

Understanding Mira Data

Advanced Quantitative Fertility Hormone
Monitoring System



For Healthcare Professionals

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Science Behind Mira

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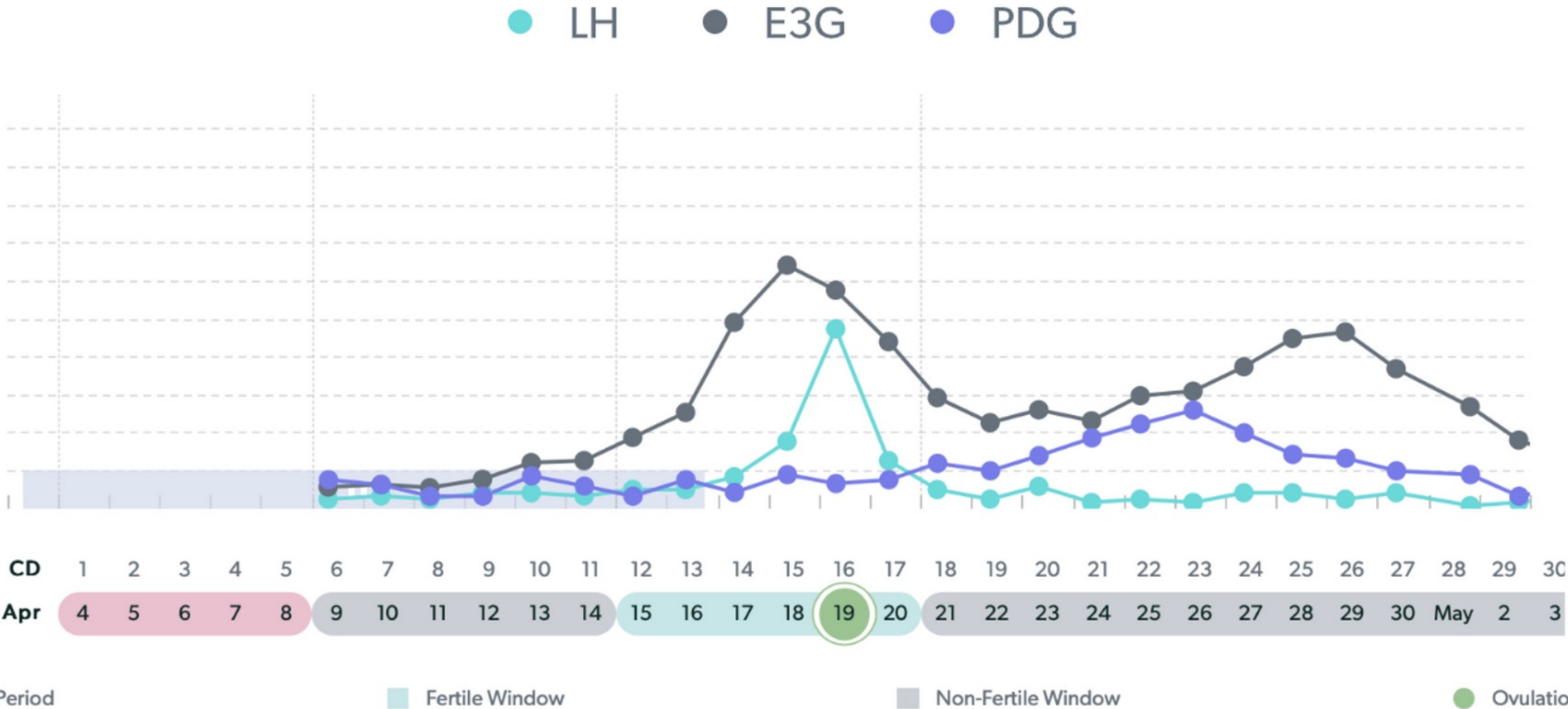


Mapping full hormone cycle with Mira

1. E3G rises, leading up to ovulation

2. LH surges, signaling the ovary to release the egg

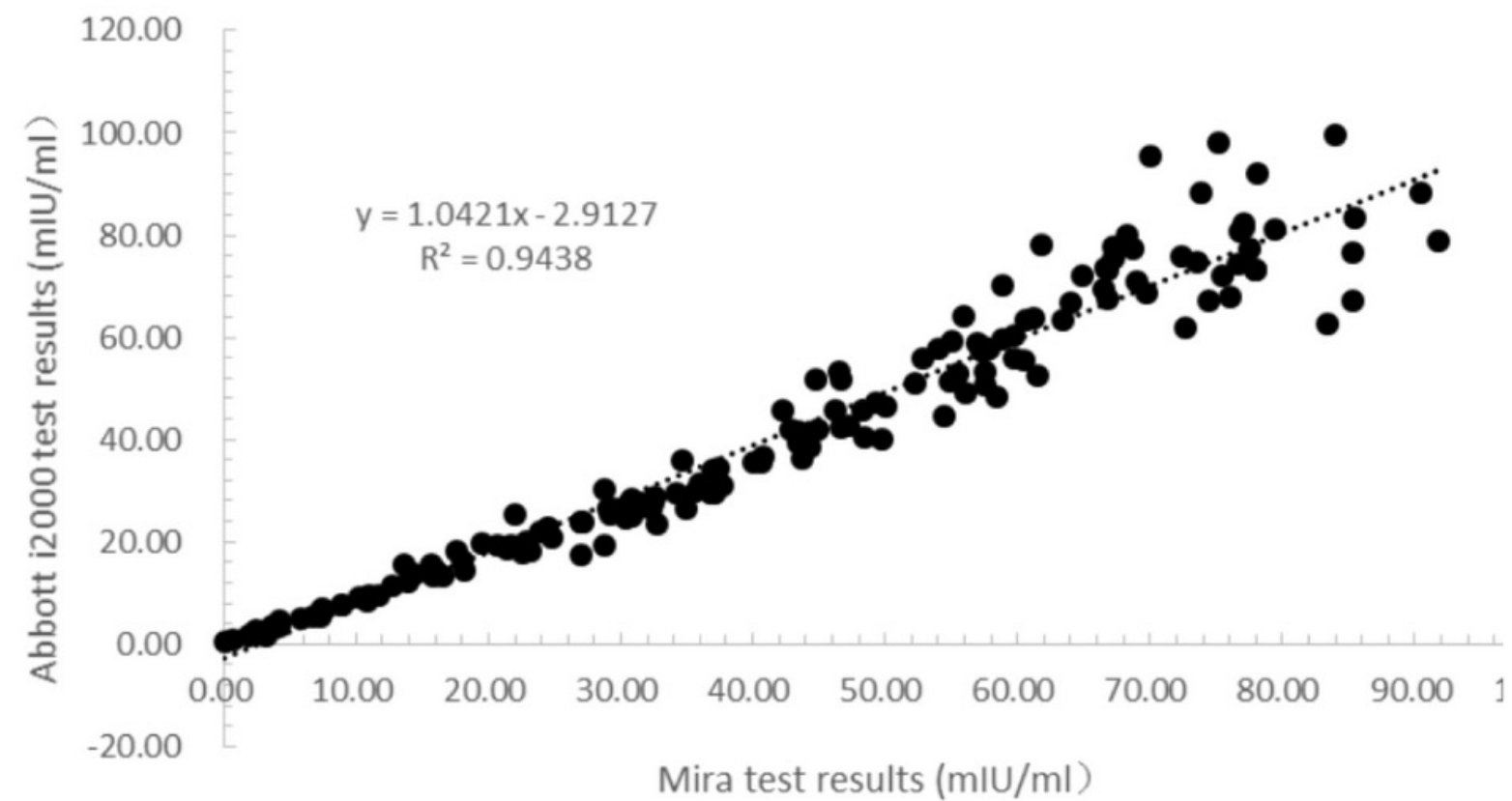
3. Elevated PdG confirms ovulation occurred



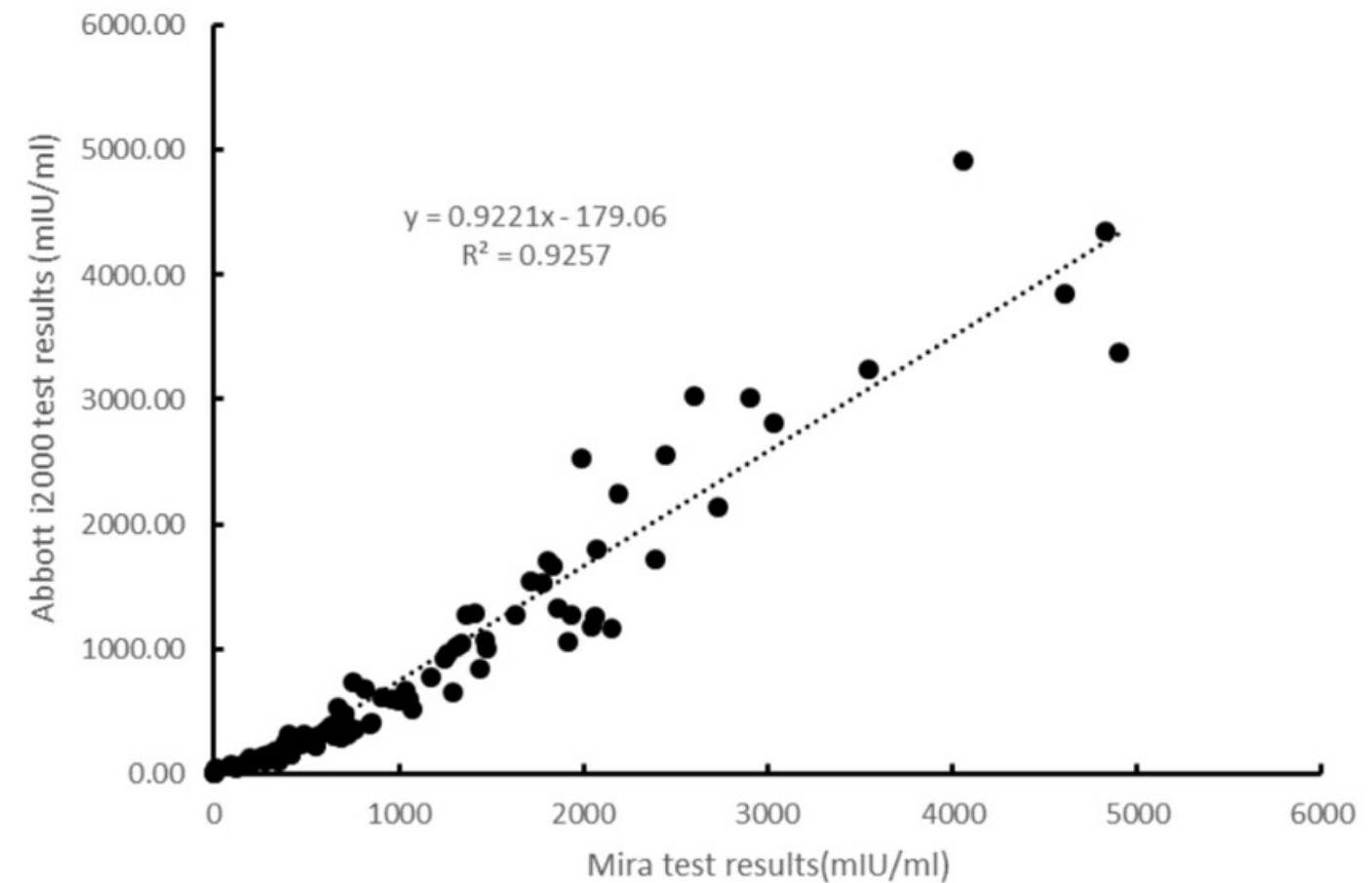
Mira's technology is based on the immunofluorescence method with accuracy equivalent to laboratory readers

The Mira LH and hCG measurements strongly correlated with Abbott ARCHITECT i2000SR. A good linear correlation ($R^2 > 0.9$) was displayed by The Mira Analyzer and Abbott ARCHITECT i2000SR for both LH ($R^2 = 0.944$; slope = 1.042) and hCG ($R^2 = 0.926$; slope = 0.922)*.

LH



hCG



* Based on internal research studies



The Science Behind Mira's Health Tracking System

Mira measures multiple female hormones.

Mira's technical specifications are far superior to other home testing products in the industry, meeting clinical needs.

Precision (Coefficient of Variation)

| Hormone changes during Menstrual cycle | LH wand | E3G wand | hCG wand | Industry Standart |
|--|---------|----------|----------|-------------------|
| Intra-Lot | 10% | 15% | 10% | 15% |
| Inter-Lot | 15% | 20% | 15% | 20% |



Comparison of urinary and serum reproductive hormones referenced to true ovulation (n=40)

There exists strong correlations between urinary and serum hormones as studied by peer-reviewed publications

Urinary and serum reproductive hormones showed excellent agreement and may be used interchangeably. The beginning of the surge in serum and urinary LH was an excellent predictor of ovulation. The rise in progesterone and E3G above baseline was a consistent marker of luteinisation confirming ovulation. Both LH and progesterone surges delivered clear, sharp signals in all volunteers, allowing reliable detection and confirmation of ovulation.

Figure 1 – Serum LH and Urinary LH

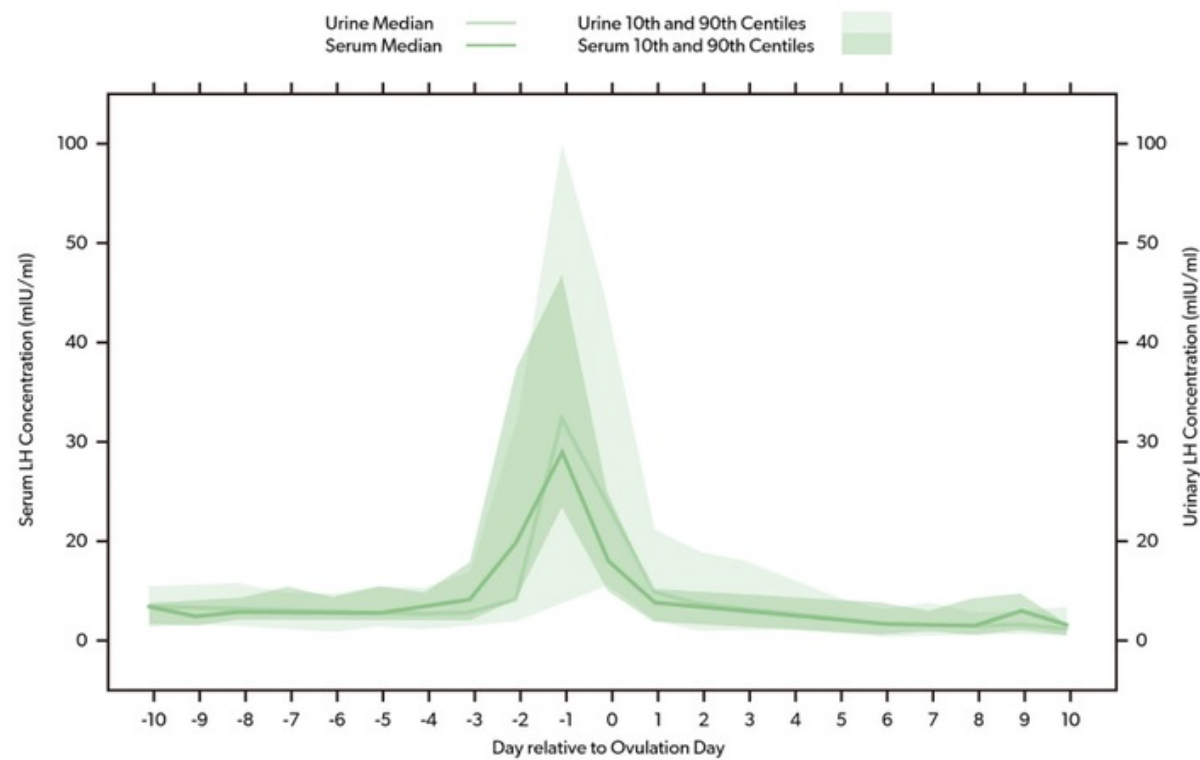


Figure 2 – Serum E2 and Urinary E3G

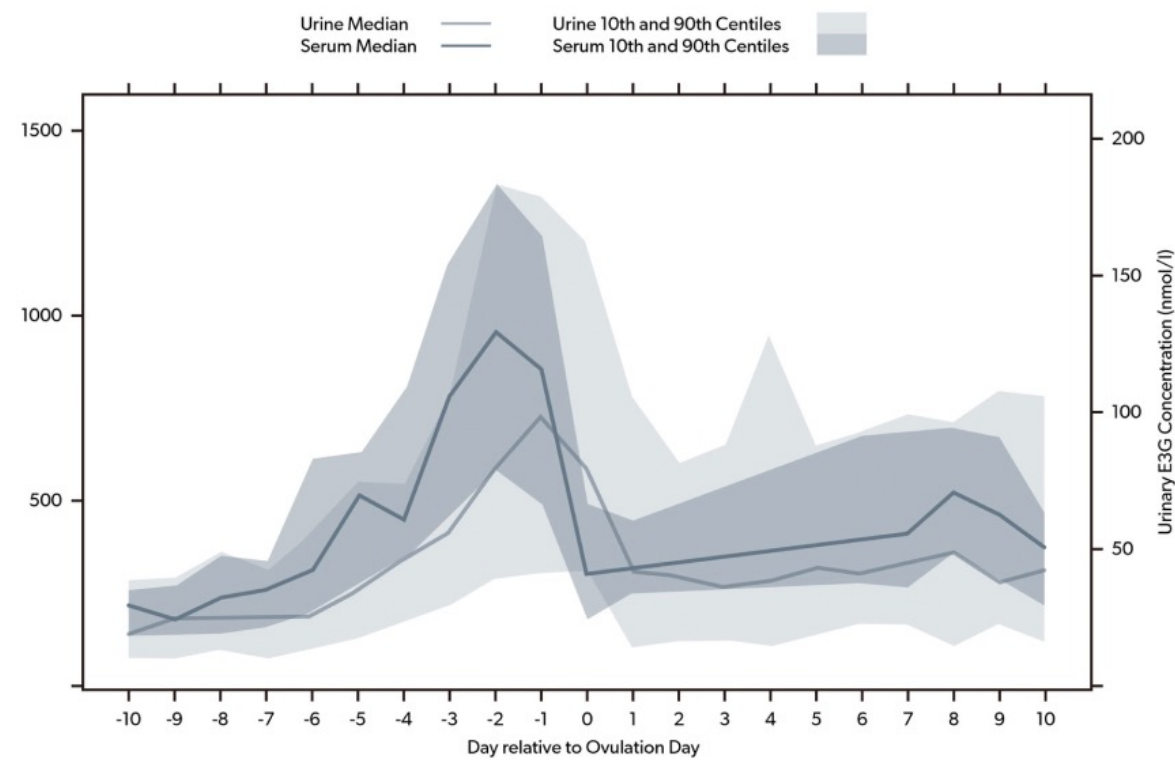


Figure 3 – Serum Progesterone and Urinary PdG

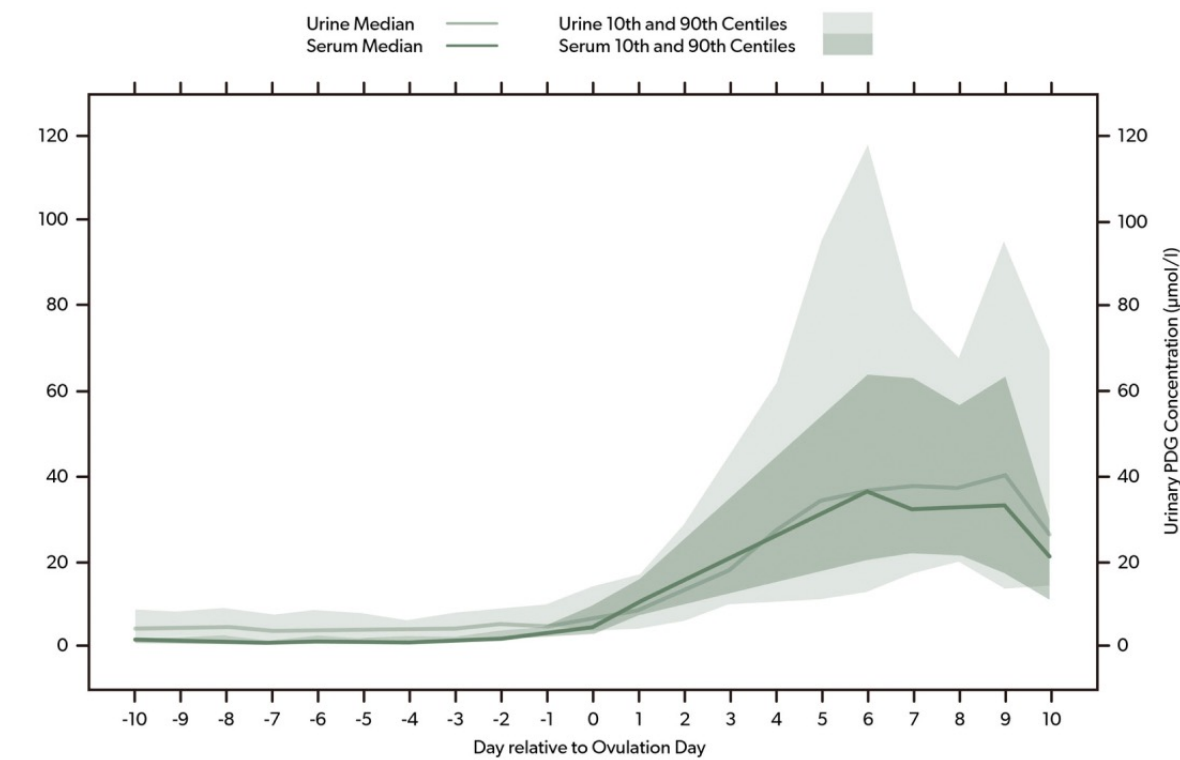
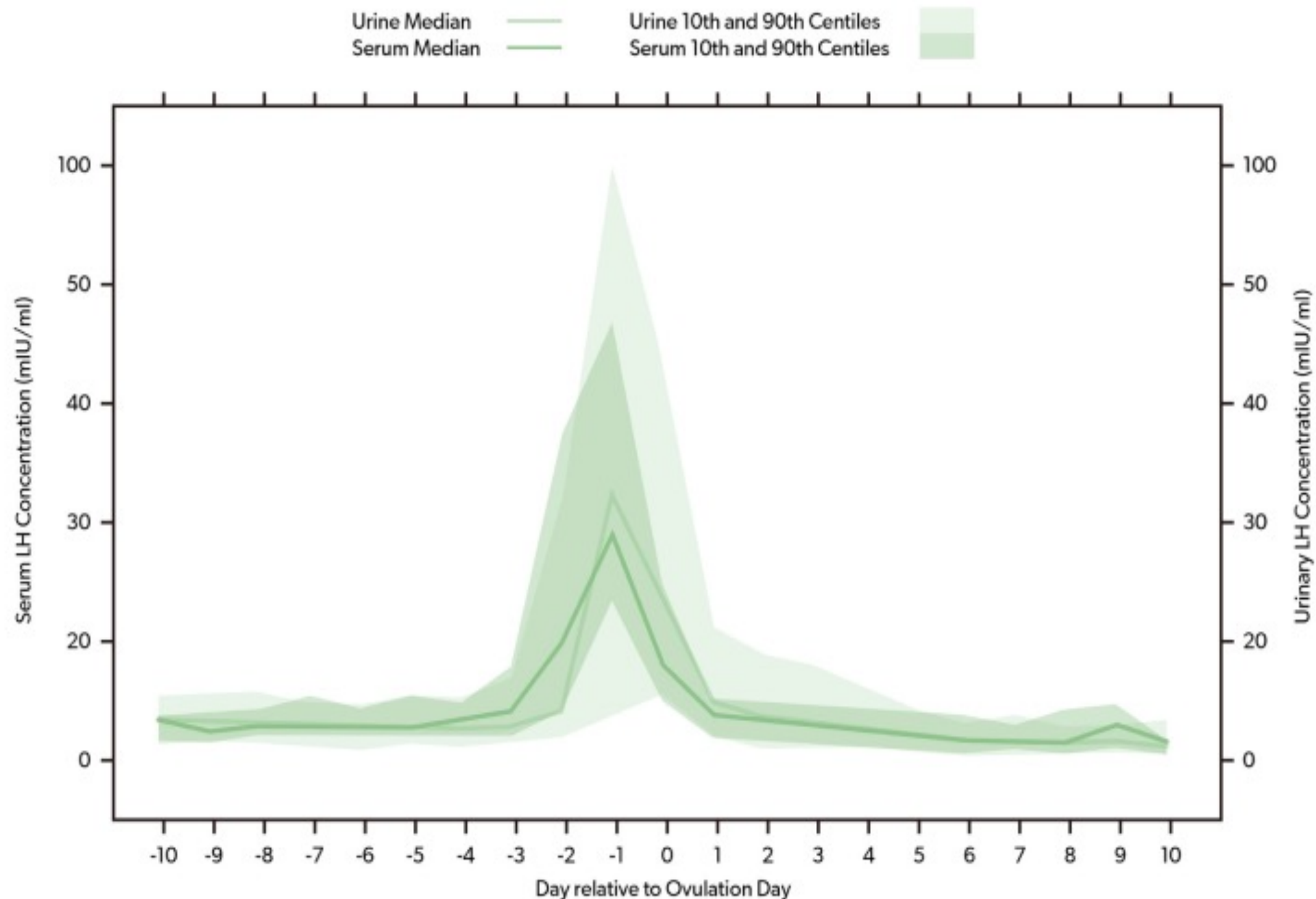


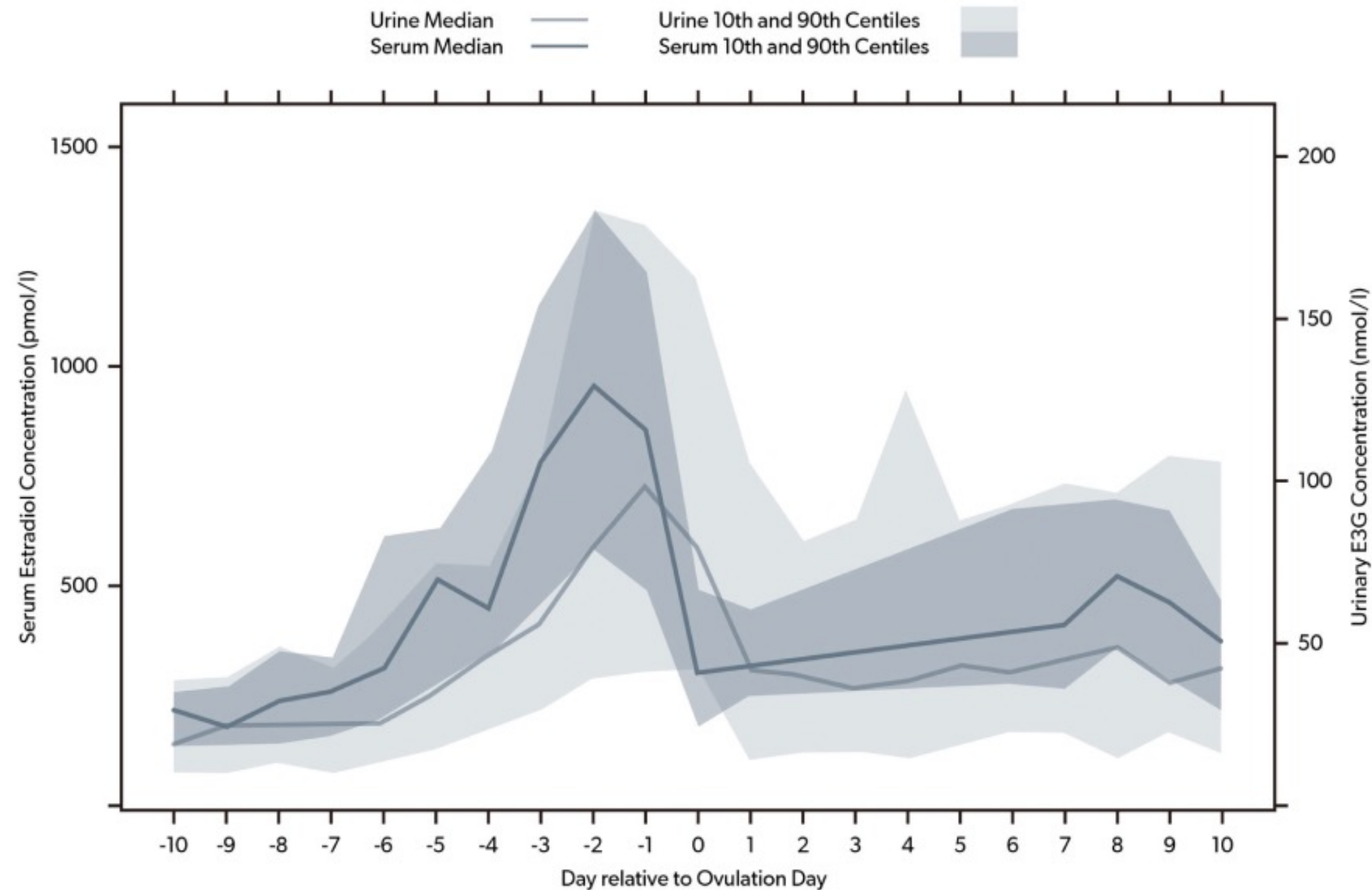
Figure 1 – Serum LH and Urinary LH Correlation



Serum (dark green, mIU/ml) and urinary (light green, mIU/ml) LH ranges referenced to the day of objective ovulation (median and 10th–90th percentile range). Measurements in urine are compared with serum measurements from the day before, the correlation is $r=0.69$, demonstrate that urinary LH and serum LH are highly correlated and show good agreement. Serum and urine levels of LH may be used interchangeably.



