PCOS: Integrative Approaches To Female Infertility

Aumatma Simmons, ND, FABNE, MS
with **Felice Gersh, MD**

Aumatma Simmons, ND, FABNE, MS
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. and trained at Princeton University and the University of Southern California School of Medicine. She's a double-board certified in OBGYN and Integrative Medicine. She is the leading expert on PCOS. She is also the author of the bestselling book PCOS S.O.S., and the creator of the PCOS S.O.S. Fertility Track. In our chat today, we're going to deep dive into what PCOS is, how to support your body, and 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 I found interesting in this chat was just the idea of what we started to talk about a little bit of what happens when you've been on birth control for a long time and some solutions for how you might retrain your endocrine system to function properly after being shut off by birth control. Let's get into it. I hope you're as excited as I am. Dr. Gersh has 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 an expert on PCOS. What exactly is PCOS?

Felice Gersh, MD
Well, those letters stand for polycystic ovary syndrome. 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 in women and the most common cause of female infertility. It's extraordinarily common, although there's no exact data kept 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. As such, it's just a compilation of findings and symptoms. It does not address the underlying causes, as the name suggests. It's a condition to rule out. You have to rule out adrenal diseases, tumors, and even prolactin-secreting tumors from the pituitary. You have to rule out other causes of these similar findings and symptoms of PCOS to get the official label of PCOS

you need based on the 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 would be very irregular. You need to have androgen excess that elevates testosterone, and that's what they focus on, not the adrenal for the definition. Now they have 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 the male pattern, hair loss. 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 comes from. By ultrasound, you have to have a high-resolution ultrasound of very good quality where you have to find at least 20 of those tiny little cysts on at least one ovary. The new kid on the block just added to the official definition: an elevation of the anti-mullerian hormone or AMH, which is a little hormone that is produced, in terms of its name, a crazy name in an embryo. It causes the regression of certain structures. That's why they call it the anti-mullerian hormone. But in an adult female, what it is, is a follicle recruiter. It says, Hey, come on, it's a new cycle; let's recruit some follicles. then ultimately one should be chosen, or, as I call it, the special one that ovulates. The recruitment process is stimulated by the anti-mullerian hormone. An elevation of that hormone can also be part of the definition of PCOS. Once you rule out all the other problems, I can give you similar findings, and then you're left with the definition you define and meet the criteria area for having the diagnosis of PCOS.

Aumatma Simmons, ND, FABNE, MS
I love it. 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, or 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 levels of anti-mullerian hormone. It's someone. A practitioner needs to work 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.

Felice Gersh, MD
It's important, all the viewers out there need to know that it isn't a self-diagnosis. Now, it's 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. How challenging is it to make this diagnosis? But yet, it has been misdiagnosed or undiagnosed in so many cases. But it does take a healthcare professional to do all the tests to rule out the things that can cause similar types of side effects, findings, and symptoms. Once you get the label, that's just the beginning of understanding what the ideology is; we'll call it standard, the usual. I'll call it standard PCOS. That's ovarian-based, not adrenal, not brain, not pituitary. If we talk about ovarian-based treatments, then once you get the label, that's just the beginning because

understanding the ideology and then what to do about it is important, especially if you're trying to get pregnant, because unfortunately, the standard treatments haven't changed very much in many years. It remains that birth control pills as the mainstay, with a few minor additions. If you want to get a baby, that is not going to get you anywhere.

Aumatma Simmons, ND, FABNE, MS
No.

Felice Gersh, MD
The first step is getting the diagnosis and doing the rule-out. That just begins the journey of what to do next.

Aumatma Simmons, ND, FABNE, MS
If someone was 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 birth control because they want to get pregnant. Where would they start? What are the main possible root causes or ideologies that are happening under the surface that connect to what's happening in the body?

