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Hey everybody, Dr. Rob Silverman here, Proven Health Alternatives. I have a superstar in the world of functional medicine, a two-time bestselling author, Doctor Felice Gersh.

Dr Gersch, how are you doing today? Just great. We're really happy to have you. I know you're going to lay what we call those knowledge bombs and share some really implementable ideas.

So I've got a couple of notes here. Various studies have shown that menopause can raise a woman's risk for several health conditions, including sleep disorders and cardiovascular issues.

Almost all women from the ages of 45 to 55 will experience menopus. Lastly, research estimates that there's more than a billion women globally, which will be in menopause in 2025. What is going on?

Well, it turns out, and this I figured out decades ago as an obstetrician during my heyday of doing deliveries for 25 years, thousands of babies, it became quite apparent to me that the prime directive of life, whether you want to have kids or not is your choice, but the Prime Directive of Life is the creation of new life.

And to that end, you need to cardiovascular system, neurological system genitourinary system musculoskeletal system. Every organ system has to be optimally functioning for a successful reproduction.

In humans, in order to successful, you have to fertile, conceive, have an uncomplicated pregnancy, deliver, nurse the baby and then do it several times over and raise each child to his or her sexual maturity.

So you have to be really healthy to have the species persist and survive. To that end, estradiol, the estrogen made by the ovaries, I consider like the hormonal glue that keeps all the organ systems working in the same time zone, in optimal state of being, and when we go through menopause, we lose our ovarian.

It's so simple. We lose ovariant production of estradiol and its sidekick progesterone. And so every organ system,

these hormones have receptors throughout the body on every organs system.

we become insufficiently provided with these vital life hormones. I never call them sex hormones anymore. They're life-hormones. So every Oregon system will suffer a serious metabolic hit.

Menopause and Estradiol Basics

And unfortunately, every female, 100%, no matter what continent, no what ethnicity, will experience the process of menopause, which is actually a word that is unfortunate because it makes it sound like it's all about periods.

when it's all about the ovaries, about aging of the ovarian senescence. And we have to, as females, go through menopause, not just because nature dictated it, but because if that didn't happen, we would all die because fertility becomes really dangerous as you age.

As an obstetrician, a woman who's 35 or older is considered elderly and starting to have high risk factors. So if women stayed fertile throughout their you know, highly fertile throughout their late 30s, 40s 50s 60s.

They would all die in pregnancy and childbirth. The babies would die. I mean, it would be basically suicide to all females at that point. That's why males can be fertile forever because they don't have to go through pregnancy.

Females have the stop. But with that hard stop, which could be anywhere typically average, like you mentioned, 45 to 55, but some are earlier, some or later.

But it's going to be universal and every woman will suffer with some issues. It's not just if, it is how bad. because every woman is unique and different and comes from a different point of health and so on in genetics.

But every women will suffer a serious metabolic shift as her hormones decline. And this wisdom, this like foundational understanding of women's physiology and what menopause is, was lost, really lost for the last 23 years in the conventional medical world.

because of the Women's Health Initiative and the mistaken interpretation of this study. And so, you know, the important thing is to resurrect this knowledge base of what is really happening to women so we can be proactive instead of just reactive as issues are being developed within the female body.

Love the idea of proactive versus reactive, as we'll… get to the wheel of fortune of functional medicine. But you said estradiol. A lot of people may be confused.

What is estridiol and how does that differ then from estrogen? Oh, that is such a really important point because, and we can talk also a little bit about progesterone.

So estrogen is not a hormone, just like fats are different. B vitamins are like families. Estrogen is a family of steroid hormones in the estrogen family.

And in humans, there are four estrogens that can naturally occur, three in adults and one in fetus coming from the fetal liver, and that's estretal. But the other three that are in the adult female, and they're in males too, but we'll leave males out of this for now.

They have much smaller amounts, would be the estradiol known as E2, the big letter, just like B vitamins. There's a letter and a number, Just like there is B1, 2, 3, 4, 5, all the way up, you know, it's 12. And they have the bigger letter the number and then they a name.

The same thing for estrogens. There's E1 that's estrone, and then there's e2 that is estradiol, E3 estriol E4 estetrol. And they have different strains in terms of how they bind.

They also have different effects on estrogen receptors. So they basically have different affects in the body that can

be quite dynamically different. And E2 estradiol is the estrogen produced by ovaries.

It's the dominant estrogen of reproductive aged women and only estridiol binds to all the estrogens receptors in a balance coordinated way. And the other estrogens are not evil.

They're supposed to be there, but they're not supposed be the dominant one during non-pregnancy, when estriol is the dominate one. But pregnancy is a whole unique state of being, which we don't want to recreate unless you're actually pregnant, because there are a lot of potential that's why pregnancy is a unique time, a very stressful time for women.

