Uncover Advanced Tests To Root Out Infertility Causes

Carrie Jones, ND, FABNE, MPH
with Jaclyn Smeaton, ND

Carrie Jones, ND, FABNE, MPH
Hello, and welcome back to the Beyond Infertility Summit. I'm your co-host, Dr. Carrie Jones. Today I'm very excited to have my friend and colleague, Dr. Jaclyn Smeaton, who is an amazing fertility expert in our field. She lectures all over on the topic of fertility, and she happens to be the chief medical officer at Precision Analytical. Many of you might know that the company has the Dutch test, so we are 100% going to pick her brain on the Dutch test. But first, Jaclyn, welcome to the summit.

Jaclyn Smeaton, ND
Thanks, Carrie. I'm so happy to be here and be a part of the summit.

Carrie Jones, ND, FABNE, MPH
You are one of the top people I go to when I have any fertility questions. With your company, Hello Fertility, just following you and your everything, your fertility education journey all this time. My first real question is, given that you've been doing this for a while and you've been out there in the field with patients, what are you seeing on the topic of fertility? What do you see now, maybe as opposed to five years ago or even longer?

Jaclyn Smeaton, ND
There's been a lot of movement in the field of fertility, particularly in what we can do as integrative providers to help address fertility. Now, if you guys are trying to get pregnant, there are some things we know, and there are a lot of things we don't know when it comes to fertility and how to get pregnant. But, particularly in the field of unexplained infertility, unexplained infertility is something we don't know yet. There's got to be a cause. We just can't identify it based on what we know and can test for today. Some of the areas that have been uncovered include reproductive immunology and the role that your immune system and the stability of your immune system play in your ability to get pregnant and stay pregnant. The other area, which has been a little bit of a recent obsession for me, is the reproductive microbiome. Now,

this broke wide open some years ago, but within the last five or six years, we determined that the womb was not sterile. When babies are born, they test their meconium, which is like the first bowels they pass, which is based on absorbing and swallowing amniotic fluid in the womb, and the meconium has its microbiome. Babies in utero have a microbiome. The uterus has a microbiome. The placenta has a microbiome. We now know that follicular fluid, fallopian tubes, and the uterus all have their microbiota, and that strongly influences the ability to get pregnant. There's been a couple of big shifts, and then a lot of it is just the awareness of patients trying to conceive of the things that they can work on, on their lifestyle, and how impactful those are.

Carrie Jones, ND, FABNE, MPH
I love that because I've heard you talk about in the past the importance of not keeping this quote or this book title, but taking charge of your fertility. and one of those is testing because I feel that when it comes to fertility, patients may come to you and say, I've been worked up and they can't find anything. When you look at the workup, you might be thinking to yourself, This leads a little bit to be desired. Let's talk about that a little bit.

Jaclyn Smeaton, ND
The conventional workup is that it's important to do that. Are you ovulating? It looks a little bit like egg quality, although we can talk. I'm sure you have other guests talking about egg quality evaluation. It's not a perfect science. It can be tough to nail down what's going on with your ovarian reserve. Then sometimes they tell us a little bit about the receptivity of the endometrium, but that's rare. then most male partners only get a standard routine semen analysis. They're missing a lot, or missing gut function, or missing nutrient status, or missing your antioxidant and free radical levels, or missing hormones. We get some basic hormones, but not the full picture. There's so much that's missing when it comes to assessment. That can be refreshing when I get patients who come in to see me because they think that they've been tested for everything and there's no answer. It's like, you've just touched upon the tip of the iceberg, and from a conventional reproductive perspective, you might not have a diagnosis. We know about that. There's so much more that we can look into to lift the hood, get inside, and see what's happening.

Carrie Jones, ND, FABNE, MPH
I love that. Lift the hood and look inside. That's the truth. Let's lift some of these out. For people listening, get your pen and paper ready. Get ready to take notes. Let's pretend you're talking to somebody who is just beginning their fertility journey as well as somebody who maybe is in the middle of it. They're just beginning their fertility journey. They haven't had lab work in eons, and they're thinking, I've got to start somewhere. What would you recommend?