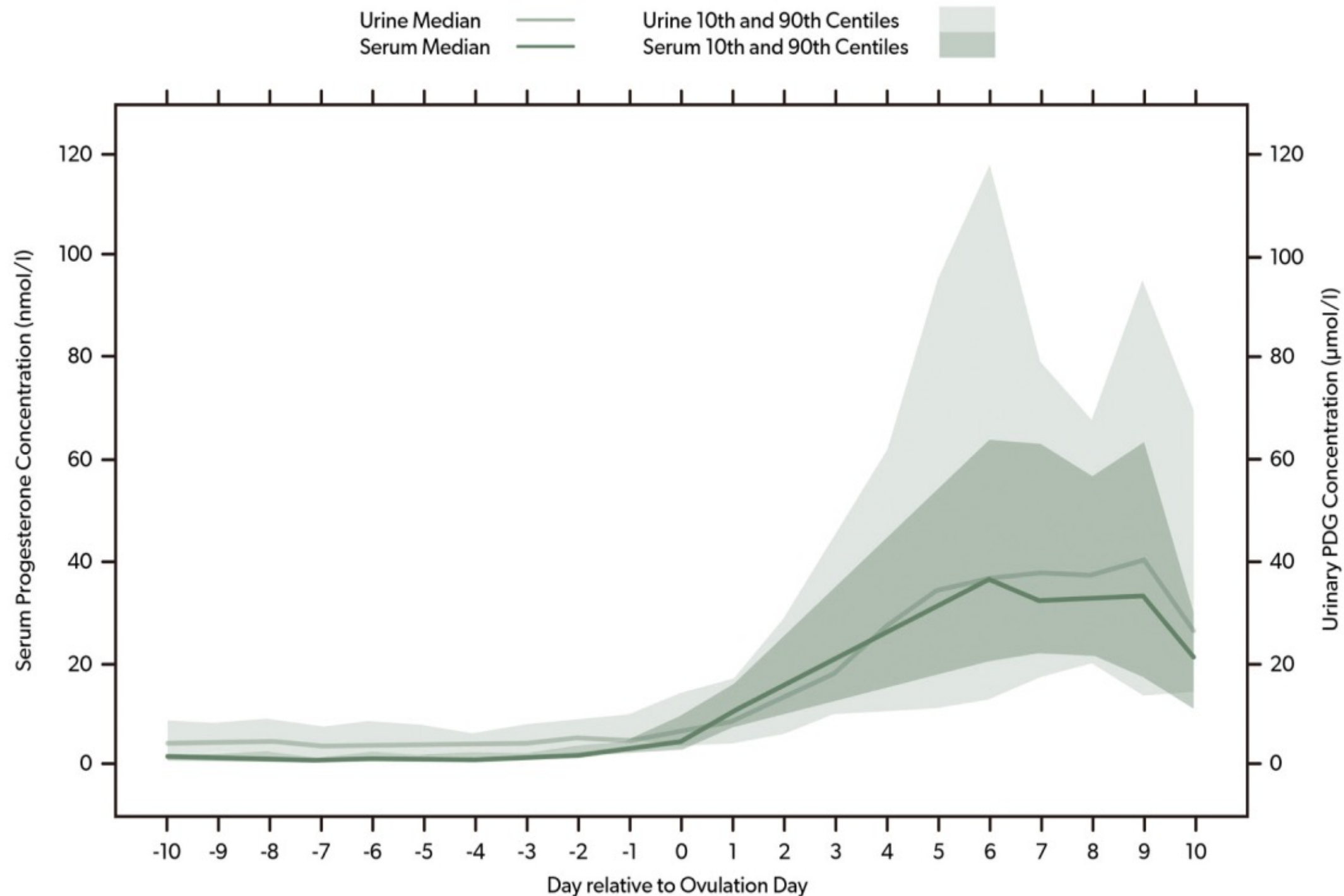
Figure 2- Serum E2 and Urinary E3G Correlation



E2 (dark grey, pmol/l) and E3G (light grey, nmol/l) nomogram referenced to the day of objective ovulation (median and 10th–90th percentile range). Measurements in urine are compared with serum measurements from the day before, the correlation is $r=0.54$. Urinary E3G and serum E2 are highly correlated and show a good agreement. Serum E2 and urinary E3G may also be used interchangeably.



Figure 3 - Serum Progesterone and Urinary PdG Correlation



Progesterone (dark green, nmol/l) and PdG (light green, µmol/l) ranges referenced to the day of objective ovulation (median and 10th–90th percentile range). Measurements in urine are compared with serum measurements from the day before, the correlation is improved $r=0.82$. Urinary PdG and serum progesterone are highly correlated and show good agreement. Serum progesterone and urinary PdG may be used interchangeably.



Dynamic range of Mira tests

| Hormone changes during Menstrual cycle | LH | E2 or E3G | hCG | Progesterone or PdG |
|--|---|--|-----------------|---------------------|
| Serum | 0-200 mIU/ml | 0-2000 pg/ml | 0-300000 mIU/ml | 0-20 ng/ml |
| Urine | 0-200 mIU/ml | 0-4000 ng/ml | 0-300000 mIU/ml | 0-15 µg/ml |
| Mira test | 0-400 mIU/ml, customizable to 0-1000 mIU/ml | 0-640 ng/ml, customizable to 0-4000 ng/ml | 0-100000 mIU/ml | 0-30 µg/ml |



Why Mira?

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Why Mira?

1. Numeric hormone levels

No need to manually read test strips, no more fading lines, and no generic manufacturer ranges.

2. LH + E3G + PdG all at once

Unlike traditional LH test strips, full hormone patterns are obtained allowing for more accurate ovulation prediction and fertile window identification.

3. Hormone patterns over multiple months

It provides better clinical insight, allowing for tailored treatments in a more individualized way.

✔ Mira is especially ideal for

- PCOS or other hormonal imbalances
- Unexplained fertility issues
- Pregnancy after miscarriages
- Conceiving after 35



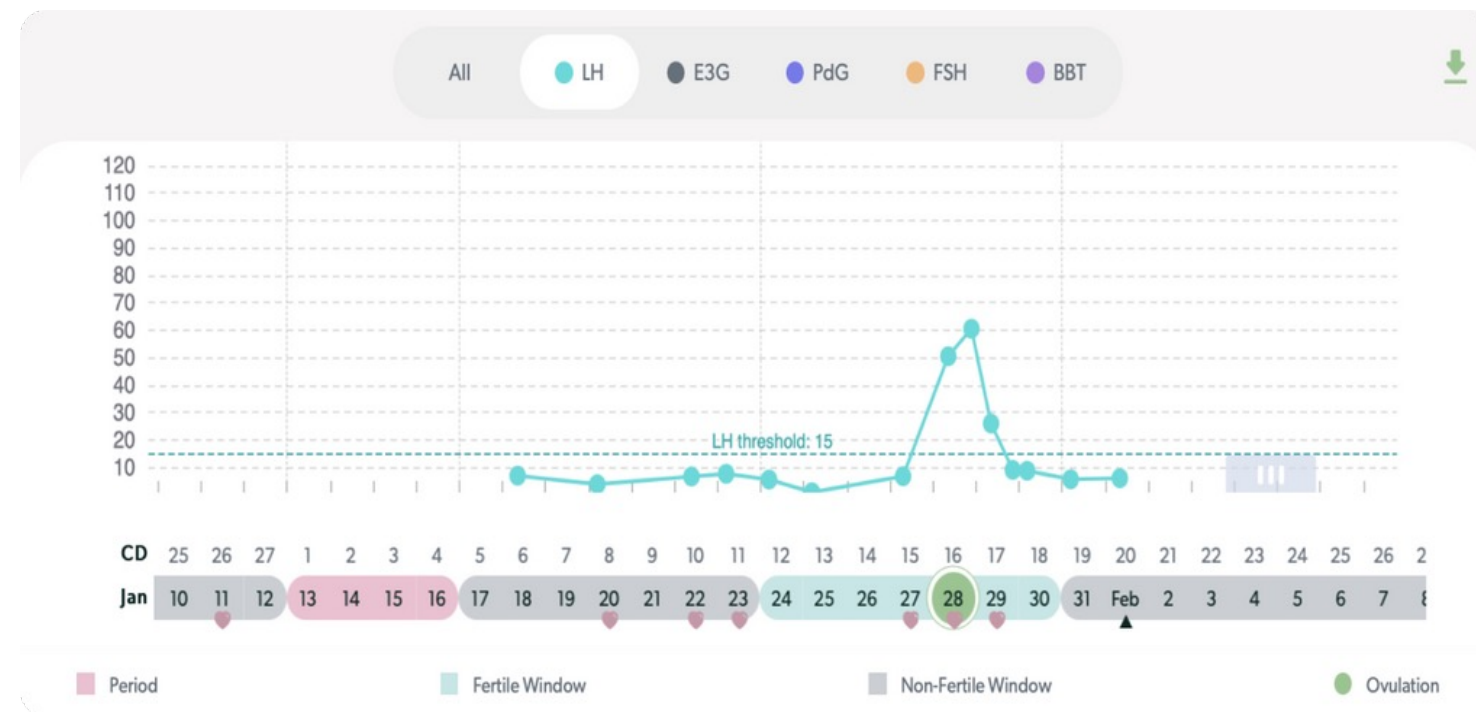
100% personalized results

How is Mira different?

- Unique thresholds instead of generic manufacturer thresholds
- Fertile window is detected by rising E3G pattern
- Peak fertility is highlighted by finding any type of LH surge

After 2 cycles Mira's personalized predictions and thresholds are optimized

Healthy Cycle – Common single LH surge: LH threshold 15



PCOS – Suppressed biphasic LH surge: LH threshold below 10



Mira vs. other methods



Mira Fertility



BBT's



Fertility Bracelets



OPK'S



Basic Hormone Monitors



Fertility App

| | Mira Fertility | BBT's | Fertility Bracelets | OPK'S | Basic Hormone Monitors | Fertility App |
|--------------------------------------|--|-------|---------------------|-------|------------------------|---------------|
| 99% Accuracy | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| Full Fertile Window Tracking | ✓ | ✗ | ✗ | ✗ | ✓ | ✗ |
| Numeric hormone levels | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Laboratory Grade Accuracy | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Uncover Unique Hormone Patterns | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| AI-Powered Cycle Analysis | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Automatic Cycle Charting | ✓ | ✓ | ✓ | ✗ | ✓ | ✗ |
| Irregular cycle & PCOS Friendly | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Fast, Discreet, Not-invasive, & Easy | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Future Expandability | Track miscarriage, fetal health, ovarian reserve in the future — all using the same Mira Analyzer! | ✗ | ✗ | ✗ | ✗ | ✗ |



Hormone Patterns

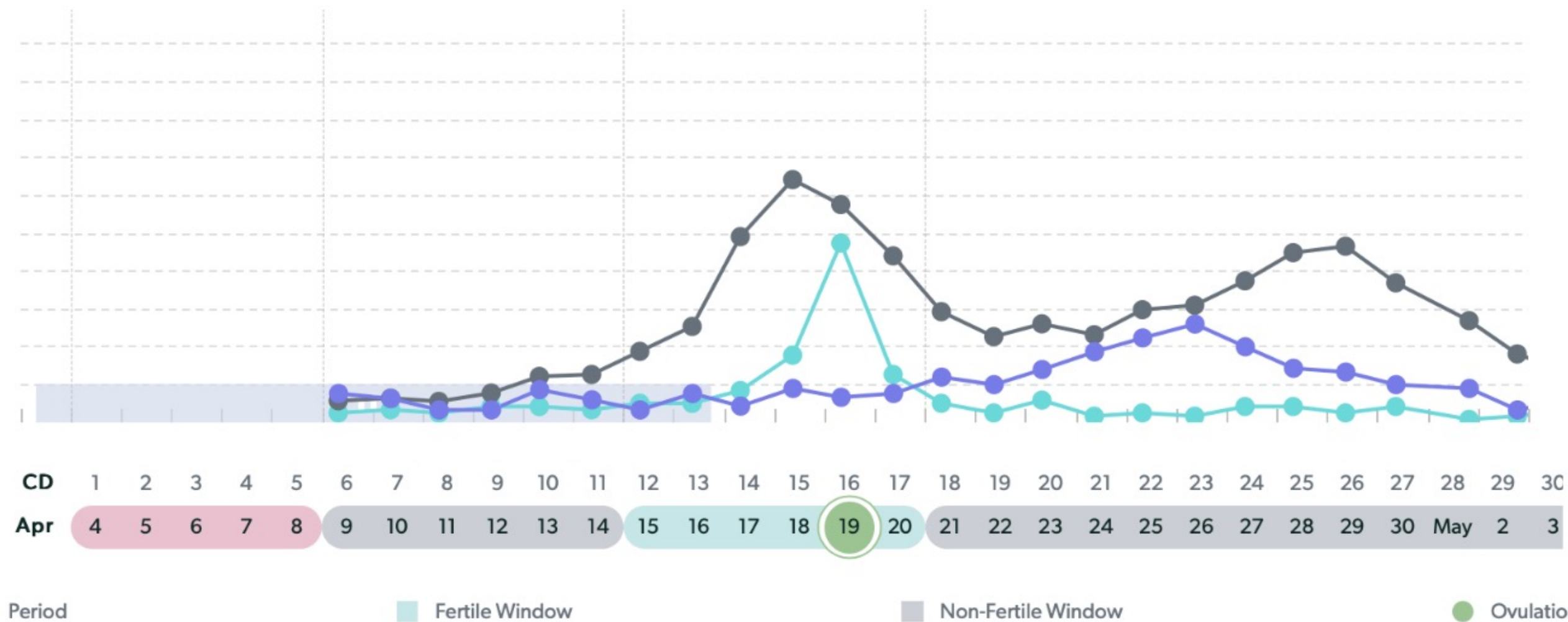
Healthy patterns

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Healthy cycle example

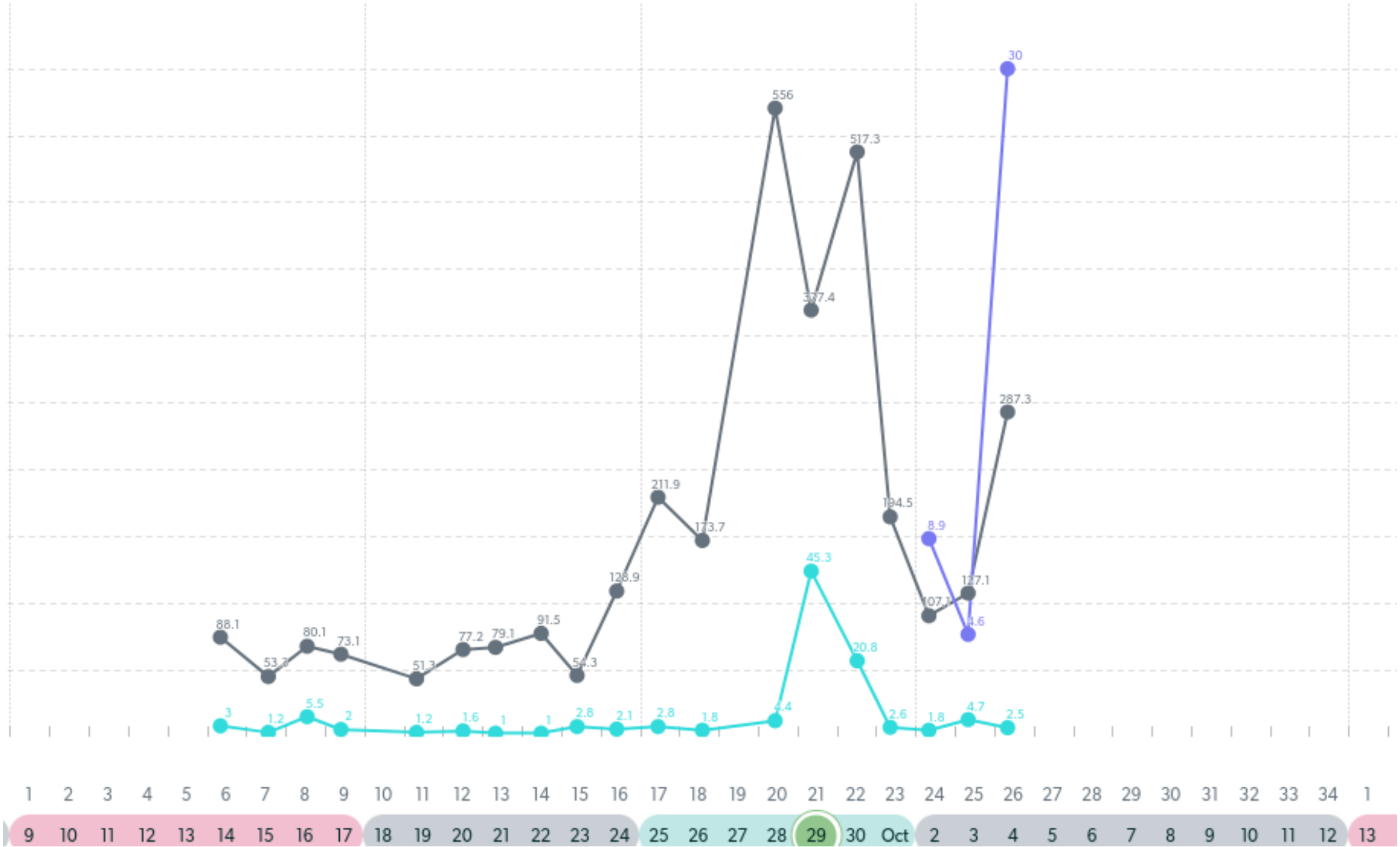
● LH ● E3G ● PDG



- Rising E3G (estrogen) leading up to ovulation
- LH surge over the course of 1–3 days
- Ovulation generally occurs 12-36 hours after LH surge
- Ovulation is confirmed by the rise of PdG (progesterone)



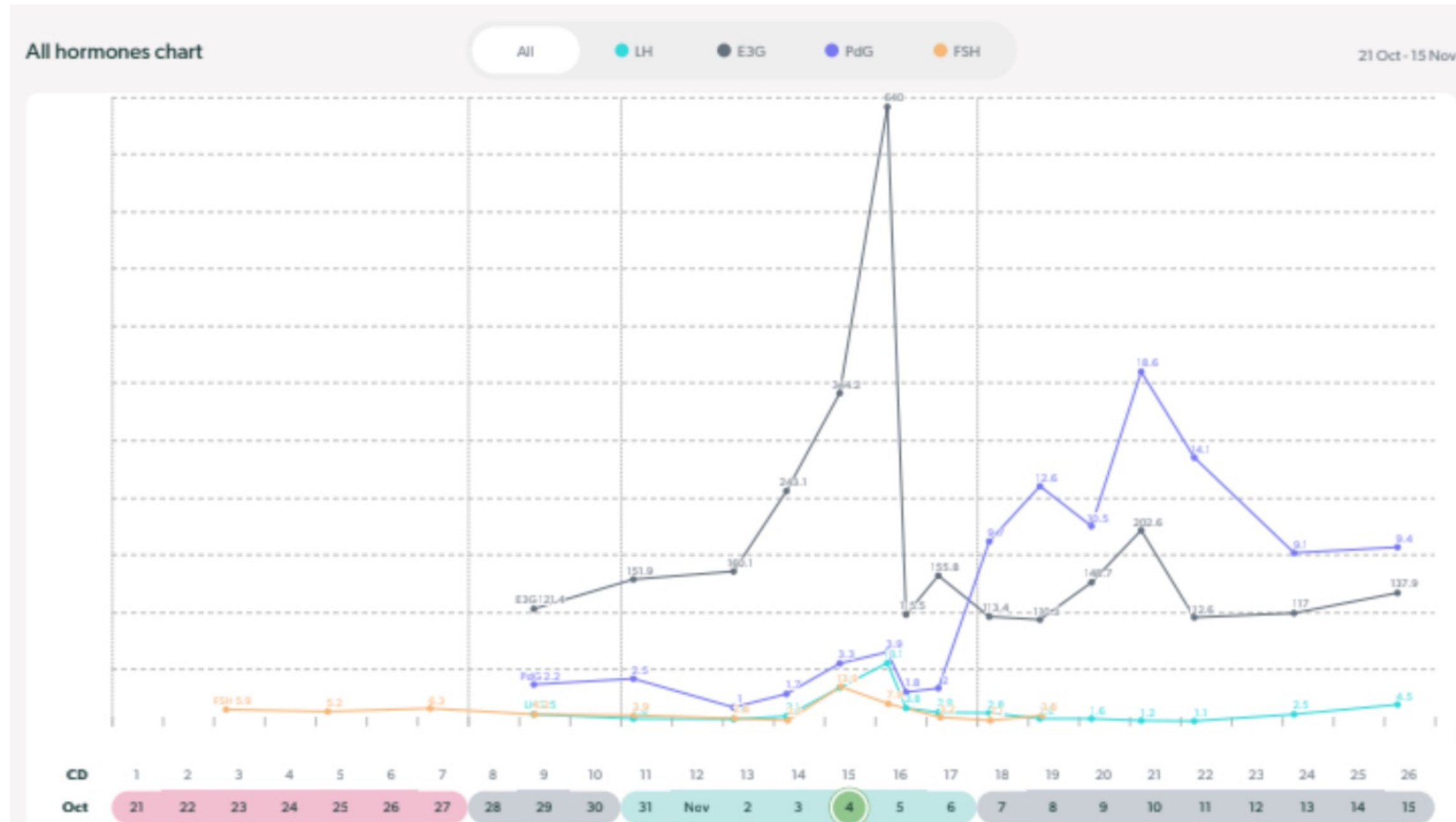
Healthy cycle example



- Rising E3G (estrogen) leading up to ovulation
- LH surge on CD 21 and CD 22
- Ovulation most likely occurred on CD 21, CD 22, or CD 23
- Ovulation is confirmed by the rise of PdG (progesterone)



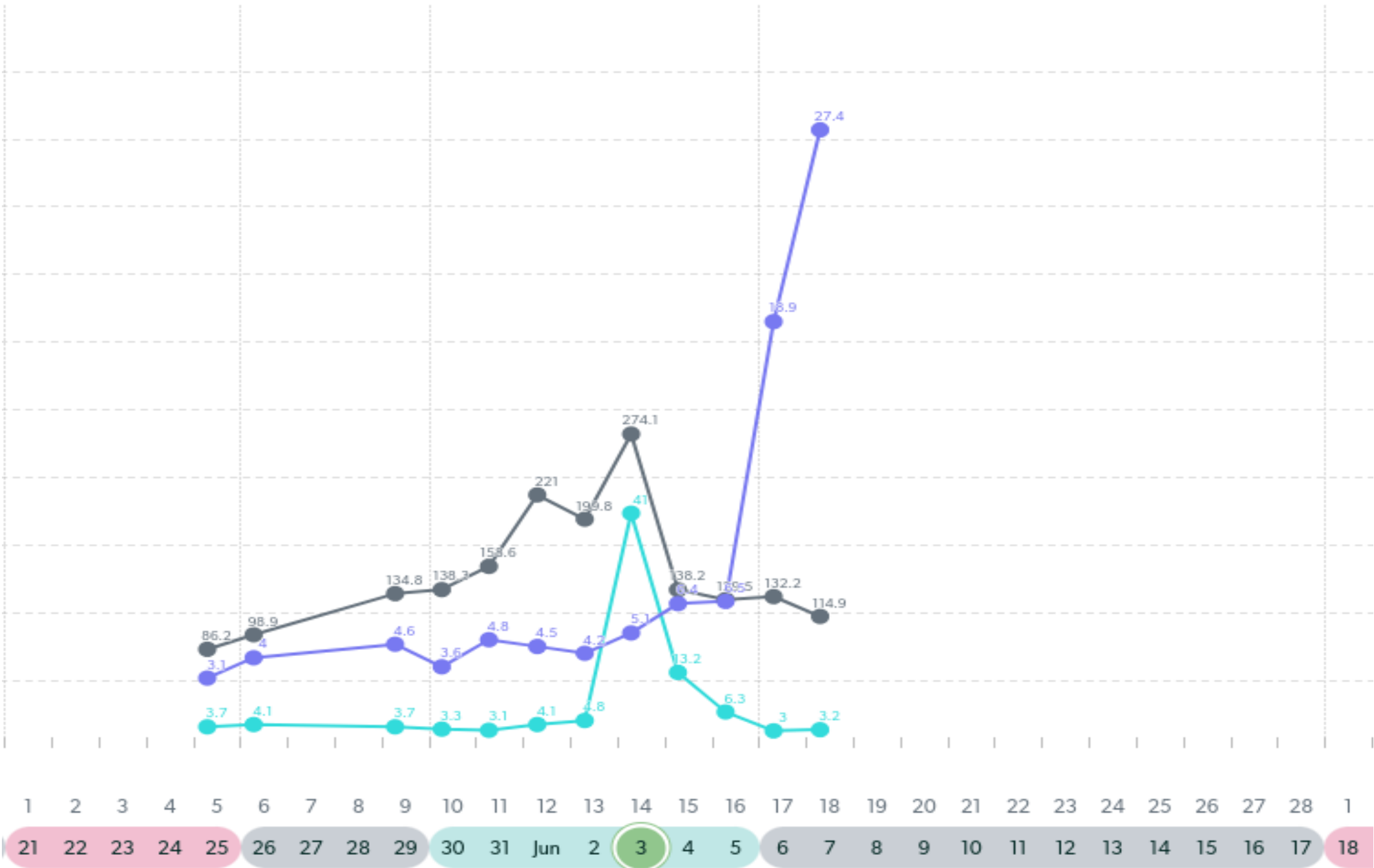
Healthy cycle example



- Rising E3G (estrogen) leading up to ovulation
- LH surge on CD 15 and CD 16
- Ovulation most likely occurred on CD 16 or CD 17
- Ovulation is confirmed by the rise of PdG (progesterone)



Healthy cycle example



- Rising E3G (estrogen) leading up to ovulation
- LH surge on CD 14
- Ovulation most likely occurred on CD 14 or CD 15
- Ovulation is confirmed by the rise of PdG (progesterone)



Healthy cycle example



- Rising E3G (estrogen) leading up to ovulation
- LH surge CD 14 and CD 15
- Ovulation most likely occurred on CD 14, CD 15 or CD 16
- Ovulation is confirmed by the rise of PdG (progesterone)



Healthy cycle example



- Rising E3G detected the fertile window starting
- LH surge discovered highlighting most fertile days
- Continuous rise of PdG
- Positive pregnancy test



Hormone Patterns

Ovulation and LH patterns

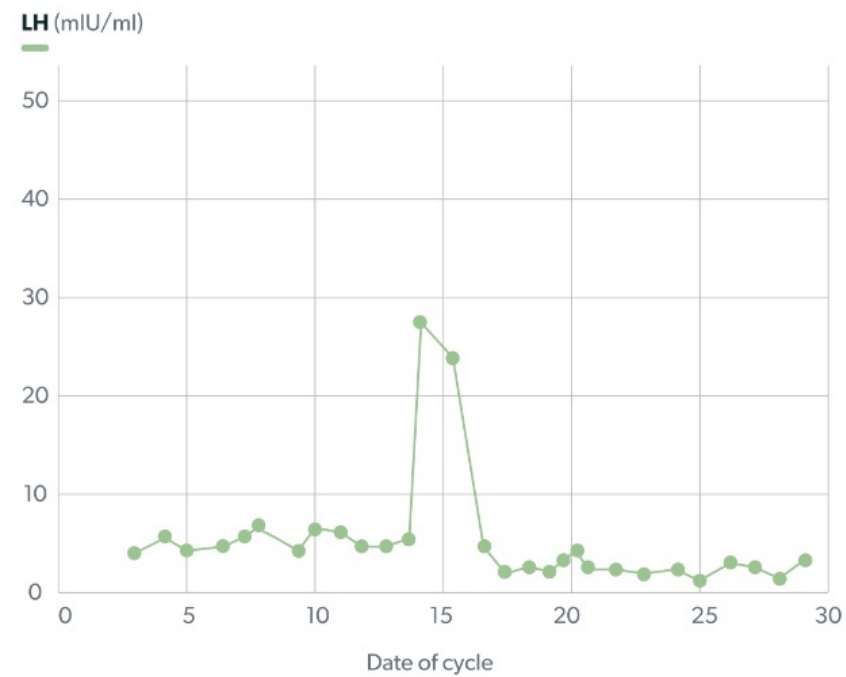
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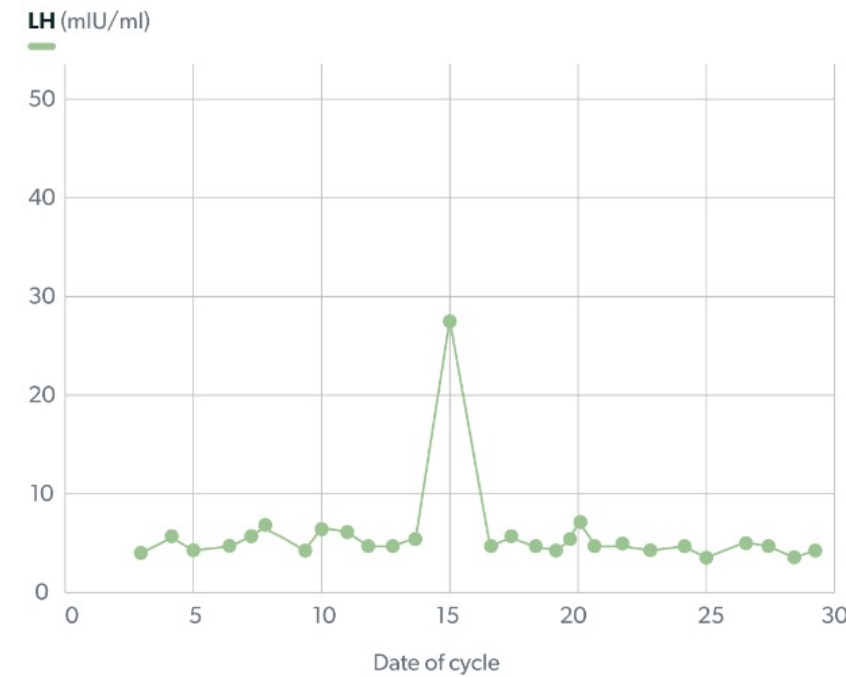
LH patterns: Single peak

