Mira Interpretation Guide

This guide will help you understand the hormonal patterns of patients through a step-by-step process on interpreting data from Mira charts. By following this guide, you'll learn how to identify any abnormal hormone patterns.

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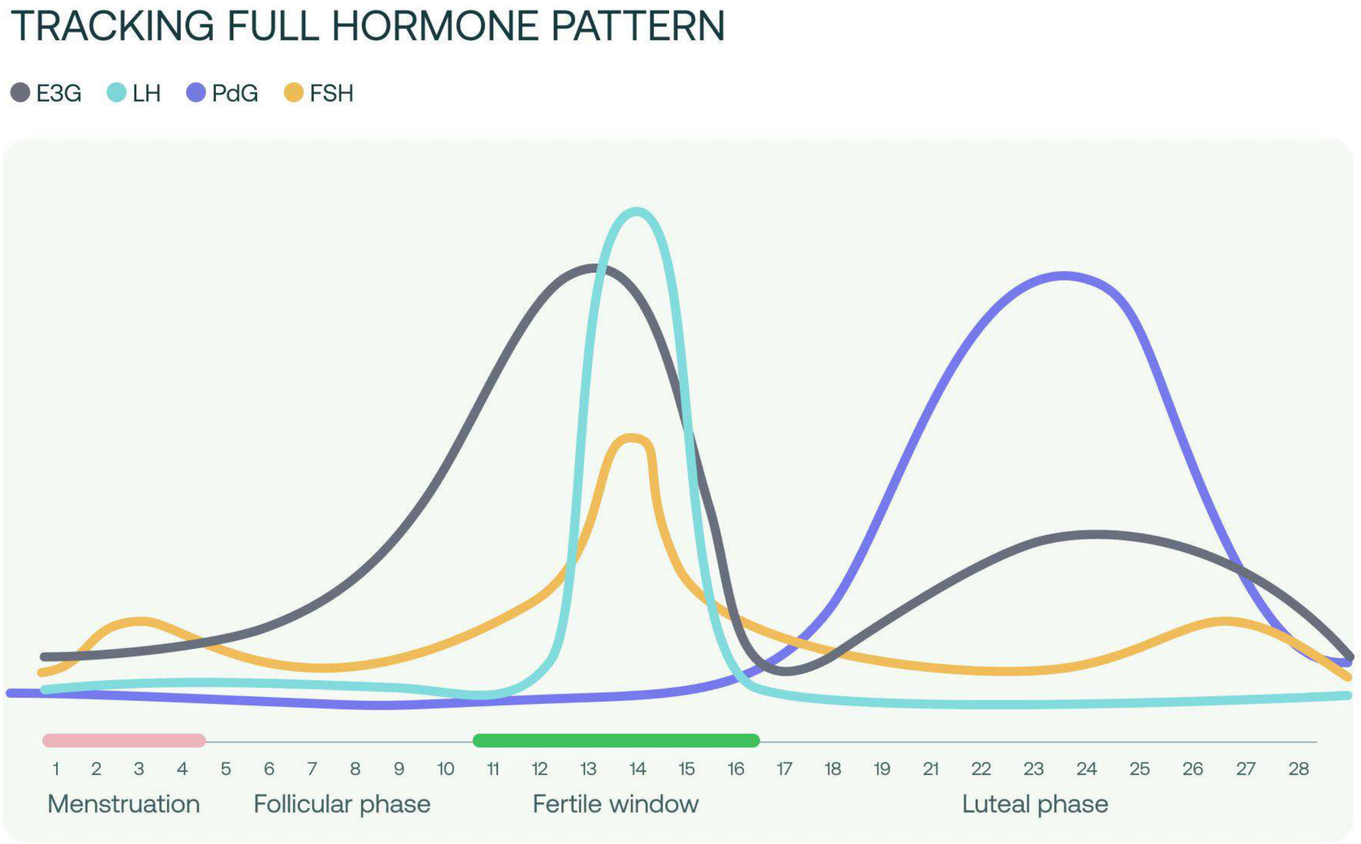


1. Interpreting overall hormone patterns

For a healthy ovulation the hormones need to be balanced and coordinated.

Checklist

1. Are the hormones coordinated?
2. Are the hormones inside the reference ranges for a majority of the data points?
3. Is the cycle length between 25-35 days?

