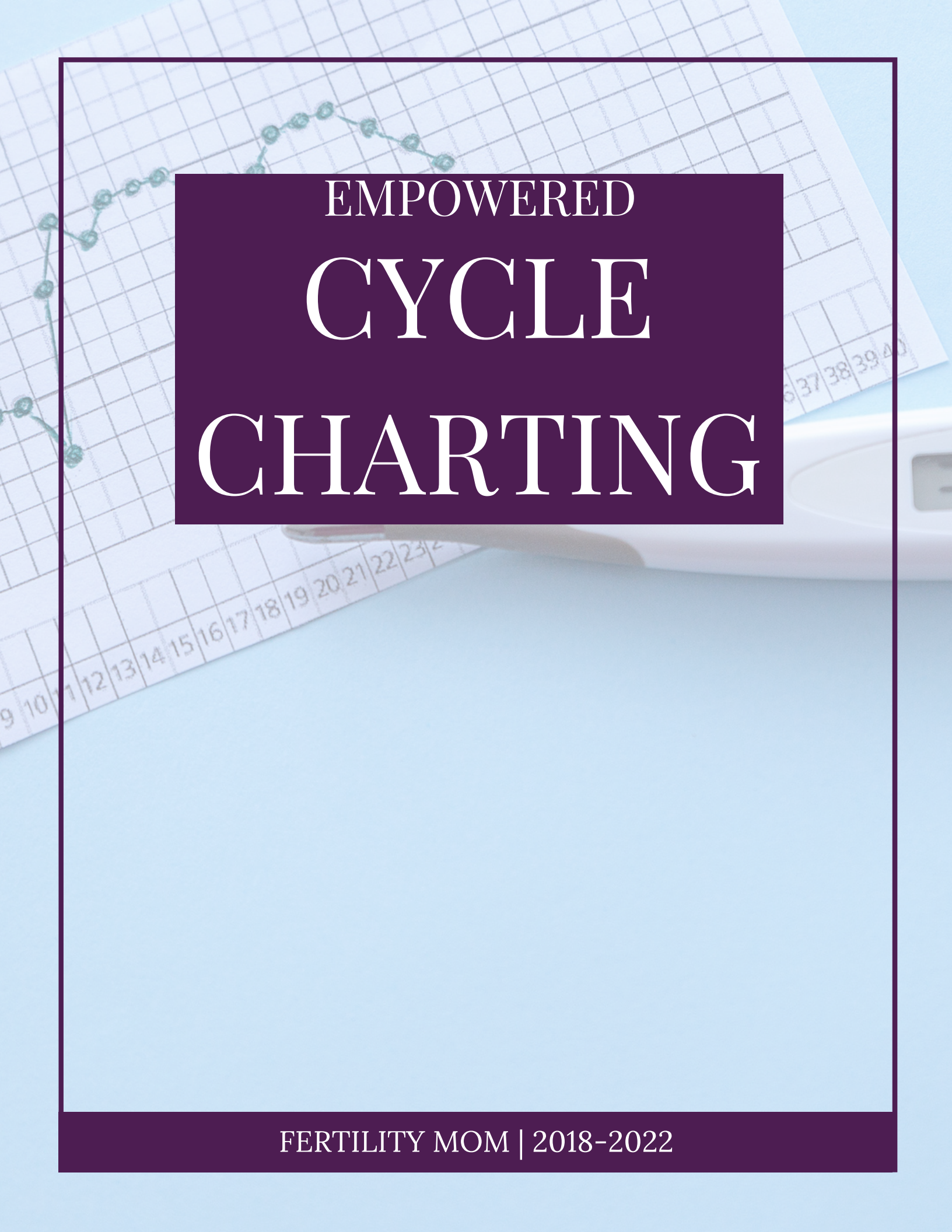


EMPOWERED CYCLE CHARTING

FERTILITY MOM | 2018-2022

Cycle Charting:
Monitoring Your Health and Fertility

LEARN HOW TO TRACK YOUR FERTILITY SIGNS, FIND YOUR FERTILE WINDOW, AND CONFIRM OVULATION

Learning to track your menstrual cycle is a critical piece of monitoring your health and fertility. Since the menstrual cycle itself is considered the 5th vital sign it should be looked at as important just like heart rate, respiratory rate, temperature, and blood pressure are. Unfortunately it is all too common to have doctors and health practitioners ignore the importance of the menstrual cycle.

We are getting a disservice when doctors or healthcare practitioners tell us that it's no big deal if we don't have a period or ovulate regularly. Irregular ovulation is associated with an increased risk of diabetes, cardiovascular disease, high blood pressure, osteoporosis among many other things. One study in the American Journal of Epidemiology found that women with irregular cycles were about twice as like to develop breast cancer in their lifetimes.

Consider your menstrual cycle a vital sign - we want to measure and track this just like our other vital signs. When you do this not only will you be able to track your health better but you will learn your fertility signs to help you get pregnant

MENSTRUAL CYCLE OVERVIEW

A menstrual cycle starts on the first day of your period bleeding and ends the day before the next period. We've all been taught the myth that a 'normal' menstrual cycle should be 28 days in length with ovulation occurring on day 14, but there is only a small portion of women who have this type of cycle.

A normal menstrual cycle length can be anywhere from 21 to 36 days with ovulation occurring anywhere between day 9 through 24. An irregular cycle is one that varies by more than 8 days from cycle to cycle or someone who has less than 9 periods per year is also experiencing irregularity.

For instance, a woman who has one cycle that is 30 days, then 34 days the next, and 29 days the following month is still experiencing regular cycles even though they're slightly different lengths. In contrast, her period would be irregular if she were to have a 28 day cycle followed by a 56 day cycle and then a 39 day cycle.

Most people also believe that the main event of our menstrual cycle is our period. Of course it must be, right? She announces herself with such drama and needs so much attention that it must be the most important.