That's way it's known as the ultimate stress test for reproductive women, so estriol is critically important estrogen, estrone as well, but they're not supposed to be the dominant one in women who are like reproductive aged and they are not optimal to beat the dominate one at any particular point except if you're dealing with estrial and you are dealing with pregnancy.

So anyway, it's really important to understand this. And then we have other estrogens that are man-made, but they're still called estrogen, like the usual estrogen that's in birth control pills is EE, ethanol estradiol.

It's a different molecule, But it can bind to estrogen receptors, not in an identical way to estridiol, And then there are what are called xenoestrogens.

These are the ones that are, the pollutants, endocrine disruptors that in our environment, like things like BPA, bisphenol A, phthalates, even like metalloestrogen like mercury, they actually can bind to estrogen receptors.

So there're numerous, endocrine disruptors, and some of them have actually become pharmaceuticals. They actually are endocrine disruptor, actually EE, ethanol estradiol, if you went to toxicology.gov on the the NIH website, it's listed as an endocrine disruptor.

So yeah, so they're, they are estrogens, but they not natural estrogen. They have different effects and we need to understand it. It's so important because even in like really high end respected medical journals, They often use the word estrogen incorrectly, when they're referring to one thing but it's really another thing or they group them all together like they are all the same.

So my analogy would be like fats. There's trans fat. Now most people know manufactured trans-fat is very bad for people. But then there are monounsaturated fats, like from olives.

And then, there's omega-3 fatty acids, omega 6 fatty acid, and then they're saturated fats. I mean, they have different effects. They're made of different fatty assets.

and they are not all the same. If you do a study with trans fat, the conclusion is all fats are evil. Stay away from fats and I bring up fats because I used to defend fat all of the time.

you too i'm sure we had to defend you were right no doubt about it yeah but now i mean so if you do a study with trans fat but your conclusion is all fats are evil i ii mean that's a big problem because guess what fats or essential to life you know so that what happened with that women's health initiative study they used chemicals and hormones that would never exist in a normal female in very different way, and they had some adverse effects.

But the problem with the study was the studies studied what was in the studying, but they made generalizations to all hormones. That's like a criminal offense really in medical science and research to over-expand your conclusions to things that you didn't even study.

And that would apply, of course, if you did another study, and there were some other studies to follow, where they used what I would consider the wrong doses or additionally the long forms, like an oral form of estrogen, which has a different effect than a transdermal form.

So there's been a lot of problems in the research around hormones and menopause. And my goal is to try to start getting some appropriate studies because we can never get the conventional medical world to buy into anything without clinical studies.

There's a ton of science. We know the science, but if you don't have clinical study, the medical societies will never change their position papers on what they recommend, which they have not, because they'll say, But where are the clinicals studies?

And it's like, well, nobody's funding them. Well, then we're not going to change our position. But look at the Science. Then they don' want to by into the So it's really frustrating as a doctor who's taking care of women for decades and understands menopause and what it does to the female body, and that it doesn't matter to me that its natural, it has to happen, but it is not naturally beneficial.

And so, you know, everything that's natural doesn' t mean it s going to provide benefits. So, we know it' s about time and things, the tide is changing and menopus is now being recognized as a big hit, metabolic shift and so on to women's health and how many organ systems are involved since these hormones have receptors in every organ system.

Testing, Symptoms, and Metabolic Changes

But even when that becomes established as the norm that menopause should be treated, then we have a whole new layer of problem which is So what are you going to do about it?

Like, how are going give the hormones? And that's the next stage is first recognizing menopause is a condition of women's lives that really should be treated.

And then the Next is, so what do you gonna do? About it. How are You going? To give hormones and Well, are hormones sufficient? No. You still got to do all the lifestyle stuff.

At every stage of life, you've got incorporate all of the, the life style elements and cause hormones are, I call them necessary foundational, but not sufficient.

But you know, so there's so many layers of what to about perimenopause and menopaus. but at least now people are more open-minded in general. The dialogue is now happening.

So that makes me at-least smile. There's a lot to unbox there. It's great stuff. So loss of estradiol, increased visceral fat, increase insulin resistance, altered lipid metabolism, weight gain, increasing risk of type 2 diabetes, metabolic disorders.

I don't want to go through female. Metapause. There are two big questions. that probably resonate from the people listening to you. Number one is what blood tests, what numbers should I look for from a practitioner?

Are the regular Western medicine practitioners taking them? And number two, how do I get rid of these endocrine disruptors? Wow, that is a lot too. And one of the things that you said I just want to jump to again, Was like you talked about like fat tissue and you know fat Deposition and that is really something that women notice they notice that even when they try to do everything right They're still eating the same healthy diet and they're exercising maybe doing even more they find that their waistline is disappearing they are getting belly fat and That is just really like the epitome of obviousness of what estradiol does in the body, that it does control everything about adipose tissue, the adepokines, and the hormones.

