Episode 09: Fertility Prep and Optimizing Pregnancy

Katie: Christa, welcome. Thank you so much for being here.

Christa: Thank you for having me, Katie. I'm super excited to be here.

Katie: Awesome. For this first episode, I know we're going to talk about fertility and optimizing for pregnancy. I love this topic so much that's obviously something near and dear to me since I just had my sixth baby and there's so much that goes into preparing for pregnancy and then nourishing the body during pregnancy and then now, where I am which is trying to consume enough healthy fats and everything for breastfeeding. I can't wait to delve into this with you because you have even written an entire book on this subject of conceiving naturally.

One thing I love, most people think of pregnancy as three trimesters and if you ask more midwives, they'll say four trimesters because you should really be resting and nursing in those three months after pregnancy but you call it a five trimester approach, which I love. Can you walk us through that? What are the five trimesters and how do you handle that approach?
Absolutely, and I have to say I commend you so much for having six healthy pregnancies and all that you've been through is that's just incredible raising these healthy kids. We break pregnancy into a five trimester approach. The first, I believe, is the most important and that's preconception. That's before the sperm and the egg ever come together and that's three months or 12 weeks before you conceive.

The book that we wrote is a fertility book and a pregnancy book and it was really born, Katie, out of people that has kept coming to me after having a really tough time conceiving. They had been trying for five years, been trying for six years with no success. Some of them have had multiple rounds IVF and IUI and they were at the end of their rope. This was necessities, the mother of invention, and so really starting to learn and study especially with women that are over 30 or in their later 30's and early 40's that's really where this all started for me as a practitioner. To take my practice in that direction is that we have to simultaneously cleanse our bodies and then nourish our bodies in preparation for the journey of pregnancy. The dads don't get off the hook either because you're developing the quality of the egg and the quality of the sperm months before they ever come together.

This is really the single best thing that you can do to contribute to your child's genetics in their adult life. It's a wild thing to think about but what you choose to eat and consume and what you choose to do in this preparation period really not only affects your children but it also affects your grandchildren. We know that now with this field of epigenetics, how much power we have to create healthier generations with how well we take care of ourselves. Preconception is this first very important trimester where we're simultaneously cleansing and building the body and balancing the hormones and really getting it ready for the journey ahead.

Yeah, that's awesome. Then, there's obviously the three trimesters of pregnancy and then also you consider the three months after like another trimester. Is that right?

Yeah, exactly. Postpartum is really important. That phase you're in now and you know more than any of us that if you don't take care of yourselves and you don't rebalance your hormones, that it could be a rough road going forward. I've had a lot of clients come to me and say, "You know what, I had a baby eight years ago and I don't know what happened since. I've never been the same since. I can't lose weight or I haven't recovered my energy."
We really talk a lot about how to take care of yourselves in postpartum in the way of balancing your hormones but also in the approach and I'm sure with six kids, you have to really decide how you're going to embrace it. It takes a village mentality and how you're going to move forward as a team and as a family and accept help and support. The postpartum chapter is very important and we also talk a lot in that chapter about placenta encapsulation.

Katie: Awesome. I know that's somewhat controversial subject in some places online but there is some really fascinating about history, and now, it seems to be an emerging research on that.

Christa: Yeah. There's been a lot of research in the last three to five years. It's a preference and it's not absolutely necessary but I will tell you especially for women in their late 30's and early 40's and I've worked with so many different women that they didn't do it with their first trial and they did it with their second or third, and that postpartum period for them was like night and day different because you're basically consuming your exact hormonal code so you can rebalance yourself so much faster.

Katie: Yeah, absolutely. Another thing I love about your approach like you mentioned is you don't let the dad off the hook because I think so many times, everything related to pregnancy end up just falling on the woman or sometimes the mom might feel like she's isolated in the pregnancy and she's the one having to make all these sacrifices and can't drink, can't eat all these different foods but you really hammer home the importance of especially preconception, both partners being really involved. Can you talk about why this is so important and why both partners especially if they're older need to do a preconception plan what that actually means, like what might be some of the practical things they should do?