Not quite! The *most* important part of our entire menstrual cycle comes down to a single day: ovulation.

Yes! Ovulation is the most important part of our menstrual cycle, and without a proper ovulation we do not consider it to be a *true menstrual cycle.* A true menstrual cycle can only end in 1 of 2 ways: a pregnancy or a period. If we do not ovulate then we do not properly go through the entire process and the bleeding we experience is called "breakthrough bleeding" while our body tries to regroup and attempt ovulating again.

Our biggest takeaways are the following:

1. The menstrual cycle is an important part of our health and should be used as a marker of our overall health and fertility. It should be tracked just like a vital sign (heart rate, respiratory rate, temperature, blood pressure)
2. Ovulation is the star! Without it we aren't having a true menstrual cycle
3. Monitoring and tracking our entire menstrual cycle as well as ovulation will give us the most information about our fertility, and will help us get pregnant.

Let's review the menstrual cycle and everything happening during this time to understand it better.

The menstrual cycle is controlled by many hormones, but we're going to discuss it in terms of the 4 most important ones:

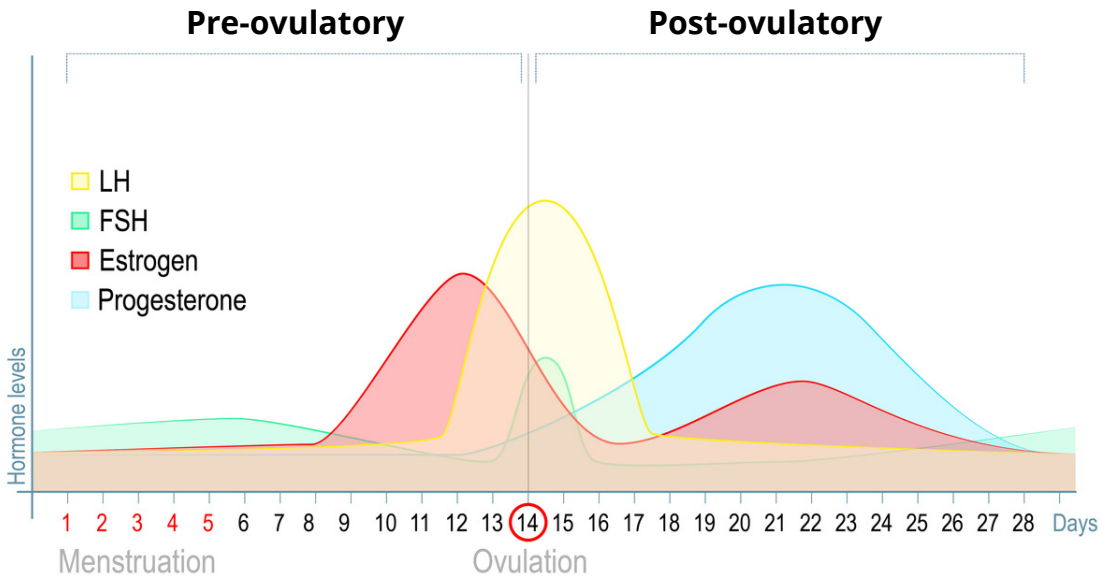
- Estrogen
- Progesterone
- Luteinizing hormone (LH)
- Follicle stimulating hormone (FSH)

Estrogen is the main hormone in our pre-ovulatory phase. It's made and released by developing follicles and is responsible for building up our endometrial lining, also known as our uterine lining. This hormone also changes our cervical mucus and will peak before ovulation to help stimulate egg release.

Progesterone is the main hormone in our post-ovulatory phase. It's responsible for continuing to build the endometrial lining and preparing it for pregnancy.

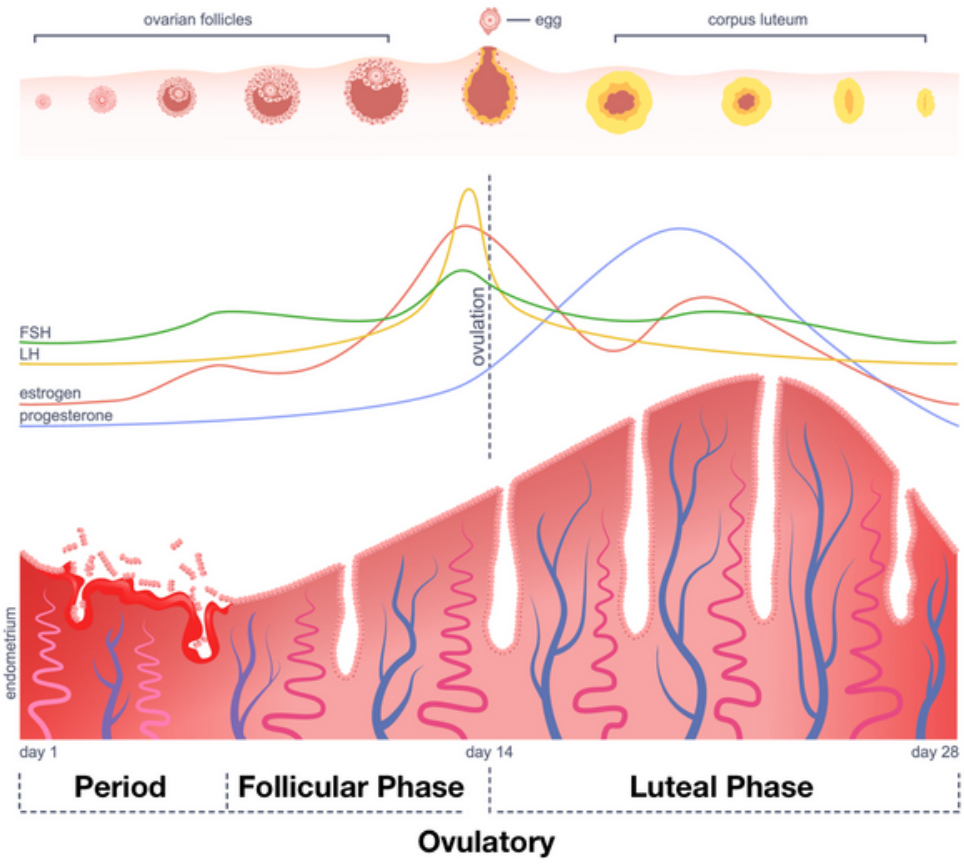
Luteinizing hormone is what is released from our pituitary gland in response to the peak in estrogen levels. LH stimulates the rupture of the matured follicle and the release of the egg.