1. Interpreting overall hormone patterns

Normal

Abnormal

1. Are the hormones coordinated?

When hormones follow their intended pattern and execute their functions at the right times, they are well-coordinated and support ovulation.

Yes - Normal

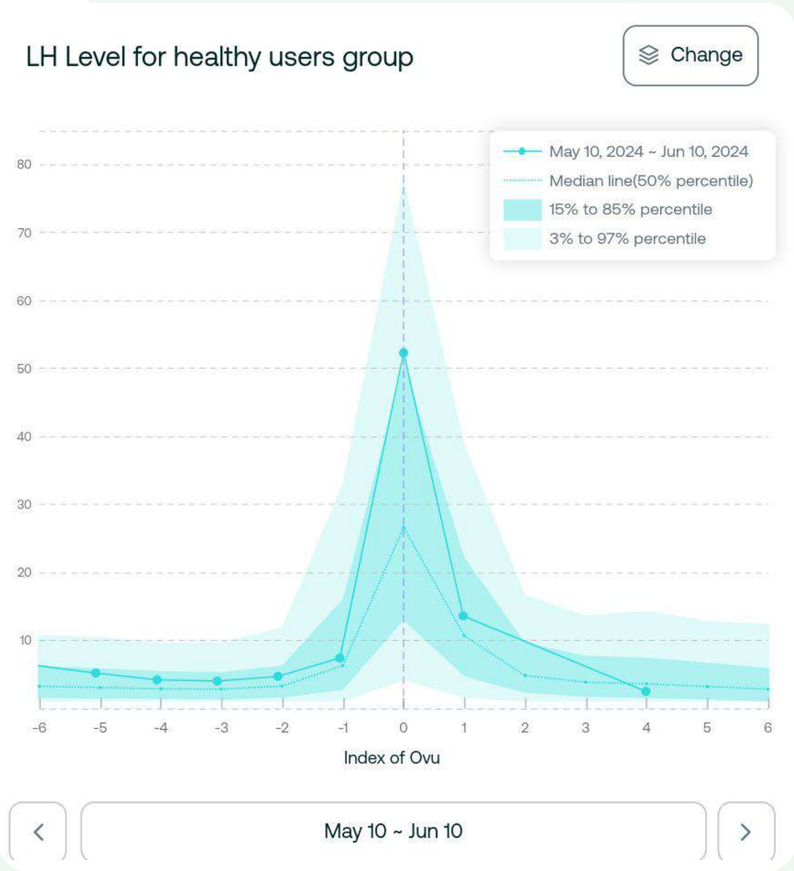
A coordinated pattern involves rising E3G levels leading to an LH surge, followed by increasing PdG levels.

No - Abnormal

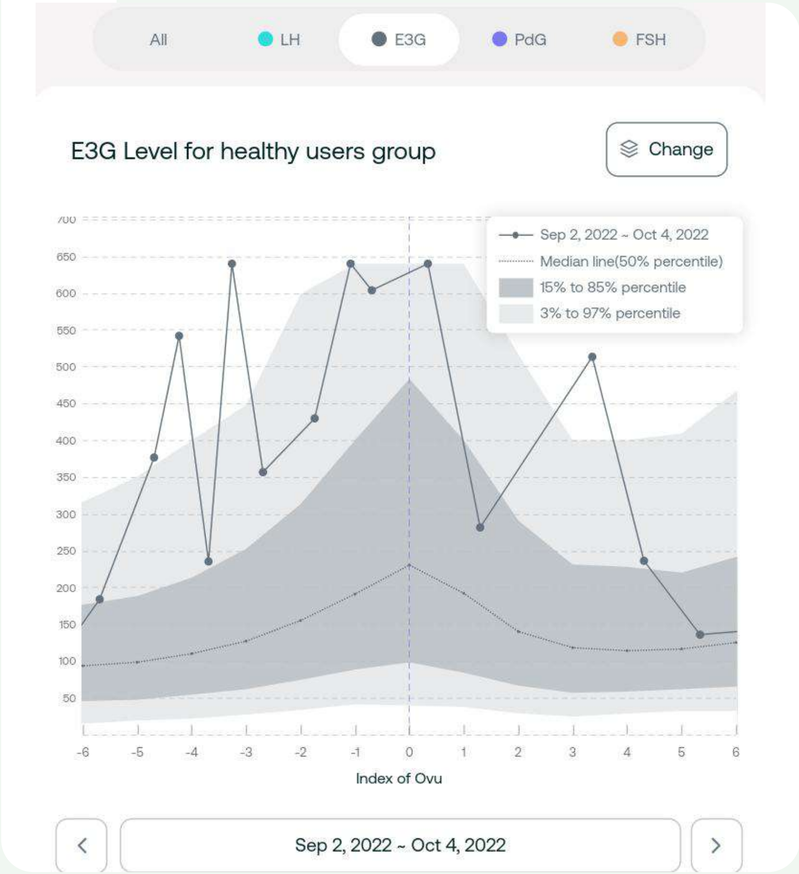
An uncoordinated pattern shows poor alignment between E3G, LH, and PdG, which impairs healthy ovulation.

