Introduction to Dr. Felice Gersh and PCOS

Hey, welcome back to the Beyond Infertility Summit. I'm your host, Dr. Aumatma, and it is my distinct honor to introduce you to Dr. Felice Gersh. She is an M. D., trained at Princeton University and the University of Southern California School of Medicine.

She's double board certified as she's double board certified in OB-GYN and Integrative Medicine. And she is the leading expert on PCOS. She she is also the author of the bestselling book PCOS SOS and is the creator of the PCOS SOS Fertility Track.

In our chat today, we're going to deep dove into what is PCOS, how to support your body and support your understanding of PCOS so that you can become more empowered and knowledgeable, so that you can go back to your doctor and talk to them about what your options might be.

What PCOS Is and How It Is Diagnosed

What I found really interesting in this chat was just the idea of what we started to talk about is a little bit of what happens when you've been on birth control for a long time and some solutions of how you might retrain your endocrine system to function properly after being shut off by birth control.

So let's get into it. I hope you're as excited as I am. Dr. Gersh is an amazing wealth of knowledge and I think you'll find this conversation very interesting.

Welcome, Dr. Gersh. It's so great to have you here. I'm very excited to talk to you because you are the expert on PCOS. So what exactly is PCOS? Well, those letters stand for polycystic ovary syndrome.

And by the way, don't hold your breath because we don't know what's going to happen. It may or may not, but there may be a name change on the horizon, and we'll see.

It's being very hotly debated. But what it is, is the most common endocrine disorder of women, the most common cause of female infertility. It's extraordinarily common, although there's no exact data keeping on it.

But it could be up to 20, 25% of the reproductive age. Women have some degree of polycystic ovary syndrome, and it is a syndrome. So as such, it's a just a compilation of findings and symptoms.

And it doesn't deal the name doesn't deal with what are the underlying etiologies. So it's actually a condition of rule out. You have to rule out adrenal diseases, you have to rule out tumors, you have to rule out even prolactin secreting tumors from the from the pituitary.

So you have to rule out other causes of this similar findings and symptoms of PCOS to get the official label of PCOS you need based on definition. From a committee of doctors who got together to define PCOS, you need two of the following three.

You need to have irregular cycles to some degree, even absent cycles that would be very irregular. You need to have androgen excess that elevated testosterone, and that's what they focus on, not the adrenal for the definition.

Now they sort of modified it. It has to be elevated testosterone and or clinical evidence of excessive testosterone, which would be excessive facial hair that we call hirsutism cystic hormonal acne, usually in the jawline that's very stubborn to treatment and androgenic alopecia the thinning, the female version of male pattern, hair loss.

And then the last one where the name came from is on an ultrasound. Findings of tiny little cysts, just little bitty

ones all around the rim of the ovary.

That's where the name poly. And by ultrasound you have to have a high resolution ultrasound, a very good quality where you have to find at least 20 of those tiny little cysts on at least one ovary.

And the new kid on the block just added to the official definition is an elevation of anti-mullerian hormone. AMH, which is a little hormone that is produced that in terms of the name, it's sort of a crazy name in an embryo.

It actually causes regression of certain structures. That's why they call it anti malaria hormone. But in an adult female, what it really is, is a follicle recruiter.

So it actually says, hey, come on, it's a new cycle, let's recruit some follicles. And then ultimately one should be chosen, as I call it, the special one that ovulate.

So the recruitment process is stimulated by and hormones. So an elevation of that hormone can also be part of now the definition of PCOS. So once you rule out all the other problems, I can give you similar findings, then you're left with you have the definition you define and meet the criteria area for having the diagnosis of PCOS.

Root Causes of PCOS and Ovarian Hormone Imbalance

I love it. So essentially this is a syndrome. It's not a disease and it's a syndrome of a lot of possible dysfunction that leads to things like high testosterone that are symptoms of high testosterone, acne, hair growth, etc., male pattern, hair loss and potentially cysts on the ovaries.

Not always present and potentially you might see high anti-mullerian hormone. So really it's it's like someone, a practitioner needs to be working through all the different possibilities to make sure that irregular menstrual cycles or lack thereof are not related to a hypothalamic issue.

