

**ICSC Culture Diversity Module 09**

**ICSC09 \_Section 5\_ Female Athlete**

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**Video Lesson: 01:16:48**

Welcome. My name is Dr. Giselle Foss, I am a Chiropractic Physician, Woman's Work Facilitator, experienced 500-hour Yoga Teacher, and candidate for my Master's in Acupuncture and Traditional Medicine.

I am here today to talk about Treating the Female Bleeding Athlete (menstrual cycle), so treating your athlete in a way that is in alignment with their body. We will get more into it and way more in-depth as we go through out this course together. It is important to remember that if you have an athlete that bleeds, that has a uterus and gets their period every month, it is not always in the best interest of the athlete to train everyday the same as the day before based on the fluctuation of hormone. That is what this whole thing is about. It is teaching your athlete how to work with their body instead of working against their body.

We are going to start with a little introduction about myself, how I got into this work, and what has inspired me to continue on the path of educating patients and athletes with bleeding bodies on how to move in a way that honors their cyclical needs. I will talk a little bit about big Ideas of menstruation and the menstrual cycle and what a normal menstrual cycle is, because it can look a little different on different people, depending on their hormones and depending on their cycle. We will learn what baseline normal is and do a little fresher on all of the sex hormones that are super important when it comes to menstruation.

We will explore a little bit into my eastern brain and talk about how menstrual cycles relate to traditional Chinese medicine or TCM is the abbreviation. Then, we will jump right into some research on how the phase of the menstrual cycle can either prevent or promote injury in an athlete. We will touch a little bit on fascia and how that changes throughout the cycle and how that can affect your athlete. Talk how birth control affects hormones, and therefore affects your athlete. Touch on how to train your athlete with their cycling body, then, how to teach your athlete how to track their cycles, so that they can move and work out and train in this way. Finally we will do a conclusion and a wrap-up summary of everything we covered.

It is very important to know that in this lecture, I use the pronouns she/her a lot to describe bleeding people. However a person identifies, if they bleed, this is relevant information for them.

Let us start with my story in how I got into this niche-type work of teaching people how to move and helping my patients live in a more cyclical way. I was diagnosed with endometriosis when I was 14. I was brought to the OB-GYN that young because of how a regular and how painful my cycles were. I was put on birth control at that super young age, and I was on it for a very long time. Then when I finally decided to come off as a young adult, everything got worse. What they do not tell you is if things are regular prior to oral contraceptives, they tend to get worse once you come off the oral contraceptive. It is because not only have you never had a regular cycle, but your brain no longer knows how to communicate to your ovaries to produce hormones in the correct cycling way. I began my journey with trying to figure out how to live a life with this crazy irregular menstrual cycle without the help of birth control.

I started being treated by an acupuncturist who also prescribe me Chinese herbs to help regulate my cycle and everything cleared up. The endo went away and everything. I started getting treated by this person when I was in chiropractic school and as soon as I graduated, I immediately went back to school to study Acupuncture and Chinese herbs portion, because I was so interested in regulating cycles and

helping people overcome painful periods in a more holistic type approach because there are so many other natural options besides hormonal replacement type therapies. I became, obviously, super passionate about periods, about menstrual cycles, about living in a way that honors your body to therefore help regulate. I started a business and heard the call that I was supposed to do this type work and I followed it. I got a lot of heat and weird looks from people, and I still do when I tell them I specialize in menstrual cycles but that is okay. It is what I absolutely love.

This is the business I first started. I am no longer taking clients online, but basically, I had clients or patients on Zoom. I taught them how to eat with their cycle and exercise with their cycle to help regulate their hormones and honor the changes in their connective tissue, in their fascia, in their hormones throughout every cycle because we are different every single week because of those hormonal fluctuations. This is super important to remember. If you are pushing yourself during times when your literal anatomical structure should not be pushed, it is causing more harm than good. This is when injuries can occur, especially in the athletic population.

This is just a quote that I like out of one of my favorite textbooks. It is the Obstetrics and Gynecology textbook by Giovanni Maciocia. It is a gynecological textbook on Chinese medicine, pretty much. This says.

*"The term Tian Gui is impossible to translate because Tian Gui means 'heaven' or 'heavenly'.... The fact that the term for Tian Gui refers to 'Heaven' is significant: it refers to the fact that women's menstrual cycle is influenced by cosmic cycle." -Maciocia*

Why I chose this quote and why this quote hit home to me when I was doing homework one day, reading the textbook and came across, is that menstrual cycles and periods were not always seen as something to hide, something to be ashamed of, or something as dirty. They were regarded as something heavenly, sacred, or from the gods.

In addition to teaching my patients on how to live in the cyclic way to honor their bodies, nurse their injuries, and prevent injuries, I also try to instill this understanding that bleeding, cycling, and modifying your life for your cycle is actually normal, empowering, and amazing because a lot of women have this disconnect between their bodies and what they think is normal. Do you know what I mean? It is important to inspire our patients as we are teaching them these concepts and let them know that your period is normal, it is supposed to happen, it is a beautiful thing.

A lot of times, when they first come to you and you are talking about these topics, especially in an athletic person, they tend to be a little bit shy "Oh, that is weird. I do not really want to go there." Just gently easing them into the notion that cycles and periods are normal, and it will really help their athletic performance if they connect with these cycles, embody these cycles, and train in a way that actually honors their bodies. It will help their performance through their sport.

This is just a classic definition from Merriam-Webster Dictionary of menstruation. I was interested one day of what the dictionary defined it as. I got,

*"a cyclical discharging of blood, secretions, and tissue debris from the uterus that recurs in nonpregnant breeding-age primate females at approximately monthly intervals and that is considered to represent a readjustment of the uterus to the non pregnant state following proliferative changes accompanying the preceding ovulation..."*

In other words, menstruation, so bleeding. The active bleeding is what menstruation is, but this is not just the menstrual cycle. This is just one of the phases of the menstrual cycle. When people hear the word menstrual cycle, they automatically think you are only talking about the period. That is not true.

The menstrual cycle is the entire month of hormonal fluctuation. Menstruation is just the period portion of this entire monthly, yearly cycling that we do as bleeding people.

Your menstrual cycle is not just your period. There are four phases, which we will go into deeper during this lesson. I like to argue five, but the point is there are different phases.