1. Interpreting overall hormone patterns

Normal



Abnormal



2. Are the hormones inside the reference ranges for a majority of the data points?

For optimal hormone levels and patterns a majority of the data points should be within the reference range.

Yes - Normal

The majority of the data points are within range.

No - Abnormal

The majority of the data are not within the reference range.

1. Interpreting overall hormone patterns

Normal

Abnormal

3. Is the cycle length between 25-35 days?

Cycle length can vary from woman to woman, but it should generally remain consistent, typically falling between 25 and 35 days with minimal fluctuations

Yes - Normal

A normal cycle length should be between 25-35 days with minimal fluctuations.

No - Abnormal

An abnormal cycle length is shorter than 25 days or longer than 35 days.

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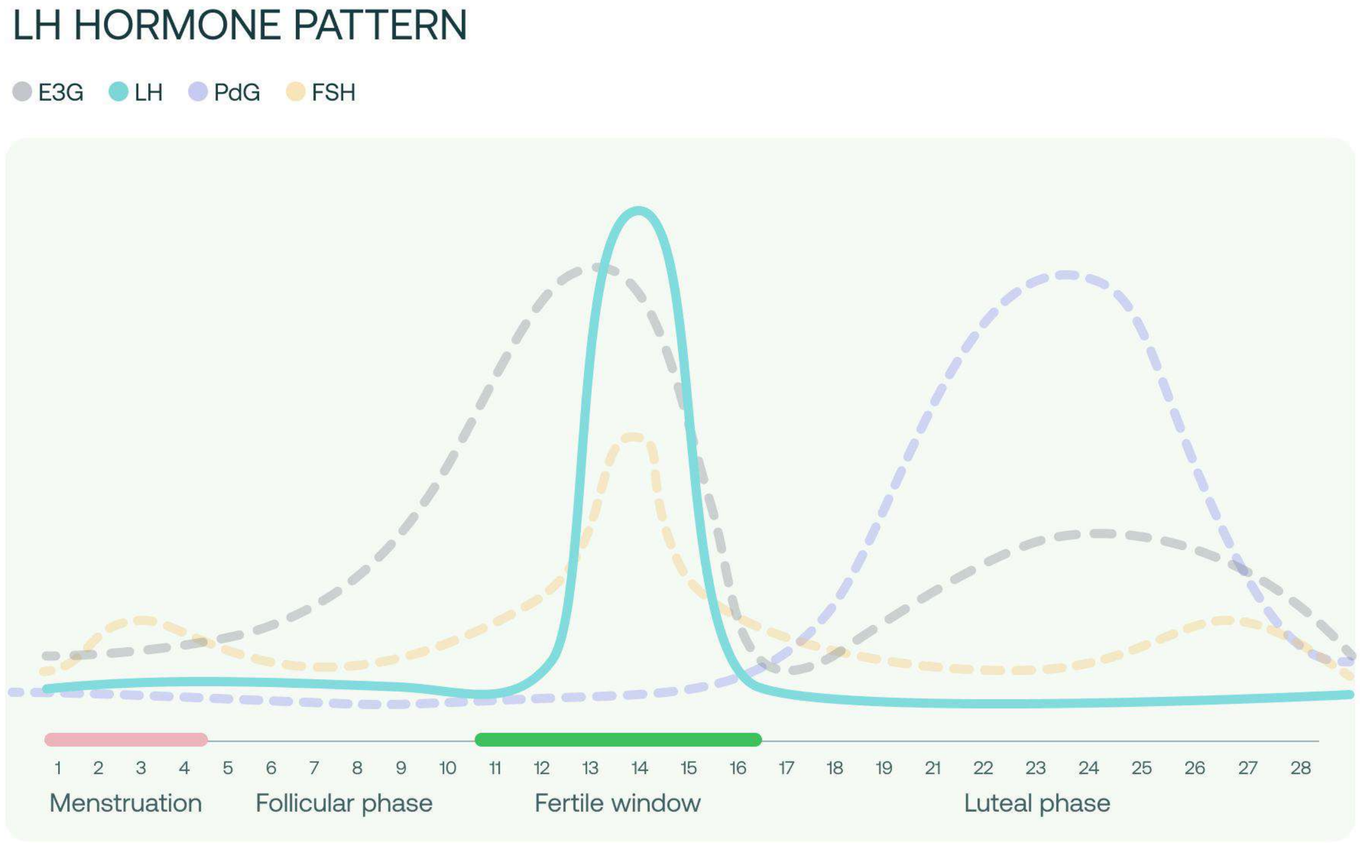
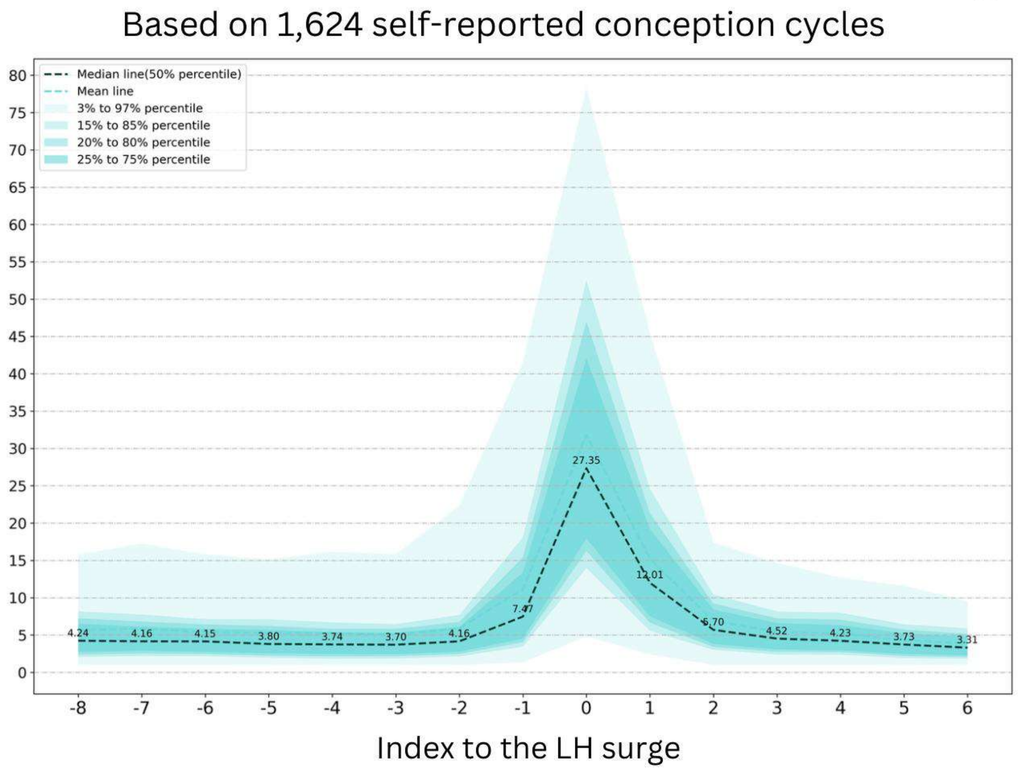


2. Interpreting LH pattern



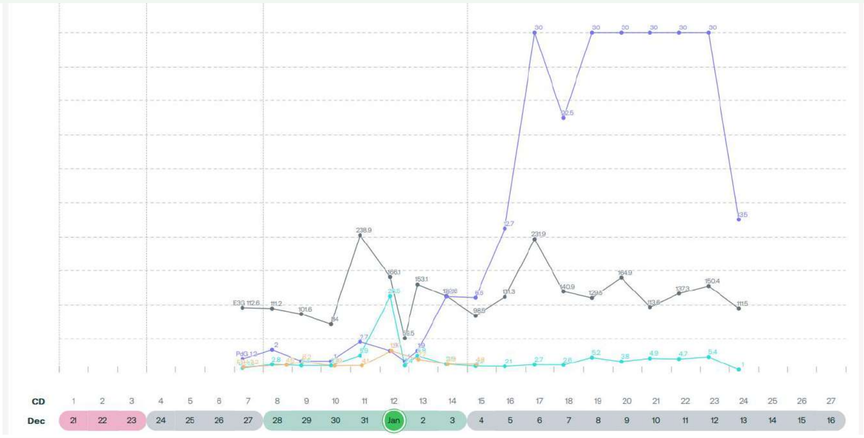
A normal LH surge triggers ovulation, which usually occurs 12-36 hours later.