But actually something like PCOS. Right. It's really important for all the viewers out there to know that it really isn't a self-diagnosis now. It is a self suspicion of the diagnosis for sure, because as odd as it seems to me, many women don't get the diagnosis properly made until they've seen multiple practitioners.

It's really like, is this this part really? I mean, how, you know, how challenging this is to make this diagnosis? It really isn't. But yet it has been misdiagnosed or undiagnosed in so many cases.

But it really does take a health care professional to do all the tests to rule out the things that can cause similar types of side finds, findings and symptoms.

And once you get the label, that's just the beginning to really understand what is the ideology of, we'll call it standard, like the usual. I'll call it like the the standard PCOS.

That's ovarian based, not adrenal, not brain, not pituitary. So if we talk about ovarian based, then once you get the label, that's just the beginning because understanding the ideology and then what to do about it, especially if you're trying to get pregnant, because unfortunately the standard treatments haven't changed very much in many, many years.

And it remains birth control pills as the mainstay with a few other little additions. And obviously, if you want to get a baby, that is definitely not going to get you anywhere. No, no, no.

The first step is getting the diagnosis, doing the rule out. And that just begins the journey of what to do next. So if someone were diagnosed with PCOS, either recently or maybe they had a diagnosis long ago, they were put on birth control.

Now they're trying to get off of birth control because they want to get pregnant. Where would they start? Like what are the main possible root causes or ideologies that are happening under the surface that connect to what's

actually happening in the body?

Well, this has been a fascinating discovery in terms of what is really going on that's creating this problem. So it's not identical member for everyone.

But once you rule out the other things, it really starts in the ovary. And this has been going round and round. So it really does. Now, if we went back to ancient times and this is like your heritage women out there who are like diagnosed with PCOS, your ancient ancestral women relatives, they had a little tiny genetic variation.

Well, I don't want to call it a defect, will say a variant where they're ovaries were not quite as adept at converting testosterone into the estrogen that the ovaries make which is called estradiol.

Now, all ovaries make testosterone and all estradiol comes from that testosterone. It's like an assembly line. One area of the ovary makes testosterone, then it goes down the assembly line to the second area, which is where the granuloma cells are.

And they're under the influence of an enzyme called aromatase. The testosterone is magically converted into estradiol. Now in women, the ancestral version of women with PCOS, they had this little variant, so they didn't do that quite as efficiently.

So they ended up with just a slight extra amount of testosterone, a slightly reduced amount of of estradiol, but not anything that clinically manifested except maybe they had slightly reduced fertility just like.

So maybe instead of having eight babies, they had four. And actually that was a survival advantage. It's like a little bit of built in birth control back in the day when there was no birth control of any sort.

And every time you got pregnant, every time you had a baby, that was a life threatening situation for a woman. And of course, those little babies deplete you of a lot of nutrients and take a lot out of you.

So you have to raise them, too. You got to nurse them. So it actually was a survival advantage to have plenty but not so many children and have a little more time to devote to each one as well.

They found that that tiny bit of extra testosterone was sort of a a blessing. It was sort of like a vitalize or those women would actually have a little bit more energy, more they were more bold and brave and outgoing.

They weren't like the little ones that stood in the corner. No, nobody was going to take advantage of them. They were like the leaders of the tribe. In fact, they did some data collection on the Olympic gold medalists who were women.

They had this like ancestral version of PCOS, had slightly higher natural levels of testosterone, but not enough to cause facial hair in excess or bad acne.

None of that just enough to give them that little extra, you know? Plus in terms of energy loss. Yeah, that little extra that little extra boost in terms of focus and energy and drive and so on.

So what happened since then? Well, everything's changed. Look at our diet. Look at the kinds of food that we're eating. Look at our lifestyles. All the light, the ambient light, the travel clothes, time zones, and worst of all, those ubiquitous everywhere endocrine disruptors, chemicals that interfere with the normal functioning of our hormones in every respect.

There's actually been now a quite a bit of research that when you're exposed as a fetus, so when you're in the uterus of your mom as a little fetus and your endocrine system is being developed, if you're exposed to excessive amounts of endocrine disruptors and the one that's had the most research to date, but it's not it's just where the most research is, is bisphenol A, BPA.