LH rise and fall over the course of 1-3 days

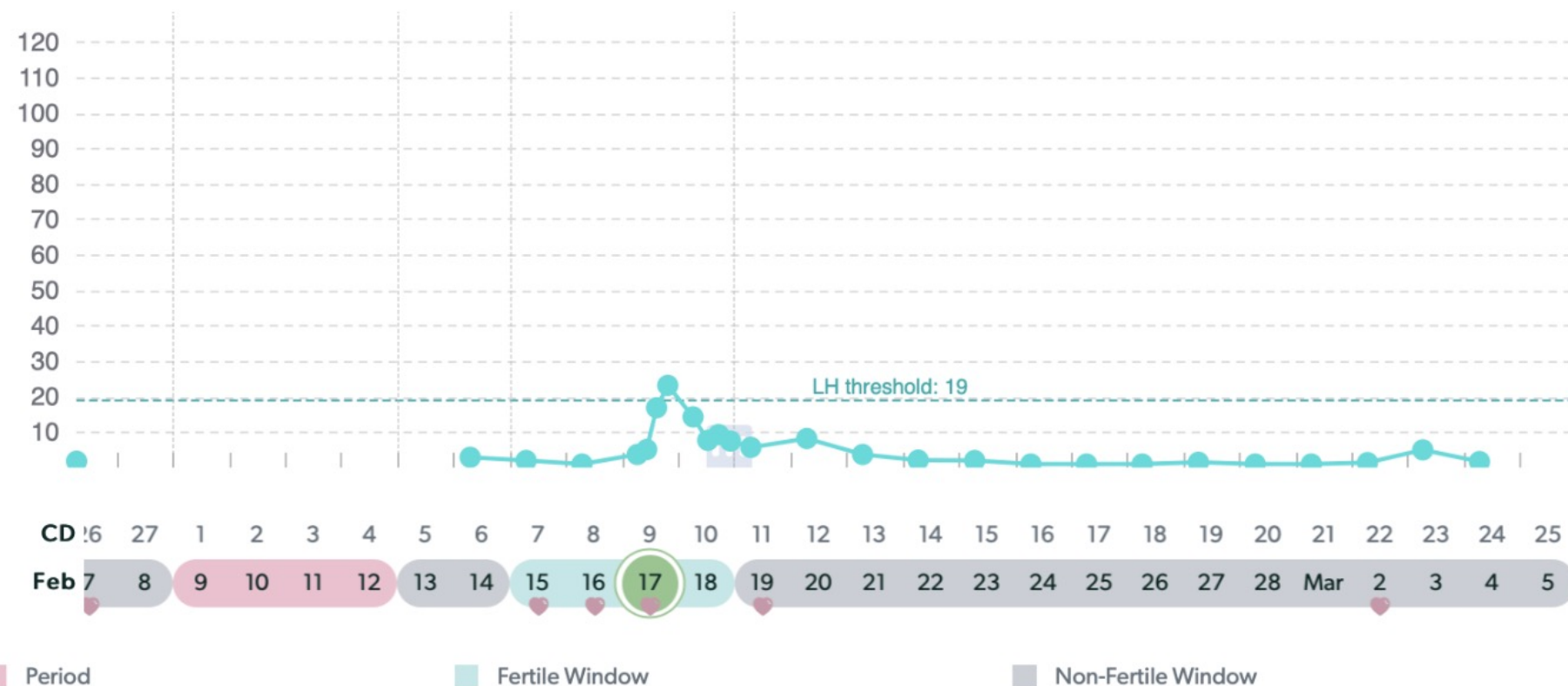
Single-prolonged peak



Single-sharp peak



- The LH surge is typically observed 12-36 hours before ovulation
- Ovulation usually occurs 10-12 after climax (peak) of LH



LH patterns: biphasic

LH rise, decrease then increase

Double-peak



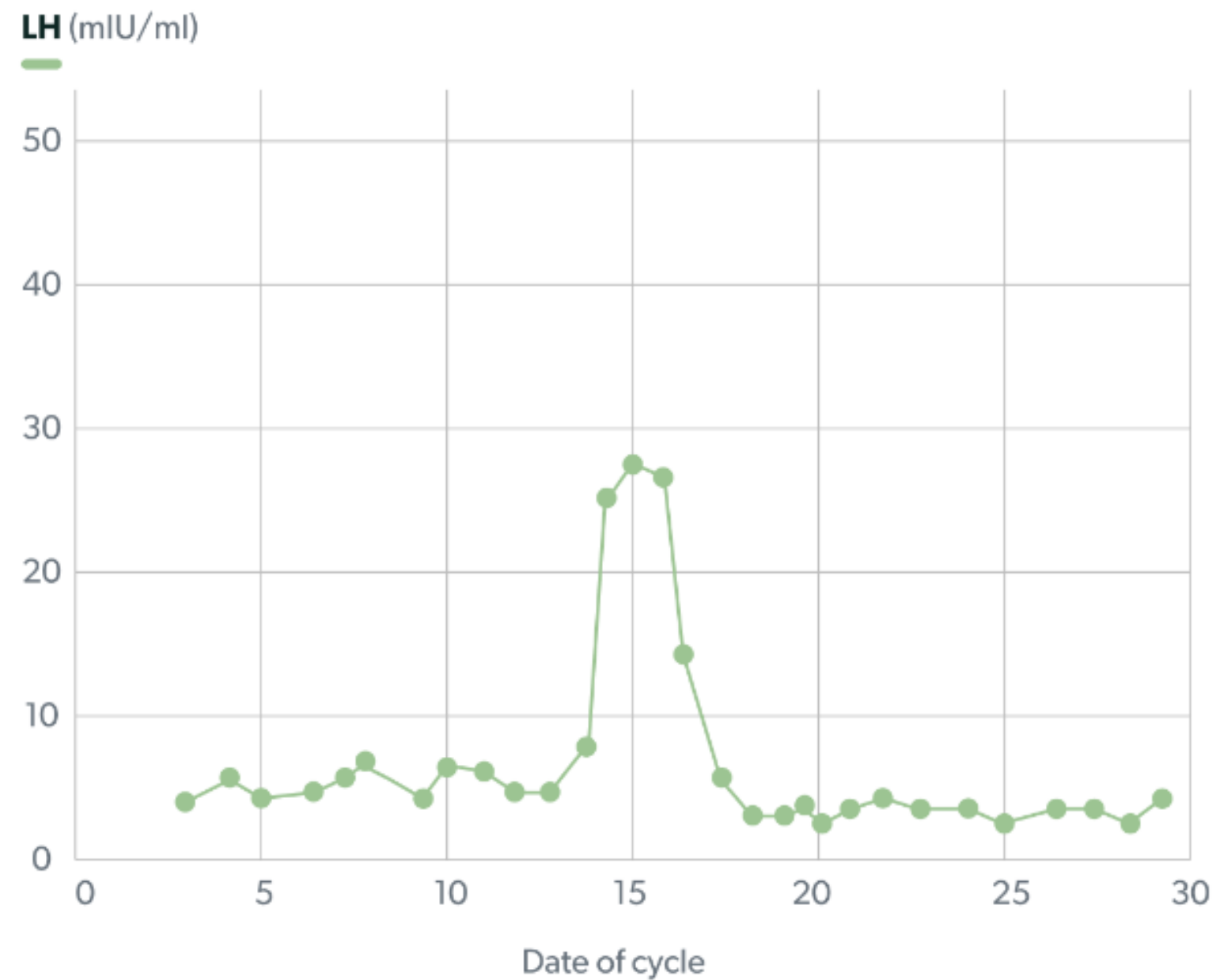
- Ovulation is likely to happen after the second peak.
- LH surge may take longer than 3 days in this case.
- This LH pattern is observed in approximately 40 % of Mira users.



LH patterns: plateau

LH rises and remains elevated for several days before decreasing

Plateau

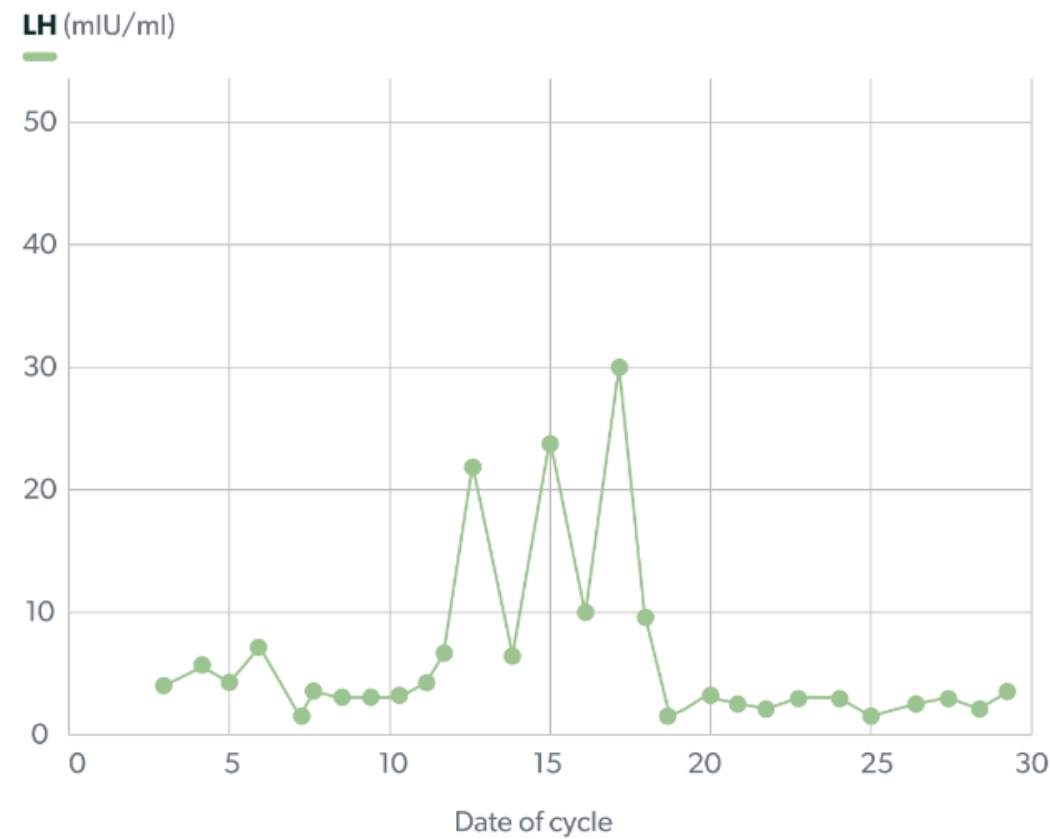


- LH surge may take longer than 3 days.
- This pattern is observed in approximately of 15% of the cycles.

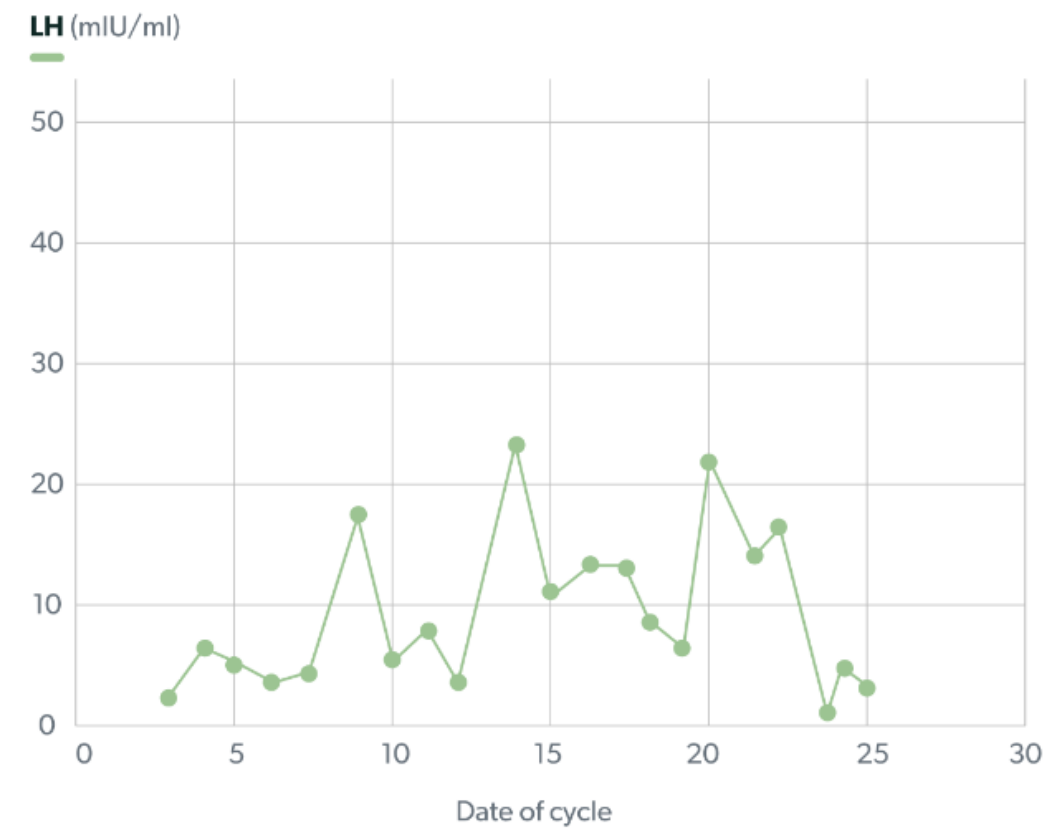


Mira chart examples: Abnormal LH patterns

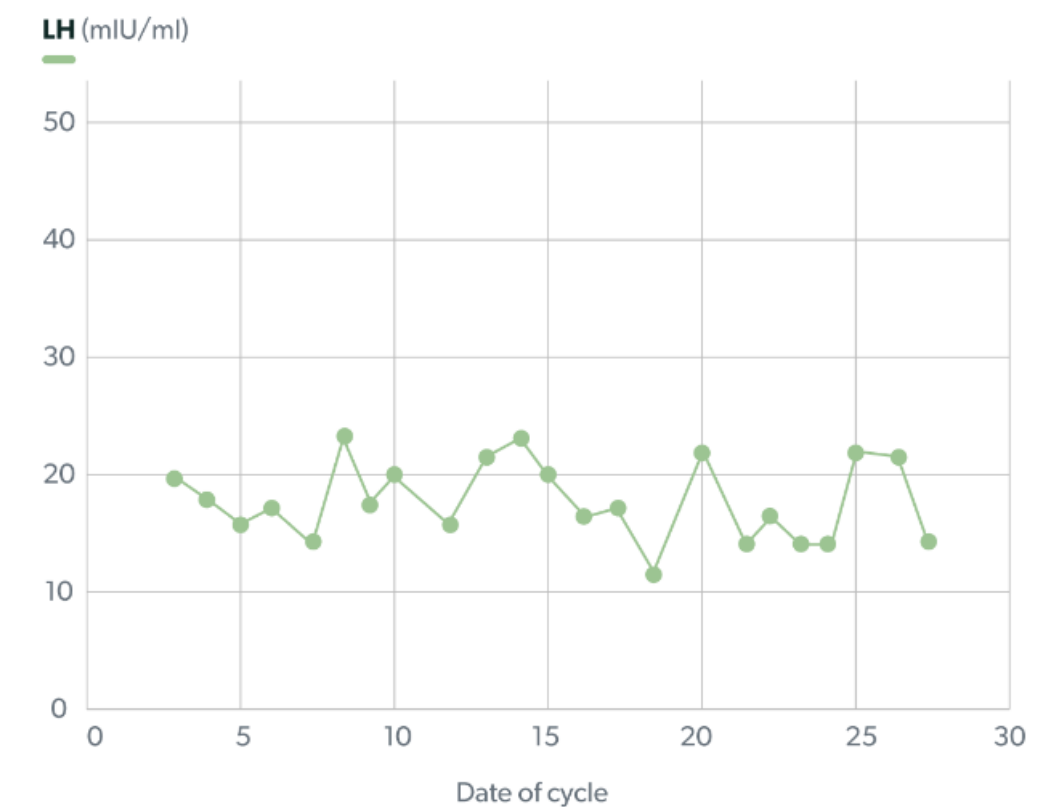
Multiple-peak



Hormonal Disorders



Polycystic Ovary Syndrome



If LH doesn't follow a typical pattern or shows multiple peaks during a cycle, this may indicate a hormonal imbalance.

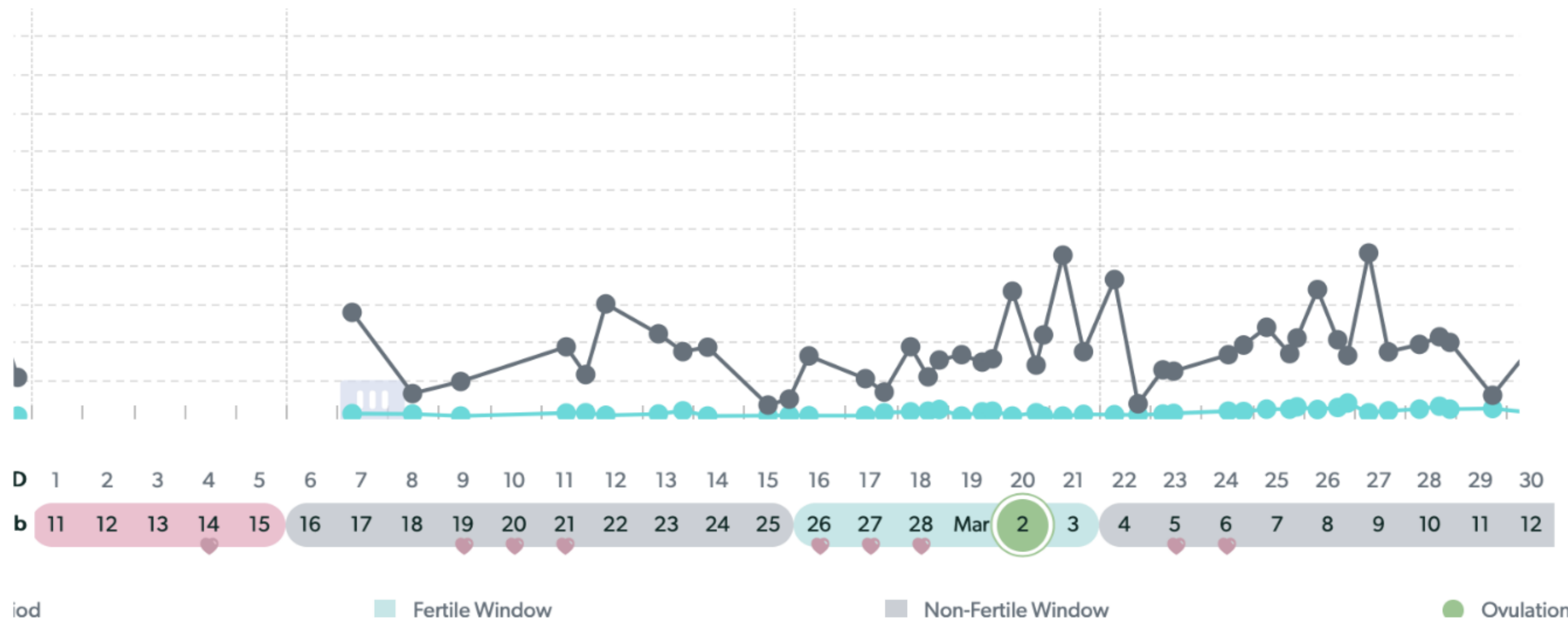
Multiple LH peaks or chronically elevated LH may indicate that patients has PCOS.

The hormonal imbalance may be caused by a disruption in ovarian function or pituitary gland.



Low LH example

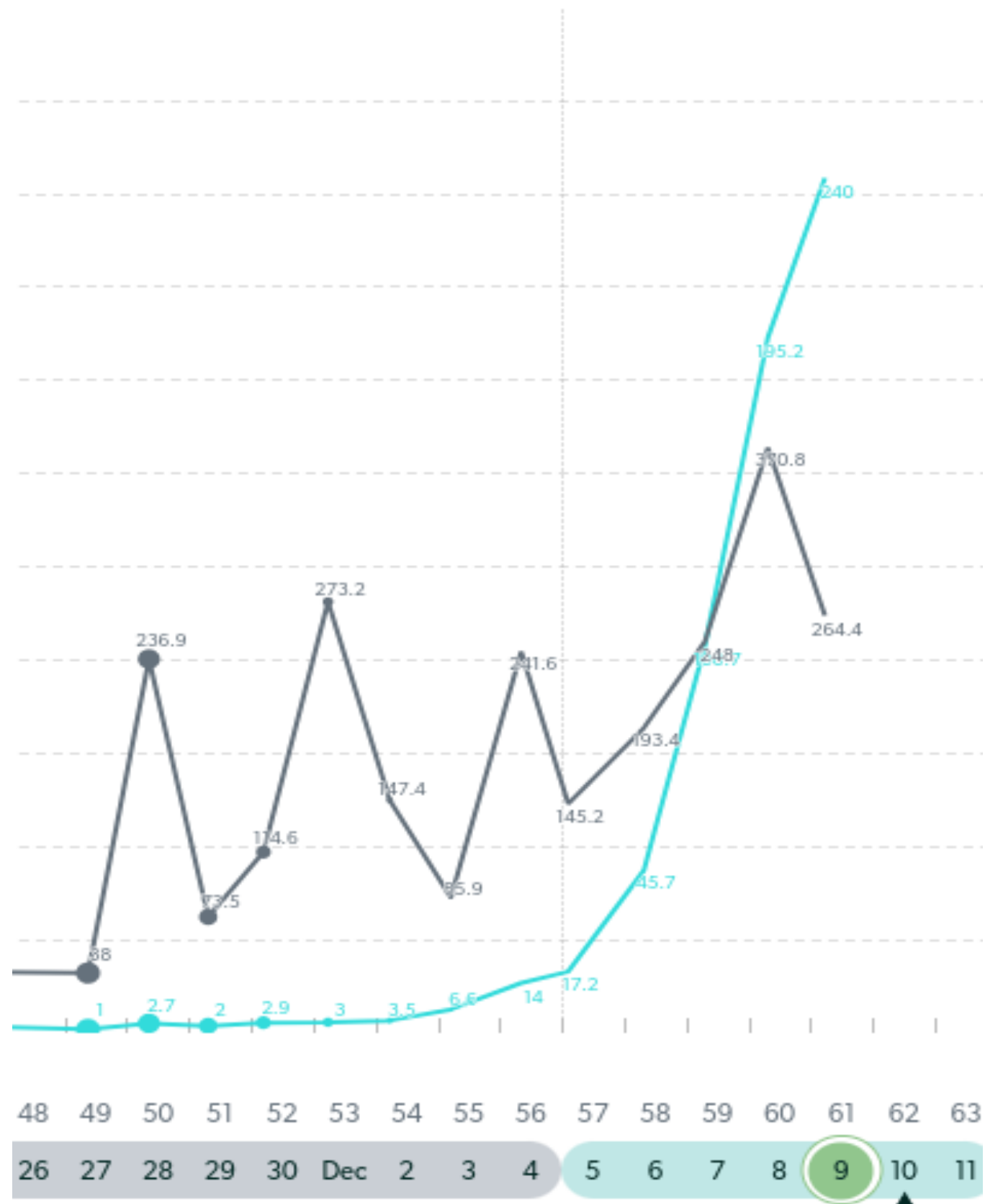
Low LH levels may indicate the lack of ovulation



Clinical Differentials: This anovulatory pattern can be caused by PCOS, disruptions in the pituitary gland or hypothalamus function.



Abnormal LH pattern



- Abnormally high or climbing LH can indicate rising HCG
- LH and HCG have cross reactivity: when hCG appears and starts to rise, you can watch LH rise with Mira.



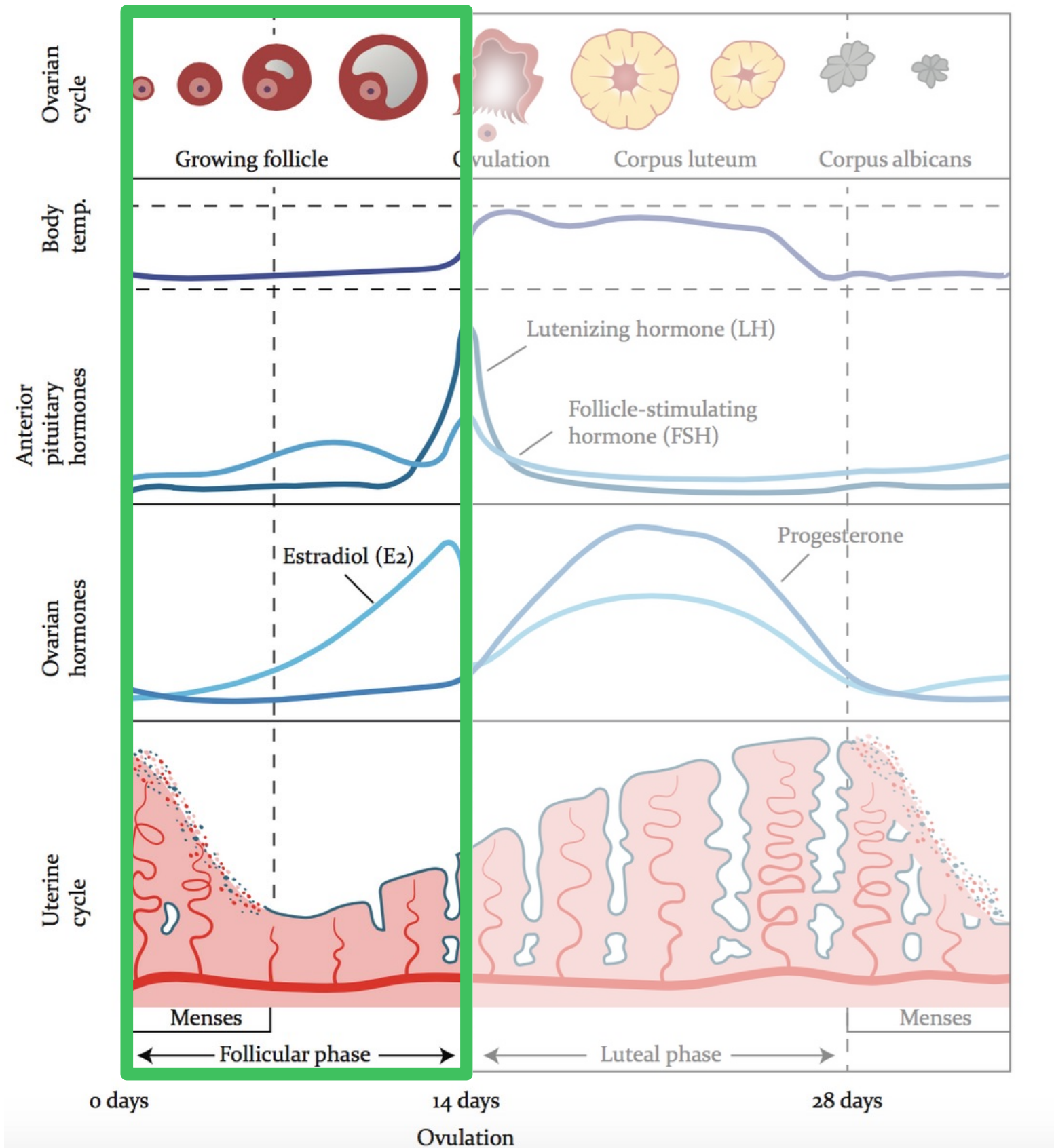
Hormone Patterns

Follicular Phase and E3G patterns

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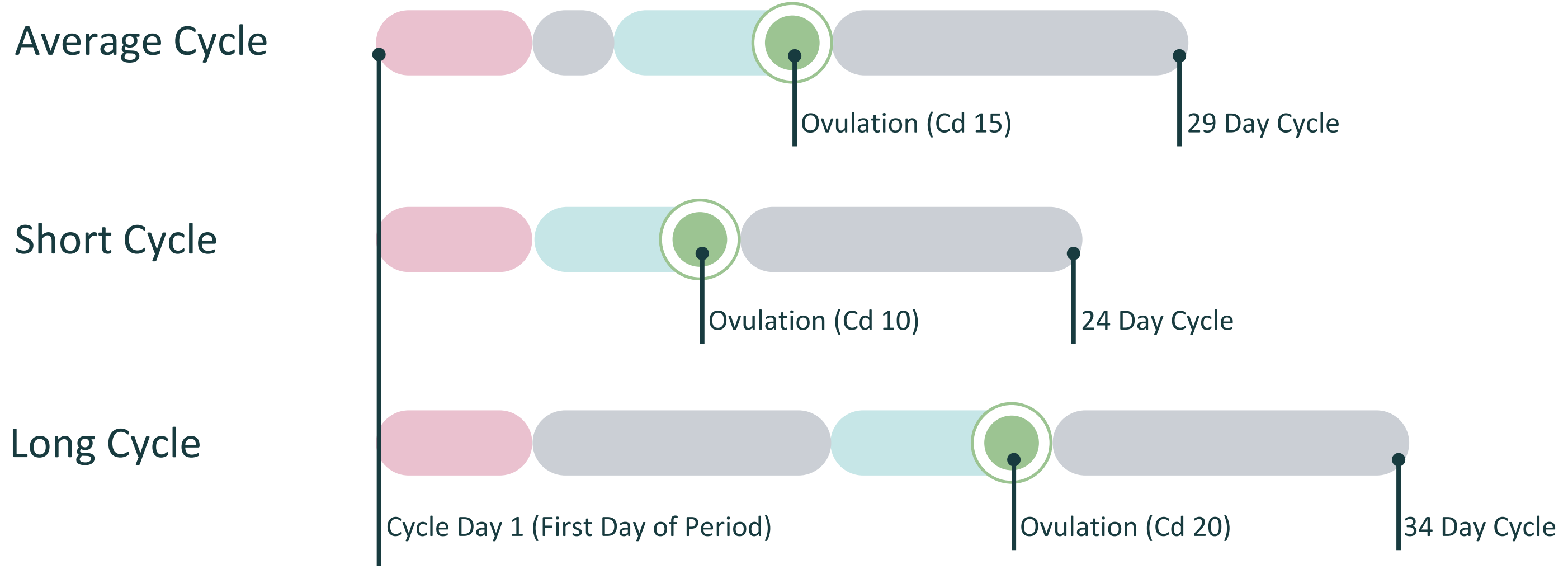
Follicle phase