Jaclyn Smeaton, ND
The basics, for me, would include a good hormonal workout. That involves, like, cycle day three labs. You have them drawn when you're still on your period, and that would be a

follicle-stimulating hormone, FSH luteinizing hormone, or LH estradiol, which is the main form of estrogen. We look at anti-malaria and hormones, testosterone, free and total testosterone, and DHEA sulfate, and see them missing off the top of my head. Those are the biggies from sex hormone-binding globulin, which gives us a little bit more context about your hormone levels. Then we look at nutrient status. I generally run a pretty comprehensive panel of water-soluble and fat-soluble nutrients, some of which are key. I won't go through all of them, but vitamin D and zinc are important. Omega 3 status is another one that we can run and is just a standard routine blood work analysis. Then cycle day 21 or seven days after ovulation, we want to measure progesterone. That's when progesterone should peak. We can tell based on the results that come back. One: Are you ovulating? Two, are you making enough progesterone? That can be related to the health of the first half of your cycle. Because if you don't have healthy ovaries and you're not having a strong ovulation, you won't have a lot of progesterone around in the second half of your cycle. We've got to make sure that's optimized. It's not just about progesterone. It's about progesterone as a marker for your overall menstrual health, male partners. I generally still start with a semen analysis. If you have come in and you've been worked up and you've been trying and you've failed IVF, I'll always add DNA fragmentation for males now too, because we know that you can't see the health of the DNA from a semen analysis. It's another independent challenge that needs to be overcome for fertility. That's a basic start. If we know all that information, then we might want to dig deeper. We can talk about that, like, what does deeper look like? But that would be a basic routine workout.

Carrie Jones, ND, FABNE, MPH
Which is good. As you mentioned earlier, it's not one that's often run. Unfortunately, if you were just to go to your primary care OB-GYN, again, there's nothing against them. To them, their workup is where they start. A lot of the labs that doctors meet are talking about; maybe they don't have ideas or options or know how to read them or what to do if they're off, high, or low. That's where great functional integrative care comes into it because we not only know how to look at these labs through that lens, but we're also trying to get you as optimal as possible. Right. But then also, what do we do with it? now yes. Get into the depths here, as you may have been on this journey. You're listening to this right now, and you're thinking, I've had all that done. Now what?

Jaclyn Smeaton, ND
First, just to reflect on what you said. that you are right. I counsel the doctors that I teach about this all the time. There is no point in running a lab if you don't know what you're going to do, if it's high, if it's low, or if it's normal. If you can't answer that, like, how would the result of this change your treatment plan? Don't run it. It's wasteful; it's useless. It's like a waste of your patient's money. That's important to say that a lot of providers, especially in the GYN or reproductive industries, have deep knowledge in a small area, and they've been practicing the law with decades of experience as reproductive endocrinologists. The less experience they have in metabolic health and how it's viewed today, the less experience they have in gastrointestinal

health and how it's viewed today. Naturopathic physicians and functional medicine doctors, because we are trained as primary care and as generalists and because we think about those as foundational to overall health, no matter what's going on, we have to have expertise as it develops over time in those other areas too that influence fertility. It's a completely different look. The next step for me is to try to hone in on what additional tests we need to do, because what we don't want to do is test everything, and there can be so many avenues or paths to go down for testing. This is where a skilled physician will ask good questions to try to determine what else is going on. This is why we ask so many questions about your digestion, your skin, your mental health, and your sleep. Because all of those little things that you deal with that you think are not important, like the fact that you get bad allergies in the spring or the fact that you have loose stools frequently or whatever that is, you don't sleep well, those are important to us because we can put those puzzle pieces together to think about some of the thematic things that might be going on for you, like digestive distress or dysbiosis or chronic inflammation or autoimmunity. It's time to start asking questions that help me hone in on what type of testing to do. But there are a couple of major categories that we look at. Let's talk about metabolic health first. We now know that Zeynep Uraz, who's a, I don't know, is Zeynep at your summit? She is a Canadian natural physician; she's fantastic. Also a researcher. She just published an interesting research article about hemoglobin, A1C, and glucose monitoring and its impact on fertility. They worked with couples with infertility, put them on CGM monitors, and taught them what their goals should be and how to keep their blood glucose in range after eating.

