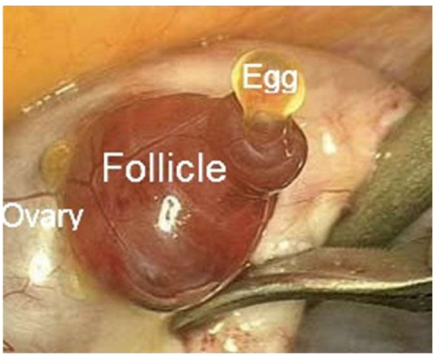
Certified Fertility Counselor Course- Session 3
Ovulation: What can Interrupt Ovulation and Tools for Ovulation

The Life Process

The core of ovulation is a complex process, it's so intricate and delicate that anything can disrupt it and anything can prevent it.



A woman is born with approximately half a million potential eggs in each ovary. From birth and on there will be no more produced, in fact with age, they will steadily decline over her lifetime, and be absorbed by the body in a process known as *atresta*.

By the time a woman hits puberty, the million original follicles will have reduced to about 300,000 thousand and they will continue to decline right through until she reaches menopause. With each menstrual cycle there will be a dominant follicle, which will recruit a mature egg that is released into the fallopian tube at ovulation. In an average span of forty years between puberty and menopause with one egg being released each cycle, this means that only about 400-500 eggs in total are released.

There are two types of factors when it comes to the egg cell. Egg *quality* is about how capable an egg is of being fertilized and going through the developmental stages to form a viable embryo. This is determined by two factors, the number of chromosomes present within the egg, and the energy supply of the egg. Both of these reduce over time and is one of the biggest factors affecting egg quality with aging women. There are factors that affect egg quality such as lifestyles, smoking, drinking, and general health.

Egg *quantity* is just how it says. Since a woman is born with a certain number of eggs in her ovaries, age has a lot to do with egg quantity, as the number becomes smaller and smaller. Some women however are already born with fewer eggs, so younger women could also have low egg quantity. The fewer eggs a woman has, the harder it is for the hormones to recruit and develop an egg. Egg quantity is also referred to as ovarian reserve.

What can Interrupt Ovulation?

Unfortunately because ovulation is fragile, and has to be strategically timed right through the body's energy and hormones, almost anything can seem to prevent ovulation from occurring. Each hormone works together closely and with each other, so if one is out of sync, ovulation will be as well. Anything can throw off the balance of luteinizing hormone release and the response of the egg in its final maturity, be it stress, competitive physical training, or even a chronic illness.

Eggs that are removed (usually for egg freezing), or inadvertently released from a follicle that has not had an LH surge, will simply not mature, and won't be able to fertilize. (This is why in vitro is perfectly timed).

Women who live a fast paced lifestyle neglect their body with much needed nutrients, vitamins and minerals in order to balance out their hormones. Those who are fast paced and on the go tend to receive less sleep at night, eat breakfast later in the day if at all, grabbing a quick processed lunch, and sometimes skipping dinner. Ultimately this never gives their body adequate sleep or food to receive the proper amount of vitamins, nutrients, and minerals. Because of this lifestyle, women are causing their hormones to be off balance, affecting their ovulation and sometimes ultimately their fertility.

When waking up in the morning, eating breakfast later in the day, or skipping breakfast will cause low energy for the rest of the day. Serotonin levels by this point are low, which leads to an increased appetite for carbohydrates (starchy foods), trouble sleeping, weight gain, migraines, or other disorders. Refined carbohydrates can affect the adrenal gland which produces hormones such as cortisol and norepinephrine. The adrenal glands are also responsible for producing estrone, which is also produced by the ovaries, and fat tissue linings.

The effects of estrone are dependent on the metabolic rate of your body. If your body starts to store estrogen on a regular basis, while still producing it on a regular basis, this will lead to an estrone hormonal imbalance. Some reasons why your body would store estrone is stress, weight gain, diet and lack of sleep.

Because the adrenal glands produce their own hormones in response to stress like cortisol, this will cause the body to produce too much estrogen, and not enough progesterone. Progesterone is an essential key that helps stabilize insulin levels, and sustain pregnancy.

