this yucky old cholesterol that's all oxidized. And then they fill up the immune cells.

Well the immune cells are attracted to damaged yucky cells. If you have damaged arteries, they're attracted to the damaged arteries. And they work their way in through the little cracks and fissures on the inside of the lining of the artery get stuck in the wall of the artery.

And those are now called form cells because they look like they're full of foam, but they're actually all oxidized cholesterol inside of them that they pick up.

And then they cause more damage in the artery wall, and it traps even more immune cells. So come to the party guys, and all these immune cells go fill up the artery wall.

It's all full of yucky old cholesterol. That's what plaque is. And more inflammation builds up. It looks like a volcano. It can explode. And that's ruptured plaque.

And that's what causes strokes and heart attack, not plaque but ruptured plaque. And none of that is going to happen when you have adequate estrogen because you won't oxidize your cholesterol.

You'll clear it out of the blood. You know, you won't have all those foam cells picking up all the yucky oxidized. You won't have damage to your artery walls.

That's why after you lose your estrogen in menopause, all of these processes start to escalate and that's not hopeless. So this is not like, oh my God, doomsday, you know, because it sounds like it sometimes, you know, when I talk about, you know, all these things happen in menopause, but the first step, remember to solving a problem is to define it, own it and recognize it.

Then and only then can we have rational solutions, like for example, statins. Everyone knows what statins are. They're like Lipitor and Zocor and Crestor.

Those are the brand names, you know, movies that and stories to and you know, so all these sets and statins are designed to block an enzyme that makes cholesterol.

Unfortunately, that enzyme also leads to the production of CoQ10 which is involved in energy production. So that's a problem. In fact, they took the highest dose of simvastatin, also known as zocor, off the market, the 80mg off because it was causing heart failure.

You know, why would it do that? Because it blocks CoQ10, a coenzyme in making energy. So you are trying to prevent heart attacks by causing heart failure.

Not a very good trade off. So they took that off the market. But all statins will create some energy producing deficit. In addition, in women, all the original data on statins was collected in men because up until 2015, women were not

even required to be in studies that related to general population stuff.

And so they weren't. And so while the data on statins, which wasn't that great anyway, was all in males. Turns out women are different. Remember, women are different and they do not respond very well to stents.

And in fact they have almost no benefit. You have to treat like way over 100 women to prevent anything from bad happening. And it significantly increases the risk of diabetes, which is horrible, you know, and estrogen helps to reduce the incidence of diabetes.

So women after menopause have a higher risk of diabetes. And then statins only add fuel to the fire of inducing more diabetes. So and doesn't really reduce events.

It can lower cholesterol. But what you care about lowering cholesterol if it doesn't lower heart attacks and strokes. So that is like a false premise, but it's based on the idea that cholesterol is inherently bad.

So what statins do is they lower LDL cholesterol. LDL cholesterol is not bad. Cholesterol is a type of cholesterol particle. Cholesterol can travel around the body by itself in these little carriers okay.

And they're called apolipoprotein. So they come in different varieties. And one is like LDL. And then there's HDL. But none of them are good. None of them are bad. They're all there for a purpose.

But once again, if you have oxidized cholesterol that's a problem. So there's no drug looks at estrogen, which nobody thinks about as a, you know, like a therapeutic approach to anything except us.

But so so what they do, they can't lower oxidation because they don't even talk about inflammation enough. Right. So it's inflammation that drives the oxidation of cholesterol.

So it's like rancid from the inflammation. So instead of like talking about let's lower inflammation. Let's look at a healthy anti-inflammatory lifestyle and the proper diet and stress and sleep and all the things that are lifestyle related.

No, they just want to lower cholesterol. But if you totally lower cholesterol, like hugely drop it, you're going to drop LDL. And then, well, if there's less LDL, there's less to become oxidized.

Well, that sounds rational, but you need LDL cholesterol. So, you know, it's like, you know, you know, like we don't want termites. Well, one solution is to burn all the houses down.

Well, great solution. Now we're not going to have termites in our house, but now we have no houses. So it's like not a good solution. Guys, we want to prevent oxidation, not get rid of all the stuff that's acts as a substrate for oxidation.

You see what I'm saying? This is like irrational. So that's why statins are not sensible you know. But we have to and especially in women. So we have to have other solutions.

So statins are not the solution. And blood pressure drugs can be useful. But they don't make arteries healthier okay. They just lower blood pressure in various ways.

And they all have side effects okay. So what are we going to do. Well number one is lifestyle. Now number two is hormones. So you see the order I set it in because I think of life and being healthy like a 1000 piece jigsaw puzzle.

And you know, as you age you kind of lose some of your pieces of your puzzle. I don't know if you've ever had a thousand piece jigsaw puzzle, but for me, every time I get one out, you know, not too often, maybe more during Covid, you know, because you're not doing anything but, you know, there's like, a few pieces missing.