Follicle stimulating hormone is another hormone released by our pituitary responsible for stimulating the development and maturation of our follicle and egg.



There are also 4 phases of our menstrual cycle:

1. Follicular Phase
2. Ovulatory Phase
3. Luteal Phase
4. Menstrual/Bleeding Phase



Follicular Phase

The follicular phase can range in length anywhere from 10-23 days and it's during this phase that we have the pituitary gland releasing follicle stimulating hormone. FSH starts to develop a handful of about 8 or 9 eggs and after a few days the ovary chooses a dominant follicle. As this follicle grows it releases increasing amounts of estrogen, which builds your endometrial lining and stimulates the production and release of cervical mucus. Estrogen peaks just before ovulation and signals the body to release luteinizing hormone.

Ovulatory Phase

This phase begins a few days before ovulation and ends the day of ovulation. The estrogen peak causes luteinizing hormone to surge and ovulation occurs around 12-36 hours later. This is when our matured follicle ruptures and releases the egg. Some women can feel ovulation! They will feel soreness in their general pelvic region or may even feel it on one side, and this is called mittelschmerz.

Ovulation only occurs during ONE single day in your entire cycle and only survives 12-24 hours if not fertilized before disintegrating. This is technically your fertile DAY, ladies. Men are fertile all day long, every day as long as they have sperm but we only have this one single 24 hour period where it's possible for us to get pregnant. Even though we only ovulate this one day, our magical cervical mucus (which we'll discuss later on) is what extends our "fertility window" to anywhere between 2-6 days. This period of time, our fertile window, is considered the ovulatory phase.

Luteal Phase

After the follicle releases the egg, the follicle turns into the corpus luteum and this is what produces and releases progesterone. Progesterone continues to build and prepare the endometrium for implantation. A normal luteal phase should last around 12-14 days, after which the corpus luteum disintegrates and the uterine lining will shed to start rebuilding and prepping for the next ovulation. If you get pregnant then this corpus luteum continues making progesterone until your placenta takes over around the 10-12 week mark. There is very little variation in the luteal phase - it will generally be the same length from cycle to cycle.

Menstrual/Bleeding Phase

The average length of period bleeding is about 4-5 days. We count the first day of a period from the first day of full flow or the day where you need to actually use a tampon, pad, of period cup. The first 2-3 days of your period are generally the heaviest days that then taper in to a medium flow, then light flow to spotting

Severe pain is not normal - some cramping is normal but it shouldn't be the debilitating, curled-up-and-crying type of pain.

Normal bleeding amount varies anywhere between 25mL - 80 mL (~2 - 5 Tbsp of blood). In order to know approximately how much blood you lose during your cycle you can add up the amount of products you use. Menstrual cups generally hold around 30mL when completely full.

- Light pads/tampons hold up to 3mL fully soaked
- Medium pads/tampons hold up to 4mL fully soaked
- Heavy pads/tampons hold up to 8mL fully soaked
- Super pads/tampons hold up to 12mL fully soaked

Lighter bleeding can be normal but it can also mean there isn't enough estrogen or progesterone to build up and develop the uterine lining. This is super important for us in trying to get pregnant since we want a thick enough lining to get pregnant (10mm or more).

Bleeding color should be bright red to a burgundy red wine type color. If you have a very dark, black, purple, or sludgy period then this may indicate there is some blood stagnation. Castor oil packs help with this and can help move new blood to the area while better sloughing off the old blood.

Small clots can be normal but large and frequent clots can be a sign of some estrogen dominance.

MONITORING AND TRACKING FERTILITY SIGNS

There are 3 fertility signs we can track:

- Cervical Mucus (CM)
- Basal Body Temperature (BBT)
- Cervical Position (CP)

Our primary sign of our fertility is going to be our cervical mucus. Basal body temperature is helpful for confirming that ovulation has occurred. Cervical position is useful in certain situations where your CM or BBT may confusing. When we accurately track these signals we can accurately know when our fertile window opens, predict ovulation, confirm ovulation, and monitor our luteal phase length so we can gain an understanding of our progesterone level.

CERVICAL MUCUS

Cervical mucus is made by the cervix in response to rising estrogen levels in the follicular phase and is made of 90-99% water. This is why it's important to make sure you're drinking enough water!

Side note You should be drinking about half your body weight in ounces of water per day at minimum! So if you're 160 pounds that's 80 ounces.

There are 2 types of cervical mucus: fertile and non-fertile. Fertile cervical mucus is the mucus seen in the follicular phase (pre-ovulatory) and non-fertile mucus is seen in the luteal phase (post-ovulatory). The presence of cervical mucus is what creates your fertile window and makes it feasible for you to get pregnant. After ovulation, the higher progesterone suppresses cervical mucus production by telling the cervix to produce a thick mucus plug — these are your dry and infertile days.