They had a massive improvement in fertility rates just from helping their clients better understand the way that food impacted their blood sugar and making some basic changes to nutrition. What we know is that hemoglobin A1C, which is a long-term picture of your glucose regulation, is correlated with infertility when it's too high. We want to evaluate metabolic health thoroughly, and that might mean testing things like fasting, blood sugar, fasting, insulin, and hemoglobin A1C, those are the basics that we look at. But you might be in a group where we think more continuous monitoring would be helpful with CGMP that can be not only eye-opening for what's happening for you but also a teaching tool to help you. It makes improvements because you get direct feedback. I read this great article just yesterday that was put out by levels of what they see as the 12 worst foods to spike blood sugar, and the number one was grapes, the right food that we think of as healthy generally. The second was oatmeal-like things that are on the list of healthy foods that even we talk about; they're great choices. But if you have sensitive blood sugar or you're not pairing things correctly, it can send your blood sugar on a rollercoaster. Metabolic health is number one. Gut health is another one. I don't know if you see this, Dr. Carrie, but like, how many people are walking around with gut processes?

Carrie Jones, ND, FABNE, MPH
All of them.

Jaclyn Smeaton, ND
I feel I could put myself in that category. This year was my year for gut health because things were off for me after a period of stress. Then I had SIBO, and I had dysbiosis, and like lack of good bacteria, it happens to the best of us, but you need to test. There are great tests available that measure your stool, that look at whether there is inflammation in your gut, whether there are signs of food intolerances going on, and then what the microbiome looks like. You could have infectious organisms that could be a problem, or, like it was in my case, I just had a lack of the good microbes I had, like nothing in my gut. That's just as bad. It can lead to inflammation. Gut health is very much tied to fertility because it influences inflammation and your ability to absorb nutrients. It can throw off your hormones. There are so many connections there. If you are someone who's had wonky digestion, sensitive digestion, or whatever you want to call it, that might be an area that's worth investing in and doing some good testing on.

Another category that is important for cell health, and egg and sperm health is looking at free radical stress and mitochondrial health. Those are brothers or sisters. We look at them together when we do testing for mitochondrial health and free radical damage. There are a couple of nice markers like lipid peroxide, or 8-OHdG, which is a urine marker that can tell us how much free radical stress your body is under and whether your current intake of antioxidants through food or supplements is enough to keep it balanced. It can also tell us a little bit about how much glutathione you have in your body, which is like a master antioxidant. What we find is that as free radical stress goes up, our oxidative stress goes up, and fertility goes down. This is one of the first root causes of fertility that was discovered in mitochondria, which are energy powerhouses. They get damaged by free radicals. Also, they're one of the first things to go wrong when you're under a lot of free radical stress and that's where the most mitochondria are in the body, the ovaries, and the testes. We thought those cells needed so much energy to do their jobs. All of these things, which are like hallmarks of aging, are important too, like, lift, dig deeper into, and figure out what's going on for you. The last one is hormones, and we saved our best for last there because, again, this is an area where we under test most patients and the conventional health care system, and when we look at blood levels of hormones, we're getting ours like a snapshot in time. It's important to keep in mind that hormones change. Everyone knows that for a menstrual cycle, they're changing every day, but not only every day. They change hour to hour, like testosterone in males, which varies by 30 to 40% over a day, depending on which test you take. So if you're taking just a single snapshot and basing decisions on that, you could be making the wrong move. This is why I love talking about the Dutch test, and why I'm so proud to work with precision, is that it allows integrative providers and patients to get a much more comprehensive picture of what's going on hormonally. I could tell you numerous stories that are embarrassing. I've learned over time that I run the Dutch test first, but there are numerous stories where I measure hormones in serum, usually because it's covered by insurance. I'm always conscientious of out-of-pocket costs for my patients, but patients are on a treatment plan, and they get worse. then I'm like, All right, we need to a Dutch test and I realize that that snapshot in time painted a picture that was completely different from reality and sent me down the wrong

path, frankly. Now I would like to get that comprehensive picture upfront. I think it's valuable. I'm sure you can speak to this too, to figure out what's going on.