Weather

Weather changes can also effect ovulation, because the body reacts to the changes in seasons. A lot of women are affected by the weather changes, and if their body is used to it being hot for example, their body temperature internally will be elevated as well. However, if suddenly it turns cold, their body will then react therefore throwing off ovulation. Most of the time delaying ovulation by a few weeks until their body adjusts.

Illness

Most small colds will not throw off ovulation or delay it, although if the cold turns into the flu or something else severe it could very well delay or prevent ovulation. Not only is the body's immune system down, but the appetite is also suppressed. Receiving the proper nutrients and vitamins will help the immune system, and ward off any illness that approaches as a threat.

Weight Gain/Loss

Rapid weight loss or weight gain can either prevent ovulation or delay ovulation sometimes for months. With weight gain, this will increase estrone levels, which can prevent ovulation. With rapid weight loss, this can affect the body's loss of muscle mass. Loss of muscle tissue leads to a loss of water content. Again depriving the body of the necessary nutrients and vitamins it needs.

Medications
There are some over the counter medications along with prescribed medications that can delay or prevent ovulation. Depending on the individual, this is a major culprit.

Stress
A lot of times women hear “Do not stress or your period will not come”. While some of that statement is true, it's not stress that keeps the period at bay, its stress before ovulation that does. If the body endures undo stress that it's not used to, raising the cortisol levels, this can prevent ovulation from occurring. In turn, when the period is “expected” to come, it does not, due to stress delaying or preventing ovulation.

Dramatic Change in Routine
Believe it or not, a change in routine can delay or prevent ovulation. The body can adapt to different settings, but sometimes it can alter the way the body functions. For example, if you are used to a quiet setting at home each night, but have company stay over for a few weeks, this can disrupt hormones in the body even though the body isn't stressed, causing ovulation to become delayed or not at all.

Extreme Exercise
Any intense workout or exercise routine can prevent ovulation or delay it. Ultimately causing stress on the body to over work itself, and sometimes overheat.

Inadequate Amount of Sleep
The body should receive about eight hours of sleep each twenty-four hour period. Although with the fast pace lives that most live, the body receives less than five each day. Because of this, some will find that their ovulation will either stop, or come extremely late in their cycles. The body repairs itself and nourishes itself during sleep time.

Diets, Foods, and Alcohol
Many women find themselves trying to lose weight before trying to conceive. However there are many diets out on the market that replace meals, or nutrients that the body needs and relies on. Certain chemicals in foods, such as hormonal foods, can interrupt how and when ovulation happens as well. It’s the same with excessive drinking or taking illegal narcotics.

Lack of Vitamins or Nutrients
Studies have shown that a lack of vitamins can cease ovulation especially a deficiency in Vitamin D. Vitamin D plays a crucial role in reproduction as it's essential in the production of sex hormones in the body.

In conclusion, if the body does not receive the proper nourishments it needs, it is possible that ovulation can be delayed for long periods of time.

Tools for Ovulation

Tracking ovulation to either avoid pregnancy or achieve pregnancy can be done with the following tools listed. It's always advisable to get to know your body first and how it works before using some of these suggested methods.

Cervical Mucus Tracking

Approaching ovulation, rising estrogen levels trigger the production of mucus from glands in the cervix. This mucus is a type of watery clear discharge. The closer it gets to ovulation, the more the mucus starts to increase and gets thicker, creating a type of egg white resemblance. This is known as fertile cervical mucus. If sperm is released before this mucus is present, even though it has a clear pathway to the cervix, it will die within twenty to thirty minutes due to the acidic environment of the vagina. Fertile cervical mucus can last as long as the estrogen continues to rise.

This is not a reliable source to track ovulation since sometimes ovulation can be delayed. Due to inadequate amounts of estrogen, or if the mucus producing glands in the cervix are damaged or non-responsive, there will not be enough mucus produced for the sperm to survive or even travel into the cervix.