Fertile cervical mucus has 4 main jobs:

- It changes the pH in the vagina so that sperm can survive. The vagina is usually very acidic with a pH around 3.5-4.9. Sperm need a more basic environment that is closer to the 7-8 range. Fertile CM has a pH in the 7-8 range so sperm can actually survive the usually acidic vaginal environment.
- It keeps sperm alive for up to 5 days — there are nutrients, amino acids, and other things inside the cervical mucus to keep the sperm nourished for days
- It allows sperm to swim up to where they need to go. Cervicial mucus creates streams that make it easier for them to actually get through the cervix and up into the uterus then to the fallopian tubes
- It prepares sperm to be able to fertilize the egg. Cervical mucus activates a process called capacitation, which physiologically changes the sperm so they have improved mobility and ability to penetrate the egg. Sperm can't penetrate the egg without going through capacitation, so with artificial reproductive technology they actually use an activating liquid for this process

There are 2 sub-types of fertile cervical mucus:

1. **Peak** —> this type of mucus is clear, stretchy, and has an egg-like quality to it. It will generally form a thin thread when stretched between fingers. Some women will be able to see this coming out onto their underwear, while others will only see or feel it when wiping. Other women will have this distinct slippery wet feeling throughout the day. All of these are signs of peak fertile cervical mucus. Peak fertile mucus can also be very watery without stretch. As a general rule, peak egg-white like mucus is seen in the immediate day or two before ovulation and day of ovulation, so this particular type of mucus is a big sign that ovulation is imminent. This type of mucus indicates that it's really time to make a baby! We want to pay particular attention to this mucus and time sex when we see it
2. **Non peak** —> this is more of a cloudy or white lotion-like mucus that doesn't stretch between your fingers. Some people say it resembles a creamy lotion.

Both types of cervical mucus are fertile types so if you're seeing either peak or non-peak mucus then the body is indicating that ovulation is coming and you are having that rise in estrogen. This means the fertile window is opening!

Finding what is called peak day of your peak fertile mucus is highly predictive for ovulation day. Some research says that ovulation happens on peak day 80% of the time. To be clear, peak day of your cervical mucus is not the day that you have the most quantity of mucus. Peak day is the last day of mucus you see *before* ovulation day.

After ovulation, progesterone causes mucus to change and forms a thick mucus plug in the cervix. This causes the cervical mucus to dry up abruptly and this usually indicates ovulation. and that you've moved into your non-fertile days.

Checking for CM:

We want to check for CM externally every time we go to the bathroom to watch for daily changes of cervical mucus. The best way to do this is to wipe from front to back before using the toilet and after. Observe how it feels. Slipper? Wet? Dry? Observe if there is anything on the paper. Color? Consistency?

Again, some of you may not observe any large quantities of CM at all, and your biggest sign that you're entering your fertile window is to have a general feeling of lubrication or wetness.

Paying close attention to the daily change in our cervical mucus to gain an understanding of exactly where we are in the cycle not only helps us to know our fertile window is opening for trying to conceive, but it can also let us know if there's another issue. Very gluey, yellow, or sticky CM could indicate an underlying bacterial yeast infection or having non-peak mucus every day or some sort of mucus all throughout the cycle with no dry days is also something to be aware of.

When observing cervical mucus we want to look for the day of mucus change. This is the day after your period ends where you start to see an increase or change in mucus pattern. This indicates a rising estrogen level!

Any pre-ovulatory mucus is fertile mucus - While egg-white mucus may keep sperm alive a little longer or help them move a bit easier, any mucus in this pre-ovulatory stage is considered fertile mucus.

A note about CM and arousal fluid: arousal fluid isn't produced by your cervix and you can have this on any day of your cycle. It appears because of the rush of blood to your vagina when aroused - it can be a slippery consistency with some stretch but that stretch quickly dissipates.

CM is your primary fertility sign that you should pay attention to in order know your fertile window is open and ovulation is impending

Timing Intercourse According to CM:

The best intercourse timing for conception is in the 3-5 days preceding ovulation. If your partner's sperm has a normal count you can have intercourse every day during your fertile window - all the days of your fertile mucus leading up to ovulation including ovulation day itself.

If your partner has a low count or quality then having intercourse every day may deplete the sperm count so much where there is nothing being regenerated between. Every other day or every 3rd day (2 days between intercourse) should be used in this situation.

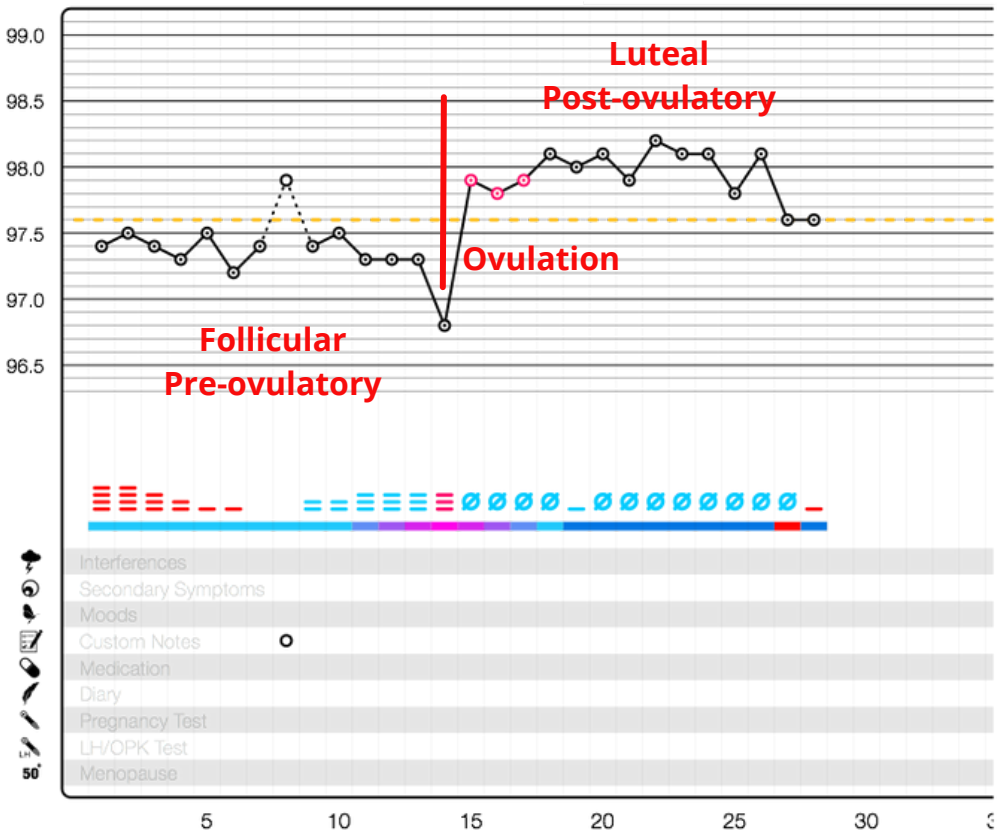
If you're only able to have intercourse once or twice during that fertile window, it's ok, too! Those sperm can stay alive for quite some time. I've even had one client whose husband got sick right as her fertile window opened. They had intercourse a full 7 days before she ovulated and she still managed to get pregnant that cycle after trying for a year. While ideally you want to get a few sexy moments in during your fertile window, sometimes things happen and that's not possible. But getting any amount of intercourse in during the correct fertile time gives you a chance.