Fat tissue is an endocrine organ. It makes leptin, adapinectin. These are like vital hormones involving energy regulation. appetite regulation. These are like critical hormones that are regulated by estradiol that many people don't realize.

And without estridiol, things become dysregulated and you end up with this inflammatory visceral fat. The other

thing that everyone should know is that there are these little organelles, they may have heard of them, called mitochondria.

that are the energy producers and they do more than just produce energy. That's like a critical function in itself, but they control the cell cycle. They help to decide like which cell is doomed, you know, because it's old, it is senescent and it should die because if they don't, if old cells don t commit cell suicide, apoptosis and die, They live on to create inflammation, potentially turn into cancer cells, and sometimes they're called zombie cells.

These like really yucky old senescent cells all of that is controlled by the mitochondria and the Mitochondria are hugely modulated by estradiol. So when you lose your estridiol, you'll lose control of the cell cycle when cells should die.

You also cannot properly create energy. You can't burn glucose, you can burn fat properly. So you see how all of these metabolic processes that you mentioned like insulin resistance, the glucose transport system relies on estradiol.

All of those things are critically important. and related to the fact that pregnancy, for example, it's critically important that you have the optimal energy state, that the intake of energy known as eating to match the needed energy expenditure.

So all of that is modulated by estradiol. These are just huge, huge things that everyone should realize that These transformational systems involving our energy, and that's what metabolism is when people talk about your metabolism changing, you know, the utilization, production, distribution, storage of energy.

All of that. is vital for life and regulated by estradiol and the immune system as well. After menopause, women become systemically inflamed because we have more of these zombie cells, but each of the each immune cells of body has estrogen receptors and without estrogen, their default is to become more pro-inflammatory and these different pathways, many pathways in the body have two arms like the pro and the anti-inflammatory without estradiol.

By default, they go into the Pro-Inflammatory. So that's just a smidgey more background on it. And then let's get back into your questions. No, that was great.

Highlight point, mitochondria, pow house of the cell. They also have an immense impact on immunity. I love the fact that you highlighted. That's an overarching theme, the cells cycles, or autophagy, mitophage.

We in the world of functional medicine, if these cells don't die, those zombie cells are spewing out inflammatory things. It's like the Boris Karloff monster.

I forget her name in The Exorcist, Linda Blair just spew out all sorts of things, sorry for being graphic. No, I love images, so that's great. I think that's a salient point.

I sit here and every time I have a female patient coming in from 40 to 55 who's looking at me as a male, you wouldn't understand. Just from your description, I understand better.

What blood markers should they be taking? How old? That kind of stuff. Can you guide them because they come in with very rudimentary levels? For perimenopause, there is no absolute test.

You are clearly in perimentopaus, but there are things that can be clues. Number one, Well, this is clinical evidence, not a test, but if the menstrual cycle is changing, often what happens is the cycles get shorter.

So maybe there was a 28, 29-day cycle, it drops to 26, 25 days. What's shortening is luteal phase, the time after ovulation gets shorter, and that is also coinciding with reproductive decline, right?

So we know fertility goes down as well, and that is often manifested in an inadequate or a short luteal phase. In

addition, there are many symptoms that women may experience years before the actual official menopause, which is an artificially defined term, 12 months without any bleeding.

That's actually late in the process, not early in process of ovarian senescence or aging. So women may notice symptoms and they're often, unfortunately, just kind of brushed off by doctors.

This is another shocking thing. Over 25% of women in their 40s are started new starts on antidepressants in the 40's and their perimenopause because there's receptors all over the brain for estradiol, progesterone, and as these hormones are declining, the neurons that are involved in making the neurotransmitters, like serotonin, they're seratonin neurons.

They depend on estradiol for the production and receptor function of serotonin. And from seratonins comes melatonins, which of course is important for many things, including sleep.

So many women years before, five years even more than that, before the final menstrual period, start having sleep disorders, and maybe start having sleep apnea.

I order a lot of sleep studies. We start with the home sleep study because they have disordered breathing during sleep and sleep Apnea and they will have mood swings.

That's why they end up so many of them on on antidepressants and tranquilizers and so on. And they'll notice the weight change, like you mentioned, visceral fat.

They'll sometimes start having vaginal dryness or overactive bladder or incontinence symptoms. So they start to have different forms of incontinent. Every woman looks in the mirror, at least from time to time, and they notice skin wrinkling because a lot of collagen is lost all over the body in joints, in bone, and in the skin, they see facial aging.

The plastic surgeon starts seeing this influx of all these women showing up in their 40s and sometimes late 30s because many women are already going into menopause in there early 40's.

So the precursor is the 30s, right? So they're having issues already. And so there are many just clinical signs that may be happening, change in libido, changing energy, like, so a lot of that is going on.

Silent things are happening of course as well that need to be monitored. Blood pressure can start rising. A blood pressure cuff is a really good thing to have, because that's a sign not of early, but actually late vascular disease.