However, pH balance also affects the cervical mucus. You can have an adequate amount of cervical mucus yet have too acidic or alkaline pH. Acidic cervical mucus can harm sperm, immobilizing it, called “Hostile Cervical Mucus”. This is common because of certain diets most people tend to eat. Their fertile cervical mucus is too thick, killing off sperm almost immediately in the vaginal region.

pH Balance Chart

Acidic-
pH balance level of 6 which is 10x more acidic - consists of consuming: bottled water, grapes, fresh water fish, watermelon, strawberries, pineapple, and brown rice.

pH balance level of 5 which is 100x more acidic- consists of consuming: Coffee, honey, bread, mayonnaise, cooked corn, and soft cheeses.

pH balance level of 4 which is 1,000x more acidic- consists of consuming: beer/wine, ocean fish, peanuts, chicken, chocolate, white sugar, tomato sauce, and turkey.

pH balance level of 3 which is poor quality- consists of consuming: pork, beef, soda, processed foods, canned foods, drugs, tobacco, and alcohol.

Most of these foods need to be avoided prior to ovulation, or consumed sparingly. A normal pH balance which can be tested by saliva strips or urine tests needs to be 6.75 to 7.25 to maintain optimal health. Let's look at alkaline pH balance next.

Alkaline-
pH balance level of 7 (neutral)- consists of consuming: filtered tap water, yogurt, corn, coconut oil, sprouted breads, sesame seeds, and butter.

pH balance level of 8 which is 10x more alkaline- consists of consuming: Brussels sprouts, oats, cooked broccoli, tofu, raw almonds, wild rice, olives, and bell peppers.

pH balance level of 9 which is 100x more alkaline- consists of consuming: avocados, green tea, most lettuce, raw zucchini, raw tomato, green beans, garlic and chives.

pH balance level of 10 which is 1,000x more alkaline- consists of consuming: raw spinach, raw broccoli, raw onions, red cabbage, cucumber, lemon/lime, and raw celery.

Since high acidic cervical mucus can immobilize sperm, it's best to have a medium balance of pH levels during the time of ovulation. High alkaline cervical mucus tends to favor the X (boy) sperm, while the medium or acidic (not too acidic) can favor the Y (girl) sperm.

Men can also be affected by acidic and alkaline pH balance in their semen. Most the time, semen is generally alkaline in nature because it helps protect the sperm from the acidic environment of female cervical mucus. However, stress, medications, lack of vitamins, foods/diets, tobacco use, and abnormalities in the seminal vessels can cause acidic semen, which will lead to fertility problems.

Ovulation Prediction Kits and Saliva Microscope

Ovulation prediction kits sold over the counter in stores and on the internet can be used to detect the luteinizing hormone, which reaches at a peak about thirty-six to forty-eight hours prior to the ovum being released. Luteinizing hormone will always be present in the body as it's produced in small amounts, although does reach at a high prior to ovulation occurring, this method should also not be relied upon. It is possible to ovulate the day of the positive result.

Ovulation prediction tests have two lines that appear on the test itself once urine comes in contact with the test strip. One line indicates that the test is working as it should, and the other line detects certain levels of luteinizing hormone present in the urine. While these tests can differ in detection amount, each one will still work the same.

Depending on the brand of test being used, both lines on the test need to be equal to, or the luteinizing hormone test line result needs to be darker in order to indicate a positive result. A lot of times while testing for ovulation, a test line and the control line will be the same color, however when testing again the luteinizing test line will be darker than the control line, indicating the “real” positive surge.

Luteinizing hormone generally rises at a high peak around 2:00 p.m., around ovulation time. Although sometimes it can be around 10:00 a.m. Urine should be held for at least two to four hours prior to testing limiting fluid intake. An ovulation test is a snap shot of when ovulation should occur. However, it does not always mean ovulation is going to occur.

Polycystic Ovarian Syndrome can compromise the results of an ovulation test. Polycystic Ovarian Syndrome develops when the ovaries overproduce androgens (testosterone), which often results in an overproduction of luteinizing hormone produced by the pituitary gland. In result, the test may constantly remain as positive, or close to.