BASAL BODY TEMPERATURE

Basal body temperature is your resting baseline temperature that gets measured in the morning after sleeping for 3-5 hours consecutively. There are distinct temperature differences between our pre-ovulatory and post-ovulatory phase and we can use the temperature shift to confirm ovulation.

Tracking BBT can also give us some information about our hormone levels - it shows us the length of our luteal phase (which is related to how much progesterone we have), and the actual temperatures themselves can give us information on our thyroid hormones. We can also evaluate our estrogen levels and get an idea on our adrenals as well.

Using BBT in combination with tracking CM progression is much better than only using OPK's (ovulation predictor kits). OPK's can only tell you about the presence of your LH surge but it doesn't tell you whether you've ovulated or not. They can also be hard to understand and not as reliable as CM in telling you about when your fertile window is open.

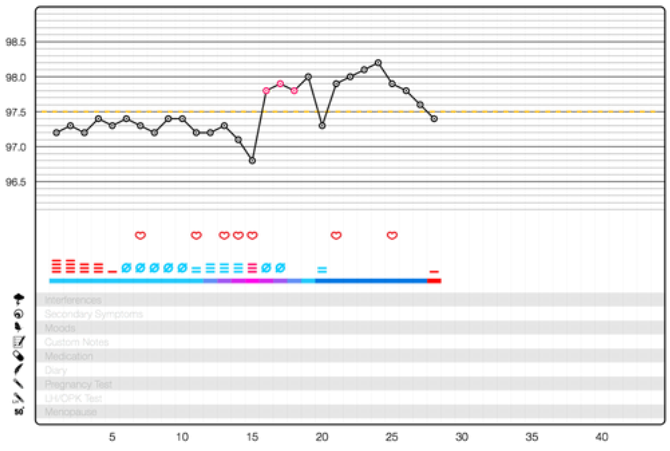


How To Take and Track BBT

There's a few things you need to do to get an accurate BBT:

1. You want a thermometer that measures to two decimal places
2. It needs to be taken in the morning before getting out of bed after 3-5 hours of consecutive sleep
3. BBT should be measured around the same time every morning. Temperature rises for every additional 30 minutes you're sleeping so if you take your temperature at the same time you'll get the most accurate graph

When you take your temperature every morning and then input it into a graph (either manually or in an app) you can see the distinct temperature shift between the pre-ovulatory phase and post-ovulatory phase.



The shift in temperature is a function of our hormones. Estrogen is a cooling hormone and so when it's dominant in the follicular phase our temperature is lower. Progesterone is a warming hormone and increases our temperature. Your temperature will be lower at first, then it will rise indicating progesterone presence and confirming ovulation. Progesterone will cause a sustained temperature shift for the entire luteal phase after which it will either continue being high because you're pregnant or your temperature will fall back down to follicular phase levels as you start your period phase.

When you chart your BBT and track your CM you will know when your fertile window opens so you can time intercourse *and* you will be able to confirm ovulation

If you work night shifts, then the best way to take your temperature is after your longest sleep of the day. After a little while you'll be able to pick up on a trend.

BBT tracking apps and thermometers are widely available nowadays. You can get yourself a basic thermometer that measures to two decimal places and manually input the temperatures into an app that will automatically graph it for you. Or you can get a bluetooth thermometer that automatically syncs with the app. Some of the most convenient things to use are wearables, though many people don't like the feeling of wearing a watch or armband while they sleep.

Apps: Lily, Fertility Friend, Kindara, PreMom
Bluetooth thermometer: Femometer, Wink (with Kindara)
Wearables: TempDrop, Ava, Ovusense (vaginal)

There are many things that can change the BBT chart that are unrelated to hormone levels. Stress, illness, poor sleep, alcohol intake the evening before, open mouth at night, colder or warmer room temp than normal — all of these things can cause a change in body temperature that is unrelated to your hormone levels.

If you've never done this before it might take 2 or 3 cycles to really learn what's normal for you. I recommend charting for at least 3 cycles so you can pinpoint exactly how your CM relates to your BBT shift. If you've charted your temperature before but felt like it stressed you out or weren't able to get accurate readings then you may wish to continue simply tracking your CM.

CERVICAL POSITION

Tracking cervical position can be useful at times when your BBT or your CM are hard to understand or are confusing you. Our cervix moves and changes throughout our cycle. In our period phase our cervix is low, hard, and closed. As our estrogen increases it causes our cervix to to rise up into the vagina, open, and become very soft. After ovulation, the cervix closes up, becomes hard again, and lowers back down to the period phase level.