Educating your athlete in this is the key, they might not realize that their period is more than just their period. It is they have to honor their body in all of the phases in order to regulate their hormones and train for their optimum performance. In the same way, because we have these phases, bleeding bodies are not the same every week.

As our hormones rise and fall, our connective tissue changes, our sex drive, energy level, appetite changes. So much changes from week to week to week and that is normal for a bleeding person.

Females are not built like men. Men have a pretty consistent rising and falling of testosterone throughout the day, whereas women have significant rising and falling of different sex hormones that shift from week to week to week. Hormones are in charge of basically all of your body's processes. It would be ignorant to think that sex hormones only play a role in getting pregnant or getting your period, they influence every system of your body.

What is a normal menstrual cycle? This is like the gold standard normal menstrual cycle. There are outliers, but this is basically what you should go by. I like to teach that a normal cycle is between 24 and 32 days, research shows that, yes, within that range, that is a normal cycle. However, whenever you read things on the internet or they teach you in basic anatomy and physiology book, they say that a normal cycle is 28 days. Yes and no.

It is very rare that most women have a perfect 28-day cycle. That 28 days can fluctuate from month to month, depending on stress levels, diet, exercise, or life events. Just because maybe your patient does not have a 28-day cycle does not mean it is not normal for them. You must know what **their normal is**.

For me, my cycles are about 31 days in length, and that is normal for me. You want **their baseline** in order to gauge if they are in that normal range. Twenty-four to 32 days is good to go.

Bleeding should last only three to five days. Blood loss is about from 10 milliliters to 80 milliliters. Eighty milliliters are obviously the high end of normal. I would argue that that is too much blood. This is just what research shows. I always like to tell my patients that about 3/4 of a menstrual cup full for the entire period is what is normal. Any more than that, you tend to be losing too much blood. Too much blood loss in athletes, anemia, fatigue, things like that, so once they come out of that period phase, if they are losing too much blood, it is hard for them to recover because they do not have enough iron. If your athlete is bleeding a lot, say 80 milliliters, you definitely want to, if it is within your scope of practice where you live, get blood work and see if they are anemic and recommended good iron supplement to give to them to help with that.

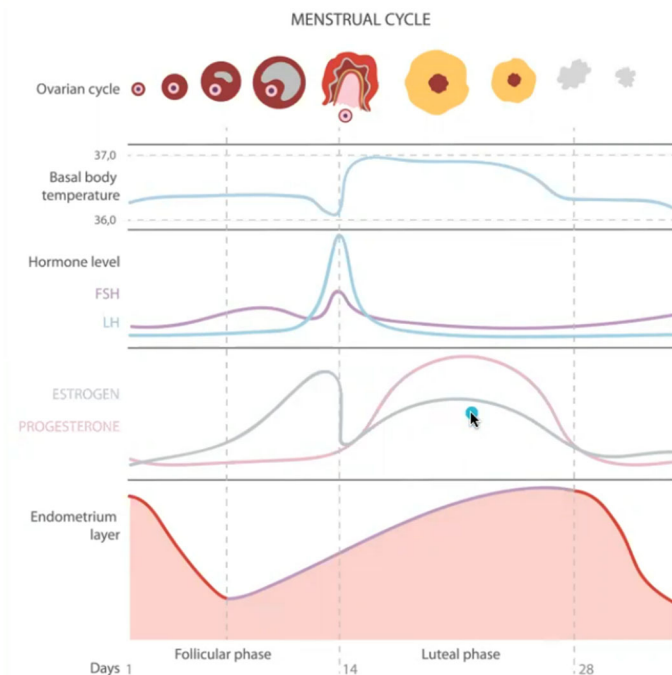
Hormones control almost every aspect of our human experience; from our mood, to our libido, hunger, energy levels, everything in our human experience is because of hormones. This is a mnemonic that I use to help me remember the order of which the hormones rise and fall through the duration of the entire menstrual cycle in my bleeding patients.

I use the mnemonic HELP. H stands for hormones, so just general. E is estrogen. That is the first hormone to rise. At the top, the second hormone to rise is the L in HELP for luteinizing hormone/follicle stimulating hormone. We will learn about it, but the two go up together. That is your fertile window. The last hormone to rise during the course of the menstrual cycle is progesterone. It arises at the very end. That is our P in HELP.

**Remember that mnemonic and write it down.** It comes in huge help, especially if your athlete, during the first 10 days of my menstrual cycle, or say they start tracking their cycle and they report, "From day 10 to day 14, I feel horrible. I am cold. I am nauseous. I feel heavy." That is an estrogen thing.

Maybe, running a blood panel and seeing where their estrogen levels are at that base of their cycles. There are normal ranges for hormones during different phases. I will not get into that in here because this is not really about blood work, but yes, investigate that. Blood work is recommended if there are cycle-related complaints. In addition to that, Chinese medicine and herbs is helpful for cycle-related complaints in specific phase stuff. You can always recommend that to your patients.

This beautiful chart which I absolutely love because it shows everything about the cycle in one picture. I am a visual learner, so I like to share charts, pictures, and stuff when I teach.



This shows the follicle maturing throughout the phase. This is your basal body temperature. We will talk about that in how to teach your athlete how to track their basal body temperature, if they are interested. These is your FSH and LH hormone. Level is rising and falling. See the peak in the middle. We will talk about that.

Estrogen and progesterone, we talked about in our mnemonic that estrogen is the first one to rise as you see it. FSH and LH are the second. They meet in the middle rising, and then progesterone is our last, following that until we fall. At the end here, we will get her period when the hormones fall.

The last little section here is demonstrating the endometrium layer. The endometrium is the

layer of the uterus that sheds and flows off for menstruation to occur. This is showing that as progesterone is dropping, we reach the bottom, the lining of the uterus is shedding. It is bleeding because this is day one. As the period ends, the lining of the endometrium rebuild itself until it reaches its peak again at the end of our progesterone peak. As progesterone falls, it falls too, and we get our period.

Let us go into some hormone detail here. I just put some basic concepts in, but I did not go all in depth. There are so much to sex hormones. There is so much research out there. If you are interested in specific hormones, I definitely recommend you delve a little deeper into that. Here are some basic ideas that will really help you understand the cycle and what hormones are responsible for.