Hcg (Human Chorionic Gonadotropin) hormone can affect the results of an ovulation prediction kit as well. A lot of infertility patients using ARTS (Artificial Reproductive Technologies) medications such as the Ovidrel Trigger Shot, which is the recombinant of Human Chorionic Gonadotropin, will turn an ovulation test result positive. Clomifene (known as Clomid) will also affect the results of an ovulation test result as well if taken too soon after the last pill.

Each cycle will also surge different amounts of luteinizing hormone, therefore test results will differ from each cycle to the next.

Determining a Positive Result

Telling an ovulation test apart from positive can be difficult especially if those do not have experience with ovulation testing. There are several days where the luteinizing hormone will have a slow rise and the test line and control line will be equal to the same color. However the next time testing, the test line will be darker than the control line indicating a positive result. If the test line is darker than the positive, this means that it's a true positive, and it would be best to go by this result.

Fade in and out Pattern

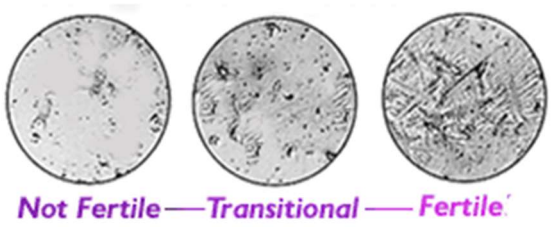
This may happen from time to time during the follicular phase since luteinizing hormone is present throughout the body in different amounts. In other-words, during testing, the test line may look as if it is turning positive. However, the next time you test the test line can be faint or barely there, and it can continue to fade in and out until you get a positive result.

Saliva Scope Testing

Another way to test for ovulation is using the Saliva Scope. This is a microscope that tests to see if a woman is “ferning”. As estrogen increases, the electrolytes in saliva increase which can be seen through a microscope with dried samples of saliva. This change in hormones will appear in crystal patterns or “ferning” when viewed. These patterns mean that ovulation is about to take place.

Understanding Saliva Results

Determining what each pattern means can be difficult, and does take a while to understand the ferning periods in the cycle itself. A Not fertile result will consist where the dot pattern and lines indicate low fertility. A result of transitional will have small ferning patterns (crystal forms) appear among the spots and lines indicating that ovulation could possibly be about three to five days out. At this time, there should also be cervical mucus changes as well.

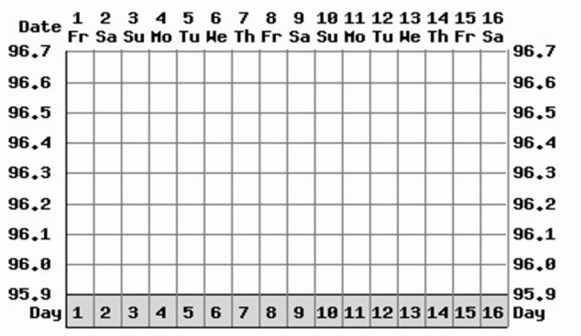


A fertile result indicates a strong ferning, or crystal patterns that dominate the saliva sample. Ovulation is about to occur, or already occurring. At this time conception is possible. Fertile cervical mucus should also be present about this time.

It is best to test first thing in the morning prior to eating, drinking or brushing teeth. Most saliva scopes can be purchased online or over the counter. While this is a great way to track a fertile period, it does not always confirm ovulation has taken place.

Charting Basal Body Temperature

One of the most reliable ways to confirm that ovulation has occurred is Basal Body Temping. However, this only works if done correctly. This can be used to avoid pregnancy as well while using cervical mucus monitoring, and ovulation tests. Confirming ovulation happens when a basal body temperature stays risen for more than three days above the cover line after a thermal shift.



There are two ways to properly chart basal body temperatures: one is vaginally, and one is orally. There is a special thermometer that also needs to be used called a basal body thermometer which can be purchased just about anywhere. A regular thermometer will not work for basal body temperatures.

The difference between the two is that the basal body thermometer measures the basal body temperatures by the 10th of a degree whereas a regular thermometer measures temperatures by whole degrees. A basal body thermometer will be more precise and narrows down the temperature to determine ovulation.