And they've found that in the fetus. Sad to say, there's a huge higher concentration of this chemical than even in the mother. And they would do blood tests on the mother and urine collections to measure BPA as a study turns out, they actually used the wrong test that an underestimate dramatically how much was even in the mother.

But it turns out that it concentrates like a little sponge into the fetus. So the levels are multiple times higher of this really toxic chemical in the fetus.

During the development of the receptors for estrogen, which are everywhere, there was a problem and there has been studies on other hormones like testosterone, thyroid, that you can interfere with the actual proper development of the endocrine system in its developmental stages in the fetus when you have these endocrine disruptors come in.

So now we have data that women who have PCOS actually have that defect in the production of ESTRADIOL, which seems to have been exacerbated in ways that we don't even fully understand, because now we know that women with PCOS don't even make enough FSA to follicle stimulating hormone, which triggers the enzyme aromatase as they should.

So there's something more going on than even meets the eye involving these other hormones. There's also receptor problems that have been shown in women with PCOS involving melatonin, and there are melatonin receptors all over the ovary.

And we know that sleep, which is disrupted in women with PCOS, is essential for proper ovarian function, and melatonin is critical to having proper ovulation.

And of course it's a potent antioxidant. So there's so many different ramifications when you have endocrine disruptors for melatonin and testosterone, too.

BPA totally interferes with the degradation and function of testosterone. So this is even more complicated than than we ever even guessed. But we do now have published data that the receptor was for estrogen in a woman with PCOS are more resistant just like you.

People know there's such a thing as insulin resistance and that is like a precursor to type two diabetes where the insulin isn't working properly to get the glucose from the blood into the cells where they need it.

Well, a similar thing happens now. It's like the equivalent.

Inflammation, Gut Health, and Insulin Resistance

It's resistance of the receptors involving estrogen in women with PCOS. So here's a double whammy. They don't make estradiol that's sometimes I do the same thing I criticize which as I say estrogen when it really is estradiol and that's a whole totally critically important conversation.

But in a nutshell, estrogen is a family of hormones and the estrogen made by the ovary is estradiol, also known as E two. And that one has a balanced effect on all the estrogen receptors, which other estrogens in the body don't have a balanced effect.

They may be bind to one particular type of receptor. So when now with women, with PCOS, they have this double whammy where the receptors are not receiving properly, so they don't work properly and you're not making enough.

So the outcome of this is essentially women with PCOS live in a state of estradiol insufficiency. And if people know what happens to women when they don't have enough estradiol, which happens to all of us eventually called menopause, when the ovaries cease to make estradiol altogether.

And of course, it goes through this process of decline. We look at the metabolic problems of women with aging.

They have more hypertension, more heart disease, more insulin resistance and diabetes, more, well, diabetes.

And so what I want to talk about this for a second because I feel like estrogen is often picked on as the bad guy, especially I've heard a lot of doctors even say, oh, PCOS, estrogen dominance.

And so my brain, I'm like, actually, no, like very rarely is it estrogen dominance in PCOS women. It's it's exactly what you're saying. Like estrogen is either not being made as well.

Testosterone not converting as well and or the receptors not responding to the estrogen as well. So let's just like let's talk about this for a second.

Like, why are there doctors actually thinking that PCOS is estrogen dominance? Because the data doesn't support that. Well, I speak all the time against that expression or that phrase of estrogen dominance number one, I love estrogen.

Okay. And and it's sort of like insulting estrogen because it's getting people to think along the lines which of course, was perpetuated and promoted by the Women's Health Initiative.

And that's involving menopausal women hormones, which put estrogen on the like evil list in. So many people's minds, both health care practitioners and also patients.

And and I just I'm trying to change that whole thinking process of estrogen is bad. So remembering that estrogen, number one, is a family of hormones is so important just like fats.

So no one would say all fats are evil. Not anymore. They used to say that. Right. But now we know there's trans fat and there is polyunsaturated fats.

There's you know, monounsaturated there's all these different families of fats. They do different things. They're actually made of different compositions of fatty acids.

Well, estrogens have different compositions and they bind differently to different receptors and they have different effects. So when people say estrogen dominance, that's always a negative.