Carrie Jones, ND, FABNE, MPH
For those listening, I am watching. I've used the Dutch test for over a decade now, so I am also equally passionate. I can do blood work. I agree with Jaclyn on maintaining somebody's budget, but if you can peel back that layer and go deeper with something like the Dutch test, you're just going to get so much information. Let's pivot into that. First, we have to ask the most basic question in the world: What does Dutch stand for? Why do we call it a Dutch test?

Jaclyn Smeaton, ND
That's a great question. It stands for dried urine test for comprehensive hormones. It explains a little bit about the test, which is done through dried urine, which is easy. Patients can do the test at home. You are the same as an ovulation predictor kit or a pregnancy test. If you've ever done either of those, you are skilled enough to run a Dutch test. You pee on a piece of paper and collect the samples a couple of times per day, or you collect them throughout your whole menstrual cycle, depending on which tests are running. You set the card out, let it drive for 24 hours, and mail it in. That's the dried urine part. very easy to collect. There are a couple of advantages to urine. One is that it's so easy to collect at home. There's no blood draw. You can get great information about hormones without ever having to prick a finger or get a blood job in a lab. But the other thing is that urine if you can think about it, is like a video versus blood being a snapshot because you're getting it's almost like a time-lapse video. After all, urine collects the metabolites over hours. If you think about it in the morning, if your first urine contains all the metabolites from everything that's happened since the last time you peed before you went to bed eight or nine hours ago, hopefully, you're sleeping that much. You're getting this time-lapse picture, and when we collect multiple time points throughout the day, four-time points will be published. Suppose that's equivalent to collecting all of your urine for 24 hours and testing that as one pool. They're the same: by just cheating and doing four catches on paper, you can get all of the metabolites that you're making throughout an entire day. What that does is even out those up-and-down fluctuations that you get in the production of hormones throughout a day and give you a much clearer picture of what's happening hormonally. That's the comprehensive piece of it. One is that you're catching it for a whole day. But then, in addition to measuring hormone levels, measuring metabolites is important too. The reason for this is that many metabolites are active in the body. They behave just like their brother or sister. They can tell us a lot about the overall picture. We see this a lot, especially with androgens in females, with PCOS, where sometimes what I'll see is that I'll be looking at someone with PCOS who doesn't have high testosterone or doesn't have high DHEA, but what they do have is high metabolites of testosterone. They quickly move on, but those metabolites still act like testosterone in the body, and they produce the symptoms of abnormal hair growth or hair loss, acne, or irritability—the things that we associate with testosterone. Now, if you only measure blood testosterone in

normal, you would miss that completely. The comprehensive look at all of those metabolites gives us a better picture of what's happening hormonally.

Carrie Jones, ND, FABNE, MPH
I'm glad you mentioned PCOS because I have read statistics that show a significant percentage of women who go to their GP or OB-GYN or whoever primary care and get missed on PCOS or get told, No, your testosterone is in range or it's not elevated. Therefore, despite your symptoms, it may be due to something else. It's not PCOS, and I've seen this a lot and run Dutch tests on patients where, just as you said, and I'm so glad you said this, their metabolites are high. I'm like, you do have PCOS. It's that one diagnostic criterion: elevated androgens. It doesn't have to be testosterone. That's a concern. But it can be these metabolites. and I've heard you say before in other conferences that PCOS is a leading issue with fertility problems. It's the number one endocrine disorder in women. so to get it properly diagnosed is huge.

Jaclyn Smeaton, ND
It is. I end up diagnosing it for many women who are coming to me after seeing their OB-GYN, after seeing their reproductive endocrinologist, and the hallmarks that clue me out to it are that irregular cycles are one thing that women start to pay attention to when they're trying to conceive. If your cycles are unpredictable, it's not always PCOS, but very often you have signs of PCOS, and you might have an atypical presentation of it, which is how things end up getting messed up. You're not overweight; you don't have high androgens. There can be other causes too, like adrenal health, which can contribute to metabolic health and ovarian health. PCOS affects all of those symptoms.