Both orally and vaginally will be accurate for the most part. However, taking the temperature vaginally will tend to give slightly higher temperatures. The most important thing to remember is that the temperatures need to be taken consistently, not switching mid-cycle. If the mouth is left open while sleeping, or temperatures seem to be erratic while temping orally, then it's best to try taking the basal body temperatures vaginally.

Basal body temperatures need to be taken at the same time each day, normally right when waking up in the morning, limiting movement, and having four hours consecutive sleep, if not more. There are several factors that can affect a basal body temperature, which includes the following:

- Waking up in the middle of the night (movement causes body temperatures to rise)
- Drinking alcohol the night prior (this causes a rise in body temperature as well)
- Illness/fevers/colds/sore throats
- Stress
- Travel
- Breastfeeding
- Change in climate
- Sleep disturbances
- Changes in room temperature
- Changes in sleeping conditions (such as cuddling/or using heavy covers)
- Some medications may interfere with temperatures
- High protein diet the night prior

These can all cause basal body temperatures to either rise at a high or in some women drop to a low. It's not so much the temperature that should be looked at, as much as the pattern of the temperatures. Basal body charts go by typical ovulatory patterns, especially during the follicular phase of the cycle. The one temperature that matters is the “thermal shift” to indicate ovulation has occurred.

Temperatures can be considered accurate for up to 30 minutes before or after normal waking time although it's best to set an alarm, at least until a few charting cycles can be recorded.

Chart Patterns

The main temperature you are looking for is the thermal shift pattern. Shifting your follicular and entering your luteal phase. Sometimes it's not as easy to spot when charting.

Slow/Sloping Rise: Sometimes it will take three to five days for temperatures to completely rise to confirm ovulation. It may be curving or a steady shift by one tenth of a degree.

Fallback Rise: Basal body temperature may significantly rise one day and drop the next. On the third day it will have a sustained rise. However keep in mind that other attentions to fertility signs during the ovulatory phase are important to, as one could also have a “fluke” in rise.

Sawtooth Rise: This is a frequently occurring pattern that sounds just like its name. Temps will rise, and fall a little for a few days and rise again. This will continue throughout the luteal phase.

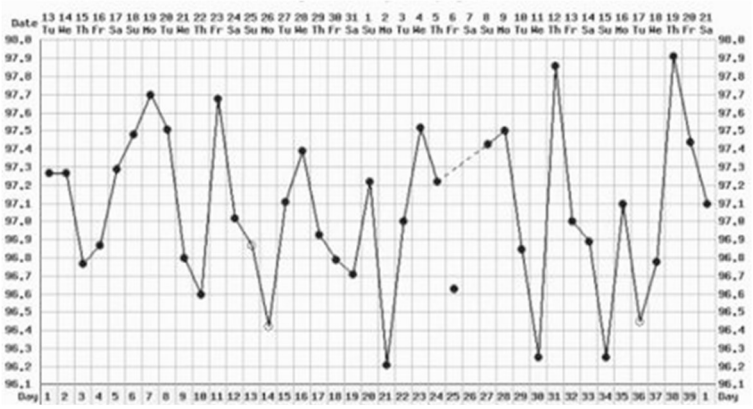
In some unique situations long cycles might be noticed, either as a pattern for the individual or a chart pattern. Long cycles can be very frustrating, but there might also be multiple patches of fertile cervical mucus, indicating that the body geared up to ovulate, and did not.

There are times where erratic temperatures will also be noticed, but still indicating ovulation is occurring. It's always good to keep an eye on the charts for a few cycles to better identify

fertile patterns.