Like, where did they go? How did I lose these? That's kind of like as we age, we, like, lose these pieces of our

puzzle that keep us healthy. Well, of the 1000 pieces, I consider the 400 center pieces, which are critical to seeing the picture when you put the puzzle together.

Those are the hormone pieces. But the other 600, the surrounding ones, that's lifestyle. When you start a puzzle, where do you start? Like your thousand piece jigsaw puzzle?

With the frame you look for the straight edges right, the corner pieces and the straight edges. So you always start with lifestyle. That's your 600 pieces of your thousand piece jigsaw puzzle.

So lifestyle is everything that you know. You have to get adequate sleep. You have to eat the right food, which is a heavily plant based diet. You know, real food.

You know, I like quoting, you know, our, you know, the guy that was out there, Mr. Pollard, you know, like, eat real food and not too much, you know? So, like, anything is better than eating ultra processed food.

That's like, anything is better than eating ultra processed food. But, you know, I'm a very big fan of, I call it Vegan plus, or it's called sustainability Diet, where you eat tons of plant based foods and a little bit of animal, but not too much, just a little bit for the sustainability of our bodies and our planet.

Because we can't like, have animals everywhere eating tons of grain and all this. Even grass.

Lifestyle, Phytoestrogens, and Hormone Therapy

You know, we don't have enough open grasslands to feed a bazillion, you know, grass fed cows and such. So, you know, eat a little bit of animal and a lot of plants and a variety, all kinds of plants and, you know, vegetables and and whole grains.

That means not pulverized grains made into like cake or something. And so whole grains and the legumes, beans, these are like the most affordable foods to buy.

The way, you know, all kinds of beans and lentils, every kind of vegetable that exists on the planet and fruits and everything. I also have another model.

Don't be afraid of fruit eating too many pieces of fruit isn't why we have an epidemic of diabetes in the US. Trust me, it's not because people eat too many apples or even too many bananas.

You know it's not. It's not the biggest problem here that we're dealing with. It's that ultra processed food and the environmental toxicants, which is another part.

So you eat the right food and you eat at the right time because everything is rhythmic. So you like you don't eat all your food at midnight. That is not a good idea. Even if it's good food.

You try to eat your food and not too many meals. I'd say no more than three times a day. Don't snack all day because you got to get that insulin and down, you know, because insulin is essential to life.

But we don't want to have a high amount all the time. It'll make you fat and it will make you insulin. So we want to, you know, eat the right food at the right time when you get enough sleep, because that's we know so much about sleep.

It's not the absence of awake. It's like a very active time of the body. That's when you have this giant surge of blood to your brain and you like, reduce all the inflammation and you get some growth hormone.

And it's like you get your melatonin, which has like so many different actions in the body, not asleep. It's like a very potent antioxidant. We do think things like oxidized cholesterol.

So you need to get that sleep and you need fitness. We live in such a sedentary environment, our lives. So exercise is like the cure all for just about everything.

It improves gut microbiome status in that it beats antidepressants like so many times over in terms of improving mood. It activates, you know, your mitochondria.

You can have micro genesis increase mitochondrial production and health. So exercise, fitness is so critical. And then stress control, you know chronic stress is a killer.

We you know there's so many mechanisms. We understand how chronic stress and it changes your cortisol your autonomic nervous system your gut function.

And so so many things. So you know I'm huge on mind body medicine. And that's not woo woo. That's like evidence science based medicine and environmental toxicants.

All the the collection of plastics and flame retardants and pesticides and herbicides are so toxic they're mostly endocrine disruptors. A lot of the problems that people face are because of endocrine disruptors that interfere with the normal function of hormones, particularly estrogen.

And that and they call them like diabetes surgeons. They're endocrine disruptors that increase diabetes and obesity. And they're interfering with guess what estrogen.

Because I mean, I could you know, I do ode to estrogen because estrogen also regulates your appetite. And of course mitochondria burn fat. So if you can't burn if you have mitochondrial dysfunction which happens, guess what you're going to do make that it's a different skill set to make that than to burn fat.

So after menopause women are very good at making fat. Not so good at burning fat, which makes you tired too, because fat it's energy, right? So nobody wants a big middle and fatigue.

But that's what happens to a lot of people. But we can work on that. You know, with exercise alone is amazing for improving the ability of mitochondria to burn fat.

And I have to do a call out to phyto estrogen foods. So a whole array of foods we don't even most people don't even know that they know soy, you know, so it's a vital estrogen.

But so are all the legumes, all the beans, lentils, nuts and seeds and many vegetables and fruits. There's many different types of phyto estrogens. There's isoflavones.

There's a lignans resveratrol, which is considered like amazing. It's a fasting mimetic. It gives a lot of the same effect that if you fasted and it's like in grapes and other fruits, and resveratrol is an estrogen mimetic, it's like a mimic of estrogen, a phyto estrogen.