Christa: Absolutely. Yeah, it's both parties that are contributing here. We have a whole dad chapter to mentally prepare him because you're getting ready to raise a child together and to create new life. You're starting to build that teamwork and your diet and your lifestyle is going to be huge part of your family and if you can be on the same page, that's just better for everybody but the quality of the sperm especially in their late 30's, early 40's, life happens, more stress, we can collect toxicity and we can have trouble and we can offer not such healthy sperm. In order to make them stronger and better tails and faster swimmers, then we have a chapter called creating super sperm and we have super sperm smoothies that we really need to give the dad a big lift and boost to his hormonal balance before he contributes that sperm and to really start to cleanse it. That goes hand in hand with what genetic code you're contributing to your child.
In preconception for both parties, we are slowly cleansing them. We're getting them off of things like alcohol. We're cutting back, scaling back on caffeine considerably and definitely on coffee. Sometimes, we'll include things like green tea and latte but then cutting back on sugar and gluten and pasteurized dairy and all these things that really rob our energy and when they're consumed in abundance, that they can really start to imbalance our hormones.

Then, we're starting to really build and cleanse and so this supplements come into play when we talk about supplements for both parties. For example, and I know we're going to talk more about supplements as we go through, but we're having dad a couple of months before contributing his sperm is he's taking the black type of maca which is an amazing adaptogenic herb. There's 13 different colors or phenotypes of maca and the black type will considerably boost fertility in males. The yellow color considerably boosts fertility in females. We're really breaking this off in both parties that are doing their part to make sure that when they try to conceive, it can go as smoothly and gracefully as possible, and you feel so much better along the process which you can't underestimate that.

Katie: Absolutely. I always try to like, because I know especially if getting into healthier lifestyle has been a journey for someone as it was for me, you look back and like I think, "Oh, I wish I had know this and this and this before I got pregnant the first time," and I always try to encourage women, "Don't beat yourself up on what you did not know in the past because you can make yourself crazy doing that."

I always say this is advice for going forward and there's so much you can do even if your baby's already born. It's so fascinating to see all the research that there is available now that you said about epigenetics and how we can change the expression of genes and improve our child's, literally, their whole life by how we eat. Also, I think it's interesting to note that since it's been a journey for me and I started with the more conventional approach in like my first child had rice cereal because I didn't know any better.

As my health has improved and my nutrition has improved and especially since I started focusing on building my body up a lot before pregnancy, I've had so much easier pregnancies like this time with number six, I had no morning sickness. The pregnancy was so easy that I almost like, "Am I really pregnant?" I was almost like having them, the midwives, check a lot because like don't even feel pregnant, I feel so great. I always tell women that too, not only is that better for the baby but it really does make it easier on you too. Pregnancy does not have to be a hard thing necessarily especially if your body is really ready for it.
Christa: Yes, amen. Thank you for sharing that and I totally and completely agree with you. It's not all about baby, it's also about mom. By strengthening yourself to your point when you go through pregnancy, the baby is going to take what the baby needs from your body. Whether that leaves you deficient or not, the baby is going to take it because this is how it goes.

By taking care of yourself, you don't create those deficiencies. You feel better and you just enjoy the experience a lot more. Like you said, we have a quote in our book from Maya Angelou's, "When you know better, you do better." It's just day by day and whatever you didn't know before, no problem but then there's all these information from which to move forward.

Katie: Absolutely. Another thing I love that you do because you have the clinical focus and you're like me like I [inaudible 00:09:58] numbers oriented and love seeing all these stats in the research. You do a lot of lab work with people and I love that because it's really, it gives you such an insight that you may not know otherwise. What kind of lab work would you recommend for a couple before trying to conceive? Especially maybe if they're having trouble, what kind of lab work can help shed some light?

Christa: Absolutely. The first thing that I would run on a couple would be their food sensitivity panel because we know food can be a form of medicine or [inaudible 00:10:24] form of poison. We run an IgG food sensitivity panel to see okay which foods are working for you and which foods are your immune system responding to as if that food is not healthy for you and we eliminate those foods that aren't working for them and then immediately you get a lift when you start taking out foods that don't work for you and adding in foods that do work. The five most common food sensitivities are wheat, dairy, corn, soy and eggs. We're really looking out for those to see how people can tolerate those. I'm always working to get most of those out anyway with the exception of eggs, pasteurized eggs.