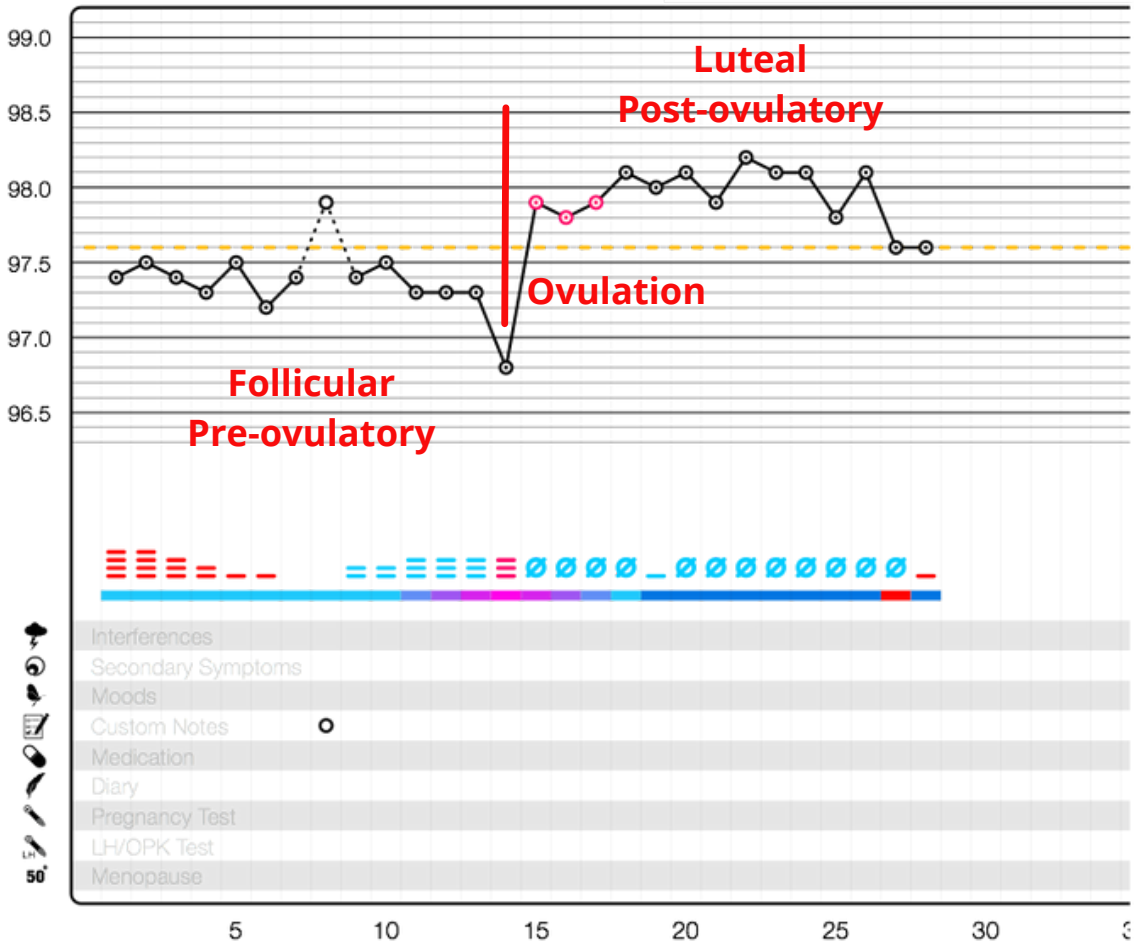
The best way to check this is in the squatting position. You can stick your middle (or pointer, depends on you) finger into your vagina and feel for your cervix.

- During the follicular phase, the cervix will be high, soft, and open and feels like pursed lips (go ahead, purse your lips and feel them ;-)
- During the luteal phase and menstrual/bleeding phase, the cervix is low, closed, and hard and feels like the tip of your nose (yep, you're feeling your nose now, right?)

Sometimes the cervix can be hard to reach when it's in the high, soft, and open pre-ovulatory phase which is why this can be a difficult sign to track well.