Felice Gersh, MD
Well, this has been a fascinating discovery in terms of what's going on that's creating this problem. It's not an identical member for everyone. But once you rule out the other things, it starts in the ovary. This has been going round and round. Now, if we went back to ancient times and this is your heritage women out there who are 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; I will say a variant where their 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 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. 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. They ended up with just a slight extra amount of testosterone and a slightly reduced amount of estradiol, but not anything that clinically manifested except maybe they had slightly reduced fertility.

Maybe instead of having eight babies, they had four. That was a survival advantage. It's a little bit of built-in birth control from the day when there was no birth control of any sort. Every time you got pregnant, every time you had a baby, that was a life-threatening situation for a woman. Of course, those babies deplete you with a lot of nutrients and take a lot out of you. You have to

raise them, too. You have to nurse them. It 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 a blessing. It was a vitalizer, those women would have a little bit more energy; they were bold, brave, and outgoing. They weren't the little ones that stood in the corner. Nobody was going to take advantage of them. They were the leaders of the tribe. They did some data collection on the Olympic gold medalists, who were women. They had this ancestral version of PCOS and slightly higher natural levels of testosterone, but not enough to cause facial hair in excess or bad acne. None of that is just enough to give them that little extra plus, in terms of energy. That little extra boost in terms of focus, energy, drive, and so on.

What has happened since then? Well, everything's changed. Look at our diet. Look at the kinds of foods that we're eating. Look at our lifestyles. All the light, the ambient light, the travel-caused 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 quite a bit of research showing 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, 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, or BPA.

They've found that in the fetus. Sad to say, there's a hugely higher concentration of this chemical than even in the mother. They would do blood tests on the mother and urine collections to measure BPA as a study. Turns out, they used the wrong test and underestimated dramatically how much was even in the mother. But it turns out that it concentrates a little sponge into the fetus. The levels of this toxic chemical in the fetus are multiple times higher. During the development of the receptors for estrogen, which are everywhere, there was a problem, and there have been studies on other hormones, such as testosterone and thyroid, that 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.

Now we have data that women who have PCOS have that defect in the production of estrogen, 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 FSH or follicle-stimulating hormone, which triggers the enzyme aromatase as they should. There's something more going on than meets the eye involving these other hormones. There are also receptor problems that have been shown in women with PCOS involving melatonin, and there are melatonin receptors all over the ovary. 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. Of course, it's a potent antioxidant. There are so many different ramifications when you have endocrine

disruptors for melatonin and testosterone, too. BPA interferes with the degradation and function of testosterone. This is even more complicated than we ever even guessed.

But we do now have published data that the receptor was for estrogen in a woman with PCOS who is more resistant than you. People know there's such a thing as insulin resistance, which is a precursor to type 2 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 the equivalent. It's resistance to the receptors involving estrogen in women with PCOS. Here's a double whammy. They don't make estradiol, and sometimes I do the same thing I criticize, which is, as I say, estrogen when it is estradiol, and that's a critical conversation. In a nutshell, estrogen is a family of hormones, and the estrogen made by the ovary is estradiol, also known as E2. That one has a balanced effect on all the estrogen receptors, whereas other estrogens in the body don't have a balanced effect. They may bind to one particular type of receptor. When it comes to 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.

The outcome of this is that, essentially, women with PCOS live in a state of estradiol insufficiency. 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, 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, diabetes, and so on.

Aumatma Simmons, ND, FABNE, MS
I want to talk about this for a second because I feel estrogen is often picked on as the bad guy, especially since I've heard a lot of doctors even say, PCOS, is estrogen dominance. My brain says, No, very rarely it's estrogen dominance in PCOS women. It's exactly what you're saying. Estrogen is either not being made as well. Testosterone is not converting as well, and the receptors are not responding to the estrogen as well. Let's just talk about this for a second. Why are there doctors thinking that PCOS is estrogen dominance? Because the data doesn't support that.