Checklist

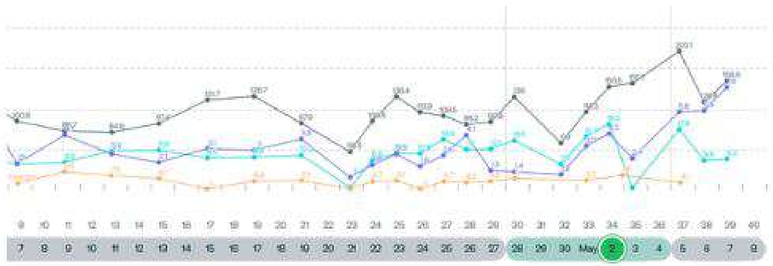
1. Is LH generally low throughout the cycle but surges once over 1-3 days?
2. Is the LH surge pattern one of the three typical variations?

2. Interpreting LH pattern

Normal



Abnormal



LH is elevated throughout the majority of the cycle

The LH surge is 5 days long

1. Is LH generally low throughout the cycle but surges once over 1-3 days?

To trigger ovulation, LH should be low the majority of the cycle and surge over the course of 1-3 days.

Yes - Normal

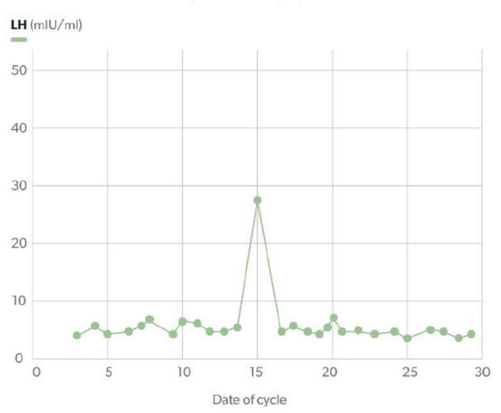
The LH surge occurred over two days on CD 11 and CD 12

No - Abnormal

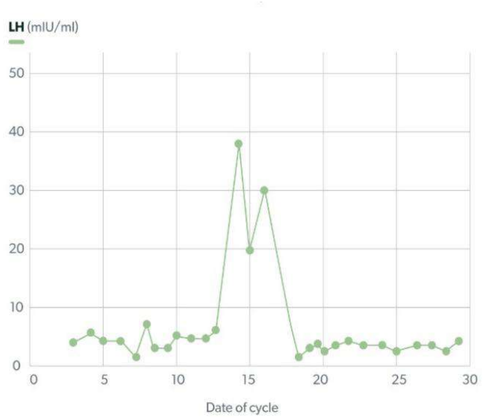
The LH surge does not follow the typical pattern of surging over 1-3 days.

2. Interpreting LH pattern

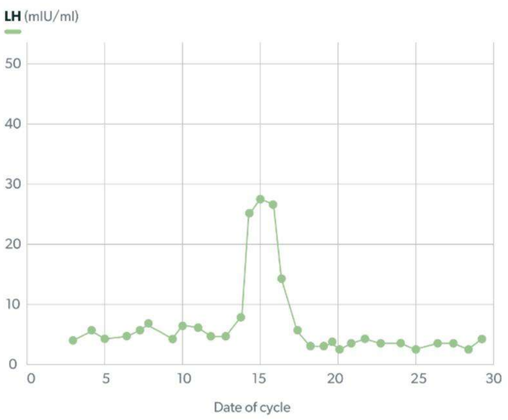
Normal



Normal



Normal



2. Is the LH surge pattern one of the three typical variations?

Normal LH patterns typically follow one of three variations.

Yes - Normal

LH pattern is one of the these variations.

No - Abnormal

LH pattern does not follow any of these variations.