We'll run a food sensitivity panel and depends if someone has struggles with fertility or not, how far we go with the lab work, but I think it's very important to look at your thyroid and to look at a comprehensive thyroid panel before you start trying to conceive so you know how much work to do on your thyroid. When I say that, you don't want to just look at TSH which is your thyroid stimulating hormone, you also want to look at your other thyroid hormones including T4, T3 lets you know are you able to actually convert thyroid hormone and use it for energy and then you want to check your immune system to make sure that you're not having an autoimmune response.
I know you talked, Katie, a lot about Hashimoto’s. You want to look at thyroid antibody just to see what you’re dealing with especially if you’ve been under a lot of stress or you haven’t been able to conceive in six months. That’s the marker you’re going to look for is going to be TPO or thyroid peroxidase. You can also run your thyroid globulin to look at antibodies just to make sure your thyroid is not confused and attacking itself. That’s really helpful for me to see somebody’s hormonal balance because the thyroid is so crucial for ovulation. We have to be ovulating and we have to be able to track our cycle in order to conceive naturally.

That’s really important but then we can go all the way into looking at heavy metals, depends how far somebody wants to go and we can cleanse someone of heavy metals. We can run gut panels for people who have PCOS or polycystic ovary syndrome. That’s a really common cause of infertility and a lot of the mainstream medical doctors will take it as far as that’s the cause of their low progesterone.

We know that we need progesterone to improve fertility because it prepares the uterus for implantation to start thickening and the idea is you have to dig further than that. Why is your progesterone low? Usually 8/10 times in my experience, that’s because there’s pathogenic activity in the gut and you’re not able to convert and to use and to get your hormone balance. We’re going to do a stool test and we’re going to look for different pathogens or things that could be the root cause of hormonal imbalance which then leads to trouble with fertility.

Then, the last one that I find very important especially if you’ve had one or more miscarriages, is to check for the anti-CHFR genetic mutation which tells you can you convert folic acid into folate, the usable form, and really let’s you know like how well you can detoxify it or not because if you’re not detoxifying properly, you’re going to have Herxheimer’s response which we call like a 10-car pileup on the freeway and that’s not a conducive environment to be able to conceive a child or really to hold the baby.

I really like to bring that one up and I’ve had a lot of clients that were saved a lot of heartache, future heartache, when they realize they had this genetic mutation and they could change their supplementation, they’re able to hold a baby and deliver it to full term. Those are my go-to’s when I work with someone and we list them all out in the book of how to run your labs and which ones to do first if that’s something you’re really looking to do before you conceive.
Katie: Yeah, absolutely. I would echo that and just encourage women because I know if you're trying to conceive and you want to have a baby, it's so hard to think of waiting maybe three more months if that's where you are and you just really want to have a baby. For my own experience looking back, I've learned some of these things when I was already pregnant and not only was like, "Man, I wish I had known this before so I could have been in better health," but also when you realize even for your own health things you can do but a lot of these gut health things or different protocols you can't do when you're pregnant.

If you don't take the time to do it beforehand, not only is it going to benefit your baby if you do but it's also going to benefit you and then once you conceive, you really have to wait until after pregnancy and a lot of times even after nursing before you can do some of these things. I think it's like everything that you do in your whole preconception plan is absolutely worth that three extra months just to make sure that the pregnancy is going to be easier on the mom's body and also so much better for the baby as well.

Christa: Yeah, 100% and you can't underestimate just having more energy and vitality throughout your pregnancy. If you have the opportunity, if you have the power, I really encourage you to use that because you will enjoy that postpartum period when you enjoy it all a lot more. If you're already pregnant, you just pick up wherever you are. We have people get our book, they pick up at second trimester and they take it through and that's the beautiful thing about the human body is it will constantly reorganize itself and responds to these positive directives you give it.

Katie: Absolutely. Let's go a little bit deeper. What kind of diets and supplements do you recommend during the preconception period and like what that plan look like?

Christa: For preconception period, we're definitely making sure so we can have things to eliminate and things to add in and we lay out a 12-week action plan where we're trying to crowd out the things that don't work. It's not to rough of a road. For example, we're having people drink lemon water first thing in the morning, such a simple thing to start to really build hydration and flush the intestines, pull excess acid out of the joints.
They're adding in a lot more foods that are alkalizing because it's very important to have a good pH environment within the body in order for the sperm to survive when you conceive. We're adding in more things like leafy greens and super foods, lots of different types of super foods we add in. I know you're a huge fan of liver as am I, so if we can get our [inaudible 00:17:19] to eat liver, grass-fed beef liver, that's really helpful to build and boost your own liver to help with cellular energy to boost mitochondria function. If they can't eat liver, then hey, we have desiccated liver that we can take in pill form, no problem. We personally can't eat liver, so I take it in pill form.