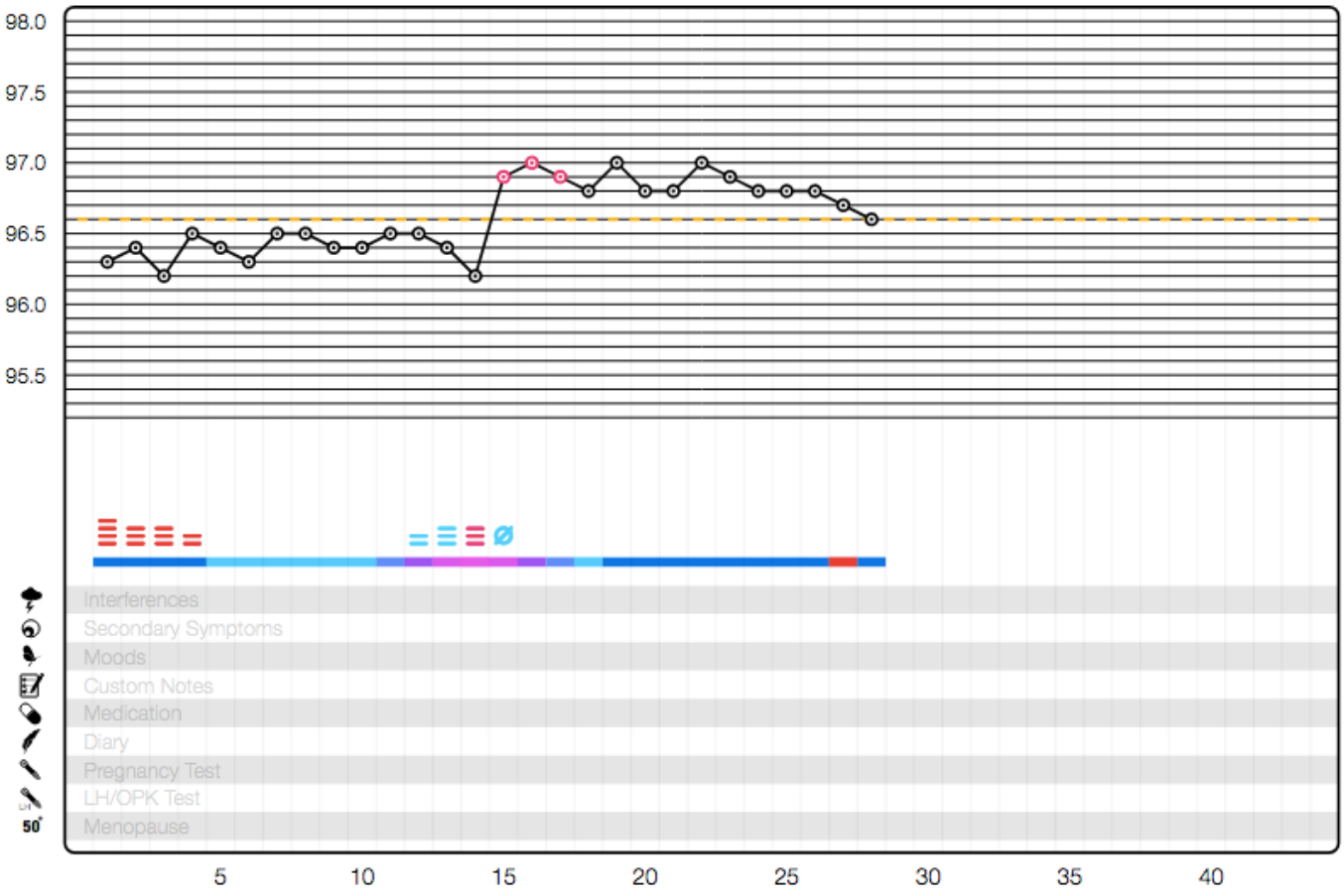
My recommendation is to track it for one cycle and take note of how it feels and how it moves. If you ever need to check it because your BBT or CM are confusing then at least you have an idea of what your normal is.

CHARTS



The chart above is a classic normal chart with 2 distinct temperature shifts between the two phases. There is cervical mucus noted for 5 days before ovulation day and ovulation is confirmed by 3 temperatures that are higher than the previous 6 temperatures. The temperature shift is sustained for a 14 day luteal phase.

HYPOTHYROID CHART

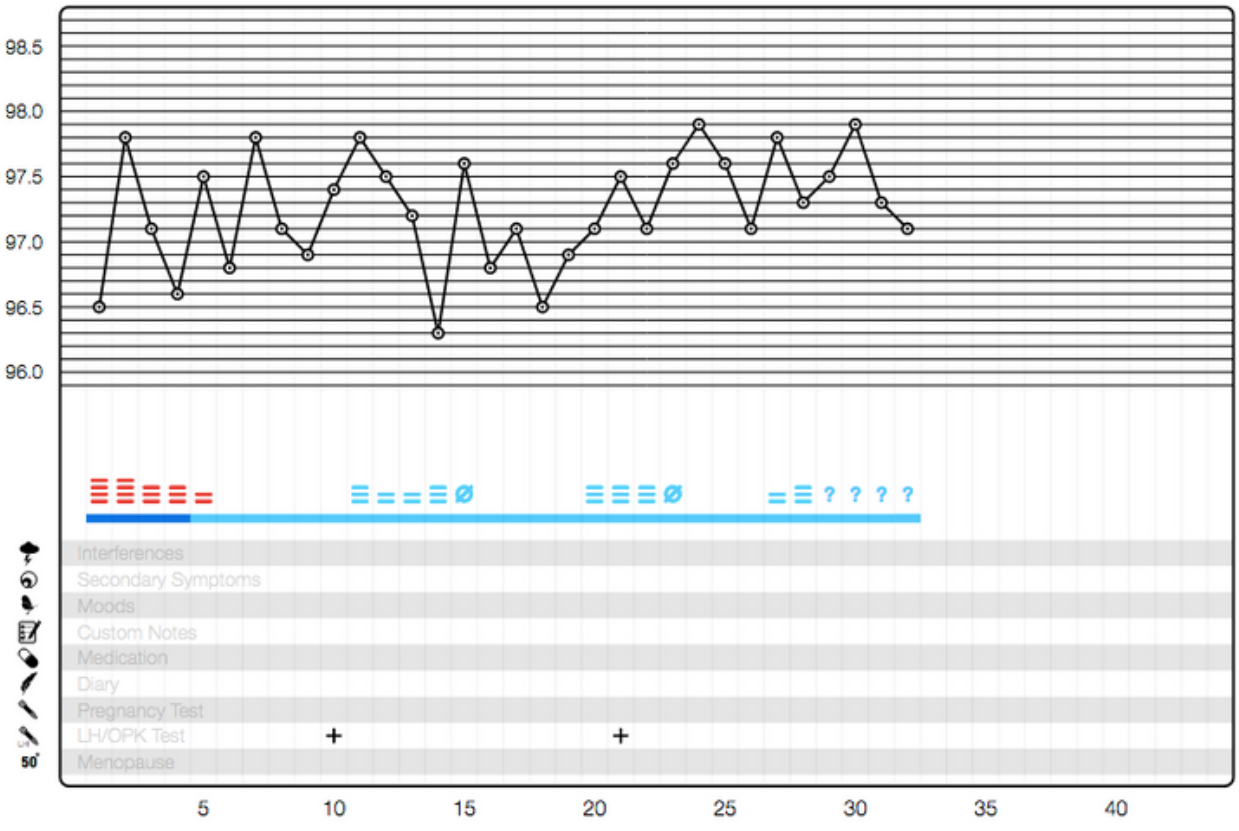


The thyroid has an effect on our basal metabolic rate, and those with untreated hypothyroidism will be able to see a low temperature, even after ovulation. These temperatures are low both pre ovulatory and post ovulatory, which would lead me to think we need a thyroid workup.