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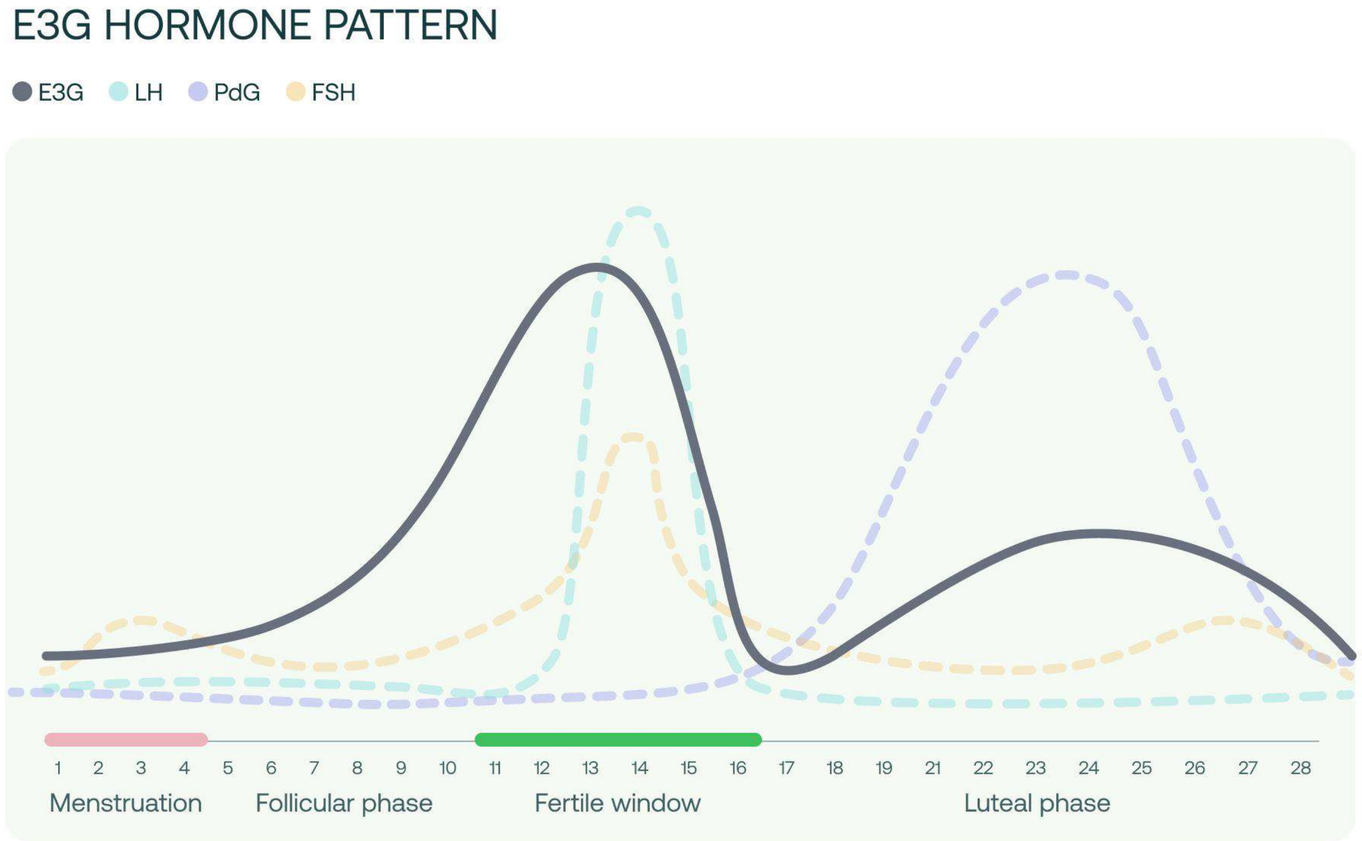
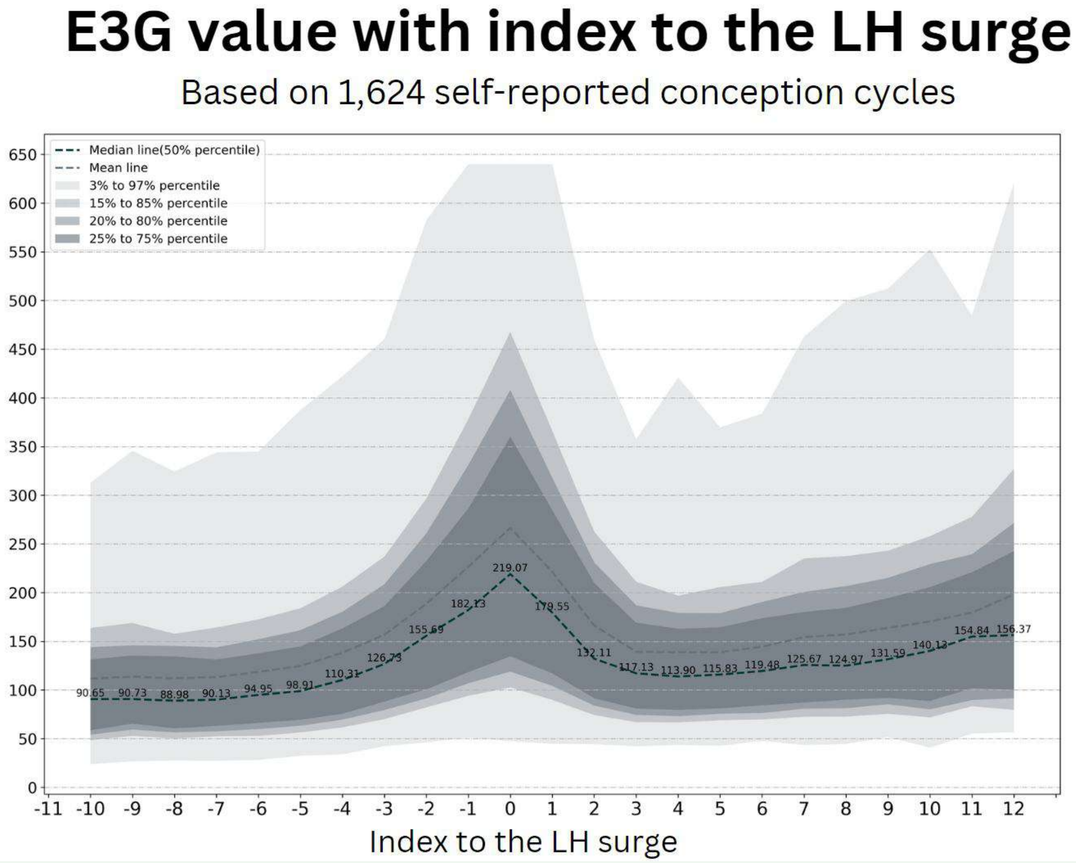