Carrie Jones, ND, FABNE, MPH
Let's move into cortisol and then come back to things like estrogen and estrogen metabolism. Since you mentioned adrenal stress, how does cortisol play a role in fertility? Then, a lot of people are probably saying, I got a blood draw; I had a morning cortisol, and it was in range. What do I need to do again?

Jaclyn Smeaton, ND
A morning cortisol is, in my opinion, like a useless measure for HBO. It's like it's so inconsequential to test that one time. When we look at the function of the HPA axis, there are several things that I like about what we offer with the Dutch test. One is that you get multiple views of the HPA axis function. what most labs do is this diurnal curve where you measure it for time points, and you trace it over a day. What we see is that when you first wake up, your cortisol elevates in the morning, and then throughout the day it comes down, and in the evening it should be quite low. That's the typical piece there. That's an important measure to look at. With the Dutch test, where you can also add a cortisol awakening response, which is three time points taken in the first 60 minutes. Now, to do this, it's like not just urine; it's also saliva because I don't know about you, but I'd have trouble peeing three times. Yes. Also, that's not enough time to,

like, catch all of the metabolites in urine. We do that in saliva and right upon awakening. It's a stressor for your body. It acts like a stress test, just like a hormone stress test. What would they do for someone if they were testing them for disease of the adrenal gland? We can look at that. In our research, what we're seeing is that what happens to your cortisol in the first 60 minutes of the day is predictive of your overall health on your HPA axis. then the third thing, which just gets back to the comprehensive side of the data, we also look at cortisol metabolites. I talked with Mark Newman, our owner and founder, and the science genius behind the Dutch test today about this. Because within our testing, what we can see is that there is a percentage of our patients that we're testing whose cortisol looks normal on the diurnal curve but whose metabolites are way off. There are reasons for this: your cortisol might look low, but your metabolites are quite high, or alternately, your cortisol is measuring high and your metabolites are low. This mismatch tells us that something is going on that's not about making cortisol; it's about clearing cortisol. There are lots of things that can cause this, like obesity, chronic inflammation, and thyroid dysfunction. Our team, our doctor team, reviews every test that comes out and will help doctors recognize these patterns of what's going on. For example, it looks like your patient might have hyperthyroidism. You know they've been tested for that. You might want to recommend screening there because there's such a mismatch there. Metabolism is so high that they're making plenty of cortisol, and we can see all the metabolites of the cortisol in their urine. But when we measure them for cortisol, it's gone as soon as they make it; they're clearing it out, and that can be a problem. Again, that comprehensive nature and this is a lot of your new-to-Dutch testing. It sounds like a lot to have to learn that our team has amazing support resources and does a lot of things like mentorship and one-on-one consultation to help doctors get this. But the HPA axis is another thing that's so important for fertility. If we pull it back a bit, everyone talks about, oh, you have this story where we decided to adopt and we took the stress up the fertility, and then all of a sudden, boom, we got pregnant. Which one? Never put that pressure on yourself. It's not just about relaxing, for sure. However, there is clear documented evidence that stress impacts the reproductive hormone system, which, like fertility, is the first thing to be negatively affected by stress. If you think about this from the point of view of evolution, and when it's a good time for a female to get pregnant and have a baby, it's when you're well-resourced. Our experience with stress has changed dramatically in the last 50 to 100 years. But before that, our genetics are built so that if we had a time of stress, which in that instance was probably like no housing or famine, like a year of famine, we would increase the level of cortisol we make, and it would shut down our reproductive system or make it less efficient so that we didn't get pregnant at a time where we couldn't have a healthy pregnancy. Nowadays, our stressors are all over the place and different, and we experience the negative impact of that. But there's real physiology behind that, from changes in your hormones, like lower progesterone levels, to even your cells, like in the testes and the ovaries. removing their ear is what we call receptors for brain signaling. They'll close down their ears when the brain is overfiring, and it changes the system from the brain to the ovaries and the testes, basically making the reproductive system less efficient. We want to make sure stress is managed and the hormones associated with stress are in good balance.