We're starting to really build up the system with a high quality multivitamin and we want to fill in nutritional deficiencies and so we are using we want to start to build up your stores of folate. It's really important to have naturally occurring folate, not folic acid and a prenatal vitamin and it should be at least 800mcg. You're going to be looking for 18mg of iron in that and you want to fill in all of those micronutrient deficiencies in terms of the mineral component. A lot of us are really mineral deficient.

We work with that and then, it's going to be really important to start to build up your omega stores and your DHA which is going to be super important when you are pregnant. Ideally, you want to be doing that for at least 30 days before you conceive. The same thing with folate, that's really important for the baby's neural tube to form and it's really important for the implantation of the eggs. Getting in the fish oil. Katie, I'm sure you knew this, maybe, but there's an eight-fold increase in the absorption of fish oil when you take it with fat versus if you take it with a meal that doesn't have fat. You want to make sure that you're eating consistently, balancing blood sugar and taking your fish oil. I recommend taking it twice a day.

Then we add in probiotics which is going to be a really important part when we talk about these gut infections and these really good strengths of probiotics to start to challenge the bad pathogens so that we can start to get rid of them. Then, eating fermented foods like sauerkrauts and bone broth is probably one of my favorite most important things in this preconception plan that really moves the needle for both partners and they feel different when they start having about one or even two cups of bone broth daily. That would be pasteurized bone broth. We add some collagen to that which is going to be really helpful super foods.
Then, we're removing things. Alcohol and caffeine, I think, are the two hardest things for people. I know a lot of your subscribers and readers probably aren't eating much sugar but that's going to be number three that we're going to want to eliminate. Then, as you start to learn your food sensitivities, you really want to understand genetically-modified foods specifically genetically-modified corn and you want to leave it out of your diet at all costs. Don't eat the chips at the Mexican restaurant. There are studies on lab rats of just declining fertility all the way to infertility by third generation when they consume genetically-modified corn regularly.

There's things you want to get out. There's things you want to add in. My other couple of supplements that I find it really important to talk about is Vitamin D3. You want to build those stores before you get pregnant and I'll say, just as a clinician that I've run at least 800 labs for Vitamin D, 80% of my people even here in sunny southern California, they come back low in Vitamin D. We want to make sure that we're building those stores and there's a really good study in the University of Pittsburgh Journal of Nutrition that it's one of the most common problems in pregnancy even when you supplement with it.

It's important. That's another lab that you'd want to run with your doctor to make sure you're in the functional range which would be between 60 and 100. Your doctor might say, "Hey, you're at 30. You're fine." You're really not fine. You want to boost it to where you're up around 60 because that's going to really reduce your child's risk of type 1 diabetes, of asthma and just improve your own immune system.

Then, there's two more supplements we've touched base on maca which I really love that and I'd have a lot of success working with women to having them take maca because it modulates or balances estrogen in the body when they're too high or when estrogen is too low. Women can have difficulty getting pregnant and so it's a really nice adaptogen to keep it where it needs to be because excess estrogen levels can cause progesterone levels to plummet and that can be a problem. We know that we really need to make sure we have enough progesterone.

This is like my superstar supplement, the last one, awesome for both mom and dad. I've had great success especially with guys when the infertility or fertility issues [inaudible 00:22:50] them is royal jelly. Have you ever used it, Katie, or heard of it?

Katie: I've definitely heard of it. I've never used it related to pregnancy, but yeah, I've definitely seen some of the research on it that it's fascinating.
Christa: Yeah, it is really. What it is, it's actually the queen bee's sole source of nutrition and really many believe is the primary factor in her longevity and her fertility. The queen bee lives 50 times longer than regular bees and the queen bee produces about a quarter million eggs a season. There's a lot to learn from having this kind of magical substance. When they studied it in Japan and now, the study has been archived in the US National Library of Medicine, they did a six-month randomized, double-blind, placebo-controlled trial. I think that's a lot of words but really what that says is we know that this works and it is proven to accelerate the conversion of DHEA which is major stress/sex hormone to other hormones.

Everything about my work is healing from the root cause. I think hormonal balance begins in the brain and then if you can really help to restore what's going on in your hypothalamus, in your pituitary gland and your body can start to make the hormones it needs to bring its own balance instead of forcing a hormonal directive on the body. We talked about precursor hormones. Those precursor hormones are DHEA and pregnenolone and from those hormones are sex hormones that we need for fertility and healthy pregnancy can be made.