Annovulation Charts

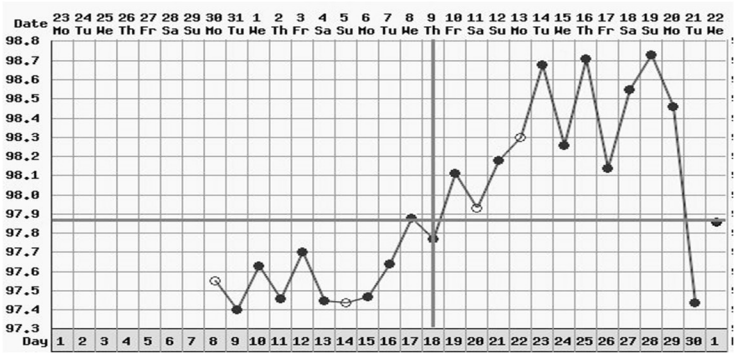
Annovulatory charts are somewhat easier to recognize. Some charts may be very erratic showing no thermal shift indicating that ovulation has not occurred. These temperatures will be all over the place, although there are times were basal body temperatures will be. An annovulatory cycle can happen at least twice per year. Sometimes it will be less dramatic as this chart, and sometimes the cycle will be of regular length or even longer.



Erratic charts such as the one pictured, may indicate a thyroid, or polycystic ovarian syndrome. It is common for basal body charts on women who have polycystic ovarian syndrome to have erratic temperatures, that are dramatic, and do not show any pattern or thermal shifts what so ever. Estrogen surges cause basal body temperatures to dip low, and progesterone rises high. That is why during an annovulatory cycle there is no regular pattern.

Recognizing Ovulation

Learning a basal body ovulatory pattern is usually recognized after the first three cycles of consecutive temping. Some women will have what's known as an ovulation dip. This is where the temperature will dip below what the usual “cover line” is in her cycle.



A cover line is drawn across a basal body chart to split the follicular phase and the luteal phase, and show a pattern for each cycle. Generally the cover line will stay around the same each cycle. The cover line is determined by a temperature being .2 degrees (Fahrenheit) higher than the last six temperatures prior.

A normal ovulation chart will determine if temperatures are being recorded correctly. For the most part ovulation charts are accurate for determining ovulation. However this only determines if ovulation takes place. Once the temperature has a thermal shift and rises above the determined cover line, the ovum has already disintegrated back into the body, therefore conception cannot happen. This is why ovulation prediction kits or cervical mucus monitoring is taken alongside with charting basal body temperatures.

A basal body temperature will start to decline as the hormone progesterone declines during the luteal phase, triggering the onset of a new menstrual cycle.

Flatline Temperatures

Flatline temperatures can indicate that the battery in the basal body thermometer is going dead, so temperatures will be the same sometimes for three days or so until the battery is changed.

Corpus Luteum Dip

Normally between two to five days past ovulation a basal body temperature may dip just slightly below the cover line. This is called the corpus luteum dip. The reason for the dip is due to progesterone being produced in effective amounts from the corpus luteum. After this dip a temperature will still rise until the luteal phase ends unless pregnancy is achieved.

Temperatures Staying High

The length of the luteal phase generally never changes however it can vary by a day or two. If ovulation has been confirmed, and a basal body temperature stays above the cover line, more than the length of the luteal phase for 18 consecutive days, it's a high chance pregnancy was achieved.

Lufs Syndrome

While charting basal body temperatures is an accurate way to determine if one is ovulating, there can also be rare cases of Lufs Syndrome. Better known as Luteinizing Unruptured Follicle Syndrome and referred to as trapped egg syndrome. It's a very rare condition in which the follicle develops to mature an egg. However the follicle never breaks open to release the egg. Luteinizing hormone rises and basal body temperature spikes, all usual signs of ovulation occur, however there is no ovulation. This condition is more likely to happen with women who have endometriosis and women who have PID (Pelvic Inflammatory Disease).

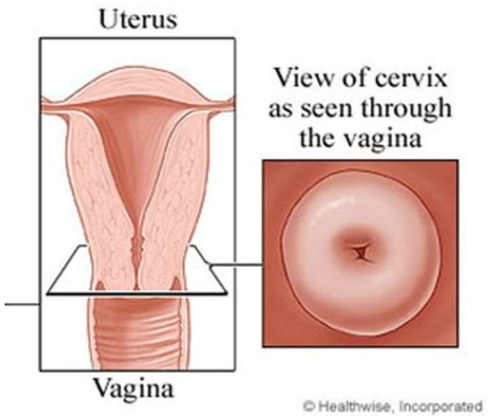
Ovulation Spotting and Mittelschmerz

Ovulation spotting is common, as this is when the follicle fills with antrum fluid, it also fills with blood. Once the egg has matured and is ready to be released, blood also may be released along with the fluid. This can happen before, during, or even after ovulation occurs. The follicle starts to open up, once it starts the fluid and blood leak out, yet the egg is still inside the follicle. If the blood makes it down through the fallopian tubes, down the cervix and into the vaginal canal, a woman may see “mid cycle” spotting. Ovulation bleed should be light pink in color and also be somewhat mixed with fertile cervical mucus.