I mean, I've never heard anyone say that and it was a positive, you know, and so I just want to get rid of that. I just want to call a spade a spade. I want to define what is happening.

So number one, in ovarian based, the most classic will say classic PCOS, the ovaries are not producing enough estradiol. So it's an extra adult insufficiency.

Now here's where people get confused. In the majority, like 80% of women with PCOS, they are overweight or obese. And that's because estradiol is essential for metabolism.

And that's where all the metabolic things that happen similar to like in older women are happening in women with PCOS. So I liken PCOS to a condition of accelerated aging.

So you see a lot of the same things that you see in older women. But in younger women, like diabetes, for example, you have seven fold higher incidence.

In a 40 year old PCOS woman as in the average population. So estradiol is essential for burning fat like mitochondrial function, creating energy. So this is really important.

So in women with PCOS, they tend to accumulate a lot of adipose tissue and generally in the viscera around the internal organs, like in the liver and also in the pancreas and in the belly.

They have a lot of belly fat. Now, fat has the enzyme aromatase, unbelievably, but it does. So you can make

estrogen in fat tissue. Now, the estrogen that fat tissue makes typically is a different estrogen than the one that the ovaries make.

It typically is est grown. Now estrogen is E1 and it binds primarily to the receptor called alpha. And that has a different effect. Now, why is estrogen made more?

It's not that it's only made, but it's made in higher amounts because the dominant even in women with PCOS, the dominant androgen is the DHEA s and DHEA, which comes from the adrenal gland.

And all estrogens are derived from androgens and all estradiol specifically comes from testosterone. But DHEA and DHEA, as which DHHS is 100% made in the adrenal, and that gets converted predominantly into est grown, which has a different effect.

It's much more pro inflammatory, and estradiol works the switch. It's really important. It's a modulator of inflammation. It turns it on when you need it, like to fight an infection, to deal with injuries and damage, and it turns it off and promotes healing and resolution.

When you're ready to stop having inflammation. So it's a modulator. When you only have E1, it's like it works just the on switch, but not the off switch.

So you get into this pro-inflammatory state. So it's really a problem and it's, it's really understanding. Instead of throwing these terms around like estrogen dominance and that sort of thing, just understand that there's a complex metabolic process that's going on in women with PCOS that's causing this potentially overproduction of estrogen, which has totally different effects than if you have the balanced estradiol from the ovary and you end up in a more pro-inflammatory state as well, and you're highly inflamed and inflammation is always talked about with PCOS.

It's like underlying so many of the things. But then you say, why are they inflamed? Like what is going on here? And it's like a total group of things that come together like the perfect storm that creates this ongoing inflammation.

Well, inflammation actually not only upregulates the enzyme aromatase, not in the ovary, but in fat tissue. So you produce more of the as strain, but it also downregulate the enzyme that helps to convert astronaut into estradiol.

So you get stuck in estrogen because the body's enzyme that could cause estrogen in estradiol can actually have an enzyme that can go back and forth. It can convert from one to the other, but that enzyme is downregulated.

So it's less functional when you have a lot of inflammation. So it's like once again the perfect storm. They're making all of this unfortunate as drone and it can't convert to estradiol, which properly modulates inflammation as well.

This hormonal imbalance which is like just really severe, it affects the gut and now we have studies originally out of China back around 2015 that showed conclusively that women with PCOS have leaky gut and they have what they call dysbiosis, abnormal microbial populations in the gut microbiome.

And then on top of that, because every organ system in the body has estrogen receptors, that includes the immune cells and the immune cells all have estrogen receptors and the ones that are the innate immune cells, the initial attack animals, like if you have a pathogen or injury, they are predominantly alpha.

So it turns out in this research originally came from Indiana University that the immune cells, these first line of defense which are in heavy amounts in the gut associated lymphoid tissue, all of this immune tissue that lines the gut, those individual immune cells are more activated.

Why Birth Control Can Mask PCOS

It takes a lower amount of inflammation to trigger a huge inflammatory response, producing all these little particles called inflammatory cytokines that circulate, creating all this inflammation.

And when you have the wrong gut microbial population, dysbiosis and you have impaired gut barrier known as leaky gut, the lining cells of the gut are drifting apart due to the inflammatory damage from within the gut.