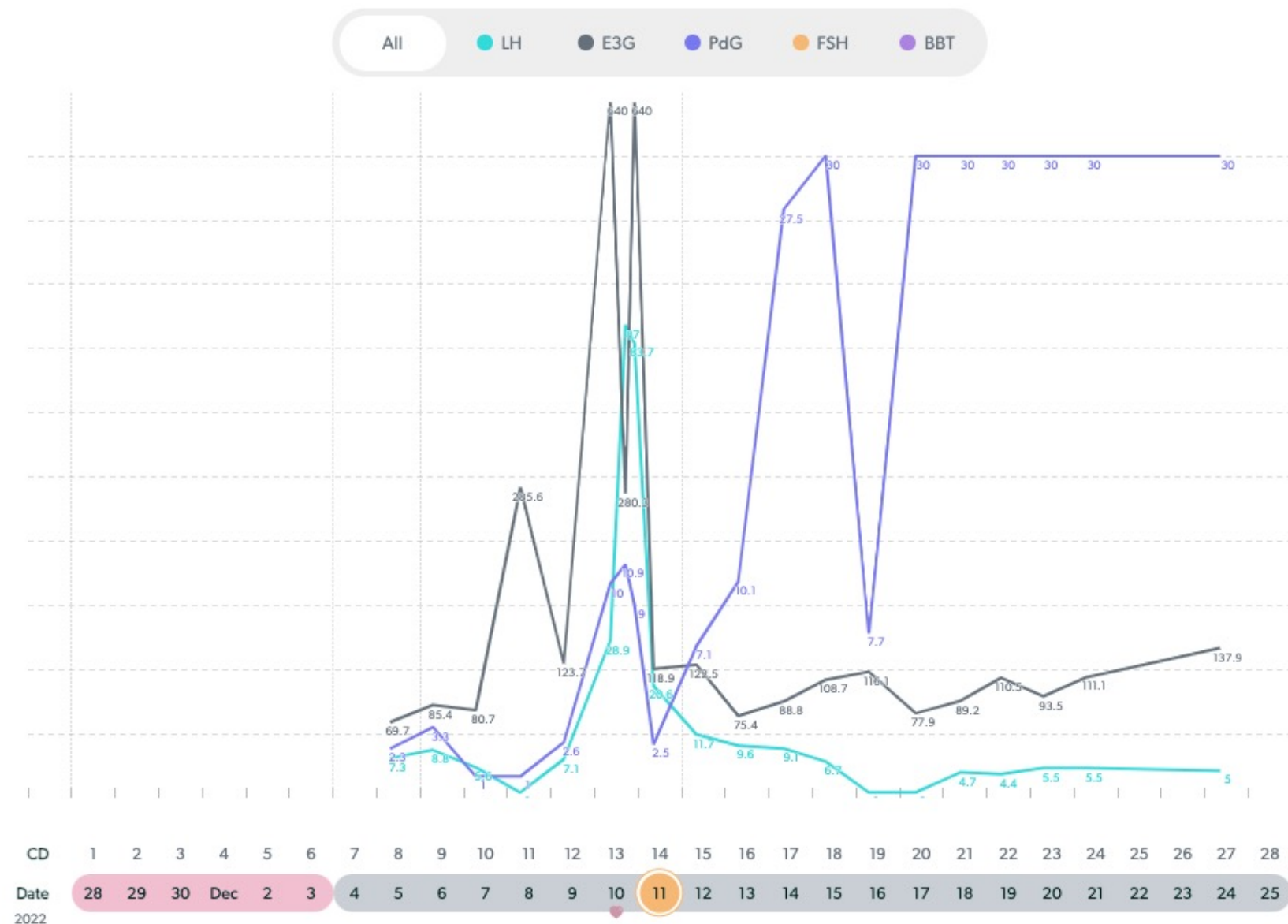
- More variable than luteal phase
- Varies from cycle to cycle
- Varies from women to women
- It depends on age, health conditions, stress

Normal Cycle Variations

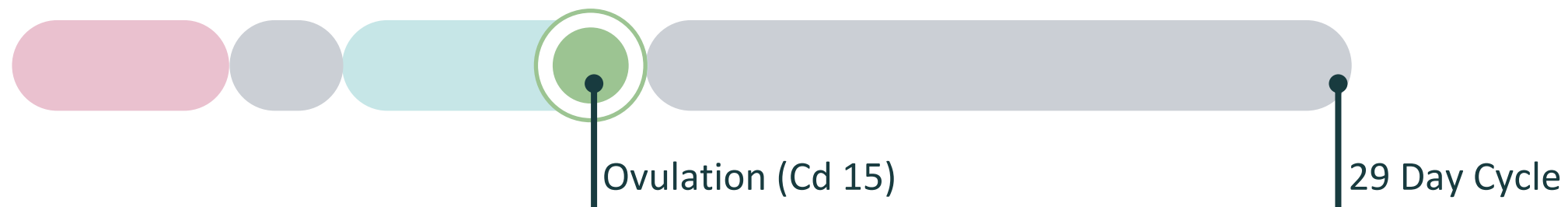
Cycles are considered normal if they consistently fit into one of these categories



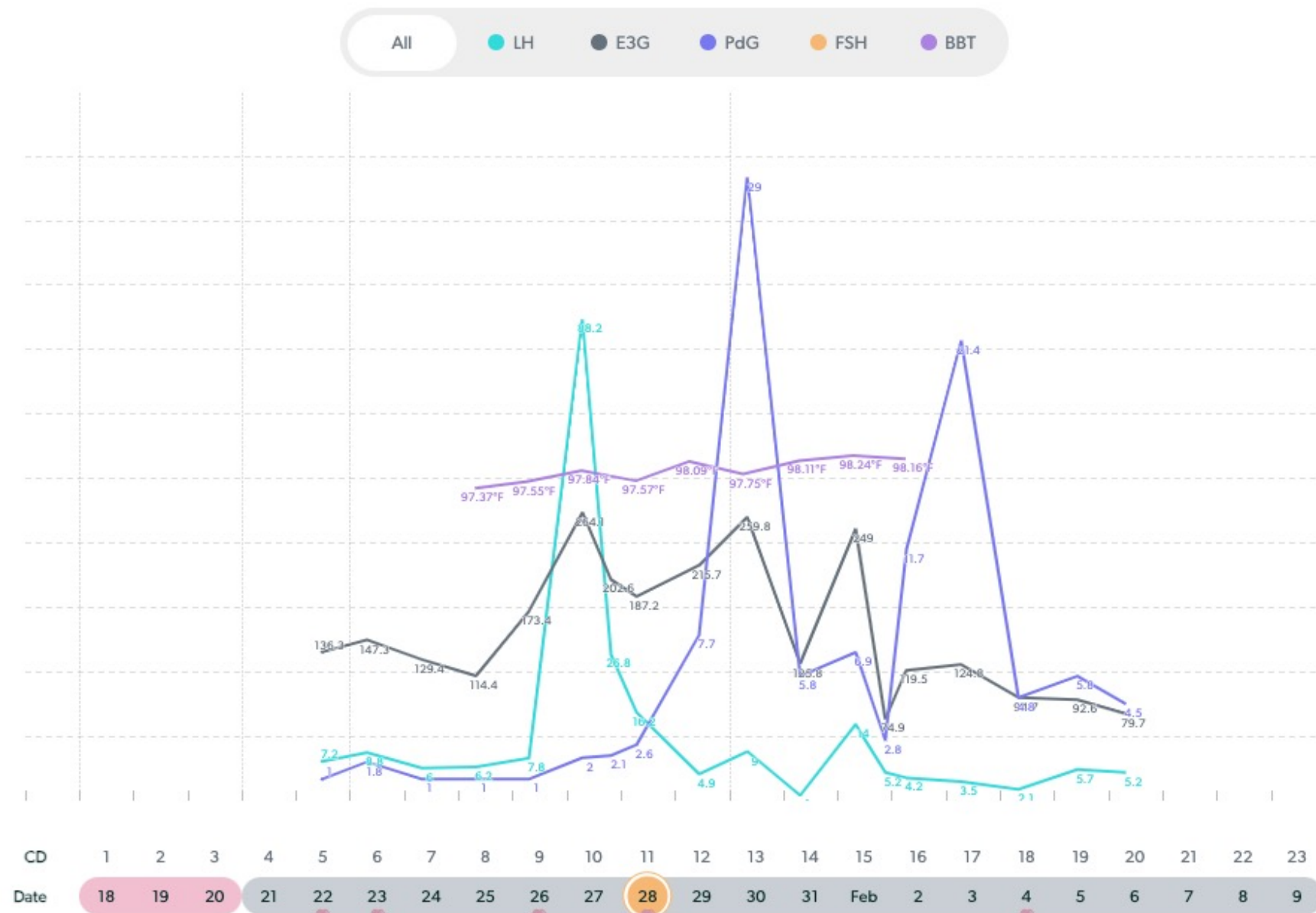
Variation in follicular phase: Average Cycle



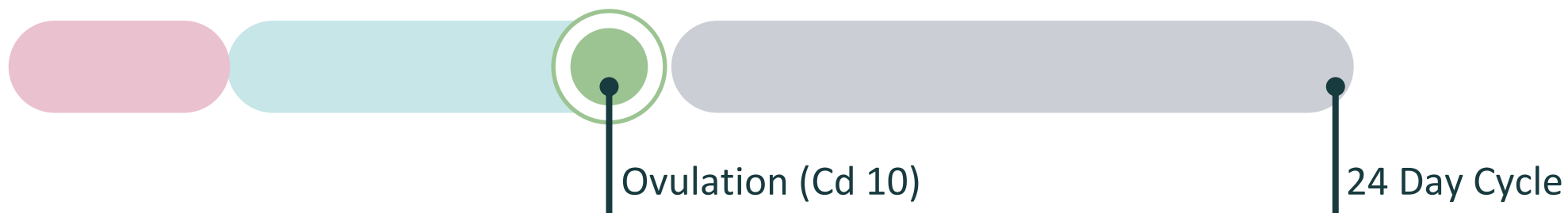
- Ovulation generally occurs between cycle day 13–17
- Cycle length commonly between 27–30 days
- Considered normal and ovulatory as long as each hormone follows a healthy pattern



Variation in follicular phase: Short Cycle



- Ovulation generally occurs between cycle day 9–12
- Cycle length commonly between 23–27 days
- Considered normal and ovulatory as long as each hormone follows a healthy pattern



Variation in follicular phase: Long Cycle



- Ovulation generally occurs between cycle day 18–22
- Cycle length commonly between 31–35 days
- Considered normal and ovulatory as long as each hormone follows a healthy pattern

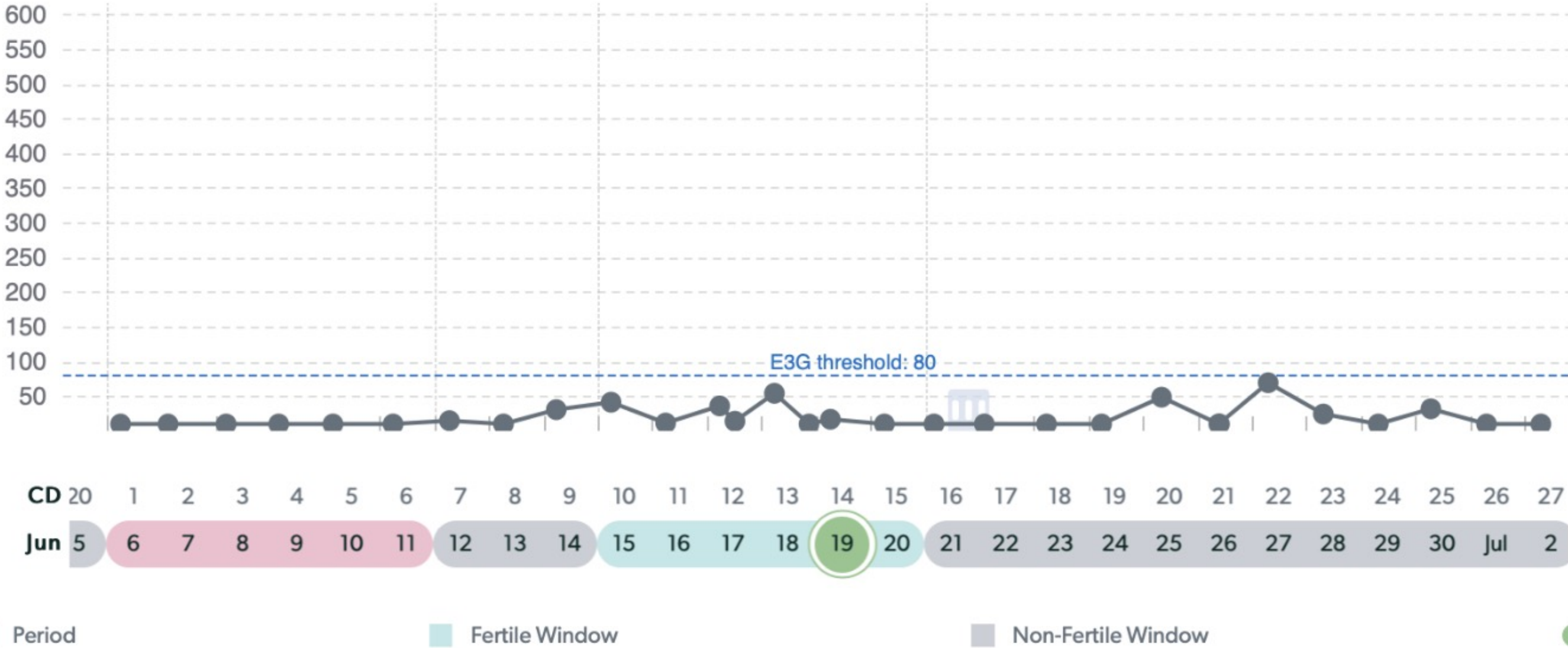
Ovulation (Cd 20)

34 Day Cycle



Low E3G example

Clinical Differential: Decrease in ovarian follicles or altered hormone interactions.

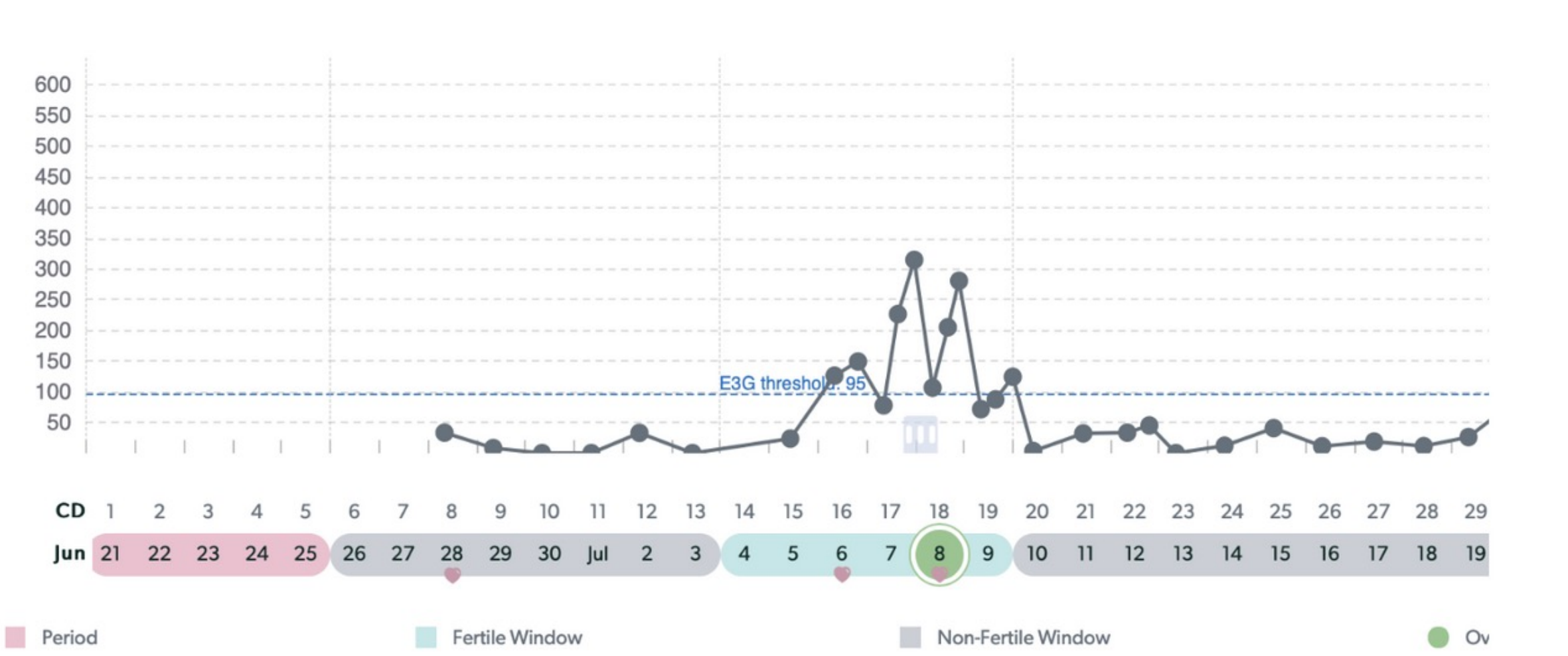


- Low E3G levels may be caused by a disruption of the ovarian function
- Low E3G levels may prevent the body from ovulating, leading to irregular or absent periods

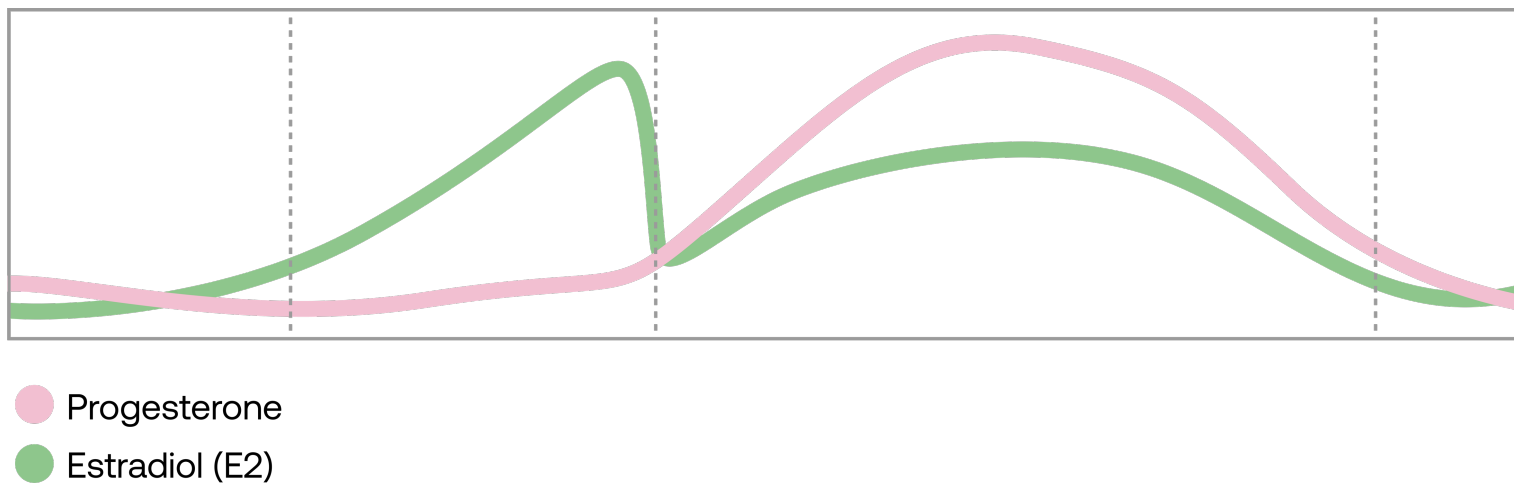


No E3G rise in the luteal phase

Lack of second rise in estrogen causes concern for lack of or poorly formed corpus luteal and/or non-ovulatory cycle.

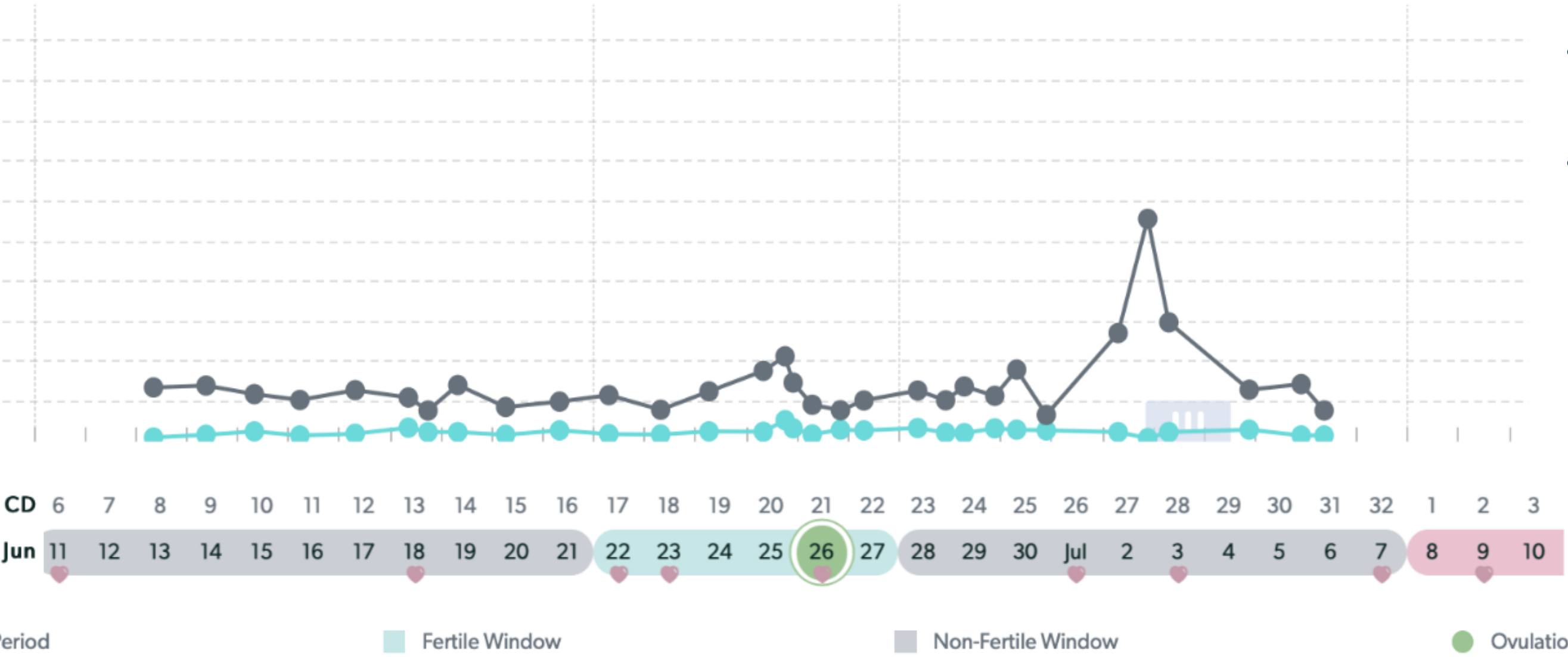


- In a healthy cycle E3G has a second small rise during the luteal phase that indicates the proper functioning of the corpus luteum
- Without a second rise in E3G consider confirming ovulation with rising progesterone, a thermal shift and/or ultrasound imaging



E3G rise, no LH peak example

Clinical differentials: PCOS, ovarian cysts, or hyperprolactinemia

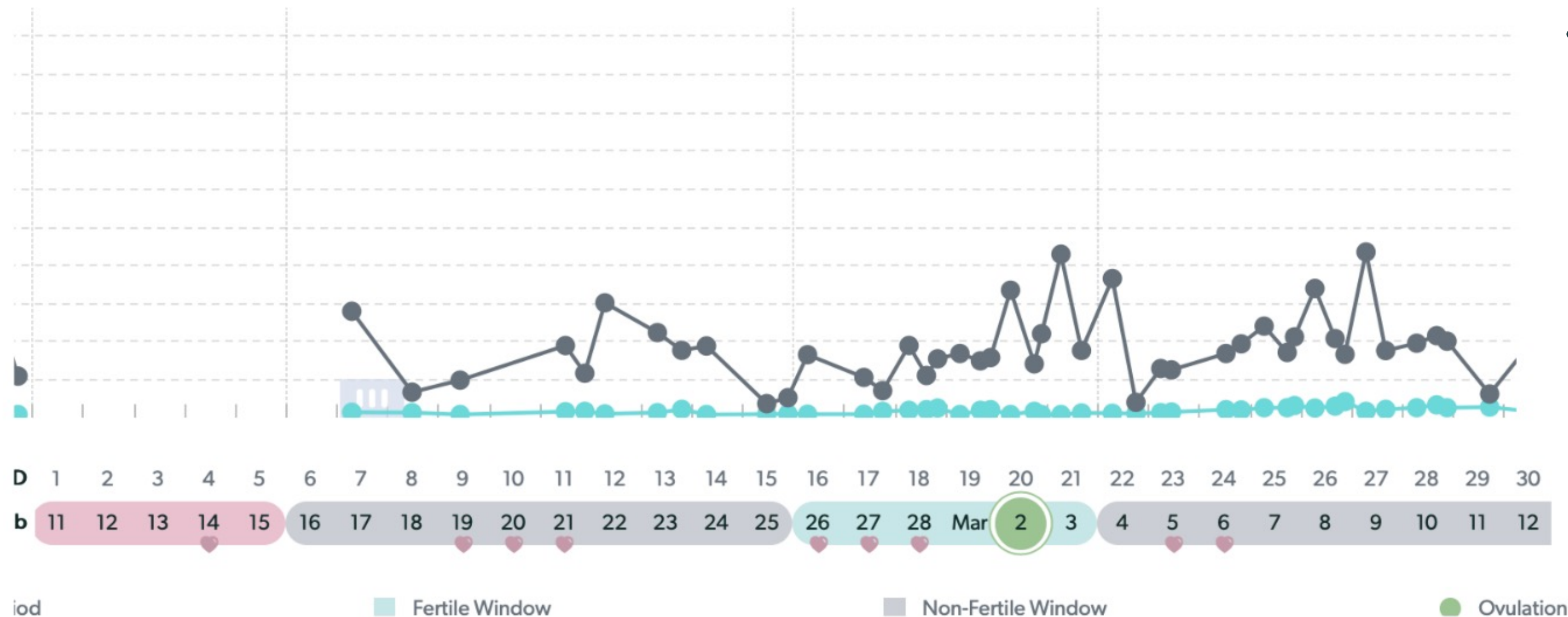


- E3G generally rises in the days leading up to ovulation
- Rising E3G without an LH surge is unlikely to cause an ovulation



Variable E3G, no LH peak example

Clinical Differentials: pituitary gland dysfunction, ovarian tumors, PCOS, medication, postpartum amenorrhea



- Fluctuating or variable E3G with no LH surge indicates a disruption in ovulation or lack of ovulation