When we are talking about estrogen, there are three types of estrogen in the bleeding body. There is estriol, estradiol, and estrone. When we are talking about estrogen, it is really these three types of estrogens. Estrogen is most commonly produced by your ovaries, which sits connected to your uterus by fallopian tubes. Small amounts can also be created by your adrenal glands as well as fat cells. Because of this, it is very important that we have our bleeding athletes on diets that include good healthy fats like avocados and fish. If they do not eat that, omega-3 is to support this healthy estrogen productive production through the first phase of our menstrual cycle. A healthy follicular phase, which is where estrogen rises, sets the rest of the cycle of birth success. If there is a problem in the follicular phase, there will probably be an issue at ovulation and definitely reflected in the period itself.

The main role estrogen plays in your menstrual cycle is it helps your uterine wall regrow after you bleed, so that an egg may have a soft place to implant. If the wall, the lining, the endometrial lining is not really grown to like par, the embryo, the fertilized egg cannot safely implant into the wall. It needs a soft cushy area to burrow into to get stuck there. This is obviously something that could be a miscarriage risk or anything like that. We really want to make sure that estrogen is good and supported by good fats. We know that it is the first hormone to rise in the beginning of our menstrual cycle. It rises around day 8, depending on the person, depending on their normal cycle.

Just some few things that estrogen does, it keeps your heart healthy by raising HDL. This is the good cholesterol. It keeps your bones strong. You will notice that post-menopausal women start to get osteopenia, and then if it progresses, to osteoporotic. That is because of the drop in estrogen. Once estrogen drops, your bone density tends to drop as well. That is why it is important to keep your menopausal and postmenopausal women on weight-bearing exercise regimes to help keep their bones strong. It affects your mood. It affects your cognition. It affects your hair and skin. It affects breast tissue.

Number 2 is our L in the HELP mnemonic. This is our luteinizing hormone. When your body is ready to ovulate, which ovulation is your fertile window. When ovulation happens, this is the only time of the month, you can get pregnant. A bleeding person cannot get pregnant. The LH and FSH need to spike in order for that to happen. Your pituitary gland produces luteinizing hormone, then it releases it, which causes a surge and triggers the release of an egg from your ovary. This is why you can get pregnant.

If your luteinizing hormone does not rise. There is no egg released from the ovary. Again, conception cannot occur if there is no egg for the sperm to meet. This is just a little picture. From your brain, your pituitary produces the LH. When it is around mid-cycle when you are going to ovulate, it releases that LH. It causes a surge to the ovary, which causes the release of an egg, which therefore can get fertilized. If it does not, it will then leave the body with the shedding of the endometrium when the period occurs.

FSH or follicle stimulating hormone rises at the same time as LH. This still counts as our L in our HELP mnemonic. There is a lot of similarities between FSH and LH. Again, it is essential for ovulation. It is also released from the pituitary gland, and basically, the job of FSH is to get the egg ready for ovulation. It stimulates the growth of a follicle in your ovary. This is essential.

Follicles are tiny fluid-filled sacs that live inside of your ovaries and secrete hormones that influence your menstrual cycle, like estrogen. Each follicle has the potential to release an egg during ovulation. If LH does not rise and trigger that follicle to get ready to release an egg, your estrogen levels will be off and other hormones we will learn are also produced in a follicle in the ovary as well. It is very, very important that these ovulation hormones. Even if your athlete is not trying to conceive, they are trying not to conceive, it is very important that these still rise in a healthy way if they want their estrogen secretion as well as other hormonal production and secretions to be healthy and normal. This is essential.

Our last hormone to rise in our cycle is progesterone. The job of progesterone is to get the uterus ready to get pregnant. It makes sure that the uterus is ready for implantation and progesterone is dominant in the second half of your cycle. It helps feeling calm. It helps reduce anxiety. It helps you fall asleep. It helps protect your breasts and uterus from cancers. It is created in the corpus luteum. It is in your ovary. It is created at ovulation. Even if your athlete is not trying to conceive, healthy progesterone levels are important for more than just preparing your uterus to have an embryo implant. It helps with the calm, the anxiety, and fall soundly asleep at night. You want to make sure

your athlete is in a good mental health space when they are training, especially when they are performing. You want to make sure they have a good night sleep. Very essential for these hormones to be rising and falling in healthy levels.

This is not in our mnemonic. This is my sister who was a gymnast for a very long time. Testosterone — when we think of testosterone, we normally think of males because they are more testosterone-dominant, whereas we are estrogen and progesterone-dominant. Bleeding people have testosterone as well. It is produced in our ovaries as well as our adrenal glands. We do not have nearly as much as testosterone as males have but having normal testosterone levels in the bleeding person is extremely important. It helps with our bone strength, our brain speed, and our good moods. It helps us with confidence, energy, and libido. All of that sounds amazing. It is super important to have these hormones at healthy levels.

Relaxin — this is a hormone that we are probably going to focus the most on during this lecture because this is what most of the latest research focuses on when they are looking at cyclical connections to athletic injuries.

Relaxin — huge, huge hugely important in the female body. It is most predominantly known for facilitating vaginal labor. When relaxing is released, it increases the laxity of the pelvic ligaments, allowing for the child to pass through the birth canal. It is a member of the insulin-like family. There are three types of relaxin. Relaxin-1 and 2 are what we really care about. They regulate the expression of collagen, fibroblast metabolism, and changes in the corpus luteum and other layers of the ovary as well as the endometrium. Relaxin-2 is present in non-pregnant females and linked to cyclical changes of connective tissue that alter the mechanical properties of ligaments, tendons, muscles, and cartilage. This is primarily produced by the corpus luteum, so in the ovary. Relaxin-1 is important, but relaxin-2 is our big key thing to focus on here when we are talking about training the bleeding athlete. Relaxin-3 is specific to the brain. It is also important, but we do not need to go into it for this specific topic.

Thyroid hormone is, arguably one of the most important hormones when it comes to regular menstrual cycles because when your thyroid levels are off, all of your hormone levels are going to be off. If you are feeling some intuition about maybe your athlete's thyroid is not working an optimum levels, I would definitely investigate that and order blood work. When you do order blood work, you need to make sure that you are ordering T3, T4, and TSH levels. You need to see all three thyroid levels to actually get the full picture. If you just have one or two of them, it is not good enough and you are not investigating far enough for your athlete in the functioning of their thyroid.

T4 is the inactive form of thyroid hormone. It needs the help of your gut, kidneys, and liver to convert it into the active form, which is T3. T3 manages your mood, energy, and Metabolism. If your T3 is too low, it can cause irregular menstruation. Low thyroid hormone is associated with infertility, miscarriages, digestive disorders, hair loss, and skin disorders.