These particles that are in the gut called endo toxins or LPs like what polysaccharides they get out of the gut into the body itself, where the immune system resides.

And it causes an explosion of inflammation when these immune cells are exposed to these toxic chemicals coming from the gut, creating systemic inflammation, which then creates another cascade of problems, and inflammation triggers even more insular and resistance, and then insulin resistance triggers more production not just of insulin, but of IGF one insulin like growth factor one, which can actually migrate into the ovary and directly stimulate even more testosterone production, making the situation even worse.

So I don't want everyone to feel overwhelmed. Oh, my gosh. PCOS is like a death sentence. No, it doesn't have to be. And we can do so much. But the first step, I always say the first step in solving a problem is to define and understand the problem.

This has not been happening at all. It's just, oh, you have too much testosterone, you have estrogen dominant will just put you on birth control pills.

And what they do is they just take the ovaries offline, which I can't say doesn't have some symptomatic benefit, but you're actually sort of kicking the can down the road because you're not addressing any of the underlying causation of the problem and you're giving, unfortunately, birth control pills which turn into estrogen in the body.

So that's why they promote blood clotting. Everyone knows, oh, you have a higher risk of blood clots if you're on birth control pills because they are pro-inflammatory.

They predominantly create as strong. So but you you shut down the ovarian production of all that testosterone and you increase sex hormone binding globin.

So you have some symptomatic benefits. But from a metabolic point of view, you're not really addressing all the issues that increase high blood pressure and insulin resistance and obesity and all those things are not really being addressed.

And of course, if you want to get pregnant, that is not going to help you one iota. And in fact, I have found that then there's no real published data on this.

But when women are on birth control pills for many years and then they go off of them, they actually have an exacerbation of their PCOS problems, probably because their hormone receptors have not been properly stimulated by the the beta receptor because there's too much as strong in women on birth control pills.

And we do know with receptors it's a bit of use it or lose it. And we already know that women with PCOS have receptor problems just from their fetal damage that happens with their development.

So I found almost like explosive PCOS in so many women when they get off birth control pills. So now I am doing something that I sort of innovated myself, which is when they go off and I hope women who want to get pregnant go off at least like a year ahead.

I mean, really if they're on them because I really need time to help rejuvenate their receptors and their metabolic functions and everything else because it's so critical.

I'm sure everyone out there knows to be healthy before you conceive, not just for improving your fertility probabilities, but for improving your pregnancy outcomes, which is, you know, as an OBGYN, I would say the entire process from beginning to end, the fertility doctors that, you know, in the big clinics, not they don't see what happens once they let go of the patient.

What happens to the rest of the pregnancy? I would be there from the beginning to, you know, conception, pre-conception all the way through the whole postpartum period.

So I know all the problems that occur in women with PCOS in pregnancy, they have a dramatically higher rate of pregnancy related complications like gestational diabetes, hypertension, pre-eclampsia, big babies, small baby.

Oh, my God. Not to add that women with PCOS have higher likelihood of pregnancy loss. Much higher, much higher miscarriage rate. And and you know, if you have a lot of insulin resistance and you're diabetic, you have higher rates of birth defects, too.

I mean, so we have to get women really healthy before they conceive. And this is not not what's happening. And so, you know, we're here, both of us, to change the paradigm, to say you have to be optimally fertile and that requires being optimally healthy.

Okay. That there is a that's why it's now recognized. It should be but not enough that fertility is a vital sign, like just like blood pressure if you don't have regular periods and there is more and more being published on this.

If a woman doesn't have regular periods through her reproductive life and birth control pills gives you the illusion of regular periods. It's not real periods at all.

It's all an illusion, smoke and mirrors. But if a woman doesn't have spontaneous, natural, regular periods during her reproductive life, she has a higher lifetime risk of heart attacks, strokes, diabetes and mental illness.

And probably, although we don't have perfect data on this kind of thing of dementia because it all interconnect acted, we now know everything is interconnected.

So it's really critical and osteoporotic fractures. So the fertility of a woman during the reproductive years, even if she doesn't want to be pregnant, is really critically important as a vital sign.