By the time you actually have, you know, pre-hypertension and hypertension, cholesterol goes up. So it turns out that cholesterol, the enzyme that, for example, that statins are partially blocking, HMG-CoA reductase, that enzyme is modulated by estradiol.

So basically 100% of women will have increase in cholesterol production from their liver because of dysregulation of this enzyme as their estridiol levels start to drop.

And this can occur, like I said, a few years before that final menstrual period. In addition, there are what are called LDL receptors on the liver that help to pull cholesterol that's circulating out from the blood back into the livers for either disposal or recycling.

The LDl receptors rely on estradiol and you get more inflammation that leads to oxidative stress, reactive oxygen species that can lead to oxidation of cholesterol.

We call it oxidized LDL. And the enzyme that helps to block the oxidation or like the equivalent of resting of Cholesterol is peroxinase 1 known as PON1, that enzyme has a modulation effect by estradiol.

So there are all these things happening to the lipid system. And then because you get more insulin resistance, it will often translate into higher triglyceride production as well, which is often a reflection of insulin resistant.

You definitely want to get a lip profile, you want a high end lip end profile. Whether you like to get lipid particle sizes, I like the apolipoproteins A1 and B.

So it shows me like, okay, we don't want to just know total cholesterol. We want know is it inbound or outbound from the liver. That's really important because many women And that's another thing that is not recognized.

HDL, which some people call good cholesterol, but it really isn't. It's just cholesterol. Just a carrier protein for cholesterol and a piece of that called apolipoprotein A1 and also known as reverse cholesterol so it's the particle like envelope that carries cholesterol back to the liver and that it actually modulated by genetics and estradiol.

So, it's like, you know, every time I research anything, yeah, estridiol's involved. You want to get all of these lipid profiles. Now, here's another interesting thing.

There are receptors on the thyroid gland for estradiol, and the receptors for thyroid require, for optimal function, estridiol. So many women will develop low thyroid, hypothyroidism, when they are transitioning into menopause.

And even if they have so-called normal or in the reference range thyroid levels, They may have the symptoms of hypothyroidism because their thyroid receptors, as the estrogen production goes down from the ovary, their thought thyroid, receptors are less functional, kind of like a similar to like insulin resistance.

We have thyroid receptor resistance, so you need to have. The receptor working to receive the hormone. for the ultimate effect within the tissues. And so many women are also brushed off because they read Dr.

Google and they have all the symptoms of hypothyroidism, but their lab tests don't show it because the receptors are not working optimally. But you know, you wanna get that, and then many woman will develop Hashimoto's as well, because when you don' have enough estradiol, uh-oh, the gut microbiome shifts to a dysbiotic state.

abnormal gut microbial population because that relies on estradiol. It's like a really amazing synergy between the hormones, the autonomic nervous system, which has the vagus nerve, part of the parasympathetic, should be the baseline.

They call it rest and digest. When things are calm and really good. The predominant neurotransmitter for the vagus nerve is acetylcholine, which requires estradiol for proper production and function.

So after and in the transition into menopause, women become more sympathetic dominant. as in stress, that's the stress part of the autonomic nervous system that sometimes people call fight or flight.

It should only be induced, the sympathetic part, when you have trauma, you know, injury, pathogens and infection, it shouldn't be the normal state. But what happens as you transition is you vagus nerve going down in terms of it's the vagal tone you have less parasympathetic more sympathetic so women are more stressed they have more anxiety and they're more palpitations a lot of that happens because of the sympathetic nervous system being over activated and the Vegas nerve The autonomic nervous system controls everything in the body we don't think about, which includes gut motility, the peristalsis of the gut.

So as women are transitioning into menopause, they have more acid reflux, more GERD. Like before menopus, women have much less acid reflux or GERD compared to men but with the onset of menopause women surpass men in Gerd and they will then have gut problems, gut motility problems which also will affect the gut microbiome.

Hormone Therapy and Lifestyle Strategies

So women as they transition into menopus will get leaky gut impaired gut barrier and that causes inflammation also because you have the toxins coming into the body but as well when you Have the microbes from the gut coming in to the it's tantamount to a chronic infection and the immune system which resides largely around the ultimately starts reacting to though the passage of these microbes into and they will create antibodies against these microbes coming in.

And as a chronic infection, over time, there is a process that can occur called molecular mimicry, where our own RNA and DNA, the nucleotides that make up all life forms are similar, whether it's a bacteria or us.

It's like mistaken identity, and we start making antibodies ourselves which is autoimmunity which can lead to Hashimoto's autoimmune thyroid and rheumatoid arthritis which are predominantly seen in postmenopausal women.

So you have the change in the gut, the immune system, and the auto immunity. We need to test for these things. Many women will have aches and pains. and they'll have joint pain, we need to look for things like autoimmunity, rheumatoid arthritis.