Yes, if your athlete that you are working with, and you are teaching them all these cyclical concepts, if they are unable to regulate their cycle or they come to you and they are saying their cycle has always been irregular, or they do not know why, maybe they are presenting thyroid symptoms, whether it is hyper or hypo, definitely order blood work for T3, T4, and TSH levels, as well as making sure you check for anemia and stuff like that.

This is my favorite thing to teach. It is the phases of the menstrual cycle. In order, it is your menstrual phase, which that is your bleed; your follicular phase, in which estrogen rises; ovulation, which is the midpoint where FSH and LH rise; and our luteal phase is our progesterone rising. Those are the four main phases of the menstrual cycle. You cannot properly teach a patient about their menstrual cycles or training with their cycles if you do not educate them on the specific phases.

We are going to tap a little bit into my Chinese medicine eastern-sided brain. This is my favorite thing to teach. I am super passionate about this. I find it super interesting when I started learning about the Chinese medicine perspective of menstrual cycles. It just inspired a lot of passion in me and a lot of understanding about my body and how things would change during different phases of the cycle. Let us get into that. In Chinese medicine, each element corresponds to a menstrual phase, a color, a flavor, a season, and a form of movement, in addition to other things. Let us break that down and make some sense out of that sentence.

We are a microcosm living within a macrocosm. This is something that we say in TCM practices all the time. This is what our original text, that all Chinese medicine was based off of, boils down to. What this means is we as the human, our bodies are a tiny little universe that has their own season. Things change in a cyclical way. Living inside of the macrocosm, that is planet earth, which has its own big seasons, like spring, fall, summer. Things like that. It is important to have those things.

This is just basic theory. I am not going to go too much into it because it can get quite confusing. When we are talking about elements in Chinese medicine, this is how we tend to set it up with this star. We call this the controlling cycle, the insulting cycle. We are not going to get into that, but this is how we look at our elements. We look at it in a star because it helps us see the order in which each element can affect each other respectively. We are not going to go into that, but we are going to go into the element. We have fire at the top of our star, followed by earth, metal water, and wood. Each of these things break up into phases of anything. Macrocosmic seasons, microcosmic seasons, emotions, movements — we are going to go deep into that

We are going to start with number one or phase 1 of the menstrual cycle. This is our menstrual phase. This is where your athlete is actively bleeding. This is when they are on their period. The first day that you start bleeding is day one of your menstrual cycle, and then you keep counting up in numbers until you get your period again. When you count your menstrual cycle days, it is not just the days you have your period. It is all the days from period to period. It should be between that 24 to 32-day-window that we said. The fall of progesterone triggers are endometrium to start shedding, and this is our menstrual blood.

In the Chinese medicine sense, the element associated with menstruation is water. This is our inner winter. If you are a bleeding person watching this, it makes perfect sense because when you have your period, you just want to rest and be reflective and lay on the couch, watch TV, and eat snacks. Energetically, that is exactly what you should be doing. This is a time of rest and reflection. The emotion associated with menstruation, from a Chinese medicine perspective, is fear. There are two organs that are associated with each element. For this element of water, our inner winter, and our menstruation, it is kidneys and urinary bladder. The flavor associated with this is salty. That makes sense to me because water in the ocean is salty. Kidneys and urinary bladder, I think of electrolytes salt. That makes sense to me.

Your athlete, during this time, should not be training hard — gentle stretching, slow walking. I understand that having an athlete do only gentle stretching or slow walking for the entire phase of their menstrual cycle is probably impossible. They want to get back to training, so maybe recommend maybe day 1 and 2. If they are insisting that they even work out on day 1 or 2, or they have a meet or competition on day 1 or 2, maybe instruct them to take it a little bit easier and make sure that they have more than enough food, nutrients, and water to support them losing blood. I always tell my patients that if you were bleeding this much that we lose from our menstruation from any other part of your body, you would probably go to the hospital. You would not be on the stair stepper for 40 minutes. That opened their eyes.

We are actively losing blood, fluids, and iron when we are bleeding. Our body is not capable of working that hard. You are just depleting yourself. Giving your athlete permission to take two days to just take it a little bit easier can be really liberating, and their bodies will feel so much better when they are done bleeding because they are not absolutely drained, depleted, and exhausted. During this time, it is important that your athlete only eats foods that are cooked and warm. Cold foods can give them more cramps and lead to other things from a Chinese medicine perspective. I always recommend bone broths, maybe chilis, stews, soups. A lot of my athlete patients say they do not eat a lot when they are bleeding because they are nauseous. I always recommend soups and broths. It tends to be my go-to that people really like.

Phase two is our follicular phase. This is the time from when you stop bleeding, so your period ends, up until you ovulate. Up until that FSH and LH surge, this is your follicular phase. During this time, you might notice a rise of energy, productivity, and inspiration. This is when you want to tell your athlete to optimize on their energy. This is the most energy they are going to have throughout their cycle. The energetics during this time is rising. It is our inner spring. You want to plan, prepare, and get organized. Our estrogen is rising. Our follicles in our ovaries are growing here. As the follicles mature, they start increasing the amounts of estradiol that are being released, new endometrium layers being formed, and estrogen stimulate the cervix to produce fertile cervical mucus. This is day 5 to 13 in a perfect world. As you can see, a lot is going on in your follicular phase. Remember when I said if your follicular phase is off, the rest of your period is probably going to be off? This is why. Your follicular phase really sets you up for success.

Let us look at it from a TCM perspective. Inner spring, we said that. The element associated with your follicular phase is wood. The emotion is anger. The yin organ is the liver. The yang organ is the gallbladder. In our foundational text, it says that the liver controls planning. The liver is the organ that is working overtime here. It is the most predominant. This is the time when we want to plan. Maybe your athlete gets really inspired to plan their workouts and their training schedule during this time. You should encourage that. Give them ideas on how to create that training schedule in a way that honors the rising and falling of their hormones.

I know for a lot of my patients, during their phase, they whip out the highlighters. They whip out their calendar, and they are writing their exercise program on their calendar based on their menstrual cycle. It is always really inspiring and fun to watch. It feels good for female athlete to know when to work with her body. They will notice their training will be better as they do this because they are not exhausting their bodies in times when they should be resting. They are optimizing on their energies in times when they have the energy to optimize on.