So even women with PCOS who are not interested in becoming pregnant need to optimize their cycles, but not artificially with birth control pills. But by first understanding, this is a really complex problem that is involving the interplay between fertility reproduction and everything.

Metabolic colic and metabolism is the creation, utilization, distribution and storage of energy, which is the spark of life. And when you're metabolically unhealthy, then every organ system, the cardiovascular, the neurologic, the g. I, the musculoskeletal, you can go through every system, the skin, every system has its own sets of malfunctions.

And there are estrogen receptors in every organ. That's why the array of medical challenges that women with PCOS face are so astoundingly great. Because when you don't have these proper hormones and it starts with estradiol, but of course it includes all these other hormones that every organ system, every organ system is impacted.

And it really is the intersection of reproductive and metabolic health. And once you understand which I figured this out really early in my career, that the prime directive of life is the creation of new life.

Every system in the female body is designed to support reproductive success, and you cannot be reproductively successful if you have unhealthy cardiovascular system, neurological system, G. I system.

That's why estradiol I call it the hormonal glue that literally linked every organ system to the reproduce active system to allow a successful pregnancy.

And not just that the woman, a human female, has to not just get through the pregnancy successfully and have a healthy baby. She needs to raise that child to its sexual maturity so it can repeat the process and it needs to do it multiple times over.

Right. Because in order to replace the species, you have to have multiple children.

Rebuilding Hormones After Birth Control

So not only are all the Horgan organ systems helped and to stained by estradiol, but this has to be an ongoing process, not just for reproduction directly, but for the whole body to be healthy for a long time because humans have a long period of maturity before they become sexually mature and to do it over and over.

That's why estradiol is so critical in understanding its role in all of these functions and that women with PCOS are now insufficient in it and they have all these other like side issues that they have to then face and stop using terms like estrogen dominance and just understand what's happening in the body.

And then we can actually tackle it and we have to tackle it on all fronts. It's not easy, but like I said, I when women go off birth control pills, I now will often put them on bioidentical hormones because I'm trying to get them.

It's like a catch 22. If they can't make estradiol properly and this becomes even more of a problem when they get off, I think everything becomes sort of the equivalent of rusty.

Like their ovaries haven't been making estrogen at all all those years they're on the pill. The enzyme aromatase hasn't even been used for 1/2. Their receptors for the beta receptor haven't been properly being utilized.

So I put them on bioidentical estradiol and bioidentical progesterone and progesterone actually down regulates testosterone production and receptors. So it's like anti testosterone when you have progesterone, which women will only make if they ovulate.

And when would PCOS aren't doing that? Very frequently. So when you think about what birth control pills are, they're all these chemical endocrine disruptors.

They're mimics of human hormones, but they're not human hormones. They're they're actually literally technically endocrine disruptors. If you went to toxicology dot gov, which is a site of the National Institutes of Health, it lists every ingredient in a birth control pill as an endocrine disruptor.

So why would that be? Okay. And then they get off of it because they want to get pregnant. Why would it not be okay for me to give them priority edible hormones, the ones that their ovaries are supposed to be making?

So it's like one of those catch 22. You can't heal without the hormones, but until you heal, you won't make the hormones. So I give them a few months of bioidentical cyclic, just like mimicking a menstrual cycle, bioidentical hormones to kind of get their receptors online to help heal all these organ systems that need these proper hormones.

And in order to function properly. And then it's amazing how well people do. So it's kind of like training wheels. Yeah, I was that's exactly what I was thinking.

This is like a retraining of the system and to do what it's designed to do. I know we should absolutely work together on this because there is no published data on this at all.

Like, we're like, I'm just like going out there because just thinking it through, like, why would it be okay to give birth control pills, which is like chemical endocrine disruptors and not give bioidentical, which is what the person is supposed to be making?

Right. But they're not. Of course, it's totally safe. Of course it's totally appropriate. And it has really excellent outcomes. But women. Oh, my gosh, I'm sure everyone out there has Bob who had been on and then gone off birth control pills with PCOS, see? Oh my gosh.

Even women who never were diagnosed with PCOS, who have been on birth control pills like they may have gone

on them because they were in sports or they had cramps or something and they were like 13, 14.

This is really rampant and now they want to get pregnant and they're 32. Look how many years. Absolutely. And like actually the early years of a young woman's life are so crucial to setting that template of her.