Pomegranates have phyto estrogens, flaxseeds with the lignans or like all the seeds, so, so many foods that we think of as healthy, they have these magical ingredients.

I call them the magic source of foods that are plant based, that are called polyphenols. And they're actually phyto estrogens, which means that they're like magic.

Ingredients bind to estrogen receptors in a very good way, and actually can help the cells to maintain a lot of their healthy function. And they've actually done studies that show that night sweats and hot flashes, which are not just bad, they're bad omen for the future.

They're high levels are associated with increased risk for heart attacks, for example. And you can actually dramatically eradicate them through eating soy, organic, whole soy.

But you can add any of the phytoestrogens. So a heavy plant based diet will reduce night sweats and hot flashes. And that's a healthy thing to have happen.

So don't underestimate the power of our food. As a menopausal antidote. So we have all these different things and then we have hormones. And I know people have talked about hormones, but you know, hooray for hormones that some people cleverer than I have been able to, you know, create human bioidentical hormones that we can get into the body to mimic what ovaries do.

The thing that has to be recognized is that 20 years ago, when this unfortunate study called the Women's Health Initiative was published, you know, came out, after it was actually shut down, they did not use human bioidentical hormones.

And they made all kinds of really ridiculous, generalizations. It would be like doing a study that says my analogy. If you use a study with strawberry flavor jelly beans and you find the effects are not so good, like cavities, diabetes, obesity.

But the conclusion is don't eat strawberry flavor jelly beans. Unfortunately, the conclusion is never eat organic strawberries. And that is as bizarre as it seems.

That is really what they did. They badmouthed and they, you know, vilified human hormones to the point that so many doctors think that our beautiful natural hormones are life.

Hormones are actually death hormones. They kill it. They do not kill us. Those are endocrine disruptors. The things that they gave are never found in a human body, which makes them endocrine disruptors.

So if I told you to lick plastic all day and then I said, guess what? That wasn't really a healthy treatment. Sorry I told you to lick plastic all day, that, you know, you would say, well, that seems obvious.

That was not a healthy thing to do. I wouldn't want to get my hormones by licking plastic all day, but that's kind of what they did. I mean, that's bizarre as that once again, sounds.

So if you lick plastic all day, what does that have to do with the man in the moon? What does that have to do with your hormones, your beautiful hormones that you make from ovaries that we can now replace?

Because the brilliant people who figured out how to manufacture human identical hormones that we can give. But the people are so afraid, even a lot of doctors who prescribe them, they get these little minuscule doses that would be like, you know, broccoli is good for you. Why don't you eat one bite a month?

It's like, that's not really adequate. Okay, so you don't want to give ridiculously low doses. What you want to give is the most efficacious dose. So what would that be to mimic?

Like something like what a healthy 25 year old woman would have in her body. So we can't make you 25, but we can at least try to get the hormones into a physiologic level, not some joke level.

And that's what a lot of the studies used that came out after the Women's Health Initiative. That was the doctors doing the studies were so afraid of hormones that they give absurdly low doses.

And then when you measured the levels, they weren't any different than menopausal levels. And it's like, well, duh. That's why I probably didn't have that much of an effect.

And there were other problems, like they kept using the wrong stuff. It also because the doctors doing the study sadly didn't really understand hormones at all, but they meant well.

So a for effort but effort outcome. So so yeah. So true. I mean you got to make sure, you know, the labs we used with the postmenopausal woman, when you have her on hormone replacement, you're putting her into a luteal

phase so that she actually you're not putting her to be in a postmenopausal phase because that.

Yeah, that's not the goal or even an early, early follicular phase when estrogen is at its lowest. That's a really important point that, you know, that you're making here.

Is that estrogen the effect on the immune system is actually dose related. So low doses, low amounts are actually more pro-inflammatory and higher doses are anti-inflammatory, which is manifest in the menstrual cycle.

The menstrual cycle doesn't have the same dose all of estrogen. It's not static. So when a woman is obviously she has this giant spike of estrogen. And at that point she's the most anti-inflammatory for good reason.

It's down regulating the innate immune cells so they don't attack and do not kill the sperm or the developing, you know, embryo if there is one. So the last thing you want to do is kill because remember, those are foreign objects in the body or immune system is designed to attack invaders.

So we don't want the immune system to attack invading sperm, you know, because we, you know, so that's why the immune system is downregulated at ovulation.

But during the menses when people are bleeding, that's actually the lowest level of estrogen produced. And that's an inflammatory step in a stage of the woman's menstrual cycle.

Because what's happening that's pro-inflammatory. Well her uterine lining is dying. It's dead. It's having to be expelled. And in order to have that happen, there's a pro-inflammatory plastic landing that's produced in the uterine cavity.