Exercise for your follicular phase from a Chinese medicine perspective again, this is the time when you want your athlete to do more yoga and be stretching. This is because in our ancient text, it says that wood should be flexible in the wind. The element is Wood, and we know in the actual macrocosmic season of spring, it is super windy. Marches in like a lion and out like a lamb is the saying. So we want the branches of the trees, wood, to be flexible, so that in the wind, they can sway. They can go with the wind instead of snapping and breaking. Same thing here. I did not write it in the slide, but the tissue associated with the liver as well is the sinews. The connection of tendons and ligaments to the bone. The stretching makes sense during this time because you want to keep those areas lax to prevent rupture or sprains, anything like that.

The energetics of this phase is rising and productive because during spring, the energy of the earth is coming back. The energy of our body is coming back after losing so much blood. The flavor is sour. Maybe you tell your athlete to drink lemon water during this time. Nutrition is to eat light — nut, sprouts, and salad. Whenever it comes to nutrition in Chinese medicine, we always recommend eating



the food of the season. We are not going to go deep into this because it can get mind-boggling, but if this is your inner spring, you want to eat more like you would that things that would grow naturally in the spring like nut, sprout, and seeds. If it is the dead of winter and you are eating these things, that can cause more harm because our microcosm is affected by the macrocosm. If you have any more questions about that, you can send me an email. Just tell your athlete to eat lighter during this time.

Ovulation — when the body has reached its peak estradiol levels, a sudden release of luteinizing hormone from the pituitary starts ovulation. This is when your athlete is most fertile. This hormonal surge only lasts about 48 hours. The release of LH matures the egg, starts the process to release an ovum. If it is not fertilized, it dissolves in the fallopian tube and then you bleed it out with the endometrium layer. During this time, there will be an increase in the libido as well as an increase in confidence. This is our energetic peak. In a perfect world, if your athlete had their meet or competition on the day of ovulation, that is the perfect day to compete because they are the most confident, most energetic and the most willing to go out, be social, and do things. This is the most energetic, the energetic peak of the cycle.

This is our inner summer from a Chinese medicine perspective. The element of fire. Summer is hot. Fire is hot. Emotion is joy. The yin organ is the heart. The yang organ is the small intestine. The exercise recommended for bleeding people during this time is a heat workout.

What I mean by that is more cardio. The element of fire rules the heart. You want to make sure that your athlete is upping their cardio during this time to help exercise that heart organ. The energetics during this time is up and out. Like I said, this is our energetic peak. The flavor is bitter. Nutrition during this time is that that would be harvested in the summer, so fruits and veggies. Please do not eat a watermelon in the middle of January. We are a microcosm within a macrocosm. Yes, more fruits and veggies are great during this time, but make sure if it is cold out still, they are cooked. Do not eat watermelons in the middle of the winter. That is used for heat stroke as a Chinese herb, and it makes you too cold. Play with what you can incorporate into your diet that makes sense for the season that you are in now, as well as the season of your internal menstrual cycle.

An interesting point here is a lot of OB-GYNs recently, fertility doctors, and MDs are recommending their patients who are struggling with fertility to try the keto diet. I understand why they would want them to be on a keto diet during the follicular and ovulation phase because you are eating lighter. You have more energy naturally. You really do not need carbohydrates in your diet here. However, I feel like as a bleeding person, it is important to have carbs, starches, and extra calories in your luteal and bleed phase because you need the energy. You need the calories to prepare to lose all that blood. If your athlete is doing the ketogenic diet during follicular phase and ovulation, that is fine. During luteal and your bleed, you need the extra calories, so definitely give them permission to eat the pasta. Do you know what I mean?

Our last face here, is our luteal phase. This is from when your ovulation ends. After that 48 span of time to your period, this lasts about 14 days in a normal cycle. There are always outliers. During our luteal phase, this is when our energy starts to decrease. This is perfectly normal and exactly what is supposed to happen. You want your athlete to allow their body to move a little bit slower and allow them to give themselves brakes and more rest throughout the day.

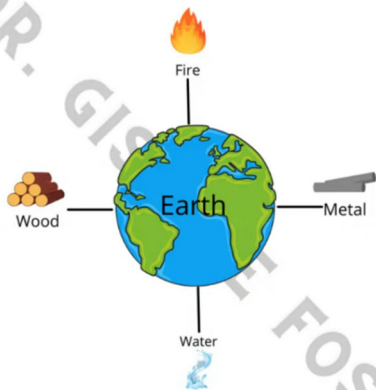
Our progesterone rises as we transition into this reflective phase and the corpus luteum produces our progesterone here. This is the luteal phase when a lot of your athletes will say like, "Oh, I am PMS ing." This happens during the luteal phase.

This is our inner autumn from a TCM perspective. The element associated with this is metal. The emotion is grief, which for me, when I learned that the emotion associated with luteal phase that is normal to be expressed during this time is grief, it really made sense for me from a PMS perspective. A lot of my patients, friends or people I know that bleed, often say "Oh, I am PMS ing. I am so emotional. I cried for no reason." I would argue that that is normal behavior because grief is supposed to be expressed during this time because the organ of the lung grows grief in Chinese medicine. That is the organ that is the most predominant here during this phase. The yang organ is large intestine.

During this time, you want the exercise for your athlete to include more weight training. This is because our estrogen is falling here. Just like in a menopausal and postmenopausal woman, when are estrogen levels decrease, you want to make sure that you are doing weight-bearing exercises to keep your bones dense and strong. The energetics are falling, which is why our energy decreases. The flavor associated with this is spicy. Nutrition during this time is root veggies and hearty foods. You want to make sure everything is warm and cook during this phase. You want to make sure you are eating more than enough protein because you are about to lose a lot of blood and you need to make sure your body is equipped to do that with enough calories and with enough nutrition.

Back to the beginning again. At the very end of our luteal phase, our progesterone levels will drop off and allow our bodies to start bleeding. This is our luteal phase peaking, falling, and we start all over again and again and again. The cycles continue from the first time we get our period at menarche until we hit menopause. If you are pregnant or on birth control, you are not cycling.

Before we started breaking down all the elements and how they fit in their phases, we said that there are five elements. There was fire. There was earth. There was metal. There was water. There was wood. We talked about four of those elements, but the fifth was missing and it is earth. This perplexed me for a little while when I started really getting into the TCM theory and relating it for my bleeding patients. Where does earth fit? It does not make sense. It does not fit a perfect phase.