We need test for Hashimoto's, for the different antibodies that are involved in hypothyroidism from auto immunity. So those are important. And because I mentioned inflammation goes up this, what they termed inflammation, We want to test inflammatory markers.

Of course we want high sensitivity C-reactive protein, we want to test homocysteine, and I like to taste ADMA, which is a surrogate marker for nitric oxide, a critical gas that maintains vascular health, prevents platelets from grouping together, aggregating, creating you know, inappropriate blood clotting.

And we need to have this nitric oxide, but we can't measure it directly. But we could measure a surrogate called ADMA. When ADM is high, it's a reflection of low nitrous oxide.

So I like to measure that. Sometimes the enzymes like LPPLA2, which is an enzyme made by white blood cells, if high is a indicator that there is likely inflammatory plaque in the artery wall, and this is like a marker for that.

I also like to get ultrasounds of my patients in my office. We have the ability to test, to look at the thickness of the intima, the lining of arteries and plaque formation in in the leg arteries, which are an incredible mirror of the coronary arteries or heart arteries and looking at the aorta.

So that's not a lab test, but it's an imaging test that is also extremely useful. And then because we have changes in gut, we're going to have change in digestion and absorption of nutrients like these critical micronutrients.

Minerals and vitamin levels systemically can go down and of course they can have consequences throughout the body in every organ system. The micronutrients are the building blocks of all of our coenzymes and our Co factors.

You got to have them. And so I like to measure a lot of the nutrients as well. So there's, I love data. I'd love to get all these different lab tests.

Because once again, you can't monitor if you never measure. And so lab testing is a critical part of the workup. And then in terms of hormones, one of things that you can test is day three of menstrual cycle.

The first day of bleeding is called day one. So then day 3, you get an FSH, follicle stimulating hormone. If that F SH number is over 10, we use that for fertility prediction.

Like that would be a sign of unfortunately for people who want to conceive, low fertility. If their day 3 FSH is over 10, it's a sign of old eggs. You know, that's what happens to us.

and they're less likely to get fertilized and turn into a healthy embryo and implant. So if a woman has a day three FSH and it's over 10, that would be indicative of aging ovaries, okay?

It doesn't give us a timeline for when the last period will happen, but it does tell us that the ovary are in the process of you know, aging. So that can be helpful.

You can also get menstrual mapping, which is looking at urine metabolites of hormones. And then you collect multiple samples with dried urine throughout a menstruial cycle.

Then it gets plotted on a graph and you see, okay, for that cycle, how was your estrogen? How was you progesterone, your luteinizing hormone? And what will show often, even for women who have cycles, they could even be 28-day cycles.

But everything is kind of miniaturized. Whereas we'll say the normal estrogen level at that point should be here on the menstrual mapping. it's like half that.

It's literally half or less. So it is like a miniaturized version. The hormones are being produced, there's a cycle, but nothing is the same. And that's why, of course, it reflects in declining fertility.

Those are women that can really benefit from I call it hormonal supplementation during perimenopause because we know women lose a lot of bone in the five years preceding the last period.

We know that their vascular system is degrading and their brain is often changing. Women have word finding, especially nouns. They can remember adverbs and You know, and adjective, but they can't remember verbs.

I mean, I'm getting wrong. They can remember nouns. Okay, so they. Remember the names of things, they describe it. So it's like playing charades. The bottom line is that there are loads of.

Things that we should be looking at and testing and then. responding by giving hormones to perimenopausal women as a safety net, as supplement to declining hormone levels.

This idea that you wait until you're at rock bottom. Nobody does that with hypothyroidism. If you have hypathyroid, nobody tests and says, well, your thyroid is quite low, but it's not zero.

let's wait to see how low it will go before we treat you. That's like the attitude for treating like menopause. It's, like, well, you know, your still perimenopausal.

Let's just wait until you have no hormones and then we'll treat. You that is not the right approach. that. Is being reactive. We want to be like we talked about proactive.

So we want. To start the hormones when they're on the decline, not when. They're already reached rock bottom. So a couple of quick points and then of course a follow-up question.

Clearly the wanted sign is elevated levels of estradiol because when it goes down this whole cascade, this deleterious cascade starts off. Interesting.

You definitely signaled and emphasized the idea that the body's all interconnected. One thing goes, It's a chain of events, those dominoes all fall. I agree with you.

That's, for me, one of the tenets of idea that we talk about in functional medicine. Functional medicine to me is not root cause resolution or just root causes.

It is this whole idea of linking the chains and using more of a liquefied thinking and understanding as opposed to just being crystallized. Thirdly, this seems inevitable.

What do I do with my wife who's going to be 53 and is going through the transitional period? Give me three quick easy takeaways to make her life easy.

Hence, happy life, Happy Life. From a hormone position, there's no woman that is 53 and is not at least perimenopausal. Oh, that's our question. Yeah, 100%. You'd have to be an alien.