Mittelschmerz is referred to as “middle pain”, and about 1 in 5 women have Middelschmerz. The pain is associated with ovulation, and can occur before, during and even after ovulation. The pain is from the follicle swelling, and the fluid inside the follicle sac. Once the sac opens, antrum fluid is released, which can also cause “middle pain”. While women can still get Mittelschmerz and not ovulate, this condition is due to the swelling of the follicle in the ovary.

Checking your Cervix Position

Another great way to tell if ovulation is approaching, or has approached, is by checking the cervix position. This needs to be checked at the same time each day during the ovulatory period. The cervix will change position during the menstrual cycle, under the influence of oestrogen. During the follicular phase when you are not fertile, the cervix is low, firm and closed. It feels like the end of a nose.



As ovulation approaches and you enter the ovulatory period, the cervix will feel Soft, High, Open, and Wet (this is known as S.H.O.W). After ovulation takes place the cervix will revert back to its low and closed position for the majority of the menstrual cycle. The cervix only opens during the fertile phase of the cycle allowing sperm to reach the uterus.

Checking your cervix position isn't always easy, but use which way is more comfortable. Some women prefer to sit on the toilet while checking their cervix, and some squat down on the floor, bending their knees up to check their position. Because the cervix moves during the menstrual cycle at different times of the day (due to hormones fluctuating), it is best to find a time that is convenient for you and stick with that time. Always wash your hands prior to checking your cervix.

CERTIFIED FERTILITY COUNSELOR COURSE - SESSION 3 – QUESTION & ANSWERS

NAME: _____

ADDRESS: _____

PHONE: _____

FAX: _____

E-MAIL: _____

Please be sure to fill out the information above, complete the test and e-mail it back to us at iridology@netzero.net. We will grade your question & answer session and will let you know if we have any questions or concerns.

1. Explain atresta.
2. How many eggs does a woman use in her lifetime?
3. What's the difference between egg quality and egg quantity?
4. By skipping breakfast this causes an increased appetite for what?
5. What are ten ovulation disruptions?
6. How do you know when cervical mucus is fertile?
7. What is hostile cervical mucus, and how can you get it?
8. What can interfere with ovulation prediction kits?
9. What is pH and how does it relate to cervical mucus?
10. Experiment: Test your own pH level, and record the results. You may use saliva pH strips or urine pH strips. If your level of pH is not where it should be describe why, and what your diet was like during the last few days.
11. Men are affected by pH balance in their semen. T/F
12. How do ovulation prediction kits work?
13. What is a fade in fade out pattern?
14. What is saliva scope testing?
15. How does saliva scope testing work to determine ovulation?
16. What does a transitional result mean in saliva scope testing?
17. How does basal body temperature work in determining ovulation?
18. What is the difference between a regular thermometer and a basal body thermometer?
19. What's the difference between temping orally verses vaginally?
20. How many hours of sleep is needed for an accurate basal body temperature result?
21. What are twelve things that can interfere with basal body temperatures?
22. What's a thermal shift?
23. How long are temperatures considered accurate after waking?
24. What are the three charting patterns, and describe them?
25. How do you determine an annovulatory chart?
26. What's a cover line?
27. How do you determine a normal ovulatory chart?
28. What does a flat lined temperature mean?
29. What's a corpus luteum dip?
30. What is Lufs syndrome, and who is likely to have it?
31. Explain ovulation spotting, and when does it occur?

32. Who gets Mittelschmerz, and what is it?
33. What does S.H.O.W. Mean?
34. When does the cervix open?