Carrie Jones, ND, FABNE, MPH
This is why I have you on for the summit because you explain things in a way that a lot of people going through fertility struggles are going to think; no one has ever said this to me. No one's ever explained this to me. This makes perfect sense. I can relate to a lot of this, and now they have much clearer answers, at least on what they intuitively thought was going on with their body. Now you're just, fact after fact after fact has just been so helpful. But we have to talk about estrogen because estrogen is a big deal, and the Dutch test does it differently as they look at estrogen metabolites and estrogen detox, which is critical for both males and females.

Jaclyn Smeaton, ND
I talk about estrogen. It's like the Beyonce of our hormones. It's the queen B. We talk a lot about estrogen in a negative way. I see that all the time, from estrogen dysregulation to estrogen dominance. I feel like if you did a Google search and looked up estrogen, you would probably more likely than not find negative media around estrogen. The first thing I want to say is that you can't get pregnant without estrogen. You can't make progesterone without estrogen. There's so much that estrogen does. Every single cell type in our body has receptors for estrogen. Our bones need estrogen. Our skin needs estrogen. Our vaginas need estrogen. It's needed everywhere. First and foremost, it's important to have enough. Now, when we look at Dutch testing, we do measure three different kinds of estrogen that are produced in our system. That can tell us a little bit more about how much estrogen is in your body because it's not just one hormone; it's a family of hormones. We look at Estrone, which is called E1, Estradiol or E2, and Estriol or E3. But the family of estrogen isn't just about those three sisters. It's like all the cousins to all the metabolites. When estrogen is made in our body to be metabolized, it goes through a couple of steps, which we call phase one and phase two. then it gets excreted through the gut and urine. But if those things aren't happening efficiently, those metabolites can have activity that will make you feel like your hormones are out of balance, even if your bloodwork looks normal. Two, they can cause DNA damage, which is very relevant to egg and sperm health. We want to make sure that your estrogen levels are good, but also that phase one metabolites and phase two metabolites are also good and that you're able to get them out of your body effectively, which gets back to that gut health piece. We have to look at the health of the liver, the kidneys, the gut, and the ovaries. When we look at that overall estrogen picture and with the Dutch test, we see every step along the way, and we're able to tell whether that's all happening efficiently, which is awesome, or if it's not, what needs to happen to get things into balance. Let's say, for example, that your estrogen levels are high when you look at your blood. That could be a couple of things. It could be that you're making too much estrogen, and then we have to figure out where that's coming from. Or it might be that you're making just the right amount but that the clearing process for estrogen is faulty. I heard one practitioner recently talk about how it's like your body's trying to take out the trash, but the garbage truck stops coming. We can see what steps are not working. then we're able to see exactly what you need to be doing differently to make that work better. Sometimes it is supplements, sometimes it's a lifestyle, and sometimes it's looking at gut health and might be increasing the fiber in your diet or taking a probiotic. But

it helps us hone in on what's going to work best for you so that you're not guessing. The other thing I hate is when patients come into me on 50 different supplements and it's like, This is why testing is so important, because who wants to take a grab bag of supplements every day? Why don't you just say no one will help?

Carrie Jones, ND, FABNE, MPH
With this estrogen metabolism, can you get this at all in your blood work?

Jaclyn Smeaton, ND
You can't, because metabolites only exist in the urine, so we have to measure them in the urine. It's another benefit of that Dutch test. You can measure the hormone levels in your basic blood work, but you cannot look at metabolites.

Carrie Jones, ND, FABNE, MPH
This is a real key piece to know because some people are, I got this drone tested, I got estradiol tested, which is great, fantastic that you should. But this key piece of information about whether it's moving out of the body or not, which could be affecting you, is what Jaclyn is talking about. So this is important to note if you're thinking you're going to go to your local Quest's lab core hospital and just get metabolites for estrogen and some of these other markers she's mentioned; unfortunately, that's not the case. They're going to look at you funny and say, We don't do that here. Not bloodwork anyhow. I would be remiss if I didn't ask you about what's called the cycle mapping test. I do want to differentiate between the testing you've been talking about, which is a one-day test, and the option of a cycle map. What is that?