But if you're too inflammatory, that's the problem. Then you make too much in this. Guess what? Then you have too many cramps. So you're supposed to have a little bit of cramps because that's the uterine muscle contracting to expel the uterine lining, just like it's a mini mini mini mini version of like what happens in labor when you have prostaglandins.

That's how we actually we use prostaglandins as an OB. We would like ripen the cervix and prostaglandin. So you will end. And when pressed the glands can trigger okay.

When you have a drop in progesterone you trigger the prostaglandins the endocannabinoid system. It's a whole amazing complex an inter reaction. And it happens on a microcosm, a tiny little level.

When you go through your period. But when you have too much inflammation then you have a lot of menstrual cramps, you know. So if you have a lot of cramps, it means you have too much inflammation.

You're making too much of this pro-inflammatory prostate gland. And and your estrogen level is quite low at that time. That can also trigger like migraines, menstrual migraines.

So you know, we have pro-inflammatory we have anti-inflammatory levels of estrogen. And so in menopause you don't want as your goal to give the tiniest amount of estrogen that has no anti-inflammatory effects.

So we've got to get this straight. Don't go backwards. All right. If we're going to go against nature, which realistically, if we're giving hormones in menopause, we're going against nature because nature sees this as an exit strategy.

You know, like you've served your purpose, you know, you know, so I, you know, so, you know, because most animals in the animal kingdom, when they reproduce, when reproduction is over, they die, okay?

Not too many animals live past their reproductive capabilities. We're lucky we get to. But nature kind of disarms us a little bit, you know, makes us go into a little bit of a deterioration state.

And so we're trying to outsmart Mother Nature in this way. So if we're going to try to outsmart mother Nature, we should outsmart it on its own terms by recreating the environment that is the most connected to being optimally healthy.

It's like when when they try to create new food and outsmart nature. That did not work. You know, the ultra processed food did not do better than beautiful garden fresh and, you know, farm right off the off the tree and healthy organic farm food.

So we we don't want to recreate a new hormonal environment. You know, we just want to mimic nature, okay. Like at the best time of our health, you know, like in the 20s.

So we're not trying to recreate a new dinner mix of hormones. That's why I just say we're not smarter than nature. If we're going to try to be smarter than nature, then we have to mimic nature by create an environment in the body with hormones that are mimicking the hormone status of a healthy person at the healthiest stage.

Because remember, every cell in your body is a different age. Like it's like the cells of your body. Don't think, oh, Mary is now 54, so she's decrepit.

No, it doesn't work that way. The cells of the body are genetically programed to do what they're genetically programed to do. They don't know how old you are.

Remember, every cell in your body is in the same cell that was there the day you were born. Cells die. That's why we love stem cells, right? By the way, estrogen helps with that.

So of course so we want stem cells so we can make new cells right. And when your stem cells are gone then you can't make new cells. That's the end. Right.

If you can't get rid of you know, get rid of old cells and replace them with new cells, you can't like, fix anything. Right? So we don't want that. We want the big pool of stem cells.

So every time the body makes a new cell, it doesn't think how old you are. It just does what it's programed to do. That's so important to think about that every cell just does what it's to do.

If you just give it what it needs the right nutrients, the right hormones, the circadian rhythm, you know, you reduce toxins. And then that's the ticket, ladies, to healthy longevity.

It's still what it is. And that includes every lifestyle thing. And in my book it means hormones. Amen. And that was our estrogen. Yes. Oh yes yes. All had just thinking all hail estrogen and you I just love being able to sit back and just, you know, just everything you said I just 100% stand behind and agree with.

Oh, true. I love your I love your analogies of the strawberry jelly bean. And I think that you talk to them because I say the same thing. But I love how you talked about the puzzle and how, you know, the the lifestyle is because it's so true.

So oh my goodness, thank you for for blessing us with your with your wisdom. It's obviously you are a proficient lecturer and, I feel like I just was at a hormone conference and just go, oh, good.

Well, it's going to give me your time. I want to give you something back. Yeah, I know, I know the ladies. I told you, you are going to learn a lot. You're going to want to listen to this one again and again, because there's just so many juicy pieces in here that are that are so crucial.

Which is why part of why I wanted to do this summit was just to dispel all the myths about estrogen and get rid of that unfounded fear and really, right, make you love and fall in love with clean estrogen.

So, so thank you so much. And, we can find your book. Tell me the truth. And yeah, so my menopause book,

menopause 50 Things You Need to Know, is on sale at as we speak on Amazon.

Fabulous. Well, you know, it's going to be chock full 50 things. Oh my goodness. Well, thank you for for just being who you are. You're you're a force of nature and just doing so much good in the world and helping women.

And so I so appreciate you and thank you for being here. My pleasure. All right everyone you got a lot to digest. We'll be back soon. What's.