So we know she's a human. Yes, so she needs hormones. Now, this brings up the how to give hormones, just as a quick word on that. We don't want to create a regimen of hormones that never exists in a human being.

It's like the biggest failed experiment of we're smarter than nature was, of course, ultra processed food. We're going to make food that Never spoils.

we are going give hormone regimens where a woman never has to bleed. Bad idea. We have to accept how we were created. One of the beautiful things that estradiol does is, among many other beautiful thing, is it creates growth factors.

Now, growth factor in the brain are things like brain-derived neurotrophic factor, nerve growth, factor. You have VEGF, you have vascular endothelial growth factory, so you create new blood vessels, tissue growth factories.

restore, rejuvenate, replace cells, right, from our stem cell pool, and you grow bone, replaced dead bone. Grow and nurture neurons and all of this. This requires growth factors.

Now, when you go on hormones, you're going to re-juvinate every organ system because blood goes to every organs. So the hormones go everywhere. When you give systemic hormones you are going literally re juvinating every system.

Here's the catch. You're going to rejuvenate your uterus. If you have a uterus, most women still do, and re-juvinating the uters means you're gonna grow with growth factors, the Uterine lining.

And here's a truism, if you grow it, you must shed it. You can't just keep growing. So there are many hormone regimens now that are being promoted like profusely where they give a tiny dose of estradiol combined with nightly oral progesterone for the purpose of suppressing estrogen's growth factors because progesterone is like the yin-yang kind of thing.

They're synergistic and they're sometimes antagonistic. It's a beautiful dance of these hormones. And there's rhythm and there is method to this madness, you know, of the cyclic hormones and the rhythm in everything.

Progesterone down-regulates estrogen receptors. So the theory behind giving these kinds of hormone regimens is we will not let the woman bleed, but we're going to suppress night sweats and hot flashes, which can happen because it takes a very tiny amount of estradiol to supress night, sweats, and high flashes.

But it take much more to create growth factors and to do other things like nitric oxide production. So you'll get something, but it depends on what your end game is.

What do you wanna do? If your goal is just suppression of some symptoms, which is not invaluable, it is important, then that's okay. But if your long-term goal, is healthy longevity, healthy aging, than that not the ticket to it.

And you have to accept that this is how females evolved. If you want to get all the benefits of growth factors and all of the other issues that are so maintained and modulated by estradiol, everything is dose-related.

You would never say, I want you to exercise, why don't you do five minutes a month? Because you know there's a dose relationship to outcome. That's true for hormones as well.

So this idea of super low-dose estridiol combined with nightly oral progesterone is really bad and may, there is even some data that it may long-term even increase dementia, because you're down regulating the benefits in the brain of the estradiol by continually giving the progesterone.

And when you give oral pro testosterone, it's metabolized in liver 80 to 90% into metabolites into other stuff. So you don't even get adequate amounts of progesterone, really, but you get a lot of other stuff.

And the other stuffs that's made by the liver is good, it's predominantly allopregnanolone but too much of a good thing is a bad thing, and it overwhelms the GABA receptors.

It's a GABAR receptor agonist. Its stimulates GABO, which is the inhibitory neurotransmitter that sedating, puts you

to sleep, It makes it harder to make memories.

It reduces memory production. So there's some concern about rats. Now, this is rat data. I can't help that we don't have long-term human data because nobody's doing the studies.

But when you give chronically high doses, which is what you get if you take oral progesterone every night, of allopregnanolone, you induce dementia in the rats.

And there's some data that it will impair memory formation in humans. So it's like, that doesn't make any sense. None of these regimens make sense, so for your wife, she should go on a regimen that is aligned with nature's regiments.

Like, just think of it as these crazy other regimens that are being created are like ultra processed food. They're designed to do something that should not happen, like food should never spoil or that women should ever bleed.

We have to just get over that. You can't have these regimens and ridiculous doses and administrative protocols. That's not going to help. The next thing is to recognize that staying optimally healthy in the menopausal years, which could be half of a woman's life, is hard work.

Because no matter how we give hormones, it's not like being 21 years old and having 21-year-old ovaries. We're doing the best we can, but it is not the same.

It's similar, and it definitely is. So you have to work really hard. Every woman should get on her exercise program. eat tons of plants, get all the fiber, which is so critical.

You have to restore the gut microbiome and gut integrity. So you have work hugely on diet with eating fermented foods, lots of fiber-containing foods.

Polyphenols, these magical ingredients, the phytoestrogens, I call it nature's gifts to women, all these magic phytoestrogen that are in plants and all kinds of plants and nuts and seeds as well as vegetables and fruits.

And limit, don't overdo the animal just a little bit, like three, four ounces a day. You can get plenty of protein from legumes, so you don' want to over do the animals because the gut microbiome makes other bad products like TMAO.