Jaclyn Smeaton, ND
It is exactly what it sounds like. It maps out your menstrual cycle. If we talk about something like a hormone snapshot, that's a single time point. The cycle map looks at urine every morning for an entire menstrual cycle. What the report looks like is a tracing of your estrogen and progesterone levels based on metabolites that we can calculate back to what would be in your blood. You get a trace of it. If you've ever looked in a textbook and you've seen a menstrual cycle chart, it's like, Here's what estrogen should look like, here's what progesterone should look like, and it shows the curves. We give you the same picture of what's happening to you. I'm in the process of doing that right now. I'm like, I should be ovulating. I'm doing this every day. It's the only test I've never run on myself from Dutch, and I'm quite excited to see what mine looks like. That'll be fun. But you look, you get to see your estrogen progesterone every day. This is helpful for women who have irregular cycles. Or you might be if you're symptomatic every period, like every premenstrual time or your time around your ovulation, or you, maybe you get anxiety early on in your cycle, whatever it is. I love running this test for that purpose because we can see what's happening hormonally when you're symptomatic and determine what's going on. I'm the one I'm doing, adding metabolites and ads like the entire Dutch. Everything they can test for with the cycle map. I'll also be doing a little bit more testing in the middle of my luteal phase,

around seven days after ovulation, to catch the full day. What's happening with my hormones throughout 24 hours within a 28-day cycle?

Carrie Jones, ND, FABNE, MPH
Cycle mapping is one of my favorite tests. For somebody who does have a cycle, I don't recommend it, but we do recommend it for menopausal women or women with no cycle like that. The point is to find your cycle. However, I was talking to a health coach yesterday who said she ran a Dutch cycle mapping because she was having a lot of high histamine symptoms at ovulation. She was very itchy, very scratchy, and very giddy. Stuff, sniffy, snotty headaches—the whole thing. She thought, Are these allergies? Why do I keep developing a histamine reaction right at ovulation? She happened to do a cycle map and found that her pre-ovulatory estrogen rice, which is supposed to be large and in charge, was larger and charged than she'd ever seen. Estrogen unfortunately slows down the breakdown of histamine. It was put on her; she was already a histamine-type person, and then it was just pushing her over her. Her bucket of histamine was overflowing, and she could see that. She was so excited because everybody kept trying to blow it off to allergies or blow it off to, here's another, histamine support, or it must be something you're eating, or are you drinking wine or eating cheese? She was like, No, none of those things. This is it. I'm an extreme estradiol maker.

Jaclyn Smeaton, ND
So she'll take charge when she needs to. But this is a cool thing about functional lab testing: she could have spent years seeing specialists who were treating the allergies, which are the symptoms. It's what's showing up for her, but it's not the problem. The problem was the high estrogen. So when you're able to see that and get to the root cause, who would think that she would need to treat her allergic symptoms with things like sulforaphane and magnesium and these things that are for estrogen metabolism? Who would have thought that that would be the key to her feeling better versus throwing Sudafed, NAC, Quercetin, and all of our favorite allergy stuff? Maybe a combo is great, but again, it's like finding the root causes there. The same thing goes with fertility.

Carrie Jones, ND, FABNE, MPH
Every time I had another case, another doctor said to me that her fertility client and you—I'm sure you see this all the time—which is why I'm bringing it up. I'm sure people listening can relate. They kept getting a blood draw for progesterone on days 19, 20, and 21, somewhere in there, per their doctor. It was always good. yet, unfortunately, they would miscarry early to get pregnant and miscarry. So finally, this doctor saw a functional doctor who did Dutch cycle mapping on them. They realize their progesterone went up like straight up and straight down. It was like the signal puttered out, and they didn't make a whole lot of progesterone after that. Yes, they look glamorous, fabulous, and robust on day 19. But by the time they got to day 22 or 24, it was even being pregnant. It just must have some signal somewhere. I just couldn't push it through. The progesterone fell straight down. She was one if she hadn't had that. They kept

thinking, It's not progesterone. Stop progesterone. You don't have a recurrent miscarriage because of progesterone, and it turned out it was progesterone; it was just that she couldn't make enough to sustain.

She did go through a few miscarriages to finally get these answers, which is awful. But another good reason. Another green check mark for this comprehensive Dutch testing, for sure.