Felice Gersh, MD
Well, I speak all the time against that expression or that phrase of estrogen dominance. Number one; I love estrogen. It's insulting estrogen because it's getting people to think along the lines that, of course, were perpetuated and promoted by the Women's Health Initiative. that's involving menopausal women's hormones, which put estrogen on the evil list. many people's minds, both health care practitioners and patients. and I'm just trying to change that whole thinking process of estrogen is bad. Remember that estrogen, number one, is a family of hormones, and is just like fat. No one would say all fats are evil. Not anymore. They used to say that. But now we know there are trans fats and polyunsaturated fats. There's monounsaturated

fat; there's all these different families of fats. They do different things. They're made of different compositions of fatty acids.

Well, estrogens have different compositions, they bind differently to different receptors, and they have different effects. When people say estrogen dominance, that's always a negative. I mean, I've never heard anyone say that, and it was a positive, 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. Number one, in ovarian-based PCOS, the most classic will say classic PCOS, the ovaries are not producing enough estradiol. It's an extra-adult insufficiency. Now here's where people get confused. In the majority, 80% of women with PCOS are overweight or obese. That's because estradiol is essential for metabolism. That's where all the metabolic things that happen in older women are happening in women with PCOS. I like PCOS as a condition of accelerated aging. You see a lot of the same things that you see in older women. However in younger women, diabetes, for example, has a seven-fold higher incidence in a 40-year-old PCOS woman, as in the average population.

Estradiol is essential for burning fat and mitochondrial function, creating energy. This is important. In women with PCOS, they tend to accumulate a lot of adipose tissue, generally in the viscera around the internal organs, in the liver, and also in the pancreas and the belly. They have a lot of belly fat. Now, fat has the enzyme aromatase, unbelievably, but it does. You can make estrogen in fat tissue. Now, the estrogen that fat tissue makes is typically a different estrogen than the one that the ovaries make. It is typically estrone. Now estrone is E1, and it binds primarily to the receptor called alpha. which has a different effect. Now, why is estrone made more? It's not that it's only made, but it's made in higher amounts because, even in women with PCOS, the dominant androgen is DHEA, which comes from the adrenal gland. All estrogens are derived from androgens, and all estradiol specifically comes from testosterone.

But DHEA and DHEAS, which is DHEAS is 100% made in the adrenal, get converted predominantly into estrone, which has a different effect. It's much more pro-inflammatory, and estradiol works the switch. It's important. It's a modulator of inflammation. It turns it on when you need it—to fight an infection or deal with injuries and damage—and it turns it off and promotes healing and resolution. When you're ready to stop having inflammation, It's a modulator. When you only have E1, it's just the on switch that works, not the off switch. You get into this pro-inflammatory state. It's a problem, and it's an understanding. Instead of throwing these terms around estrogen dominance and that thing, just understand that there's a complex metabolic process that's going on in women with PCOS that's causing this potential overproduction of estrone, which has different effects than if you have the balanced estradiol from the ovary and you end up in a more pro-inflammatory state as well, when you're highly inflamed, and inflammation is always talked about with PCOS. It's underlying so many of the things.

But then you say, Why are they inflamed? What is going on here? It's a total group of things that come together to create the perfect storm that creates this ongoing inflammation. Well, inflammation upregulates the enzyme aromatase, not in the ovary but in fat tissue. You produce more of the estrone, but it also downregulates the enzyme that helps to convert estrone into estradiol. You get stuck in estrone because the body's enzyme that could cause estrone in estradiol can have an enzyme that can go back and forth and can convert from one to the other, but that enzyme is downregulated. It's less functional when you have a lot of inflammation. It's once again the perfect storm. They're making all of this unfortunate estrone, and it can't convert to estradiol, which properly modulates inflammation as well as this hormonal imbalance, which is just severe. It affects the gut.

Now we have studies originally out of China back around 2015 that showed conclusively that women with PCOS have leaky guts and have what they call dysbiosis, abnormal microbial populations in the gut microbiome. On top of that, because every organ system in the body has estrogen receptors, including the immune cells, and the immune cells all have estrogen receptors, and the ones that are the innate immune cells, the initial attack animals, if you have a pathogen or injury, they are predominantly alpha. It turns out in this research, which 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, are more activated. 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.