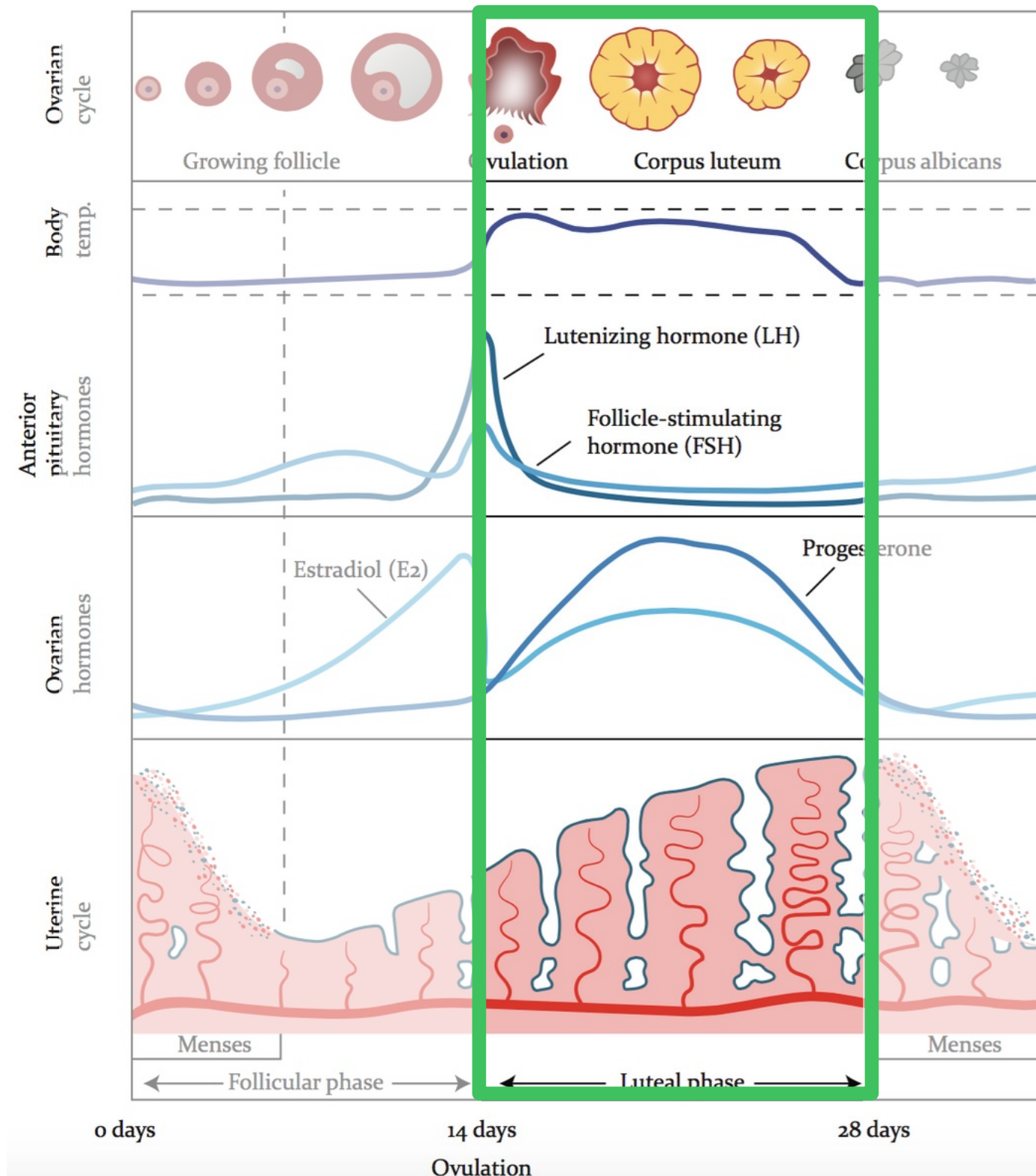
Hormone Patterns

Luteal phase and PdG patterns

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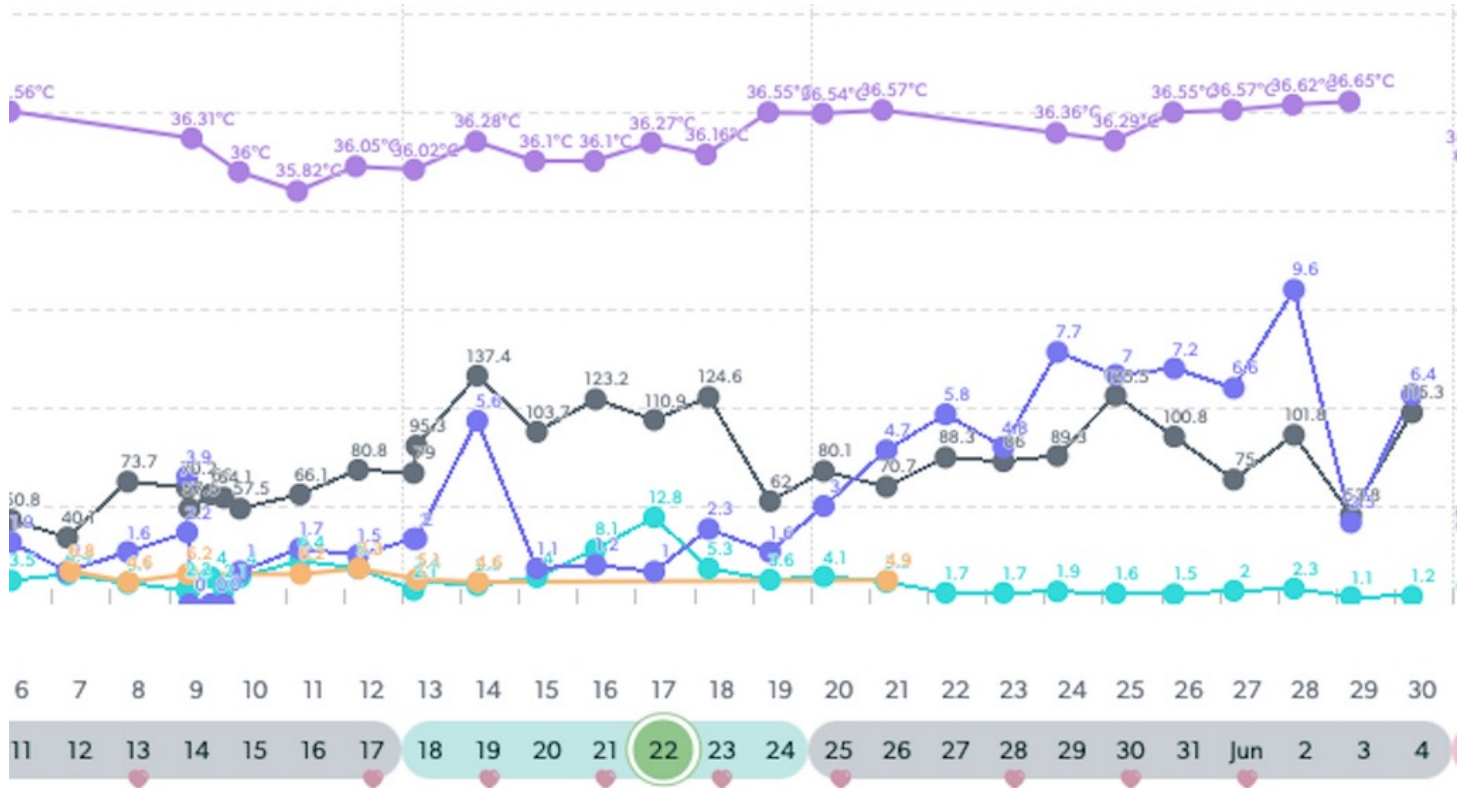
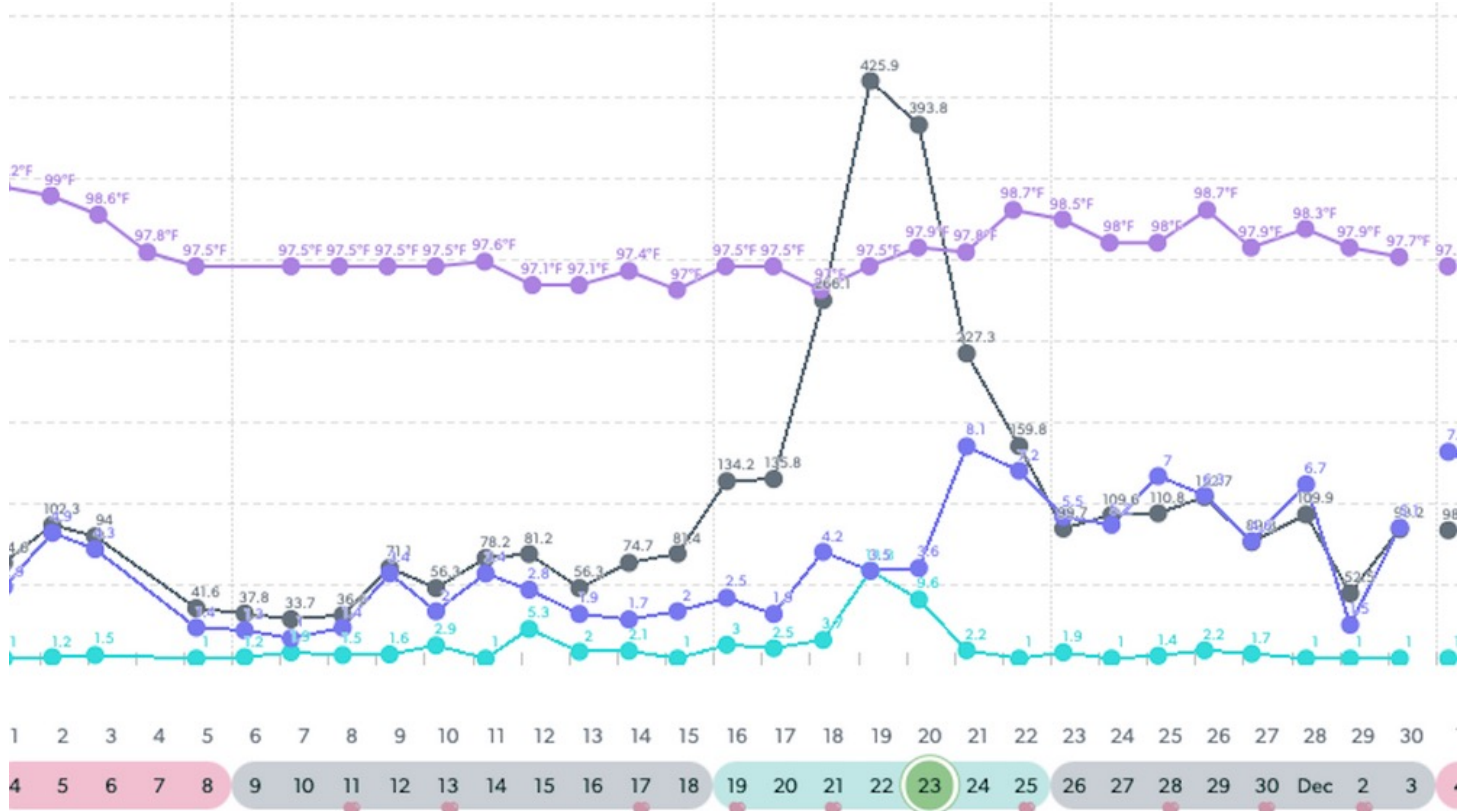
Luteal phase



Luteal phase characteristics that can be assessed with Mira: Luteal phase length; PdG pattern; PdG numeric level

- The luteal phase occurs after ovulation and corresponds to the time when a functioning corpus luteum secretes progesterone
- The main purpose of the luteal phase is to prepare the endometrial lining for implantation
- Calculated from after ovulation until next period starts
- Common range: 10–16 days

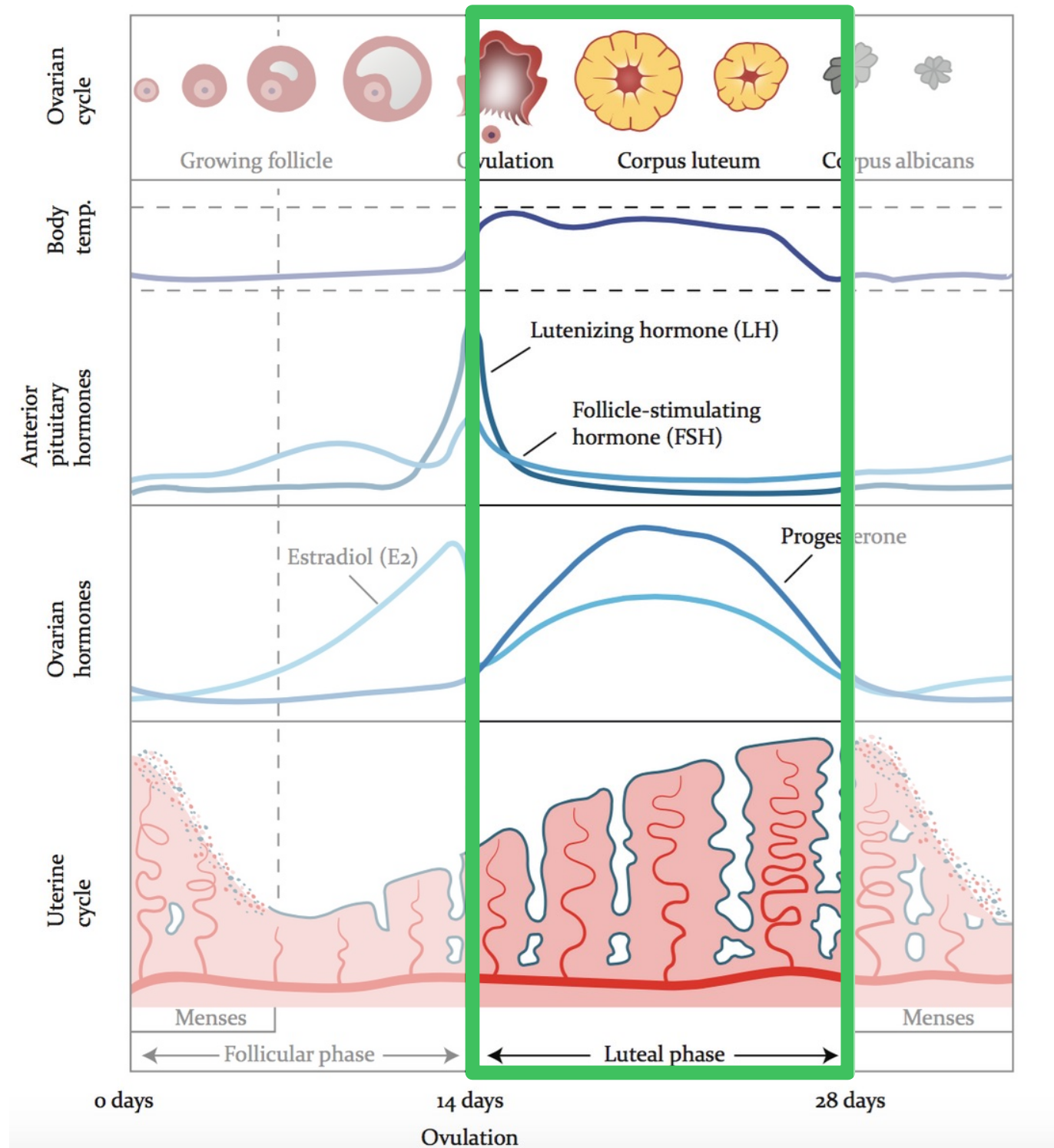
Luteal phase: Regular Ovulatory Cycle



- Ovulation can be confirmed with sustained elevated PdG after LH surge
- May see rise in progesterone during LH surge
- PdG level should be approximately four times higher in the luteal phase compared to the follicular phase



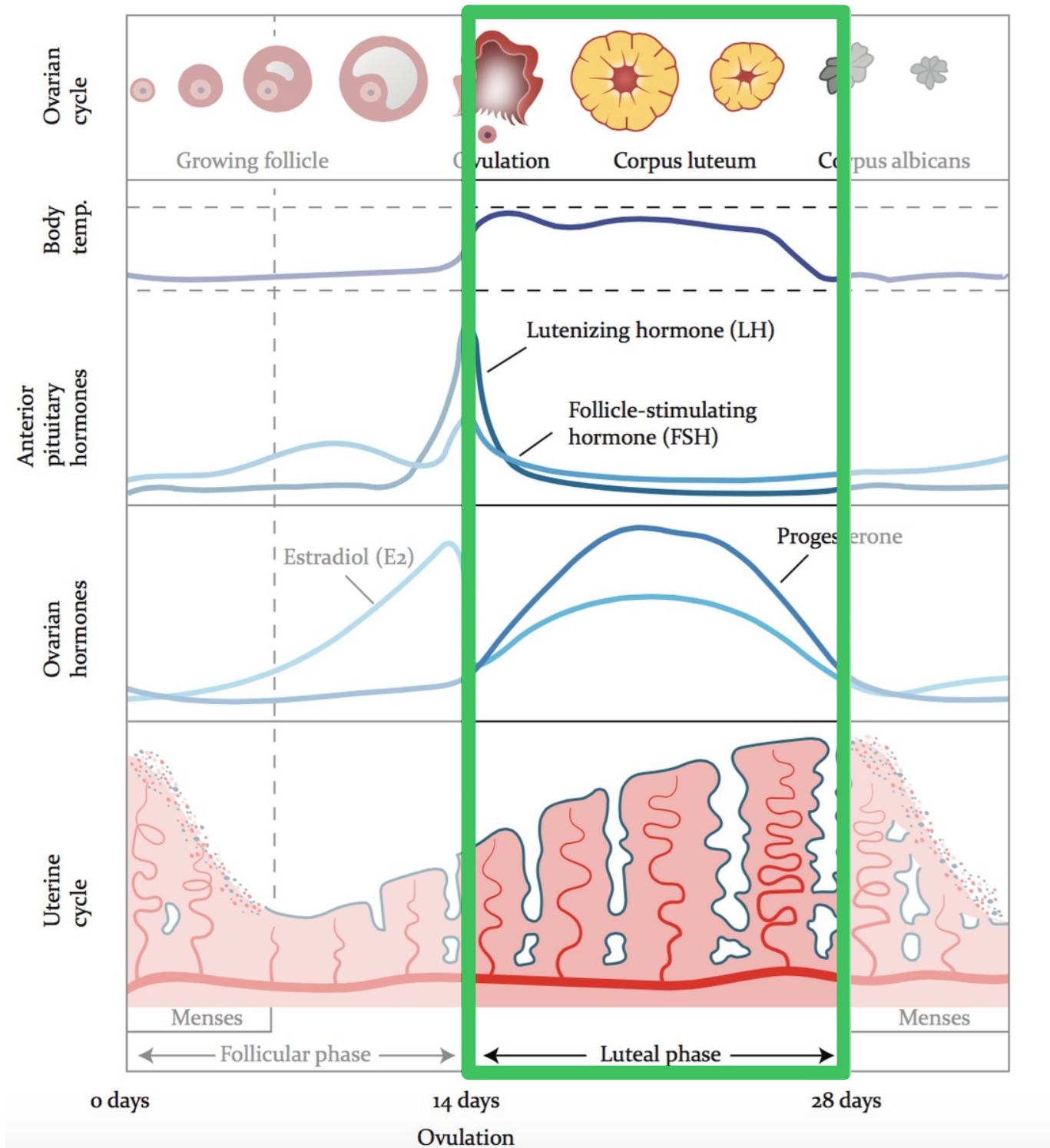
Clinical Correlation



Conditions Mira data can help detect:

- Confirmation of ovulation
- Early pregnancy
- Luteal phase insufficiency
- Luteal phase defects
- Luteinized unruptured follicle

Luteal Phase Deficiencies



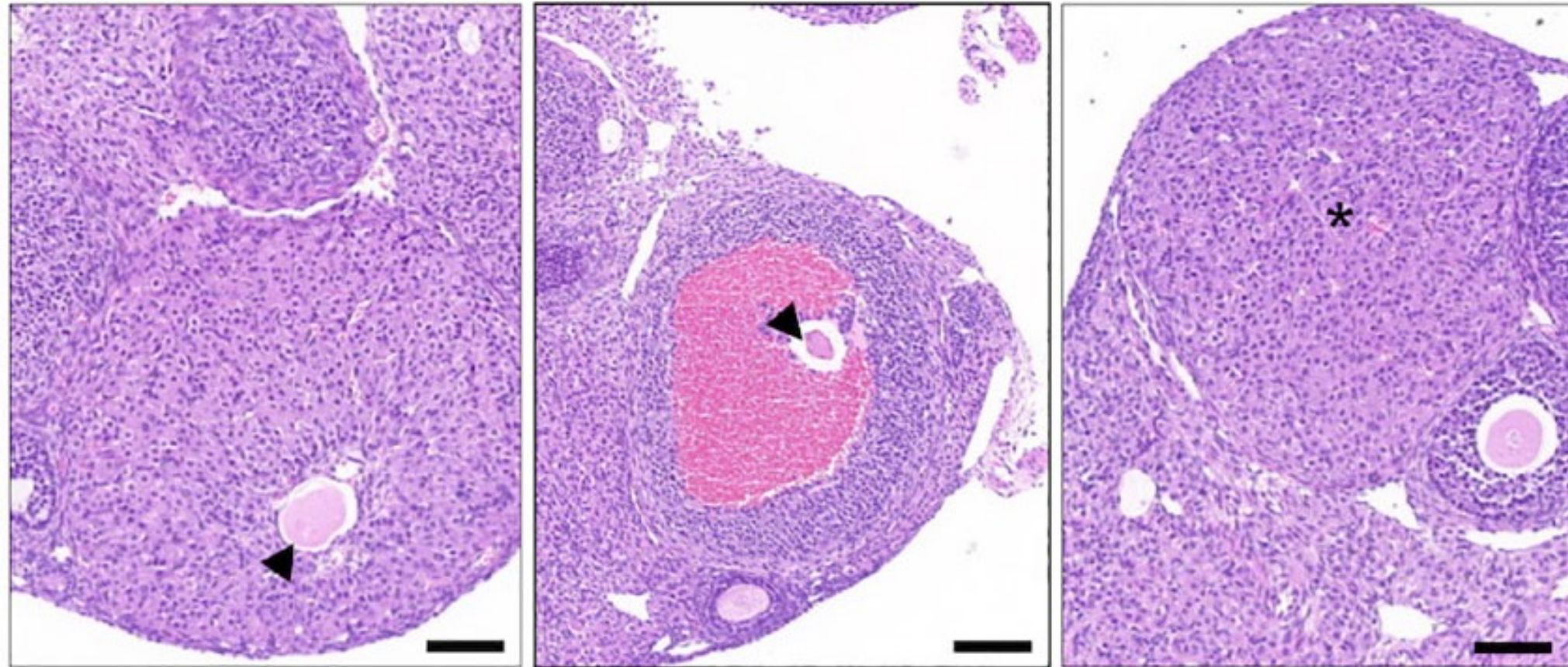
Inadequate corpus luteum progesterone production

Delayed, abnormal or poor response of the secretory endometrial development

Reproductive consequences:

- Failed implantation
- Premature luteal-placental shift
- Subfertility
- Early pregnancy loss

Luteinized unruptured follicle (LUF) syndrome

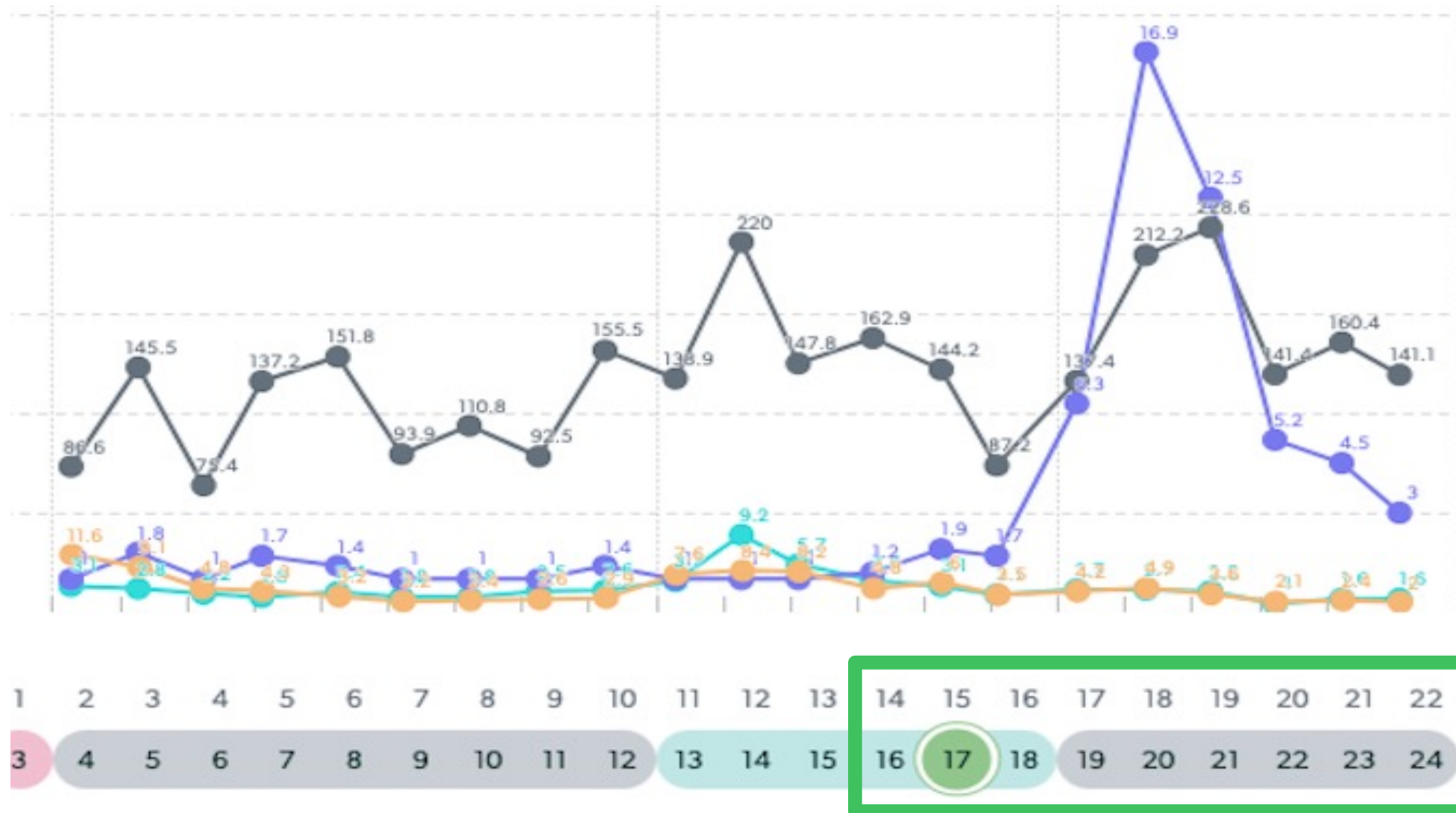


(F) Representative H&E-stained ovarian tissue sections depicting unruptured follicle and normal CL.

Low PdG Mira data can help detect LUF

- A follicle that has been luteinized and has either failed to rupture or has ruptured in a way that the ovum is not released
- Traditionally diagnosed by ultrasound or laparoscopically
- Associated with lower or more slowly rising progesterone

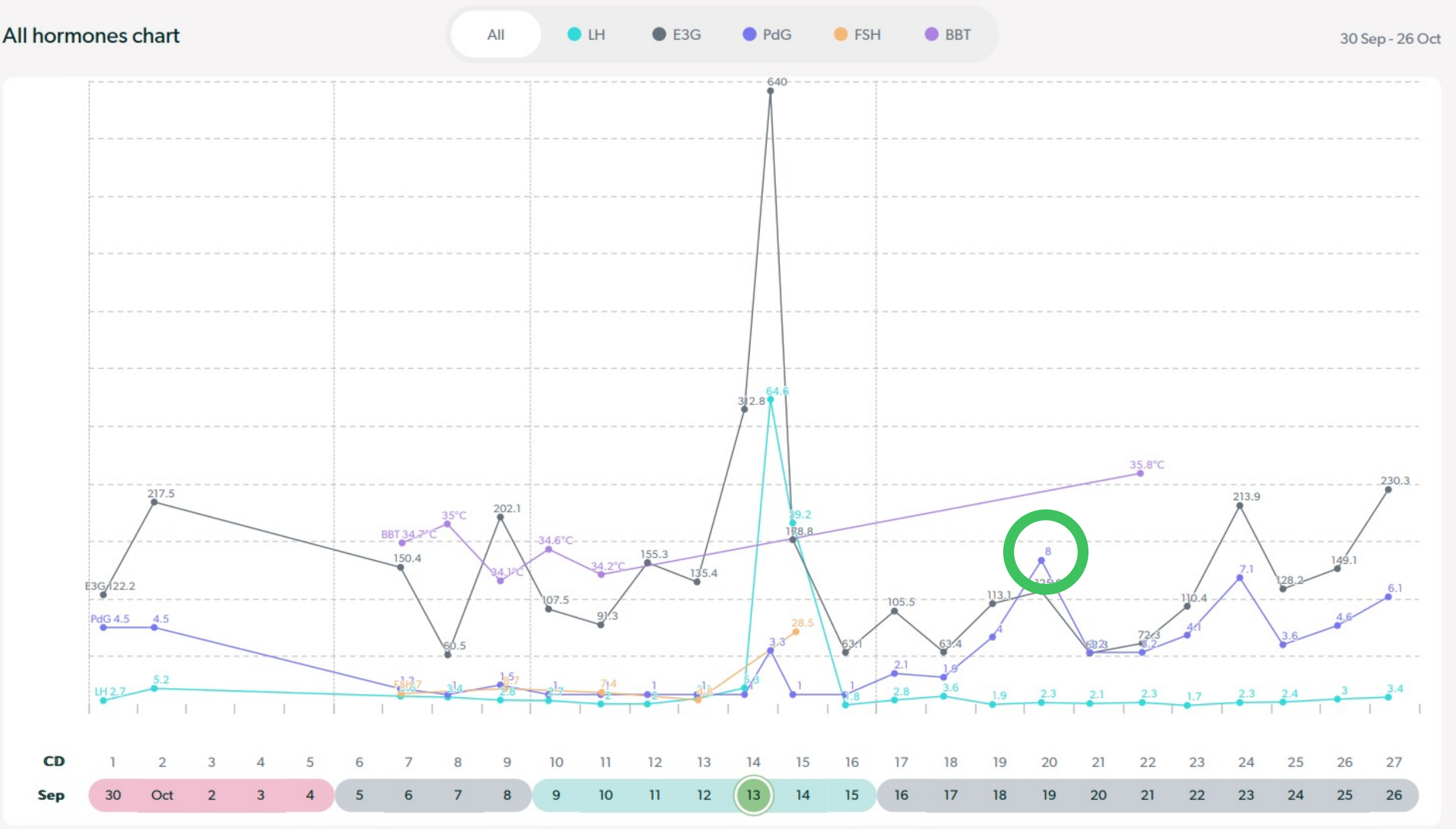
Luteal phase insufficiency: short luteal phase