Jaclyn Smeaton, ND
I have a test. Don't gasp. In my practice, as we said, we're always budget-conscious, and if we were to screen people for everything, you'd probably be looking for the things I want to see. I like $2,000 in labs, which, for some people, is fine. They're like, Test me for everything. But for the average patient, that's a lot of money to invest, especially when you're on a very expensive fertility journey to begin with. That's why we like to use the intake. I give you, like, a super extensive questionnaire, and then we have the discussion that we have to help hone in on what can be most helpful. But there are a couple of things that make the Dutch test, like one of my absolute favorites for couples that are trying to conceive, is how many things it looks at for the value of the test, so you get the HPA axis and your stress level, you get to look at your hormone levels, your hormone metabolites. then we haven't talked about this, but on the last page of the Dutch test, there is a section called the OATs, which is all these individual markers that get added on that. Tell us a little bit more about what's happening hormonally. about it, like when you see the problem on the main page of the Dutch test, you can look at the OATs page, and sometimes you can find that the cause is there. For example, we have a biotin marker on there because a lot of people run the Dutch test for hair loss. After all, hair loss can be hormonal. Now you can also see if it's nutritional.

When you look at the Dutch test with fertility, there are a couple of great markers on that OATs page. There are markers for low levels of vitamin B12 and low levels of vitamin B6 and glutathione—an antioxidant marker or antioxidant that we mentioned that is so critical for good fertility. Studies are showing that low glutathione is associated with low fertility. Glutathion is associated with high fertility, and you make it. But we can also influence how much you make it. Knowing if it's low or high can help. Also, it contains 8-OHdG one of those markers for oxidative stress. There are broader panels available for that. But as a screening tool, it's awesome for me that that's on the Dutch test because it will pick up a lot of cases where it's nutritional for you, and we need to work on cellular health to get your egg quality to improve. There are so many beneficial pieces of that test that go far beyond hormones that loom into a lot of the different root causes for fertility. The other thing is that it shows things like methylation and detoxification. Some of the general problems that can result in poor fertility can be picked up on that test. Sometimes we have to run additional testing, but it's a great peek into what might be going on for you.

Carrie Jones, ND, FABNE, MPH
I love that. Amazing. As we wrap this up, everyone's thinking that if they haven't heard of the Dutch test yet, they want it. Where can you find more information about the Dutch test education? Then, of course, where can they find out more about you as a doctor?

Jaclyn Smeaton, ND
The website is dutchtest.com. It's pretty easy to remember if you're a provider. I highly recommend clicking Become a Provider because there are so many resources behind that login that you can get. We have an entire eight-hour course that's free on mastering functional hormone testing. If you're curious but overwhelmed by some of the things we've talked about today, that course breaks it down hormone by hormone for you. We also have a great interpretive guide. If you are looking to use the Dutch test and you want some help in interpretation and getting the most out of it, that's free. You get the whole Doc team supporting and cheering you on as you get started. If you're a patient, there's a find a provider tool on there as well, where we post. You can look up by zip code and find the providers who use Dutch testing and who have proficiency in helping you interpret your results. I would take a look at that site. Whether you're a patient or a provider, I can be found at hellofertility.com, and my Instagram is @hello_fertility. I don't see a lot of patients. I don't take on a lot of cases because I'm pretty busy with all things Dutch. But I do help some couples who've been in a tough spot trying to conceive and still need some help.

Carrie Jones, ND, FABNE, MPH
Still puts out great information. For sure, at least follow her on Instagram @hello_fertility. You can follow the Dutch test as well @DutchTest.

Jaclyn Smeaton, ND
To ask further on that, in there you'll see up all the time, and we do have a podcast as well, so that's great for patients or providers. If you want to learn more about hormone health, the podcast is so much fun. We've had you on Dr. Jones's other guest list, and they're fun, they're informative, and you're going to learn a lot.

Carrie Jones, ND, FABNE, MPH
Dr. Jaclyn is an amazing host, so that is absolutely a good plug for her podcast. Thank you so much again for coming to The Fertility Summit. I appreciate it. You've been a wealth of knowledge as usual, and thank you to the Dutch Test for all this information, which has just been great.