When you have the wrong gut microbial population, dysbiosis, and an impaired gut barrier known as leaky gut, the lining cells of the gut are drifting apart due to inflammatory damage from within the gut. These particles that are in the gut are called endotoxins, or LPS, lipopolysaccharides that 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, inflammation triggers even more insulin resistance, and then insulin resistance triggers more production, not just of insulin but of IGF-1, insulin growth factor one, which can actually migrate into the ovary and directly stimulate even more testosterone production, making the situation even worse.

I don't want everyone to feel overwhelmed. PCOS is a death sentence. No, it doesn't have to be. 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, you have too much testosterone; you have estrogen dominance, which will just put you on birth control pills. What they do is just take the ovaries offline, which I can't say doesn't have some symptomatic benefit, but you're actually 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 that turn into estrone in the body. That's why they promote blood clotting.

Everyone knows you have a higher risk of blood clots if you're on birth control pills because they are pro-inflammatory. They predominantly create estrone. But you shut down the ovarian production of all that testosterone, and you increase sex hormone-binding globin. You have some symptomatic benefits. But from a metabolic point of view, you're not addressing all the issues that increase high blood pressure, insulin resistance, and obesity, and all those things are not being addressed. Of course, if you want to get pregnant, that is not going to help you one iota. I have found that 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 have an exacerbation of their PCOS problems, probably because their hormone receptors have not been properly stimulated by the beta receptor because there's too much estrone in women, on birth control pills. We do know that with receptors, it's a bit of using it or losing it.

We already know that women with PCOS have receptor problems just from the fetal damage that happens with their development. I found almost explosive PCOS in so many women when they got off birth control pills. Now I am doing something that I innovated myself, which is when they go off, and I hope women who want to get pregnant go off at least a year ahead. I mean, if they're on them because I need time to help rejuvenate their receptors, 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 to improve your fertility probabilities, but to improve your pregnancy outcomes, which is, as an OBGYN, I would see the entire process from beginning to end, the fertility doctors that, in the big clinics, 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 conception, pre-conception through the whole postpartum period. I know all the problems that occur in women with PCOS during pregnancy; they have a dramatically higher rate of pregnancy-related complications such as gestational diabetes, hypertension, pre-eclampsia, big babies, and small babies.

Aumatma Simmons, ND, FABNE, MS
Not to mention that women with PCOS have a higher likelihood of pregnancy loss.

Felice Gersh, MD
Much higher. A much higher miscarriage rate. 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 healthy before they conceive. This is not what's happening. We're here, both of us, to change the paradigm, to say you have to be optimally fertile, and that requires being optimally healthy. That's why it's now recognized. It should be, but not enough that fertility is a vital sign, just 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 throughout her reproductive life, birth control pills give

you the illusion of regular periods. It's not a real period 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. Probably, although we don't have perfect data on this thing of dementia because it is all interconnected, we now know everything is interconnected. It's critical for osteoporotic fractures.

The fertility of a woman during the reproductive years, even if she doesn't want to be pregnant, is a critically important vital sign. 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, that this is a complex problem that involves the interplay between fertility, reproduction, and everything metabolic. Metabolism is the creation, utilization, distribution, and storage of energy, which is the spark of life. When you're metabolically unhealthy, then every organ system—the cardiovascular, the neurologic, the GI, the musculoskeletal—can go through every system—the skin—every system has its own set of malfunctions. There are estrogen receptors in every organ. That's why the array of medical challenges that women with PCOS face is so astoundingly great. Because when you don't have these proper hormones, it starts with estradiol, but of course, it includes all these other hormones that affect every organ system. It is at the intersection of reproductive and metabolic health.