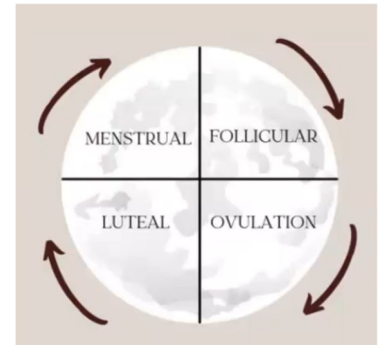


This is the star we talked about. I drew a little differently with earth in the center. This is how we actually originally learned or I originally learned the elements in my acupuncture schooling. It was with earth in the middle, but when we learn about the controlling cycle and stuff like that, we change it to the star to make it easier. I came back to my roots here and I was like, "Oh, it is because earth is affected by all of the elements. Earth is not a specific phase. It is the in-between. Between fire and metal, there is the space where earth can come through. Same thing between metal and water. This is the earth. I have been calling these the In between phases. They are just as relevant as the main phases.

The in-between — in Chinese medicine, the Earth element is associated with a late summer. The emotion is worry. The yin organ is the spleen and the yang organ is the stomach. In Chinese medicine, spleen and stomach is our digestion. Very interesting as we now know in Western medicine, research shows that, I think, 80% of our serotonin is produced in our gut. When our digestive system is not working that well or does not have the nutrients it needs, things like anxiety and depression can occur. That has been scientifically researched. I think it is very interesting that the emotion is worry and the organs are spleen and stomach, which, again, is our digestive system because if the digestion is not good during this time, if we are eating foods to support it during this time, our athlete, our patient can start worrying and feeling anxious during these in-between phases.

Earth, the tissue associated with it is not written here, but like the liver and like every other element that has a tissue, it is muscle, especially the leg muscles. The exercise associated with these in-between phases is stabilizing and strengthening leg muscles. The energetics is holding. The flavor is sweet. You want to make sure you are eating mindfully during this time to support that spleen and stomach and to help alleviate some anxiety or worrying during this time. For a lot of my patients, it was pretty empowering for them when they realize that this in-between, this late summer phase was there because when they started tracking their cycle, they would be like, "I get what I am in my main four phases, but in-between the phases? I feel weird and have weird days." That is because they are in the in-between phase and they need to eat better and work out their leg muscles.

This is just a little illustration, on right, I made showing that we cycle from the menstrual phase to the follicular, to ovulation, to luteal, back to menstrual over and over and over again. The cycle does not stop. It continues forever from menarche to menopause.



Injuries and how they relate to menstrual cycle. This is the most important to apply when treating the bleeding athletes? Let us look at some research here. In this study, 50 active college females ages 18 to 25 had their grip force tested with a dynamometer during different phases of their menstrual cycle. The study was from 2020. Through the study, it was concluded that grip strength and peak torque were lower during the early-follicular phase than the ovulatory and mid-luteal phase. Some other points from the study that I just thought were super interesting to think about were muscular performance was diminished during the follicular phase. This data indicates that females might be at a greater risk of injury due to decreased strength during the follicular phase than other phases of their cycle.

It also said things like female athletes appear to be at a greater risk for ACL injuries than male athletes. Female basketball players tear their ACL almost three times more than male basketball players. Studies indicate knee joint laxity and menstrual cycle phases are related. Injury rates may fluctuate based on hormonal changes that occur throughout the menstrual cycle. What does this all mean? Well, it basically means that we are realizing in the medical field that the phases of the menstrual cycle affect our musculoskeletal system in more ways than we could have ever imagined. This is super interesting. Even though this might seem like a disadvantage of, it is more likely that my female basketball player patient is more likely than my male, this research puts us at an advantage because now we know. We are aware of when our female athletes are more likely to get injured. We can train them and teach them appropriately, so that we can prevent this or at least try to prevent this.

Let us just talk about the conclusion here for a second, that are grip strength and peak torque were lower during the early-follicular phase than the ovulatory and mid-luteal phase has. Their grip strength was less during the early follicular phase. What phase comes before follicular. It is our menstrual phase. They are saying, they are concluding that right when the patient is done bleeding, right when they lost 10 to 80 milliliters of blood, their grip strength was less than the rest of the phases. That honestly makes perfect sense to me. Like we said, we are losing electrolytes, iron, blood, and fluids for four to seven days. It makes sense that our strength is not where it normally is. Again, telling your athlete that they might not be able to do things that require so much strength during this beginning of their follicular phase and not to be frustrated with is very important and liberating for them.

Here is another study. This study was from 2018. Basically, serum samples were taken from 26 recreationally active women from one menstrual cycle, so one month, and were analyzed to determine relaxin levels, that is the hormone that we said was the most important for our athletic injuries, throughout the menstrual cycles. The purpose of this study and why they are evaluating relaxin levels is because they are thinking that ACL injuries have a correlation to this relaxin hormone. A lot of the research, if you look it up and if you type in Google Scholar ACL injuries and relaxin, there are so many. It has been concluded that increased relaxin levels increase ligamentous laxity everywhere in the body, not just in the pelvic ligaments. Therefore, it can lead to more injury in our athletes. This study concluded that there is a significant change in relaxin levels throughout the menstrual cycle. We know this. Our hormones rise and fall. As we go through, you will see their days are not exactly perfectly matched up, but this study concludes that relaxin peaks occur on average luteal day 9 or 10, so about three days after peak progesterone. You are probably mid-luteal phase during this time. We know our luteal phase is approximately, in a normal cycle, 14 days.

Here is another study. This is from 2017. This is examining the effects of the menstrual cycle on lower limb-biomechanics, neuromuscular control, and ACL injury risks. This was a systematic review. Multiple scientific databases were evaluated to investigate the effects of the menstrual cycle on lower limb-biomechanics, neuromuscular control, and ACL injury risk. Very similar to the other one. It was concluded by this study that females are at a greater risk of ACL injury during the pre-ovulation phase of the menstrual cycle through a combination of greater ACL laxity, greater knee valgus, and greater tibial external rotation during functional activity. This study says that ACL injury risk is greater right before they ovulate, so right before that FSH and LH peak. The previous study said it was mid to the end of our luteal phase. What is the deal with that?

Well, there was another study done. This is about contraceptives. We will do this and then we will come back to the other study. This one evaluates how oral contraceptives or the birth control pill affects relaxin-2 levels in elite female athletes. Basically, it was concluded that your female athletes that do take oral contraceptives have lower relaxin-2 levels, which makes sense because they are not cycling.