Horrible. Yeah. So, yeah, there is no training like the training wheels never got put off. Well, this is the most shut down. And then you get off of birth control and you're like, why does it everything function so like, well, you never learn how to ride the bike, so you don't know how to ride a bike.

Oh, absolutely. It's like I think it's a travesty of medical care that we're giving these young teens. And now we have data that shows that things are not right mentally, that women who go on birth control pills, young, they have more emotional problems.

They have more bladder dysfunction. It's like their bladders don't get stretchy enough. So they have like overactive bladders. They have to go pee all the time and they often will have sexual dysfunction.

We don't even know how to reverse any of this stuff. They often have elevated sex. Hormone binding globulin doesn't come down. And these are not like PCOS women.

This, like everyone. And then when they go off after all those years, they have PCOS because you're giving them just like in utero, all those endocrine disruptors that are damaging the receptor function and maybe affecting somehow this whole aromatase and making it worse.

It's not working well to begin with and you're making it even worse. The ovaries can't properly do their job, and then you do the same thing during these critical stages.

Like you're you're not cooked, you're not done. When you are in your teens. You know, we now know the brain doesn't come to full maturity until you're around 26.

Why would we think that's not true of every single receptor and function in every cell? We need those real hormones to develop proper musculoskeletal health.

You need to have it to develop adequate amounts of muscle and bone and ligaments. I'm finding young women now when they go to do Zumba class and they're like 28 and they've been on birth control pills since they were 14, and they're just moving their arms around, they're just having fun and they're tearing things in their shoulders.

I mean, like, you're not supposed to have your shoulder ligaments fall apart when you're 28, but this is happening because the tissues aren't developing properly.

So I know that's a little for let's not go on birth control pills in those young years. But we but now you and I are faced with how to help them to get pregnant and be healthy and so we have to come up with our own ingenious methodologies because the conventional medical world is just go to the IVF center down the street and there's like 20 because so many women have been offered.

To a certain extent, to be fair, like IVF does, oh, essentially like bypass the need for these hormones to be functioning right. Like we can give the right hormones at the right time to get the body to do what we think it should be doing.

But really like putting those training wheels on and finally learning to have good endocrine function is not only necessary to get pregnant and have a baby, but it's going to be crucial for the rest of life when your cardiovascular system, your bones, like all of the other things that we know are issues when we get older, the way to prevent it is to fix it.

Now, like you don't want to be learning how to ride this bike at 60, you want to learn it at 35. When you realized like, Oh crap, I've been on birth control my whole life.

I better figure out how to do this. Absolutely. And I'm absolutely not opposed to IVF. I mean, I'm totally in favor of it. But once again, it's better to have a natural conception.

There's a lot of data to show that it's just better to have a natural conception. But even if you end up utilizing IVF, that's okay.

Preparing for Fertility, IVF, and Pregnancy Health

But you want to be optimally healthy going in because like with women with PCOS, they have the highest IVF failure rates of any infertile group. So you go in and you spend all that money and emotional energy and then you get pregnant and then you miscarry or you get embryos that are poor quality.

That happens when you have a lot of inflammation, which women with PCOS have the inflammations in the ovary, and they've actually done studies where they pull a little from the follicle where the egg is living.

And guess what? It's full of inflammation. So you have inflammation in the ovary itself and that creates a poor quality egg. And even if you conceive with it, it's a poor quality embryo, it's less likely to implant or grow properly.

So it's so essential and more so with PCOS than any other condition to become truly optimally healthy. Before you go for IVF, your success rate will be enormously higher in every respect, not just in getting pregnant, but keeping it and then getting through the pregnancy successfully.

Because we don't want to have serious medical complications which are really on the rise in pregnancy now. And this is not really acknowledged enough in our medical system that women are having a lot of problems, not just conceiving, but successfully getting through the pregnancy.

And the pediatric world is dealing with the outcomes of under healthy pregnancies, creating babies, because we know the babies are often metabolically unhealthy because the environment that they're in, in pregnancy is not right.

And then that changes how their genes are expressed. I mean, we're going to have generational problems for generations to come if we don't actually get things right and it starts pre conceptual.