Once you understand, which I figured out 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 an unhealthy cardiovascular system, neurological system, or G.I. system. That's why estradiol—I call it the hormonal glue—links every organ system to the reproductive system to allow a successful pregnancy. Not just that the woman, a human female, has to 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. Because to replace the species, you have to have multiple children. Not only are all the organ systems helped and 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 side issues that they have to then face and stop using the term estrogen dominance and just understand what's happening in the body. Then we can tackle it, and we have to tackle it on all fronts. It's not easy, but I said that 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 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 the equivalent of rusty. Their ovaries haven't been making estrogen at all in all those years they've been on the pill. The enzyme aromatase hasn't even been used for one second. Their receptors

for the beta receptor haven't been properly utilized. I put them on bioidentical estradiol and bioidentical progesterone, and progesterone downregulates testosterone production and receptors. It's anti-testosterone when you have progesterone, which women will only make if they ovulate. When wouldn't PCOS be doing that? Very frequently.

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 technically endocrine disruptors. If you go to toxicology.gov, which is a site of the National Institutes of Health, it lists every ingredient in a birth control pill as an endocrine disruptor. Why would that be okay? Then they get off of it because they want to get pregnant. Why would it not be okay for me to give them bio-identical hormones, the ones that their ovaries are supposed to be making? It's one of those catch-22s. You can't heal without the hormones, but until you heal, you won't make the hormones. I give them a few months of bioidentical cyclic, just mimicking a menstrual cycle, bioidentical hormones to get their receptors online to help heal all these organ systems that need these proper hormones to function properly. Then it's amazing how well people do. It's a training wheel.

Aumatma Simmons, ND, FABNE, MS
Yes, I was; that's exactly what I was thinking. This is a retraining of the endocrine system so it can do what it's designed to do.

Felice Gersh, MD
I know we should work together on this because there is no published data on it at all. We're just going out there because, just thinking it through, why would it be okay to give birth control pills, which are chemical endocrine disruptors, and not bioidentical, which is what the person is supposed to be making? But they're not. Of course, it's safe. Of course, it's appropriate. It has excellent outcomes. But women. I'm sure everyone out there has probably been on and then gone off birth control pills with PCOS, see? Even women who never were diagnosed with PCOS and who have been on birth control pills may have gone on them because they were in sports or they had cramps or something and they were 13 or 14. This is rampant, and now they want to get pregnant, and they're 32. Look how many years have passed.

Aumatma Simmons, ND, FABNE, MS
Absolutely. The early years of a young woman's life are so crucial to setting that template for her hormones. There is no training; the training wheels never got put off. Well, this is the most shut-down. Then you get off of birth control and you're, does everything function so, well, you never learn how to ride the bike, so you don't know how to ride a bike?

Felice Gersh, MD
Absolutely. I think it's a travesty of medical care that we're giving these young teens. Now we have data that shows that things are not mentally stable and that women who go on birth

control pills are young and have more emotional problems. They have more bladder dysfunction. It's because their bladders don't get stretchy enough. They have overactive bladders. They have to go pee all the time, and they often 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. These are not PCOS women. This is everyone. Then when they go off after all those years, they have PCOS because you're giving them, just 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. You're not cooked, you're not done.

When you are in your teens. 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, bone, and ligaments. I'm finding young women now when they go to do Zumba class and they're 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, 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. I know that's a little plug, but let's not go on birth control pills in those young years. But now you and I are faced with how to help them get pregnant and be healthy, and so we have to come up with our ingenious methodologies because the conventional medical world is just going to the IVF center down the street, and there's 20 because so many women have been offered infertility.

Aumatma Simmons, ND, FABNE, MS
To a certain extent, to be fair, IVF does, essentially bypass the need for these hormones to be functioning. We can give the hormones at the right time to get the body to do what we think it should be doing. But 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 your life when your cardiovascular system, your bones, and all of the other things that we know are issues when we get older. The way to prevent it is to fix it. Now, you don't want to be learning how to ride this bike at 60; you want to learn it at 35. When you realize, I've been on birth control my whole life. I better figure out how to do this.