This study is about ACL and our cycle phases. This one was from 2017, Effects of the Menstrual Cycle. Searches were conducted across multiple databases to evaluate the effect of the menstrual cycle and contraceptives on ACL injury and laxity. This, again, is regarding oral contraceptives. There is an association between hormonal fluctuations and ACL injuries. We know this in the previous research. Oral contraceptives may offer a 20% more risk reduction of ligamentous injury. Literature suggest that ACL laxity and risk of injury may be increased in the ovulatory phase.

When we are talking about fascia, which is relaxin and fascia are really the two things that were worried about when it comes to your athlete getting injured during different phases of their menstrual cycle. Dr. Carla Stecco, I watched one of her lectures and the research that she showed during that lecture. If you never watched any of her lectures, I highly recommend it. She concluded and she lectured that fascia is influenced by sex hormones, specifically estrogen. Fascia is much more active in the periovulatory phase compared to the follicular phase, and is the most active in pregnancy. This is because of collagen type III. Collagen type III is more adaptable more in pregnancy and periovulatory than follicular phases and even less postmenopausal.

After we ovulate, it is saying that the fascia in the body of the athlete and of our bleeding patients is more elastic. It is not holding things together as good as it does in other phases of the cycle. This can lead to an increase of joint instability, which is very important to know. In the study that she showed, they actually researched and found that foot length is increased in ovulation compared to menstruation because of the greater elasticity of the fascia. Ovulation presents less of balance

compared to menstruation. What happens is because the fascia is more elastic and can stretch and is not holding things together as well, the foot can lengthen. Because it is not holding things together like a tight bundle. The foot size will increase. Because of this, the plantar fascia is more mobile during ovulation. The balance of your athlete will be worse during ovulation than it is at its polar opposite of menstruation, which is very, interesting to know. This is the study that she showed showing the foot size.

I want to go back to our questionable contradicting studies here. We know that this said that our relaxin peak on average during luteal phases 9 or 10, so mid to end luteal phase. This one says that the risk of ACL is greater before ovulation. What does this mean? Everybody is different and hormones are influenced by, as we know, stress and other factors. I would say during this study, we know that the risk of ACL injury is more during when we are just looking at relaxin. Relaxin is the highest from right before we ovulate until mid-luteal phase. That is a pretty big gap where we know relaxin is the highest. However, take this Carla Stecco stuff into account, this study, and we know that the middle of that point, so the mid between pre-ovulation and mid-luteal, there is the ovulation where your fascia is less stable. It is not holding things together as well. Therefore, it causes joint instability. Yes, your athlete is at a higher risk of injury during pre-ovulation to mid to end of luteal phase. At ovulation, you have those high levels of relaxin as well as those high levels of type III collagen. Therefore, the joint is most likely the most instable it will be at their ovulation. Your athlete is more likely to get injured during that span of time, then during any other phase of their cycle.

We just looked at some research. Some of the research included studies done on contraceptives and how the using contraceptives can reduce the risk of athletic injury by about 20%. I always like to educate my patients on the different contraceptives. I never recommend a patient to go on a contraceptive because when you are on a contraceptive, your body is not cycling normally. Therefore, your tissues of your body, your mood, your libido, nothing is in homeostasis. A bleeding person has a right to choose what they do with their body, so I like to unbiasedly educate them on contraceptives, the different options, and also the benefits and risks that can come from using a contraceptive.

There are multiple types of contraceptives. There are oral contraceptives, which we talked about the most in this lecture, which is the birth control pills. There are IUDs, which there is copper or hormonal. They are little like T-shaped inserts that go into the cervix and open. The hormonal obviously releases hormones at a monthly increment. There is the birth control implant. It is normally put in the arm. They cut a little insert. They put it in, and again, it releases hormones in a monthly increment. There is the injection. There is a patch. There is a vaginal ring. There are many options for contraceptives that your athlete may be on. I suggest looking at the risks of each specifically just so you know. Maybe if your athlete has other things going on, it could be related. There is no menstrual cycle if a patient is utilizing hormonal contraceptives. If your athlete is using hormonal contraceptives, this entire lecture does not apply to them at all. Their body is at a baseline, thinking they are pregnant every day of every single month. It is completely different.

A study was performed on a sample size of over 1,000,000 bleeding people that concluded that women who were taking oral contraceptives were more likely to also be prescribed an antidepressant. These are just some overall contraceptives facts that are scientifically proven that I like to share with my patients when they are considering contraceptives. There is a 300% increased risk of developing Crohn's disease while taking oral contraceptives. Oral contraceptives have been linked to autoimmune and thyroid disorders. Oral contraceptives cause delayed B12 and magnesium deficiencies. If you have an athlete and they are taking contraceptives, you need to make sure they are supplementing these, especially if it is an athlete because they need these things to perform optimally. Contraceptives have also been linked to an increase of blood clots, cervical cancer, breast cancer, and liver cancer.

I highly recommend the book *Beyond the Pill* by Dr. Jolene Brighten. I have read it countless times and I also recommend it to pretty much all of my patients interested in cyclic living, have been on oral contraceptives or any contraceptives, as well as thinking about it because it breaks down exactly what happens in your body when you go on a contraceptive. It allows for more insight and knowledge of what is good and what is bad about them.

This is something that I talk about a lot with my patients. I am not going to talk about it heavily here, but I do think it is important to mention because it does not get enough credit. Again, Dr. Jolene Brighten, in her book *Beyond the Pill*, goes into this a lot. Like what happened to me that I explained in the beginning, when you have an irregular period, so you are put on the pill. When you decide to come off the pill, everything gets worse. This is what post-birth control syndrome is. Basically, birth control shuts down the communication between the brain and the ovaries. It can lead to so many symptoms. I am just going to use the general thing of irregular menstruation painful period and stuff like that. Everything is worse than before.

I have had the most success treating this in my patients by using acupuncture, referring to an acupuncturist that I trust, Chinese medicines or herbs, making sure they have quality supplementation. Birth control, especially oral contraceptives, deplete the body of folate, B12, and magnesium. You want to make sure that they are getting good quality supplements for that in order to make up for lost time of nutrients. It is important that they are getting a sufficient diet because you can supplement all you want, but you need nutrients from food as well.