Royal jelly is this awesome substance that you can put in your smoothie or just take a little bit. I'm talking about a quarter to a half a teaspoon a day. You can just take a little bit and that's going to improve your body's own ability to DHEA, to covert other hormones.

Katie: Awesome, I love that whole lineup. It sounds like that's pretty much, in my opinion, a lot of the things women should also be doing when they are pregnant but let's talk about the actual time of pregnancy as well. Once a woman conceives, should her nutrition change at that point or would she still continue doing these things and are there changes trimester to trimester? Because I know I see a lot of women and it's really sad, they get pregnant and then think it's a license to eat whatever they want. They're eating for two and they just give in to all the cravings which I get because the first trimester can be rough with morning sickness and that you're lucky if you can eat anything, but there are some really good reasons not to just let yourself eat whatever you crave when you're pregnant. Let's talk about that, the different trimesters of pregnancy and how to support the needs of those different times.

Christa: Yes, absolutely. A really good trick to your point of not letting your cravings make you run rampant is that we really need to increase our protein and have enough high quality protein throughout the day roughly about 70 grams of protein. That's a nutrient that you want to focus on.
In the first trimester, you really focus on protein. The third trimester when the body weight is growing so quickly, that's when fat becomes the superstar macronutrient. If you can eat protein every two to three hours in the first trimester, that's going to be important because it can't be stored like fat can. If you can replenish your protein tank, that's going to curb nausea and morning sickness. That is happening because you're getting so many hormonal fluctuations.

The other things that you really want to focus on in the first trimester are going to be naturally occurring folate, foods high in folate because again, the neural tube and spinal column, all of that is forming. That's when you're going to go and you're going to list out your asparagus and avocados and sunflower seeds, lentils, oranges, spinach, broccoli. You're going to really focus on those foods as well as kidney support. It's going to be really important in the first trimester. Having fresh parsley in your diet, having red bell peppers, that's going to be food as medicine there.

The other really important thing in this first trimester is salt and enough hydration. Now, the amniotic fluid is forming and it's basically saltwater and you want to make sure you have enough high quality Himalayan pink salts and that you're consuming at least two liters of water a day and that's mineralized water, not necessarily reverse osmosis. You want to make sure it has minerals. I think if you focus on those things in the first trimester, it will go a lot smoother.

Katie, I know we've had this conversation when we've been together before but have you seen the new research? We had previously thought that babies were born with sterile guts but now, the new research is showing that they're getting their probiotics in the womb from the placenta really, from the amniotic fluid but really more accurately, the placenta. It's like if you're taking care of yourself enough there in the first trimester, you're already starting that process to be able to contribute the good bugs in the third trimester.

Katie: Yes, I love all the research about the microbiome and especially all the emerging focus on pregnancy and the birth process. There's a documentary called Microbirth. It's really fascinating that delves into how during the actual birthing process, the mom's microbiome transfers to the baby and of course, now, we know it also begins during pregnancy. There's just so many neat ways that that interaction happens and so I love that everything that you recommend to women is also supporting mom having a healthy gut flora and things like focusing on protein and eliminating sugar and taking natural foods in. It can also help their finding reduce the risk of Group B Strep and some things that can cause microbiome problems especially during delivery.
I love that that focuses there, the whole pregnancy. I know so many women end up at 35 weeks and find out they have maybe Group B Strep and it's a little late at that point to really like reverse your whole microbiome and fix the problem from the inside out. I love that you make that a focus the whole time.

Christa: Yeah. You want to make that a focus the whole time sooner than doing damage control afterwards. It's just safeguarding your immune system totally. We're adding in a lot of high vitamin D foods as we go through so if you weren't already having liver, then you're going to be doing liver now as you move forward further into the second trimester. Things like maitaki mushrooms, goat's milk, if that works for you and your food sensitivity panel, I am a big fan of raw milk. I know it's very controversial but if you know and trust the source, I think it can be a very supportive pregnancy food.

In the second trimester, I also really like to focus on as on the bones and the skin and so that's when vitamin C and high vitamin C foods really come in. Things like camu camu, I don't know if you've heard of that. That's a super berry that you can buy the powder in a health food store and I have my ladies in the second trimester putting that in their smoothie every day. It's 480mg of food-based vitamin C with just one tablespoon. It's a lot of bang for your buck when you consider a certain orange would have 88mg.