Luteal phase is 9 days



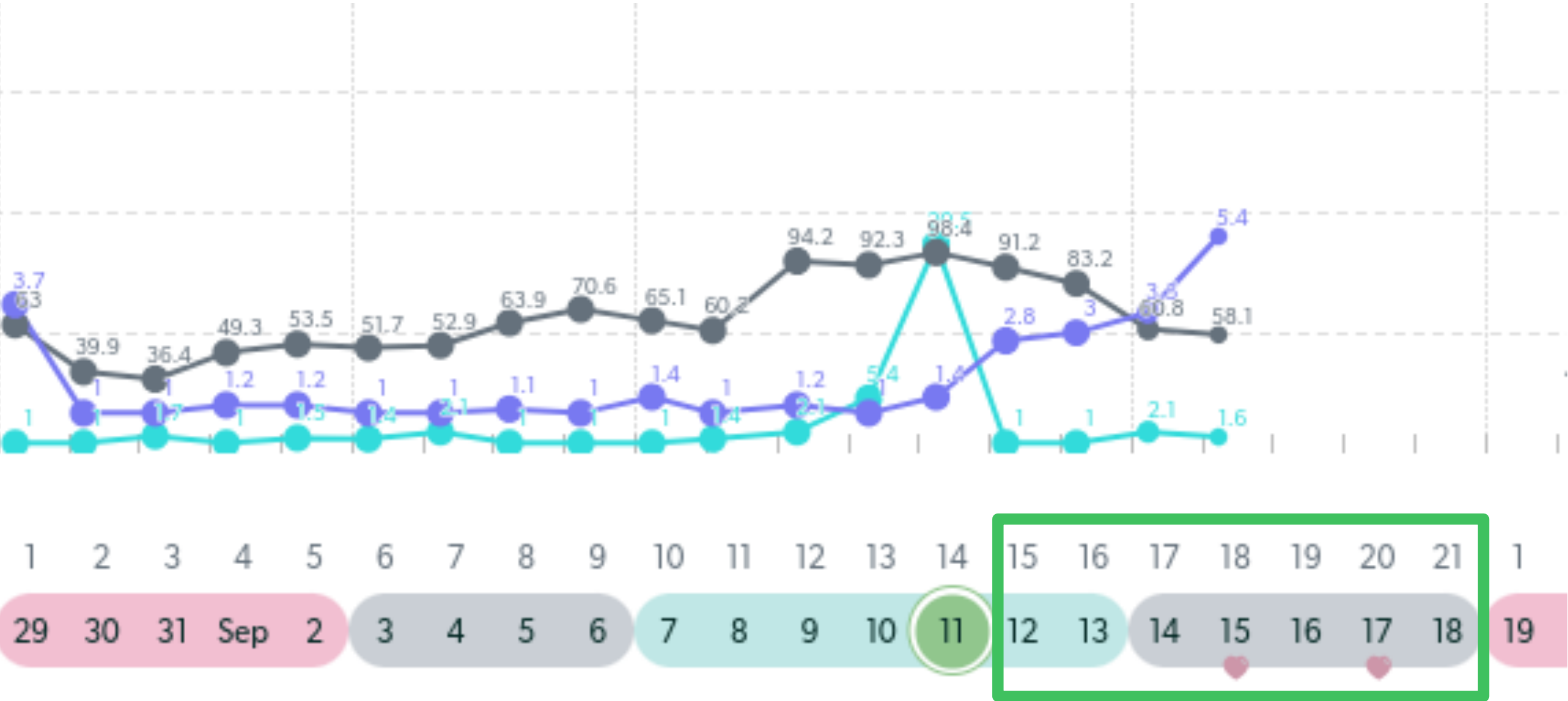
Luteal phase defect: Low progesterone



Highest progesterone is 8 = low progesterone



Luteal phase defect: Short luteal phase and low progesterone

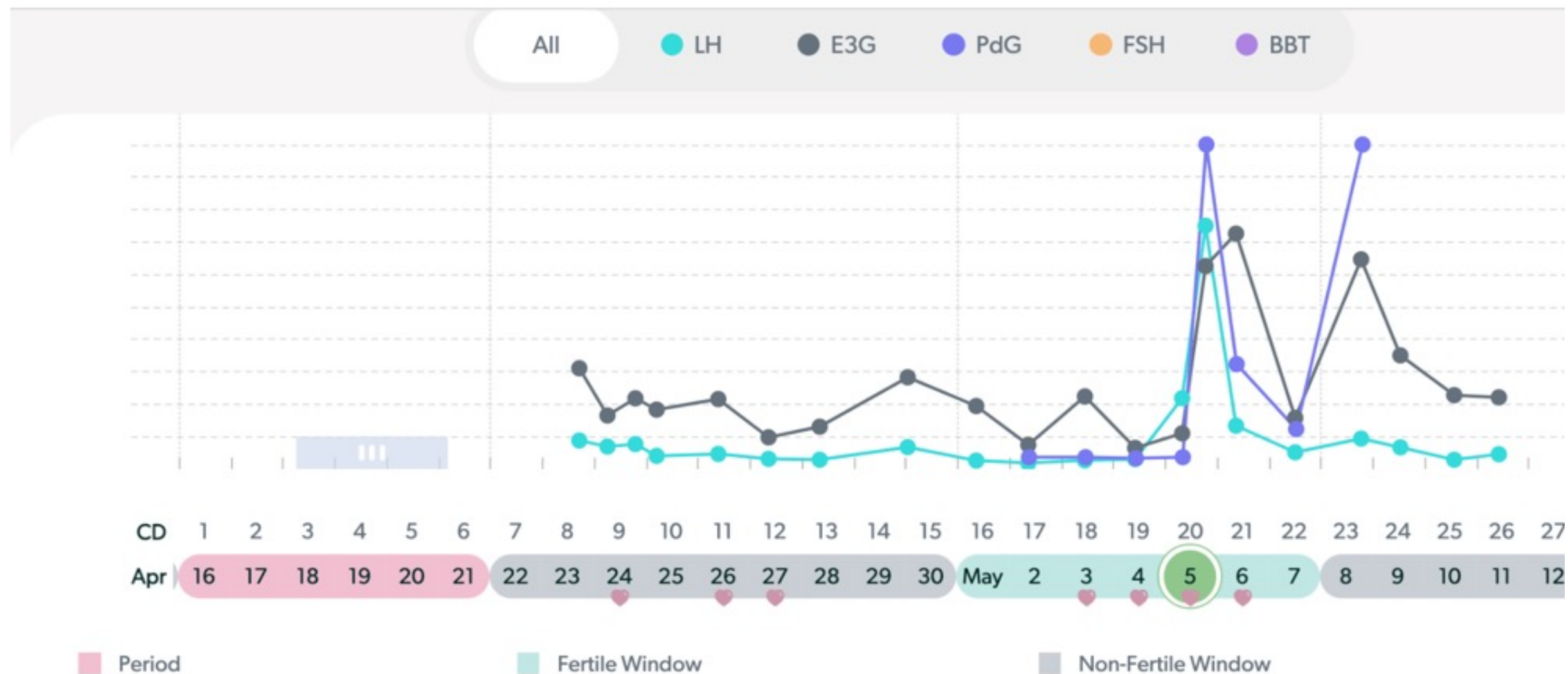


Luteal phase is 7 days= short luteal phase



Case Review: Luteal Phase Insufficiency

Luteal phase insufficiency was diagnosed in the clinic utilizing all the diagnostic tools required



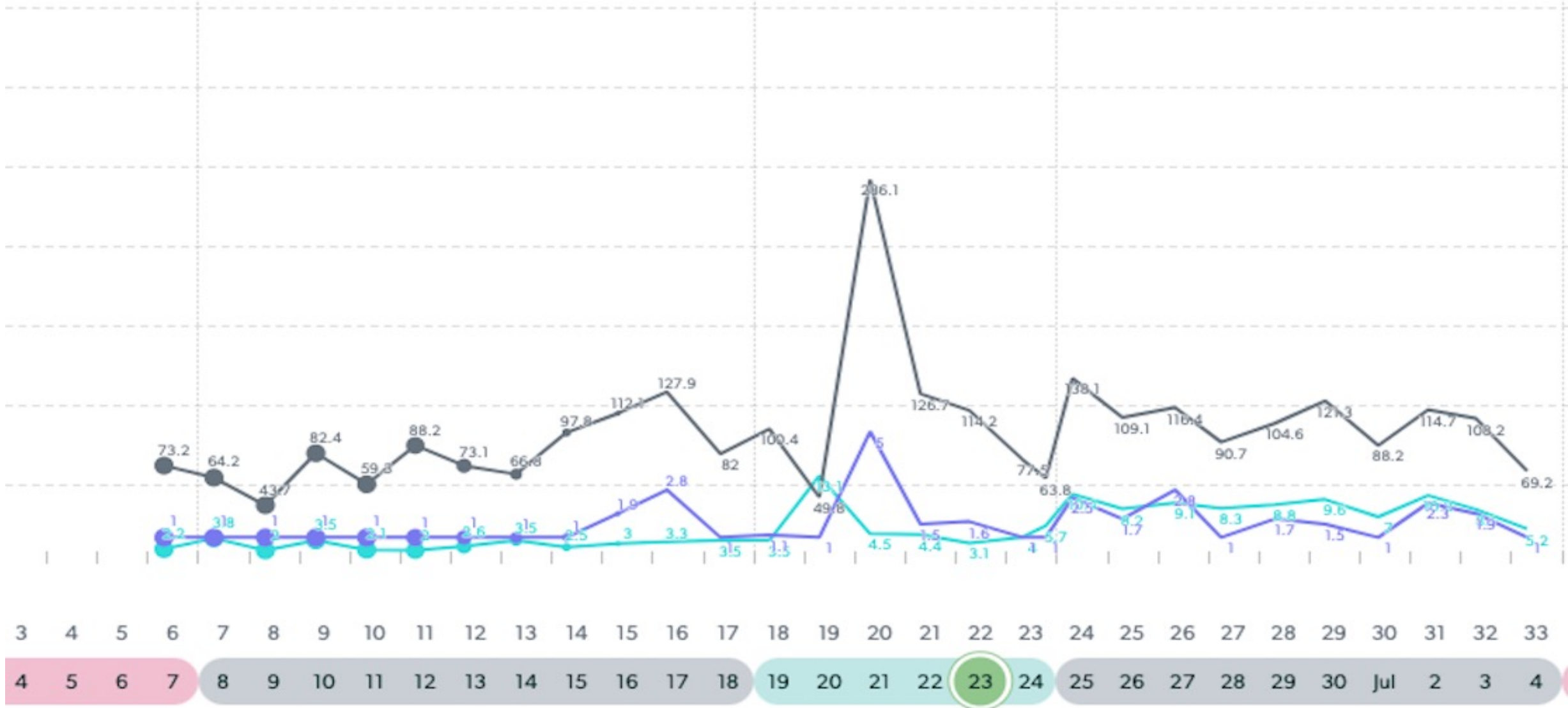
Mira data discovered:

- LH surge on CD 20 (May 5th)
- Luteal phase is 9 days
- Cycle length is 29 days



Mira assisting in clinical evaluation

Clinical differentials: LUF, luteal phase insufficiency (low progesterone) or anovulation



Mira data discovered:

- LH surge detected
- Minimal PdG rise after LH surge
- Abnormal LH pattern during luteal phase



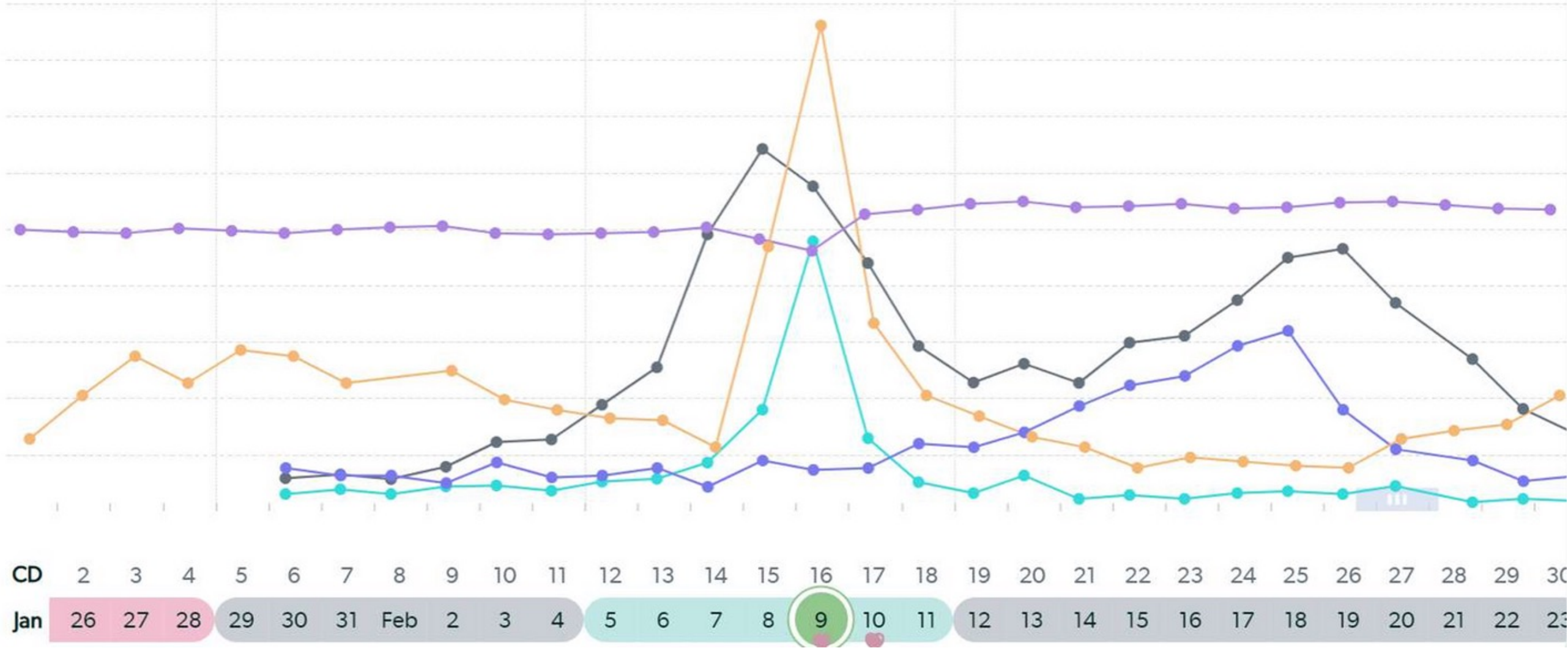
Hormone Patterns

FSH patterns

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FSH patterns throughout the menstrual cycle



Consistently elevated FSH levels may indicate declining fertility and/or an infertile state

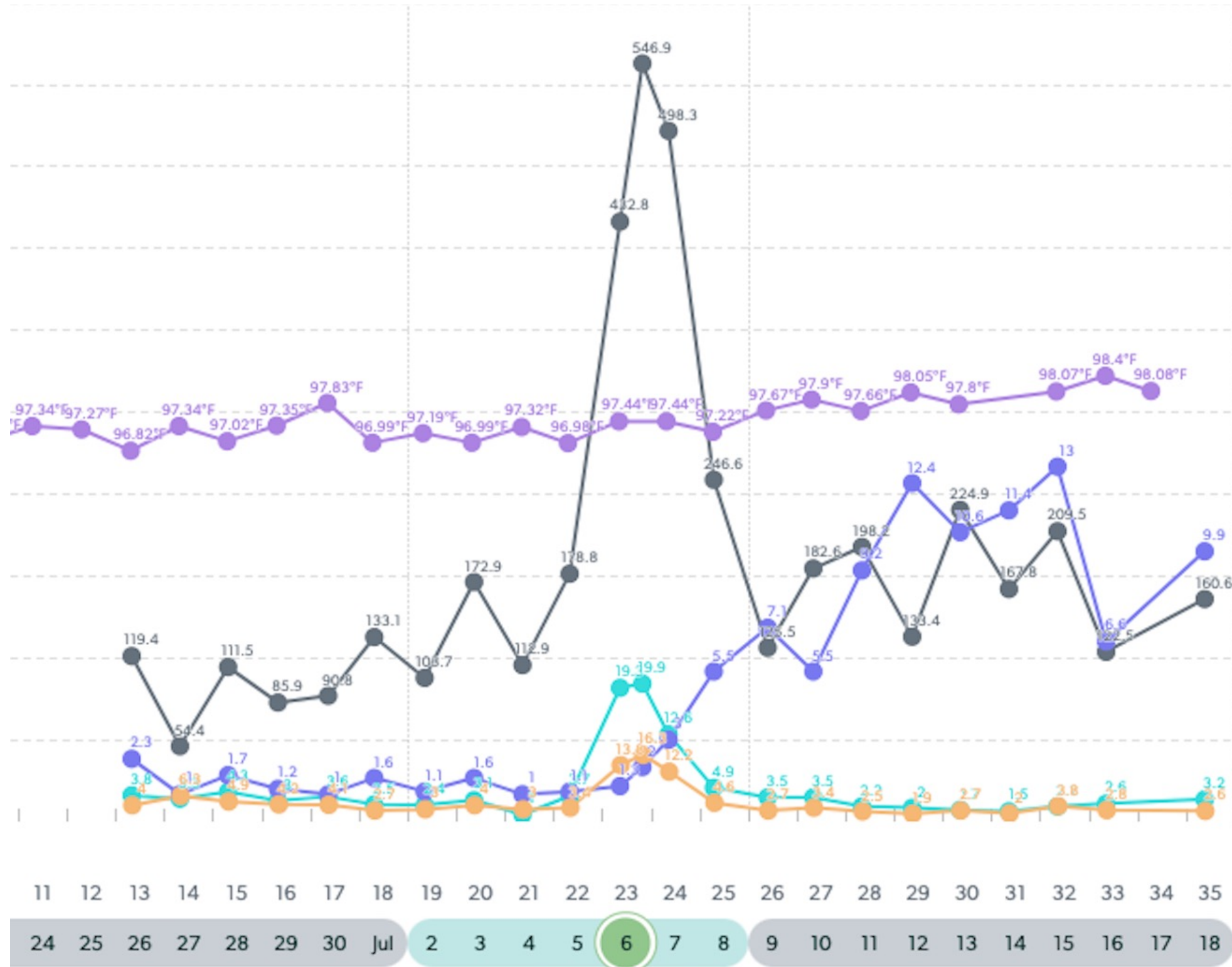
FSH is expected to rise three times throughout the menstrual cycle: at the beginning of the cycle, around ovulation and before the next period

The FSH peak around ovulation usually coincides with LH peak. An LH surge without an FSH surge is likely non-ovulatory

The FSH peak around ovulation is commonly lower in amplitude than the LH peak



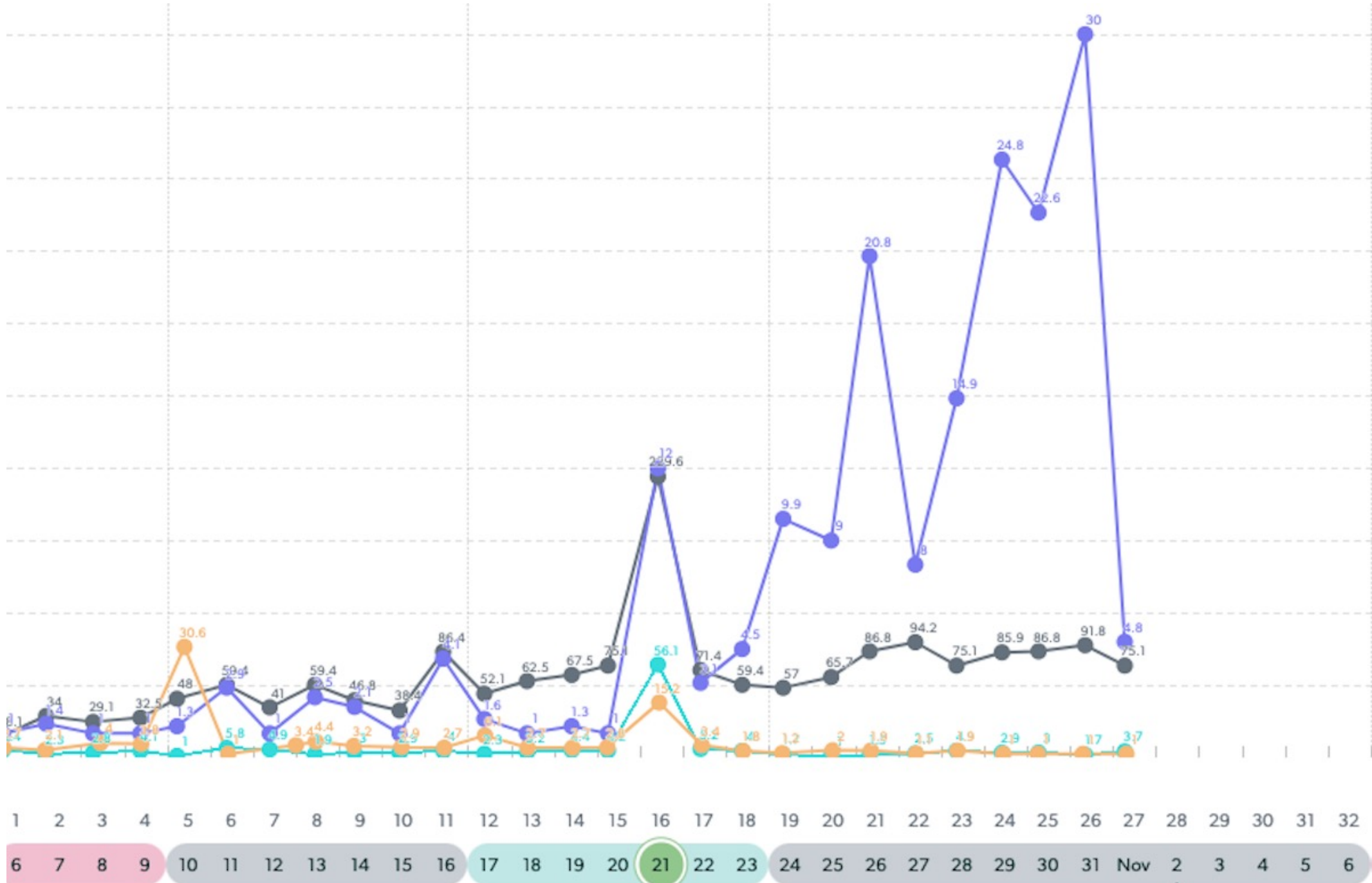
FSH chart example



- A FSH surge is seen on CD 23 and CD 24 during the LH surge



FSH chart example

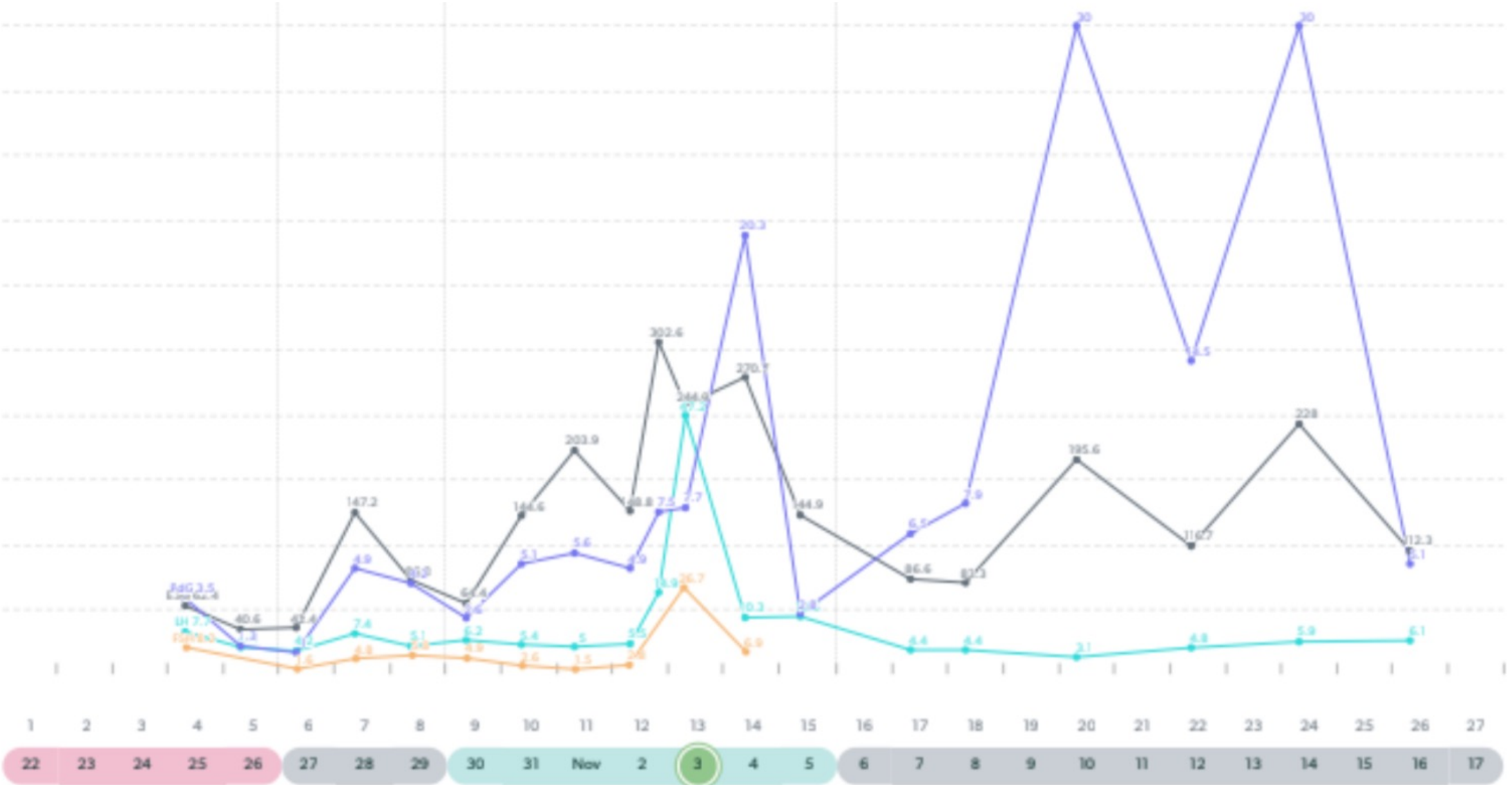


- A rise in FSH is seen on CD 5
- A FSH surge is seen on CD 16 during the LH surge



FSH chart example

- A FSH surge is seen on CD 13 during the LH surge



Hormone Patterns Perimenopause

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Mira assisting in clinical evaluation: Perimenopause

Case report of women in perimenopause has revealed certain cycle characteristics unique to this period, which include:

- cycles with delayed LH surges,
- quick rises in E3G near the LH surge,
- low E3G and LH levels in a cycle
- double LH surges in one cycle with corresponding FSH elevation during the highest LH surge
- continuous high levels of E3G and LH throughout the cycle
- low PdG levels after an LH surge.



Mira assisting in clinical evaluation: Perimenopause

Figure 6. Variable cycle with MIRA: 50 yo with low E3G and low LH: likely anovulatory.



Mira assisting in clinical evaluation: Perimenopause

Figure 10. Variable cycle with MIRA: 49 yo with late LH peak, no PdG rise, and a 29-day cycle.

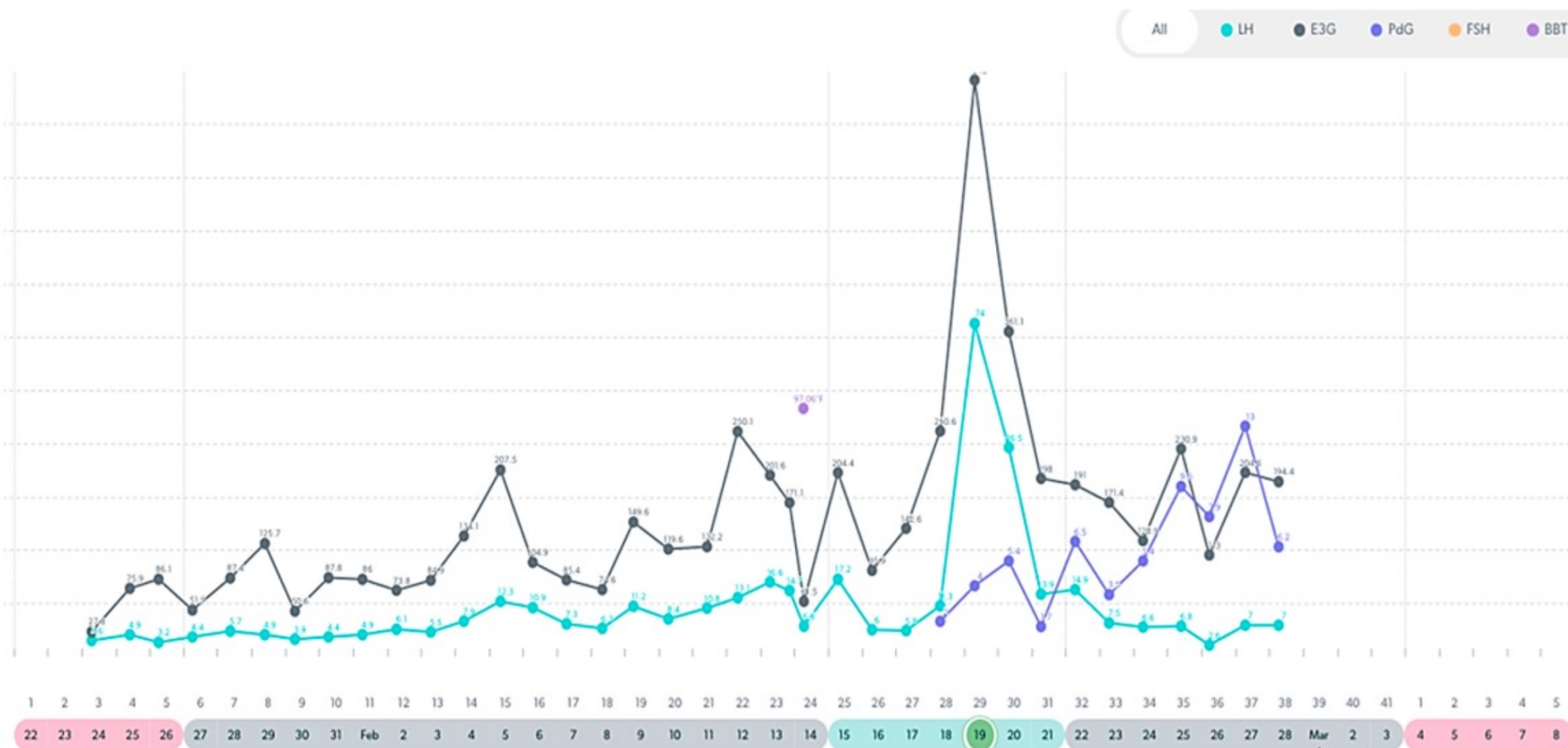


Case Reports from Women Using a Quantitative Hormone Monitor to Track the Perimenopause Transition Maria Mayers et al. Medicina, September 2023 <https://doi.org/10.3390/medicina59101743>



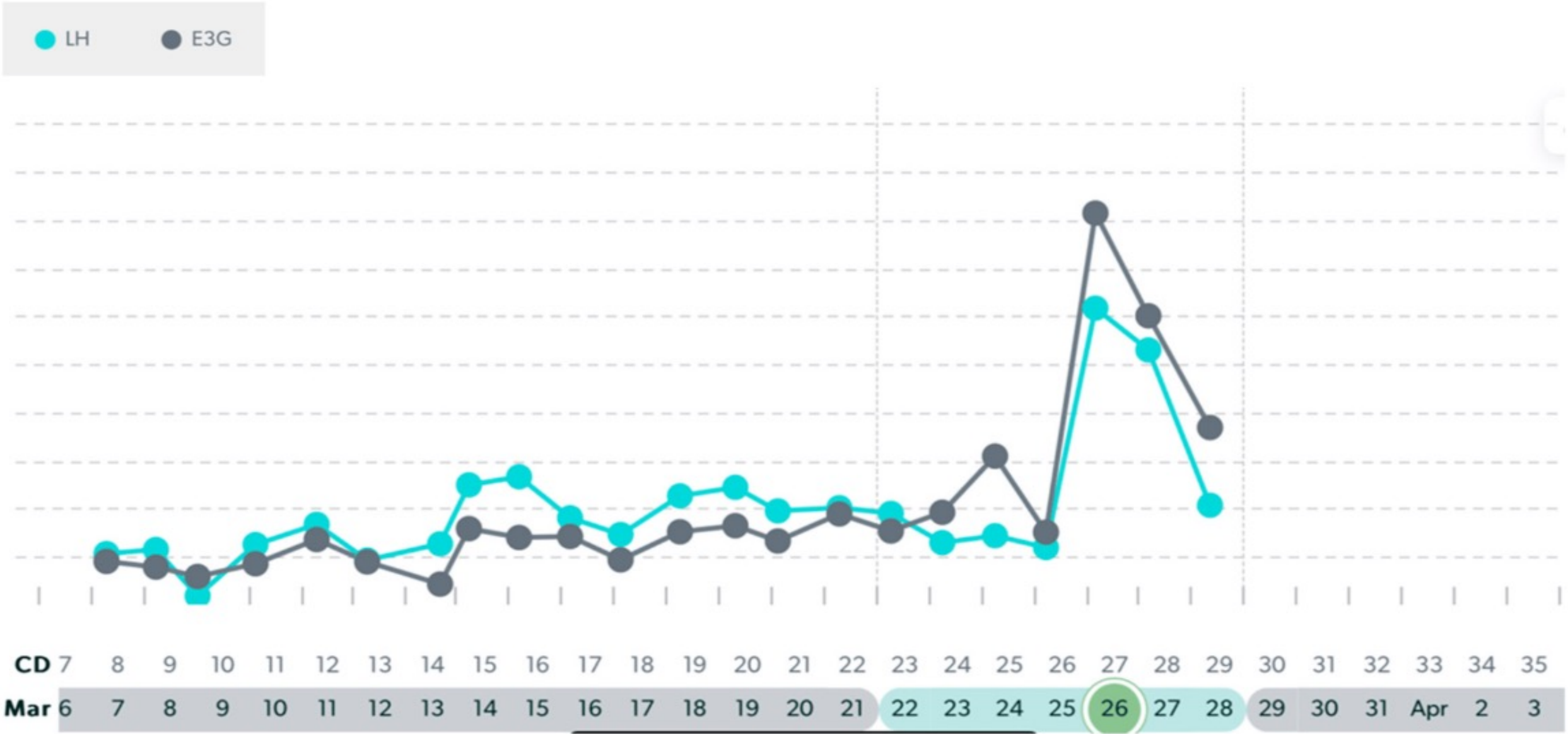
Mira assisting in clinical evaluation: Perimenopause

Figure 3. Variable cycle with MIRA: 41 yo-delayed LH peak, 41 day cycle length, PdG rise post ovulation.