Ideally, we want our temperatures to be in

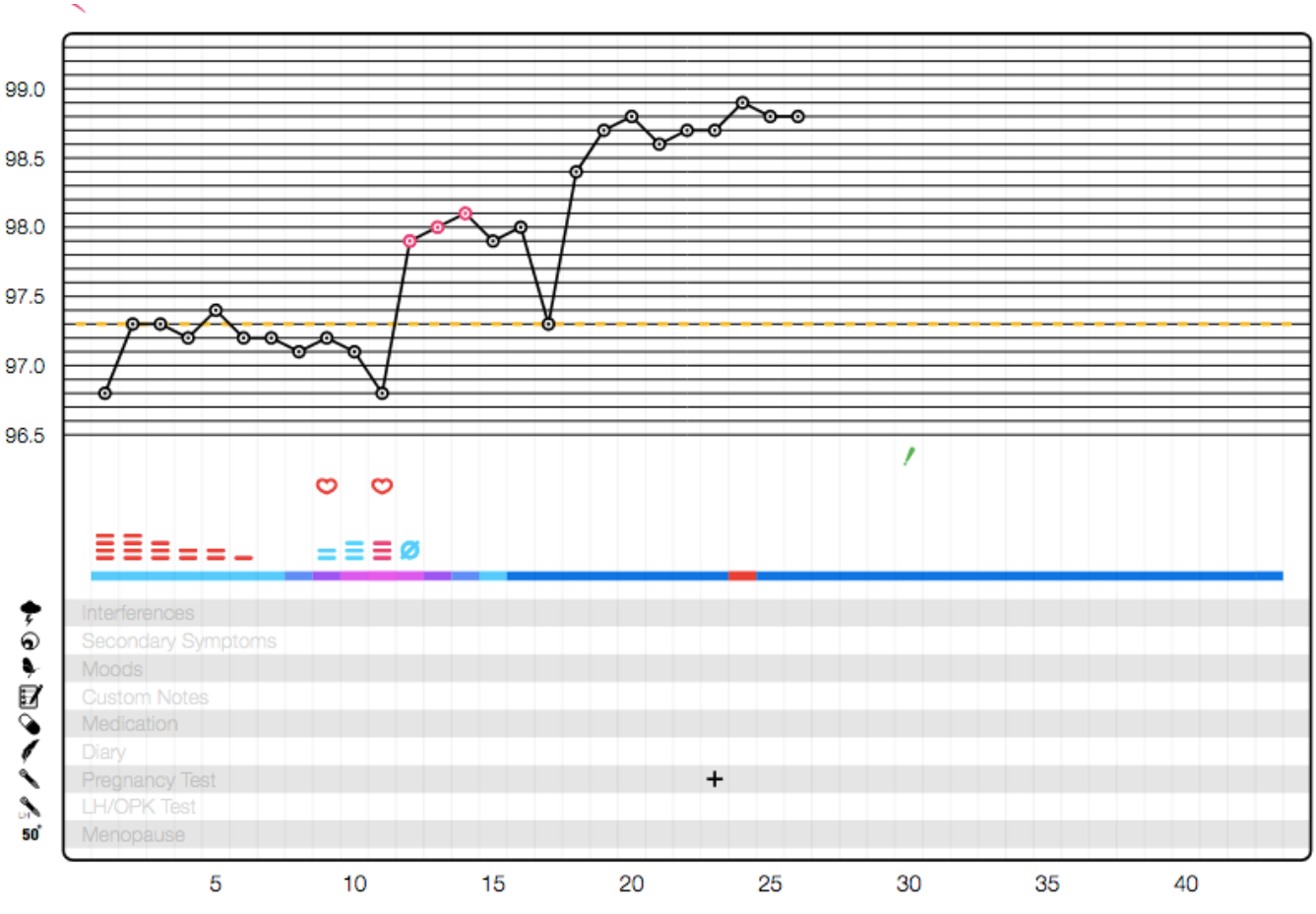
There is also the possibility that the temperatures are inaccurate. If you're having low temperatures I recommend taking your temperatures vaginally for a cycle to see if they're any different. If you're wearing a skin thermometer sensor (a wearable like Ava) your temperature might be falsely recorded as low because skin temperature is lower than your core. If you troubleshoot this and continue to have low temperatures then it's time to get a full thyroid workup (TSH, free T3, free T4, reverse T3, TPO antibodies, and Tg antibodies).

ANOVULATORY CHART



This chart shows a very uneven temperature with no discernable temperature shift. There are several episodes of cervical mucus with corresponding positive OPK test strips. This type of chart might be seen in PCOS or other estrogen dominant issues. It seems the body tried several times to ovulate but was never able to.

PREGNANCY CHART



This chart is one example of what a pregnancy chart can look like. Intercourse occurred twice within the fertile window, which was 4 days. Ovulation is confirmed by 3 higher temperatures than the previous 6. A fall-back temperature was noted in the luteal phase, either due to the small estrogen surge that can occur during the luteal phase OR implantation. Only about 30% of women have an implantation temperature dip on their charts. The temperature than shifted upwards again, making this chart a tri-phasic chart. There are 3 distinct temperature shifts, one pre-ovulatory, one that confirms ovulation and then another within the luteal phase. This can be common in pregnancy charts. A positive test was received on the 12th day post ovulation (12 dpo) and the temperatures continued staying elevated.