How can we teach our athlete to know what phase she is in? How can we start to get her in touch with her cycle, training with her cycle, and knowing where she is at and how to do things? There are three things that I suggest with my patient. Number one is I teach all my female patients about their cervical mucus, how it changes throughout their cycle, and how you can use that to gauge what phase they are in. Basal body temperature is extremely helpful, extremely accurate, but also can be extremely annoying. We will talk about it. Three, journaling.

Let us start with cervical mucus. Cervical mucus is the discharge that you will see in your underwear. If you pick it up in your fingers or you can even see with your eyes, it has different consistencies. This is because of the hormonal fluctuations throughout your cycle. During your bleed, the cervical mucus is blood, tissue, fluid, stuff like that. In follicular phase, it is normally watery and thin. During ovulation, it is sticky and egg white. Ovulation is this one. This is known as your fertile mucus. This is when you know you can have a baby if you try. If you put it between your fingers and you spread it apart and it stays together, just like in this picture here, that is your fertile mucus. That is how you know you are ovulating. During your luteal phase, it will be thick, creamy, and white.

Option number two is teaching your athlete how to take their basal body temperature. I recommend doing this to start. You do not have to do it forever, but it scientifically shows where you are in your cycle based on your temperature. It is super accurate, and that starts to allow the athlete to understand the rhythms because they can see exactly where they are at. Then, they can transition off basal body temperature and more towards the mucus and journaling because they start thinking, "During this phase, I feel like this and my mucus looks normal," remember it is person dependent. What basal body temperature is it is taking your temperature during the hours of 4:00 and 7:00 a.m. every single day at the exact same time.

If you wake up at six, walk around your house, drink coffee, eat food, and then you take your temperature, that is not your basal body temperature. Their alarm goes off, they open one eye, they grab their thermometer and they put it under their tongue. It is when they are fully at rest before they have done anything. This is your basal body temperature.

I always recommend the app Premom because I like the way the chart looks. You enter the temperature from the thermometer into the app and it charts it. You can see what your temperature is doing in the phases of your cycles. We know that during your follicular phase, your temperature is pretty consistent here. Right before you are about to ovulate, your temperature will drop then it will spike way higher than any other temperature in your follicular phase, stay up, drop again. When that drop happens, that is your progesterone dropping, and you will get your period. Teaching your athlete how to do that for a few months might start getting them in touch with the different phases of their cycle.

While they are doing basal body temperature or even if they are not, I think journaling is very important. This is the first homework assignment I give all my patients who are interested in cyclical living. They get a journal dedicated to justice.

Every day, they write the date, day of their cycle, their mood, energy, and their emotions. Over time, they will start to find patterns.

For example, day 7 is a weird day for your athlete and if they look back in their journal, it is more than likely that day 7 on every single month is also weird. They start to know how to treat their body during those days.

On day 6, they might start to think, "Tomorrow is day 7. I know I am going to be tired and it will not be a good day for me. I am going to start my day off with a workout that aligns with my cycle to get my mood better." They become aware of their cycles and how that makes them feel.

I find that athletes really like this because they like keeping track of their performance. They like being aware of their body. Journaling is a nice homework assignment for them and they tend to like it and be really, persistent with it.

Those are how you teach your patients how to track their cycle. Those are some of the general ideas. We went through a lot, but here is the big picture of everything we learned today. We now know that bleeding bodies change weekly because of our hormonal fluctuations. It affects our mood, our libido, our concentration, everything. Our cervical mucus, the way we should exercise, everything changes weekly because of our hormones. That is normal. In order to optimize female athlete performance, we need to educate her to train with her cycle.

During bleed phase, we instruct her to rest. We know athletes will not, so tell her to take it a little bit easier. Give her permission, maybe day 1 and 2, to rest, do nothing, gentle stretch, gentle walk. Follicular phase, tell your athlete to focus on their flexibility. Ovulation, they need to do more cardio. During your luteal phase, make sure they do some weight-bearing exercises to support that decrease in estrogen.

Bleeding athletes, we saw through research, are more prone to different injuries during different cycle phases because of our relaxin levels and because of the changes in fascia stability. Her strength will be decreased and muscular performance will be lessened during the early-follicular phase right when they are done bleeding, and then it should rise again. Her ligaments will be the most lax during ovulation and the beginning of luteal phase through research. We know that our fascia is the most instable at ovulation. That is the point to look out for. Make sure you are doing stabilizing exercises with your athlete during this time. Make sure they are not doing any crazy lateral motions during this time to protect their ACLs. This is the time to stabilize the joint and be aware of the biomechanics of your athlete.

Here are other athlete-related ideas regarding the menstrual cycle to be aware of. It is seen in specific sports, like dance and gymnastics, that amenorrhea is a trend. Amenorrhea and osteoporosis go hand

in hand here. If your athlete is not getting their period or their bone density is just not where it should be for their age, I recommend sending them for some help because it normally is related to an eating disorder of some sort, whether it is anorexia or bulimia. If they are not getting their period, ask the mental health questions. If they do disclose that they are having trouble with eating, recommend a counselor that you trust. Maybe find or make some connections with a sport psychiatrist in your area that you trust that you can recommend to your athletes that are experiencing this thing.

Dysmenorrhea, this is just irregular menstruation is the broad term of dysmenorrhea. Where amenorrhea is you do not get your period at all. Thirty-three percent of athletes with the BMI lower than 25 present with dysmenorrhea. Your body needs a certain percent fat to have a baby, which is why we have a menstrual cycle. Even though if your athlete does not want to get pregnant, that is fine. They still need a certain amount of body fat of body mass to have healthy hormonal fluctuations.

Painful periods from overwork as well as back pain during their periods. My patients love to come see me when they have their period because their back is sore. I am a chiropractor, so I do some soft tissue heat. Making sure that they are having hot teas and hot foods at home when they have their period. Being aware that maybe if you can adjust their lower back, do some soft tissue work, put a hot pack on their lower back and their sacrum can be really beneficial for cramps and back pain that our bleed related.

Teaching bleeding people to live in tune with their bodies is such a potent gift and I have seen life changing results in my patients from being able to empower them and give them the gift of learning of what their body is supposed to do and how they are supposed to train.

If you have any questions regarding anything in this lecture or anything else, feel free to send me an email. I look forward to the future of our cycling athletes in all that you are going to teach your patients and how empowered our female athletes are going to feel after this. It has been an absolute pleasure teaching you today. Thank you

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