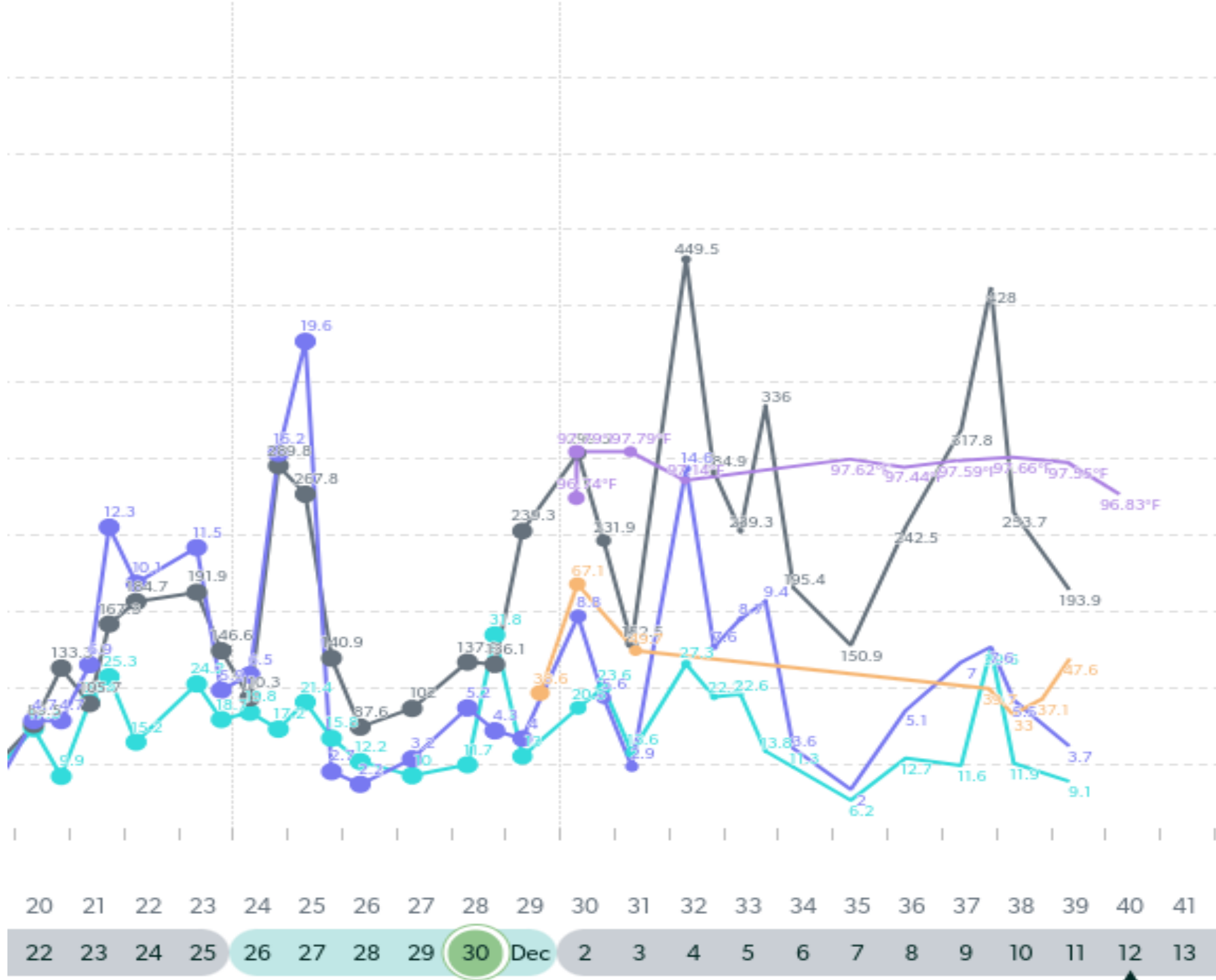


Mira assisting in clinical evaluation: Perimenopause

Figure 4. Variable cycle with MIRA: 47 yo with truncated E3G rise to LH peak in a 36-day cycle.



Case Report: Perimenopause



G12P7
 42 year old
 Oct 10th – miscarriage
 Dec – Diagnosed with Hashimotos
 <0.015 anti-mullerian hormone (AMH)
 Consistently elevated FSH = infertile pattern



Hormone Patterns

PCOS

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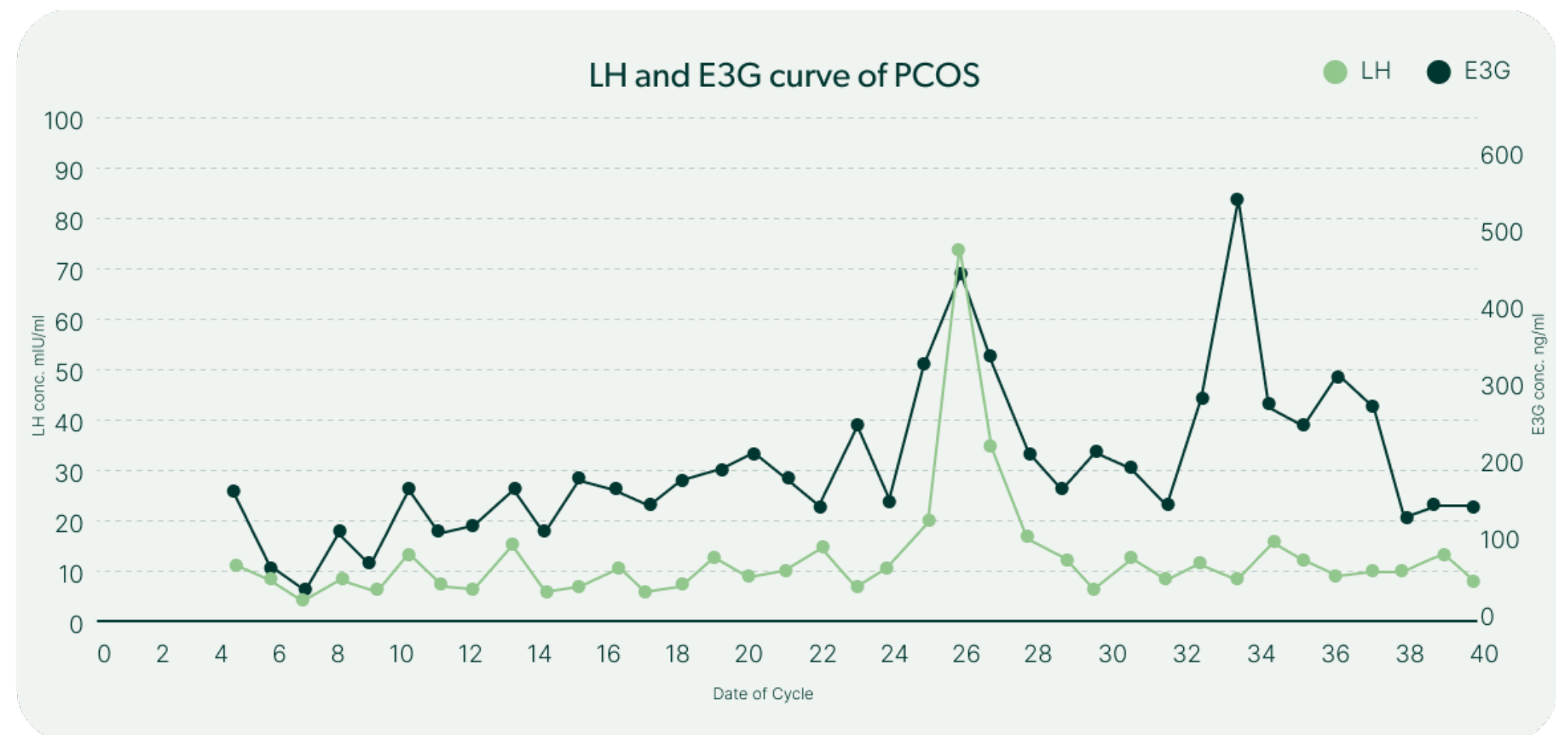
Mira and PCOS

Mira helps those with PCOS (polycystic ovarian syndrome) reach their fertility goals. With Mira, a person with PCOS can identify their hormone levels and curves even if their LH baseline is high. Moreover, they will be able to pinpoint their approaching ovulation even if they experience irregular cycles.

Mira identifies the entire pattern of LH surges for users with PCOS who have multiple LH peaks instead of identifying just one, the way regular OPKs do.

The most significant difference between Mira and OPKs is that Mira does not look for a target number based on statistical averages to offer results. Instead, Mira's AI learns from the user and displays an overall trend. Mira's prediction of the patient's fertile window is personalized and pinpoints approaching ovulation avoiding false positives before ovulation.

Many people with PCOS have used Mira to track their cycles, improve their hormone patterns and conceive



Mira chart examples: PCOS

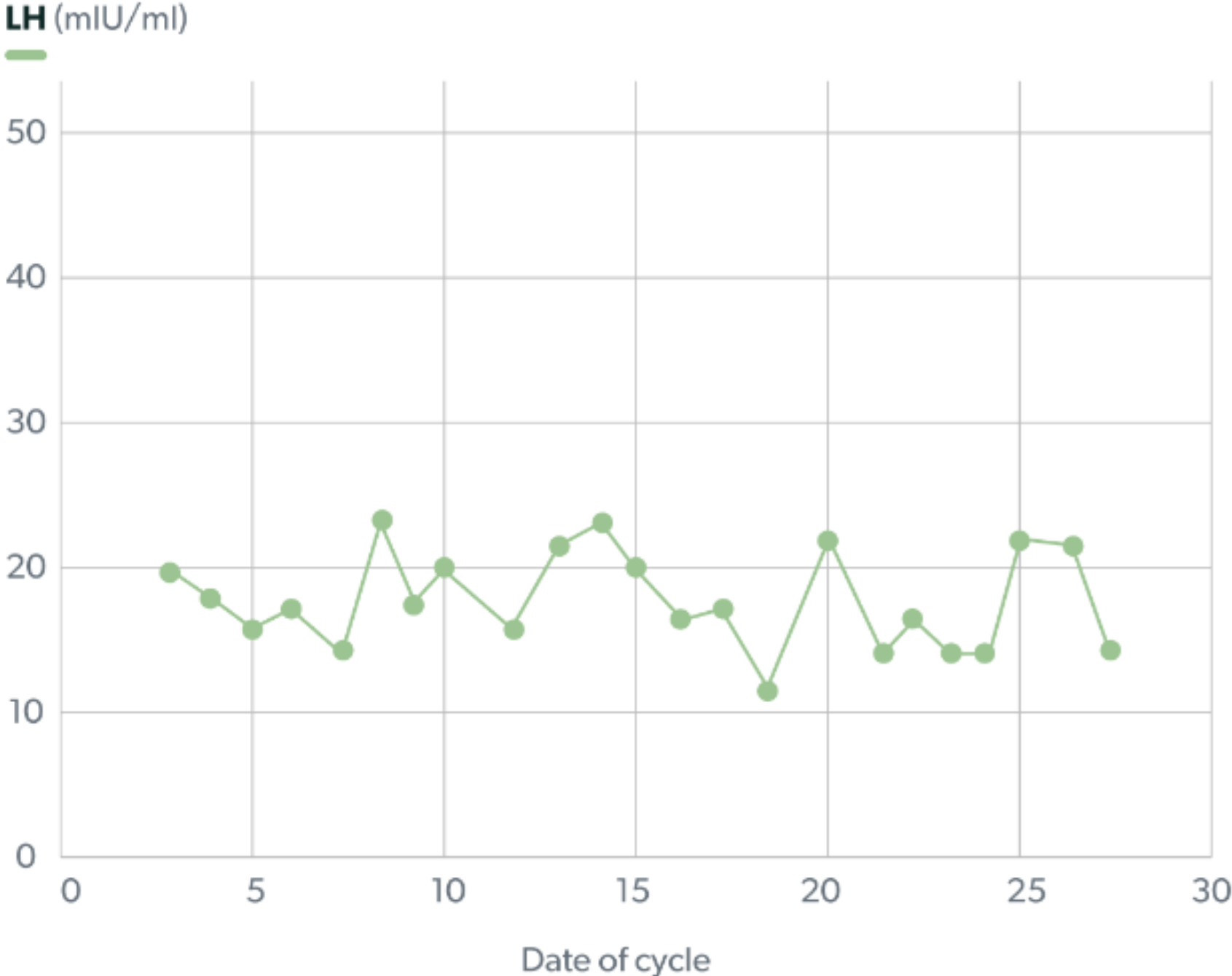
Multiple LH peaks may indicate that patients has PCOS



Mira chart examples: PCOS

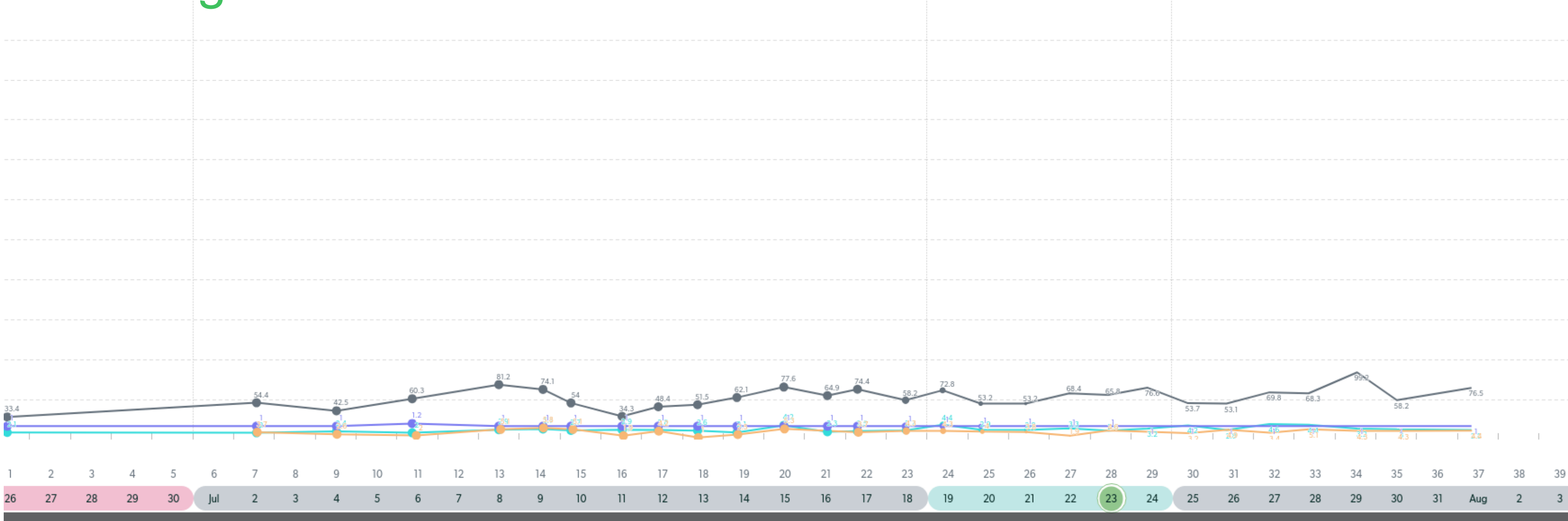
Chronically elevated LH may indicate PCOS

Polycystic Ovary Syndrome



Mira chart examples: PCOS

Unmanaged PCOS—amenorrhea



Mira data discovered:

- Minimal changes in E3G
- Lack of LH surge
- No PdG changes



Hormone Patterns By Age



Averages among all ages

| Cycle phase | LH levels mIU/ml | E3G levels ng/ml | PdG levels mcg/ ml | FSH levels mIU/ml |
|--------------------|-----------------------------|-----------------------------|-------------------------------|------------------------------|
| Follicular | 1–6 | 80–120 | 1–3 | 3–10 |
| Ovulation | 7–25 | 120–400 | 3–7.5 | 10–20 |
| Luteal | 2–5 | 100–350 | 5–20 | 2–5 |



Ages 18-35

Based on report from 9497 healthy Mira users

| Cycle phase | Days from LH peak | LH levels mIU/ml | E3G levels ng/ml | PdGlevels mcg/ml | FSH levels mIU/ml |
|------------------|-------------------|--------------------|------------------------|--------------------|--------------------|
| Early follicular | -15 to -6 | 3.44 (2.13-5.2) | 83.9 (52.84-127.38) | 1.86 (0.99-3.64) | 7.56 (5.11-10.79) |
| Late follicular | -5 to -1 | 3.58 (2.19-5.75) | 135.87 (85.86-218.95) | 2.01 (1.06-3.59) | 5.69 (3.72-9.12) |
| Ovulation | 0 | 26.74 (17.4-42.06) | 224.70 (131.73-380.38) | 2.86 (1.46-5.32) | 20.6 (13.36-27.95) |
| Early luteal | +1 to +4 | 6.6 (3.8-11.87) | 150.41 (93.46-246.24) | 5.47 (2.74-10.29) | |
| Mid-luteal | +5 to +9 | 3.12 (1.9-4.61) | 126.79 (87.24-187.3) | 13.44 (6.75-25.77) | 3.12 (2.32-4.89) |
| Late luteal | +10 to +14 | 3.05 (1.86-4.46) | 126.63 (85.33-200.77) | 11.94 (6.02-25.63) | 3.85 (2.18-4.61) |



Ages 36-40

Based on report from 5908 healthy Mira users

| Cycle phase | Days from LH peak | LH levels mIU/ml | E3G levels ng/ml | PdG levels mcg/ml | FSH levels mIU/ml |
|------------------|-------------------|---------------------|------------------------|--------------------|---------------------|
| Early follicular | -15 to -6 | 3.31 (2.07-5.2) | 83.5 (53.71-124.83) | 1.91 (1.0-3.52) | 8.62 (5.71-11.91) |
| Late follicular | -5 to -1 | 3.43 (2.09-5.64) | 135.86 (84.51-221.37) | 2.0 (1.05-3.49) | 6.50 (4.24-8.82) |
| Ovulation | 0 | 28.04 (18.11-44.26) | 227.31 (133.91-377.06) | 2.91 (1.53-5.06) | 23.48 (14.21-34.24) |
| Early luteal | +1 to +4 | 6.51 (3.63-11.84) | 147.83 (90.44-239.93) | 5.43 (2.71-10.79) | 8.28 (5.19-13.94) |
| Mid-luteal | +5 to +9 | 2.85 (1.67-4.33) | 122.34 (82.29-183.93) | 12.73 (6.6-26.25) | 3.33 (2.07-4.46) |
| Late luteal | +10 to +14 | 3.0 (1.69-4.57) | 124.24 (83.97-189.06) | 11.68 (5.53-25.32) | 2.53 (2.05-4.02) |



Ages 41 and over

Based on report from 3235 healthy Mira users

| Cycle phase | Days from LH peak | LH levels mIU/ml | E3G levels ng/ml | PdG levels mcg/ml | FSH levels mIU/ml |
|------------------|-------------------|---------------------|-----------------------|--------------------|---------------------|
| Early follicular | -15 to -6 | 3.14 (1.94-4.92) | 84.81 (53.28-126.24) | 1.98 (1.01-3.65) | 9.45 (6.02-15.12) |
| Late follicular | -5 to -1 | 3.35 (2.04-5.51) | 138.97 (84.69-229.18) | 2.0 (1.06-3.67) | 6.21 (4.33-10.14) |
| Ovulation | 0 | 27.31 (18.04-42.26) | 230.32 (135.35-385.1) | 2.99 (1.6-5.46) | 21.03 (13.53-33.89) |
| Early luteal | +1 to +4 | 6.15 (3.46-11.21) | 141.64 (86.42-233.82) | 6.0 (2.74-12.48) | 8.14 (5.62-13.84) |
| Mid-luteal | +5 to +9 | 2.79 (1.59-4.25) | 120.47 (81.21-181.28) | 14.13 (6.71-30.01) | 4.02 (2.60-5.92) |
| Late luteal | +10 to +14 | 2.83 (1.6-4.56) | 127.16 (85.19-192.87) | 12.96 (6.14-28.12) | 4.48 (3.06-8.09) |

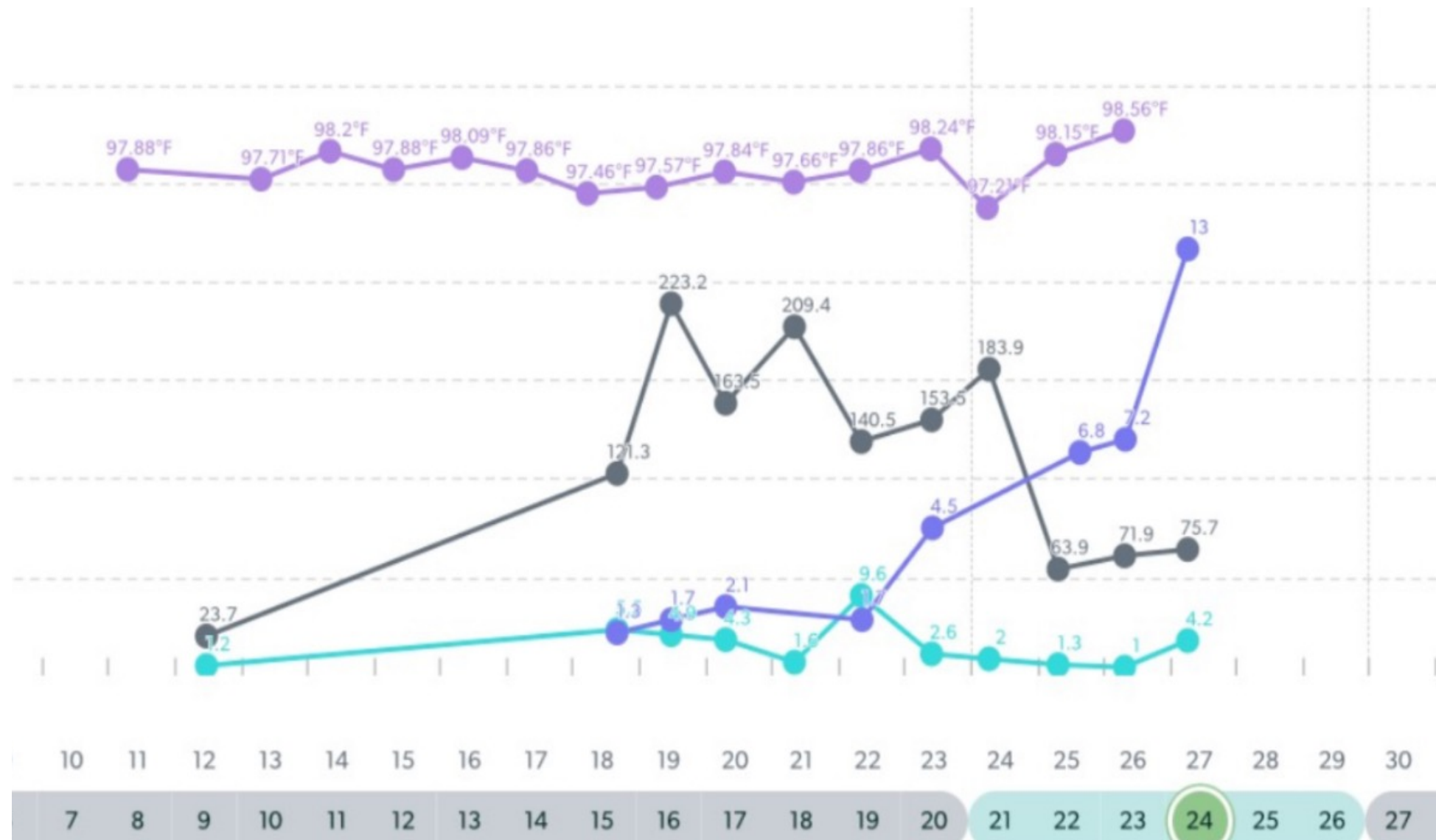


Hormone Patterns Other

[Click to Watch Video Explanation](#)



Case Report: Return of fertility after miscarriage



40F: G7P6, 14 week miscarriage

Miscarriage bleeding
Oct 29th–Nov 15th

On Nov 15th home pregnancy test was negative indicating her HCG levels had returned to pre-pregnancy levels.