Felice Gersh, MD
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. But you want to be optimally healthy going in because women with PCOS have the highest IVF failure rates of any infertile group. 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.

Women with PCOS have inflammation in the ovary and have done studies where they pull a little from the follicle where the egg is living. Guess what? It's full of inflammation. You have inflammation in the ovary itself, and that creates a poor-quality egg. Even if you conceive with it, it's a poor-quality embryo that's less likely to implant or grow properly. 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 in keeping it and then getting through the pregnancy successfully. We don't want to have serious medical complications, which are on the rise in pregnancy now. This is not acknowledged enough in our medical system that women are having a lot of problems, not just conceiving but successfully getting through the pregnancy.

The pediatric world is dealing with the outcomes of under-healthy pregnancies, creating babies, because we know the babies are often metabolically unhealthy because of the environment that they're in during pregnancy 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 get things right, and it starts pre-conceptual. 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. However women with PCOS are essentially living a life of jetlag where their different organs are living in different time zones because of the deficiency of estradiol, which regulates the master clock. By doing things like eating at the time when we're most insulin sensitive, working on stress, sleep, and fitness, getting nutrients replenished, and getting the hormones that you need to be replaced, even if you have to do it exogenously with a prescription until things get back online, you get those training wheels. There's nothing wrong with the idea that. We can change the entire trajectory, not just of the lives of the women with PCOS but also of their progeny so that they'll have healthy kids.

We know women with PCOS have a very high incidence of having daughters with PCOS or bad PCOS. We want to stop that. We want them to have babies that are girls with the pre-historic type of PCOS where they become the dominant leaders and the outgoing, successful women, not the ones who lead or live sad lives because of poor health, poor self-esteem, emotional challenges, and so on. We can change this by just putting everyone on birth control pills not changing it. I'm so happy that at least there's a focus on PCOS. You'd think there would be big headlights in the sky, but it's not a sexy medical condition. 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. Not every patient I have succeeds in conception, naturally. But the majority do. However, the ones who go to IVF have a high success rate.

This is so important that it's not just to go off birth control pills and rush off to the IVF center when you realize you're not ovulating; that isn't. You have to plan as much as humanly possible; try to plan a year to give time to whether you're on birth control pills or not, to get everything as optimal as possible for success in every aspect of life. This is so doable. Every woman with PCOS should not leave feeling depressed. I can't believe all the things going wrong in my body. But understanding, as I said, is the first step in solving a problem.

Aumatma Simmons, ND, FABNE, MS
I think, just to say it in 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 holistically. It's to your point; yes, it's overwhelming. Yes, a lot is going on. But also dialing back and saying, Where's the bit that I can pay attention to? Where can I start so that I can start seeing some differences? All of those are going to lead to better outcomes in fertility, for sure. You don't have to feel, I have to do all these things all at once. They're all interconnected. They're all playing off of each other. Any string that you can pull on will help change the whole picture.

Felice Gersh, MD
Absolutely. When you first get overwhelmed thinking, every organ is affected. But then, exactly as you said, when you take the proper steps to get healthy, every organ system is helped and healed. It's all a package deal. That's the whole thing. The takeaway is that you sink or swim as an entire body, and every organ system is going down the hill or coming up to see the sunlight, and that's what we can do. 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-22s. You can't properly heal without hormones. You won't make the hormones until you heal. 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, which will certainly dramatically improve your chances of having a natural conception. If you do go into IVF or need any fertility drugs like Letrozole to help ovulate more consistently, you will have a more successful outcome. Yes, there is light at the end of this dark PCOS tunnel. Absolutely.

Aumatma Simmons, ND, FABNE, MS
Absolutely. Well, thank you so much for being with us. It's always an honor, and thank 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—we're going to empower you guys to go talk to your practitioner. 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. Thank you again, Dr. Gersh, for being with us. It's always an honor, and for those of you listening, we'll see you very soon.