We don''t need that, we want make sure that we have a good healthy gut. we wanna work on sleep, sleep hygiene, doing everything we can. Look at the sunset.

Dim the lights so we have all the right sleep hygiene so that we get restorative sleep. Get into a really good exercise program. And more and more resistance training seems to be the ticket to maintaining muscle mass, which muscle is another whole topic for another day.

is under appreciated as an endocrine organ with the myokines and what it does, and it's the biggest burner of glucose. You're going to be diabetic if you have no muscle because what's going burn your glucose, right?

And of course, frailty is more predictive of mortality than hypertension. So we don't want to become frail people. And bones, so you want make sure you get adequate protein, you want to make sure you have all those essential minerals to maintain bone properly.

So you've got to do every lifestyle thing. You've gotta, of course, avoid as much as humanly possible the endocrine disruptors, the chemicals, plastics, flame retardants, PCBs, and all the other air pollution.

Get water filters, air filters. These are really important things to and work on stress. Women's autonomic nervous systems become dysregulated. They become in a more stressed mode.

We don't want to put everyone on SSRIs and tranquilizers. we want work with things that increase vagal tone, whether it's laughter yoga, nature walks, meditation of different types, massages, acupuncture, all these things increase the output of the vagus nerve.

So, you know, and one of my favorites is honestly laughing. So whoever coined that seems like a cliche, laughter is the best medicine, was not stupid.

It was smart. You know? Laughter, actually. And then breath work, yoga, all these things maintain flexibility. All this is wonderful. The bottom line for your wife is get on proper hormones.

and just work really hard with all of the lifestyle issues that of course most people are now aware of, but they're not always doing them, and then maintain purpose and love in life and socialization.

We know that loneliness is a big cause of death. You know maintaining friendships and purpose in live no matter how old you get and that's what they always find in the so-called blue zones is that at every age in most elderly part of the population they are part of the family.

They have purpose, they have a sense of belonging. they're not outcasts, not put in a room and watching television all day. So not that that's your wife, but this happens to people when they become seniors and they get lonely and isolated and that is a very high cause of cardiac death.

Maintaining purpose love proper lifestyle and proper hormones aligned with how women's hormones are designed to be in their body, that's the ticket to healthy longevity.

Outstanding. So, we're at that point where we do what I call rapid fire, New York style. You said you were originally born in New york, so we are going to dig into those roots.

Real short pithy answers if you can. Detox for a woman going through menopause, yes or no? Absolutely. Love it. Sophoraphane, good yes and no. Yes, but I do emphasize adequate intake of cruciferous vegetables.

We don't know long-term use of things like sulforaphane, so I usually only advocate for maybe three months at a time, just because we don t have data.

But I always advocate eating crucifers vegetables What do you do if estrogen is going to get recycled after phase one and phase two of the liver? Yes, that's a geeky question.

What you recommend? Oh, well, you have to always work on liver gut health. There's no question you know, You want to maintain that special unit of The microbiome called the astrabalone.

So, of course, detoxification. That was my first answer. Yes. And all all All chemicals, all molecules in the body need to be detoxified, and that includes estrogen.

So we know fatty liver increases, gut dysbiosis increases in menopause. It gets back to diet, diet and better diet. And then working on reducing stress so that you don't have that sympathetic nervous system, which damages your gut motility and the whole system at play.

Absolutely, we need have good detoxification for everything, including estrogen, Hot flashes, what causes them?

Rapid-Fire Menopause Q&A

Disregulation of the autonomic nervous system and in the hypothalamus of brain, the thermoregulatory center there becomes dysregulated and this is a big interconnection between the brain and the autonomic system.

It is 66.6 degrees in my room and my hypothetical wife, I won't say my wife comes in and goes, is it hot? What do I do? Help me, doc. Tell her, no, that's you, not the temperature.

The ambient temperature is fine. Your endogenous temperature, it's not. Let's get you on some hormones. But there are other things as well that can be given.

Phytoestrogen supplements. My favorite is the rhubarb. You know, the Siberian rhobarb has a, some companies have created product from that. There's evidence that if you eat a cup, this came out from Neil Bernard, who's a vegan, cardiologists who did a study where you eat like a cup of soybeans every day, and in 12 weeks your hot flashes are pretty much 100% resolved.

That's from the isoflavones, the phytoestrogens that are in there. So get more plant-based diet. take supplements that have the phytoestrogens, and that can be beneficial in both the short and the long run.

Get her a fan. She's got one that she walks around with. Exactly. In the restaurant, she's the fan, supplements to help menopause. I'll hit you with a few.

Vitamin D. Oh, well, for everyone, including menoppause, yes. Okay, I go 60 to 80, but we can talk about it. We're in a ballpark. I don't go 100. Right, over 100 I get a little sketchy on.