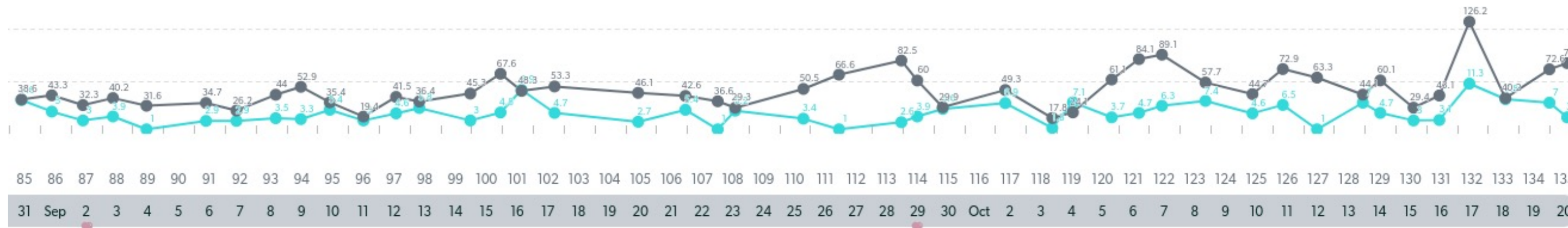
Mira data discovered:

- Return of fertility detected with rising estrogen levels
- LH surge detected on CD 22
- Ovulation confirmed with rising progesterone levels

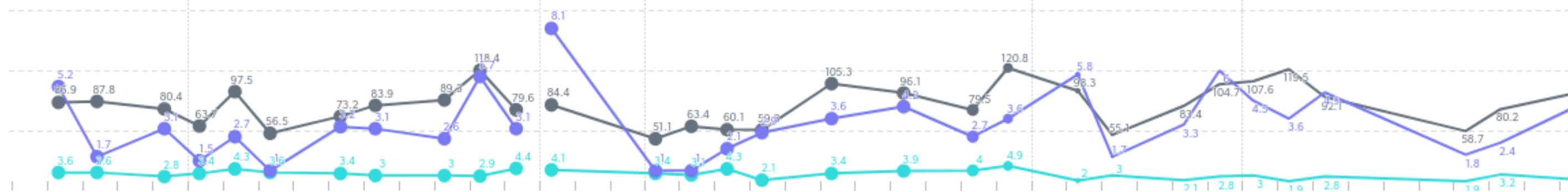


Postpartum Breastfeeding Amenorrhea Examples: Infertile pattern

Example 1



Example 2

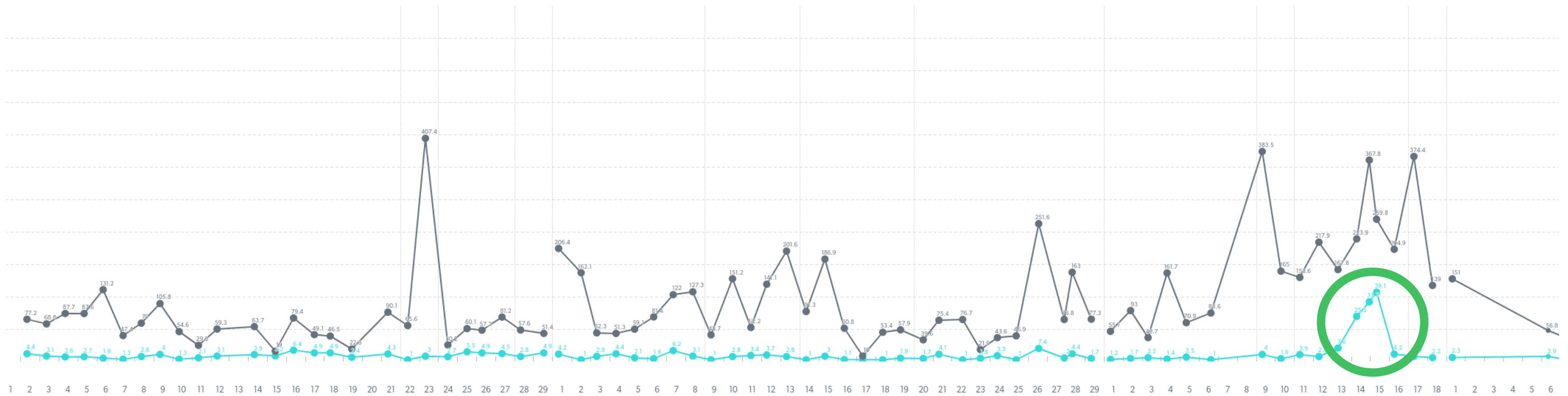


Mira data discovered:

- Lack of coordinated E3G rising pattern
- No evidence of ovulation
- No menstrual periods
- Lack of ovulatory LH surge
- Continued infertile state



Return of fertility while postpartum breastfeeding



Mira data discovered:

- Fluctuating estrogen levels prior to the return of fertility
- Sustained elevated estrogen leading to the first LH surge
- First ovulation detected prior to first menstrual period



Mira assisting in clinical evaluation: Progesterone supplementation



Mira data discovered:

- Post peak progesterone supplementation



Troubleshooting

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Improper testing technique: wand dipped for 40 seconds



Oversaturated wand

Result is dismissed as an outlier due to improper testing technique



Case Report with Mira

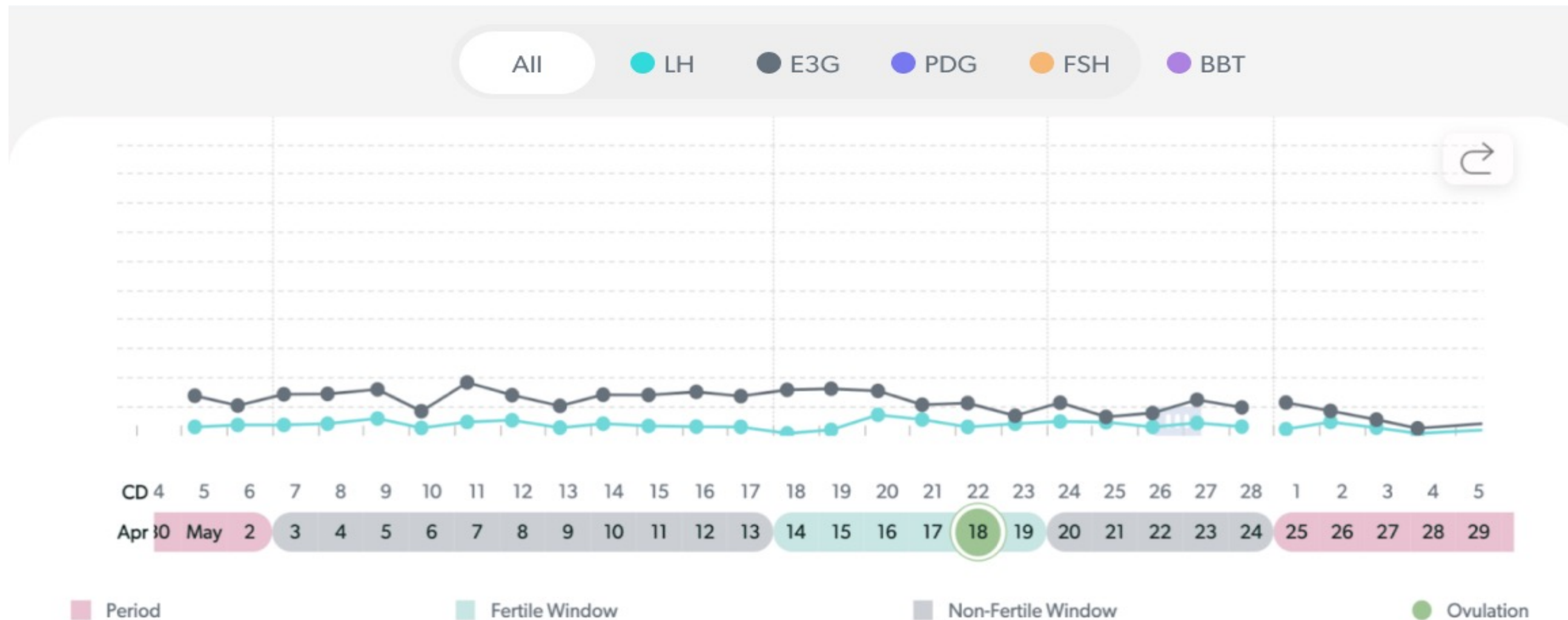
Mira assisting in clinical evaluation and treatment

[Click to Watch Video Explanation](#)



Hypothalamic amenorrhea

Hypothalamic amenorrhea was diagnosed in clinic utilizing all the diagnostic tools required



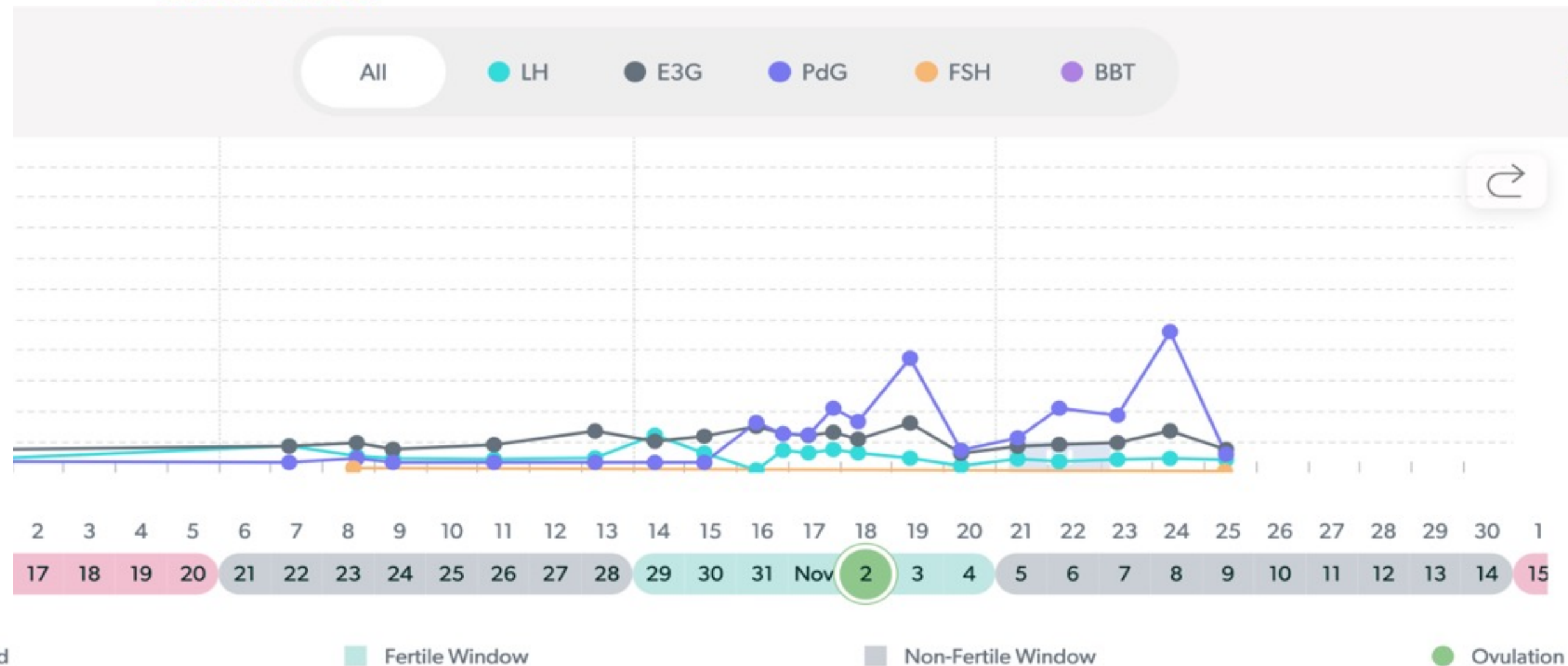
Mira data discovered:

- No LH surge
- Minimal E3G changes
- No ovulation confirmed



Hypothyroidism, suboptimal hormone patterns

Hypothyroidism was diagnosed in clinic utilizing all the diagnostic tools required



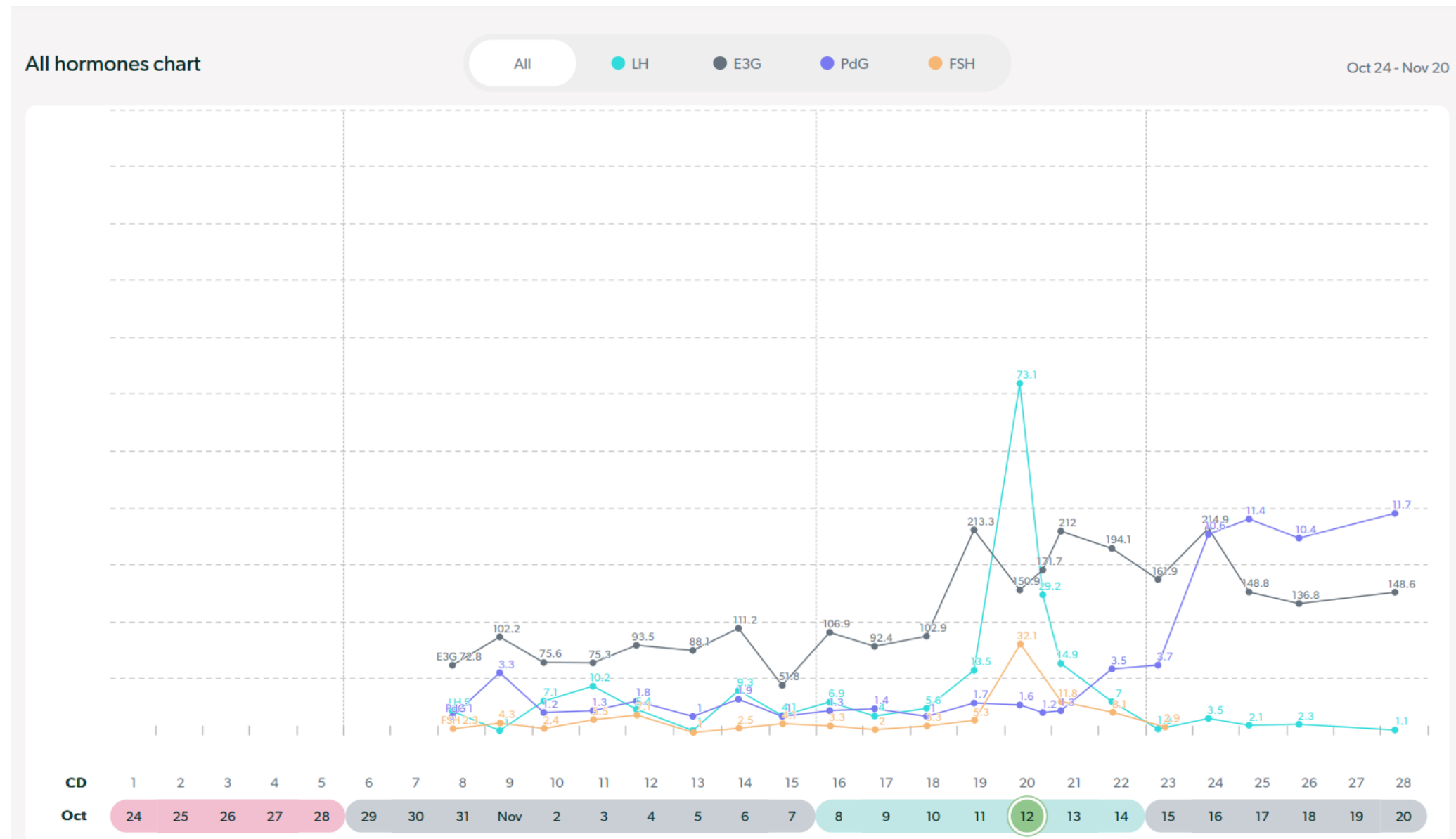
Mira data discovered:

- Low E3G
- Small LH surge on CD 14 (Oct 29)
- Minimal rise in progesterone post ovulation



Luteal Phase Insufficiency

Secondary Infertility



39 year old

Suffering from secondary infertility for 4 years

Clinical concerns for low progesterone: 3–7 days of premenstrual spotting before period begins

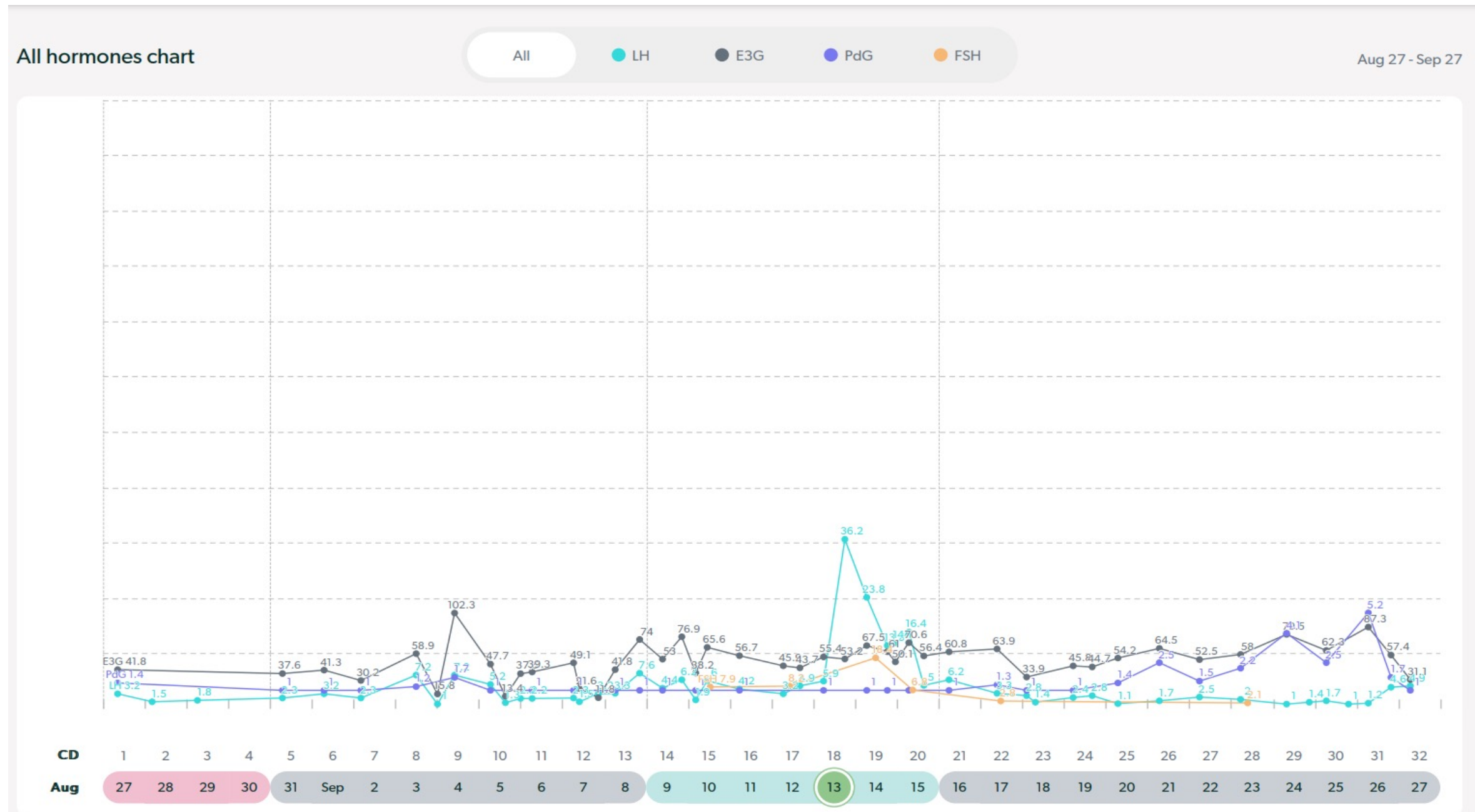
Low progesterone and short luteal phase confirmed with Mira

Mira data discovered:

- Luteal phase 7 days
- Low progesterone levels



Infertility: low hormone levels



40F: Trying to conceive for 1 year

Mira data discovered:

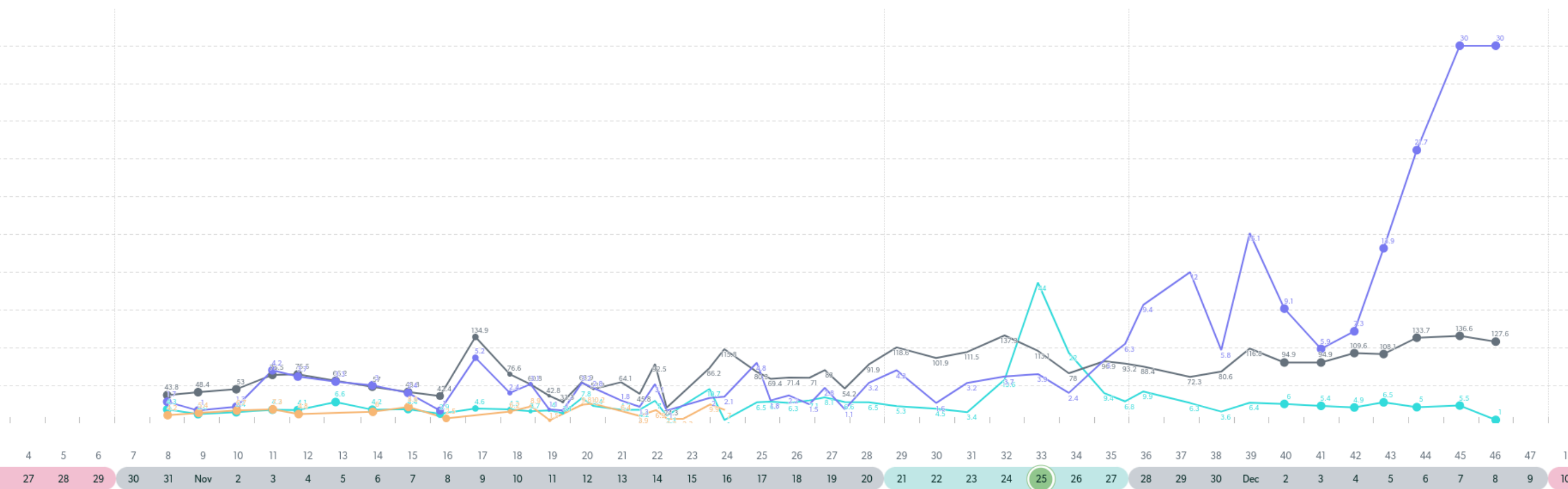
- Low estrogen levels
- Lack of effective rise of estrogen before ovulation
- Low progesterone levels



PCOS: long and irregular cycle

Acupuncture Treatment

Acupuncture treatment adjusted = estrogen began to rise and LH surge occurred on CD 32-34



Mira data discovered:
Before treatment change

- Low estrogen and lack of LH surge before CD 22

After treatment change

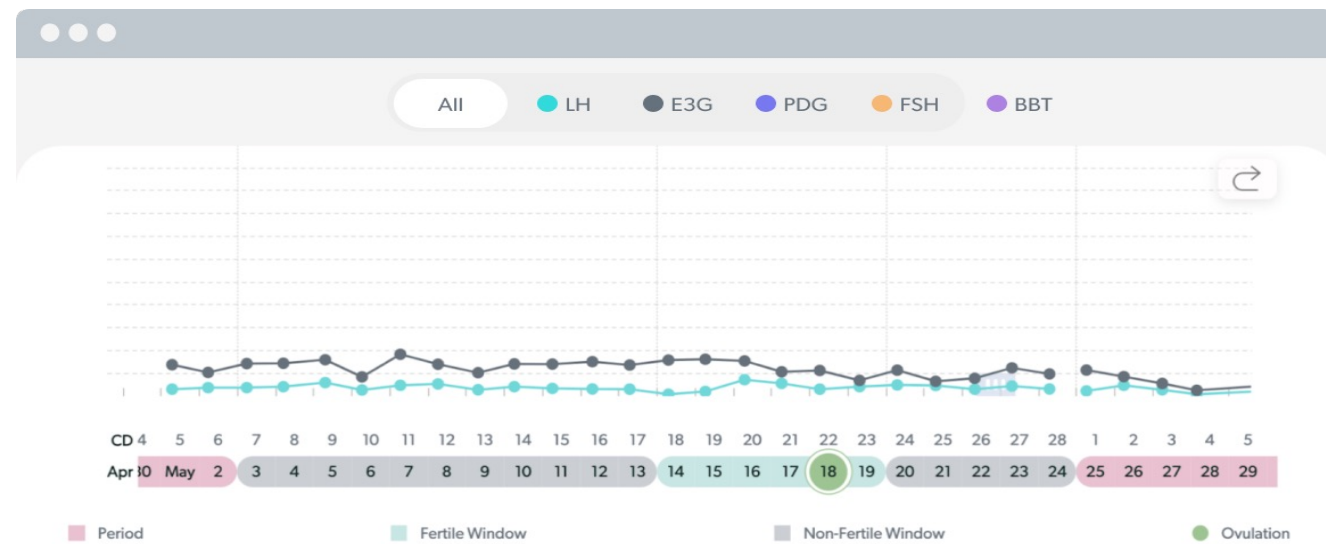
- Rising estrogen, LH surge on CD 32-34, and rising PdG after the LH surge confirming ovulation



Medicated Cycle Examples

Patient 1:

Hypothalamic Amenorrhea and Anovulation Before treatment (May '23)

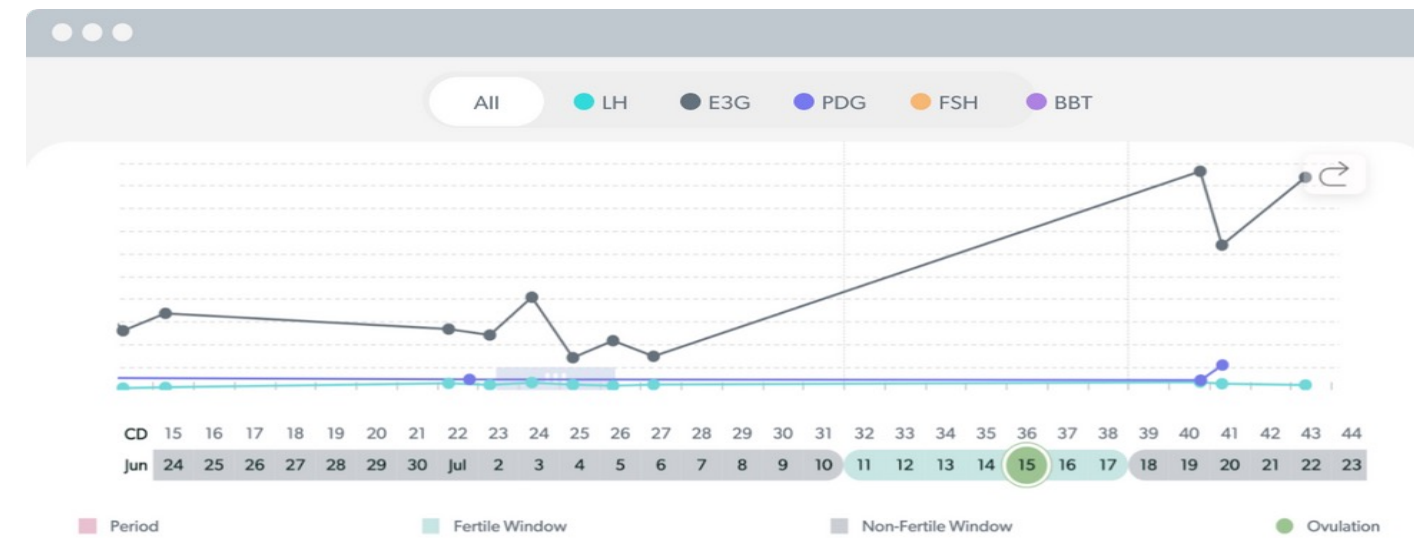


Ovulation Induction and HCG Trigger: Pregnant (September '23)

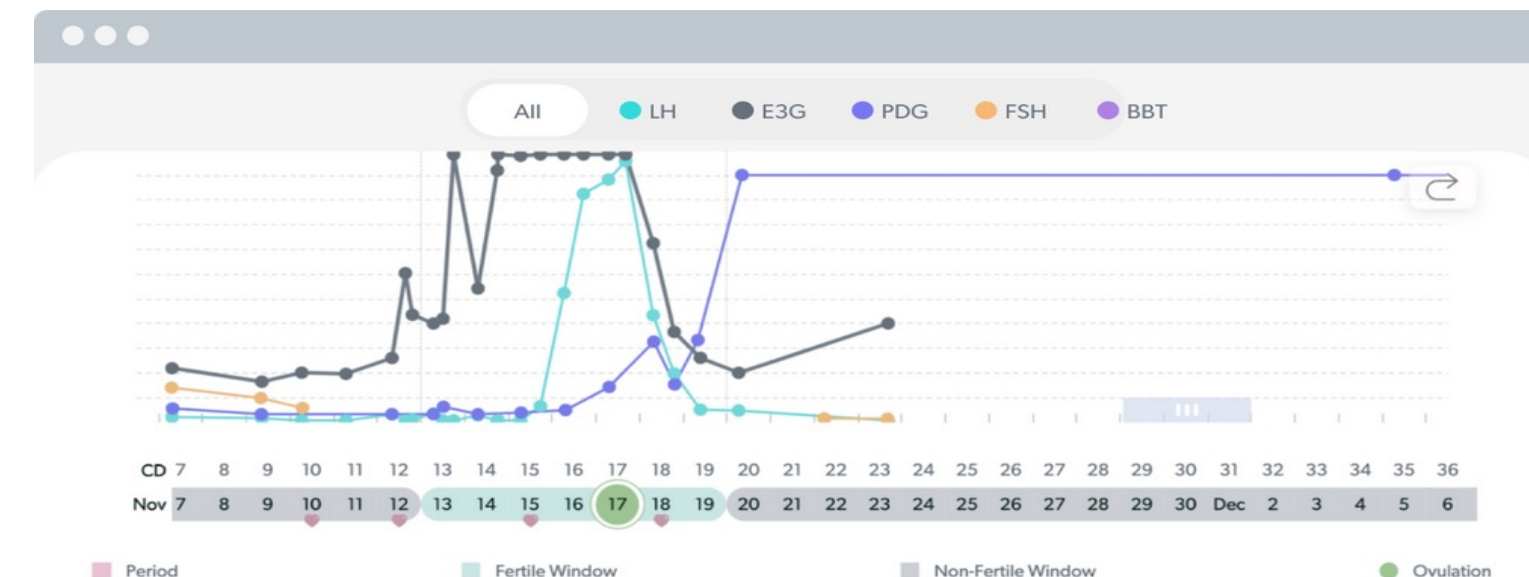


Patient 2:

Diminished Ovarian Reserve (AMH 0.6), Obesity, Anovulation, Luteal phase defect, Hypothyroidism (June '23)



Metabolic Nutrition, Trulicity, Clomid ovulation induction, HCG trigger, Progesterone: Pregnant (November '23)



Medicated cycle: PCOS

Before treatment



Mira data discovered:

- Suppressed, suboptimal LH pattern
- Minimal E3G changes

After treatment: Letrozole and HCG trigger



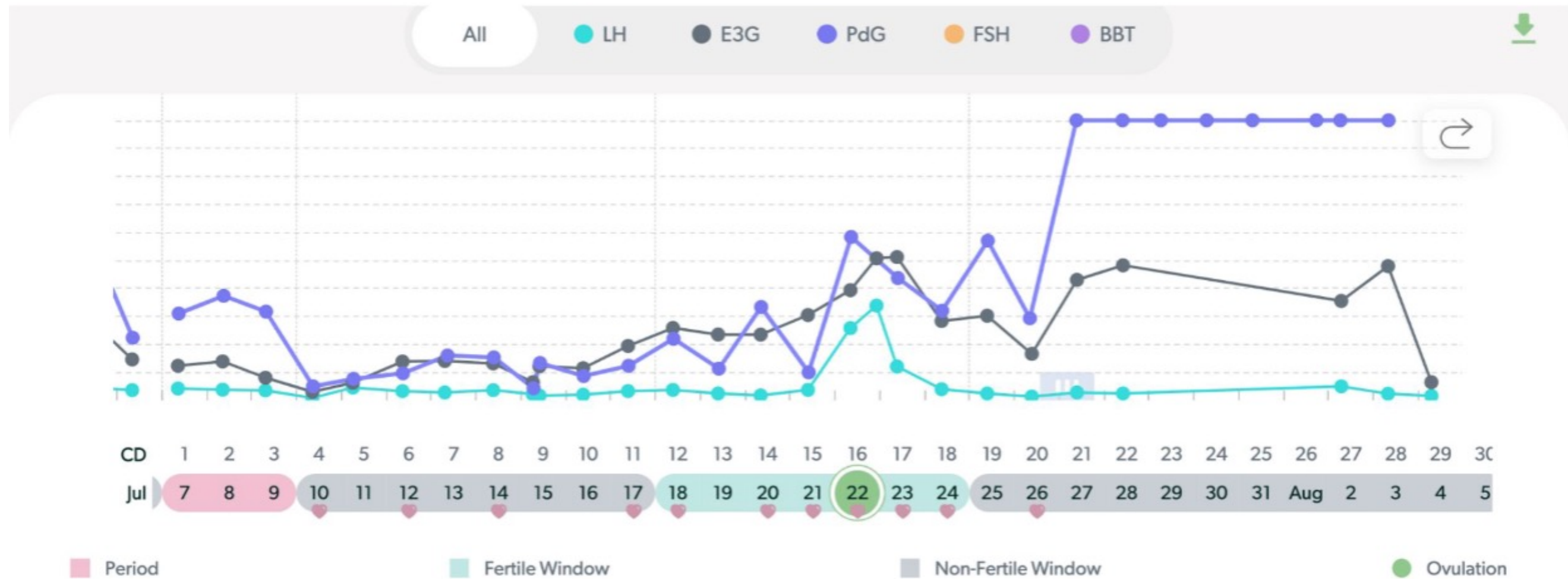
Mira data discovered:

- Improved E3G pattern
- Improved LH surge



Medicated cycle: PCOS

Letrozole stimulated and HCG trigger



Mira data discovered:

- Improved estrogen pattern
- LH surge on CD 16 (July 22nd)
- Ovulation confirmed with high progesterone after ovulation



Thank you!