You want to focus on chlorophyll-rich foods, algaes if you can, put some kelp flakes on your food. That's going to be high in iodine and really support the thyroid. Calcium-rich foods like sunflower seeds, different types of legumes if you eat legumes like black beans and garbanzo beans. Then, magnesium is really important. The calcium-magnesium-vitamin D trifecta really goes a long way and this is where we love to add in the high quality chocolate that were all cacao and things like brown rice. A lot of nuts and seeds are really magnesium-rich.

Then, you're really focusing a lot on fat when you move to the third trimester, not that you're not having it along the way but everything is happening so quickly there as you know more than most. Blood volumes doubling, the body weight is there growing so fast so you just want to make sure you're increasing your omegas and you're having a lot more of that high quality animal fat as you go throughout the third trimester.

Katie: Yeah, especially with all the brain development, it happens. Even their finding with the research on pre-term babies in those last three weeks, they need so many healthy fats for their brain development and such a drastic difference that even a few extra days in the womb can make for those babies because of all the healthy fats that can get through to them. Absolutely, I agree and I know you also feel better at the end of pregnancy when you're eating that fats because they are such dense calorie sources and you have so much nutritional demand on the body that you really need that extra calories.
Obviously, at the end of pregnancy, you deliver hopefully, a very healthy happy baby. What's your best advice for postpartum because most women think, pregnancy is over and maybe all the great stuff they were doing during the pregnancy, they give up at that point even and postpartum is a period in and of itself and especially for moms nursing. It's a time of a still increased nutrient demand. What do you recommend for postpartum? I know we already talked about it a little bit but what's your best advice there?

Christa: Yeah. Well, this is where I do wish that my partner in the book, Willow, who's a labor doula and a homeopath was here because she has put together just a rockstar arsenal of homeopathic remedies for birth and for postpartum. In terms of your food and your meals, you just really want to make sure that those meals are prepped and they're ready and that you're eating because the thing is you're probably not sleeping very well and the study show it takes two years to recover your adrenals on average after having a baby so you really need to support yourself with enough vitamin C. This is where the maca comes back in. The maca is in preconception and then you take a break during pregnancy and it comes back in at postpartum.

Really important to modulate estrogen because you're getting such a progesterone drop and so this is another reason that I can't suggest highly enough, placenta encapsulation, so that you don't get that huge drop and it doesn't have to really wild and barbaric where you're putting ... With the image you get when we talk about consuming the placenta. It can just get encapsulated and it's in a bottle and it's just like any other supplement that you take and it's very natural to rebalancing you but you want to make sure you're eating a meal with protein and healthy fat within one hour of waking to really start to anchor your hormones and retrain your metabolism.

When you wake in the morning, I'm sure you're going to be awake plenty of times throughout the night and everything really still continues. Hopefully, you should have a healthy diet and develop healthy habits all throughout and then you can do other things and supplements can change to really help with milk production and things like that. Do you make lactation cookies? Do people make those for you before you have a baby?

Katie: I typically do. I make them and then freeze them and also do different kinds of tinctures and just herbal stuff and pre-make even smoothie mixes and different meals and lots of broths and soups because I really crave those when I'm nursing as well. I just stock up on all that and I finally like, right now, I'm having my husband get it for me so much because I'm just sitting there nursing most of the day but it really does help, yes.
Christa: It really does help and you need enough carbs. Remember, we were talking about that and you just have to make sure you have enough high quality carbs to keep your energy up and just making sure you're having things like sweet potatoes and they're low-glycemic but really high nutrient type of starches.

Katie: Absolutely, I love that and I'm going to put a link in the show notes but you have an awesome book that includes a lot of what we just talked about a whole lot more detail as well, as well as like walking through the different supplements for different times in a diet. I'll make sure to link to your book "How to Conceive Naturally" in the show notes as well. I'm so appreciative of you taking the time to share your wealth of knowledge today and in the next episode, you'll be back and we'll be doing a deep dive into the understanding the microbiome which I mentioned a little bit with the Microbirth and the birth transfer, a scenario I absolutely loved researching and you do as well. I can't wait to join you again on the next episode to talk about that.

Christa: I love it. Thanks for having me. I'm excited.

Katie: Thanks, Christa.