Magnesium, in which form? Well, magnesium for sure. Almost everyone seems to be insufficient. So if they're constipated, which happens a lot because of this regulation of the motility, the autonomic nervous system, then I usually say mag citrate because that will have less absorption, but we'll have more gut benefit.

If they don't have that, than I'll usually go with glycinate. I mean, I can go three and eight, usually I just go magnesium glycinate. It kind of is an all purpose good magnesium.

All great forms, omega-3 fatty acids. Yes, I usually recommend a gram a day. I don't do the high doses like all these crazy, questionable studies. Like if you go really high dose, like four grams, five grams.

Can you start, you know, instituting somehow rather atrial fibrillation? So I try not to do mega dosing of things. So usually one gram of a good quality omega-3 product.

And I know this is not typical most, I happen to grow up with this as a food and I actually like it, but sardines, if you can eat frequently sardeins, um, If you hate them, don't, But if I like to mix them in a salad, one can of sadeins is a gram of omega three.

You get lots of calcium and you get a great source of protein. So if you actually like sardines, try to eat them frequently. You get a lot of natural source of protein, calcium, and omega-3.

Well, you definitely covered phytoestrogens. Red clover? No, that actually is probably not one of the better ones. And it can actually be too much of an endocrine disruptor.

It's like sometimes you get too many of a good thing is a bad thing. So probably, not red clover. How do you feel about the peptides for menopausal women, both something like a BPC157, which is vastly different than the GLP-1 peptide?

Well, I don't use peptides. I think that there will be a place for them. there will be a place for them for specific treatments as opposed to healthy longevity.

I think trying to micromanage, when you know what peptides are, peptide are signaling agents. They're short-chain amino acids, and they're with certain special features, but they are signalling agents, here's the complexity of it.

you have like in your brain you could have, like, oxytocin is considered a peptide. It's sort of on the border with a, you know, a hormone but or vasointestinal peptides.

You have these different amounts, in the brain, different parts of the, brain will have different concentrations of a certain specific peptid. So if you give it as a shot or no matter how you administer it, you're going to get, uh, you

can't like say, okay, this part of the brain should have a lot in this, part.

The brain. Should have. A little, the peripheral body should. Have less. I mean, This is how peptides are there. They're like flash, like here you are now you've gone and they are different amounts in different parts of.

Simultaneously. So I'm not thinking that I am smart enough to micromanage the body on that level. So, I sort of a macro-manager as opposed to a micro- manager.

Peptides are more micro managing. like macronutrients, micronutrians, and foundational hormones. And by the way, many of these peptides, if you research them, they're modulated by estradiol.

Like, it's amazing. All the mitochondrial peptide. They're all modulate by estradiola. So I have a simple kind of thinking. If I can make things normalized on a macro level, maybe I don't have to try to measure and monitor and regulate and manipulate things on the micro level.

But I think there'll be a place for them. They're not illegal. they are rather mostly illegal in California, which is my state, my plate anyway, because California has a lot of regulations that not every state has.

And so they're pretty much illegal in California. So that's not really available for me anyway.

Daily Habits for Better Health

All the injectable ones are illegal. But in terms of micromanaging, I think there'll be a place in specific situations. I don't think that time has come.

The idea of functional medicine, how does it facilitate an efficacious treatment plan and outcome? To me, functional medicine is medicine. You know, it shouldn't even have that label.

It's understanding cell biology, how systems interact, like you mentioned. That's what medicine should be. Unfortunately, medicine sort of turned a corner back when big pharma kind of came into play, and they just created protocols like, you have this problem, this symptom, give this drug, without even understanding, well, what's the mechanism?

What are the side effects? Many drugs will block, say, an enzyme pathway, you know, like statins. Like, so what are the consequences? What are side effects?

what Are the pros? You know you want to look at the whole thing. That's what functional medicine is like understanding the basics, the fundamentals of how is the body working?

How are these systems aligning or intersecting? And how are they different whether they're supplements, herbs, whether they're pharmaceuticals, what is the mechanism in the body and how do they interact with other mechanisms and other drugs or herbs.

If you don't understand that, you're just becoming protocol driven without any foundational knowledge. functional medicine is what medicine should be, trying to really understand the mechanisms, the ways the body works, and then creating efficacious and safe ways to try to optimize health.

Without that, you're just a robot. Oh, I agree, indeed. So let's end with three things that everybody who listen can implement tomorrow to have a better day.

eat more plants, walk more and start doing some lifting, and go to bed no later than 11. Love it. So it's all lifestyle. You know, it so funny. Well, that's what you implement tomorrow.

Yeah, we all circle the wagon. I've had various practitioners, medical, personal trainers, the whole gamut. It all comes back to the same thing. What do you do?

Are you putting some time in? There's no magic bullet. There is no Magic Pill. And Honestly, you've answered so many deep questions with a real erudite type of description.

It's been great. But at the end of the day, he still said lifestyle matters. I love it. Thanks for coming.