So this and, and, and it's so hard and it's also so easy because once you understand that you have to clean up the gut, you have to go to sleep, you have to work with circadian rhythm, which we don't have time to deal with.

But women with PCOS essentially are living a life of jetlag where their different organs are living in different time zones because of the deficiency of estradiol, which actually regulates the master clock.

So by doing things like eating at the right time, when we're most insulin sensitive, eating the right foods, working on stress and sleep and fitness and getting nutrients really replenished and getting the hormones that you need replaced, even if you have to do it exogenous like a prescription until things get back online, you get those training wheels.

There's nothing wrong with that that we can change the entire trajectory, not just of the lives of the women with PCOS, but also their progeny so that they'll have healthy kids.

We know women with PCOS have a very high incidence of having daughters with PCOS and bad PCOS. We want to stop that. You know, we want them to have the babies that are girls with the pre-historic type of PCOS where they become the dominant leaders and the the outgoing, successful all women, not the ones who lead very well, say sad, sad or lives because of poor health and poor self-esteem and emotional challenges and so on.

So we can change this by just putting everyone on birth control pills is not changing it. And I'm so happy that at least there's focus on PCOS. You'd think it would be like big head lights in the sky, but it really is.

And it's not a sexy medical condition. And you know, you know, it just isn't. But it's so prevalent and it's so treatable. Notice I didn't say curable, but it is so treatable, too.

And not every patient I have succeeds in conception, naturally. But the majority do. But the ones who go to IVF have a really high success rate. So this is so important that it's not just go off birth control pills and rush off to the IVF center when realize you're not ovulating, that that isn't.

You got to plan ahead as much as humanly possible, try to plan ahead a year to give time to whether you're on birth control pills or not, to really get everything as optimal as possible for a success in every aspect of life.

And this is so doable. And every woman with PCOS should not leave, you know, feeling depressed. I can't believe all the things going wrong in my body.

But understanding, like I said, is the first step in solving a problem. Problem, I think just to say it in like very simple terms, it's all of the interconnections with PCOS.

If you address one part, you're helping all of the other parts if you're addressing it in a holistic way. So it's like to your point, like, yes, it's overwhelming.

Yes, there's a lot going on. But also dialing back and saying, okay, where's the the bits that I can pay attention to? Where where can I start so that I can start seeing some differences?

And all of those are going to lead to better outcomes in fertility for sure. So you don't have to feel like, oh my God, I have to do all these things all at once.

They're all interconnected. They're all playing off of each other. So any string that you can pull on will help change the whole picture. Absolutely. When you first get overwhelmed thinking, oh, my gosh, every organ is affected.

But then exactly as you said. But when you take the proper steps to get healthy, every organ system is helped and healed. So it's all a package deal. That's the whole thing.

The takeaway is you sink or swim as an entire body and every organ system is kind of going down the hill or coming up to see the sunlight, and that's what we can do.

And then every aspect of health, including fertility and successful pregnancy, will get back to its optimal potential as you start making lifestyle changes and often a little help with some real bioidentical hormones.

It's one of those Catch 22. You can't properly heal without the hormones. You won't make the hormones until you heal. So you get your training wheels going.

You do all the lifestyle things, and amazingly, without any effort, you will lose weight, you will lose the visceral fat, you will resolve fatty liver, you will start cycling, your ovaries will start working again, and you will conceive or certainly dramatically improve your chances of, you know, having a natural conception.

And if you do go into IVF or need any fertility drugs like Letrozole to help ovulate more consistently, you will have a higher successful outcome. So, yes, there is light at the end of this dark PCOS tunnel.

Absolutely. Absolutely. Well, thank you so much for being with us. It's always an honor and you for sharing all your wisdom and pearls regarding PCOS and how it can affect fertility, but also what we can do about it to feel empowered and educated about what's happening so we can have more, more powerful spaces to have conversations with our doctors.

Honestly, that's how we're going to change the system, is we're going to empower you guys to go talk to your practitioner. And if they don't want to listen to you, find another practitioner.

There are a lot of amazing practitioners like Dr. Gersh, who support people all over the world. So thank you again, Dr. Gersh, for being with us. It's always an honor and for those of you listening and we'll see you very soon.