3. Interpreting E3G pattern



The overall E3G pattern involves an initial increase leading up to the LH surge, followed by a decrease, and a subsequent smaller rise during the luteal phase.

Checklist

1. Does E3G rise leading up to the LH surge?
2. Does E3G decline after the LH surge and have a second rise in the luteal phase?
3. Is E3G higher in the follicular phase than luteal phase?

3. Interpreting E3G pattern

Normal

Abnormal

1. Does E3G rise leading up to the LH surge?

Rising E3G levels are seen before the LH surge as the egg matures.

Yes - Normal

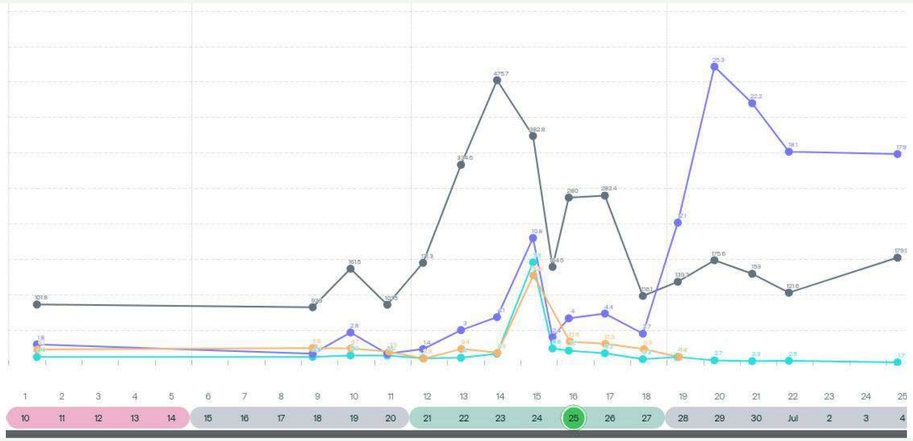
A rising E3G pattern leading to the LH surge.

No - Abnormal

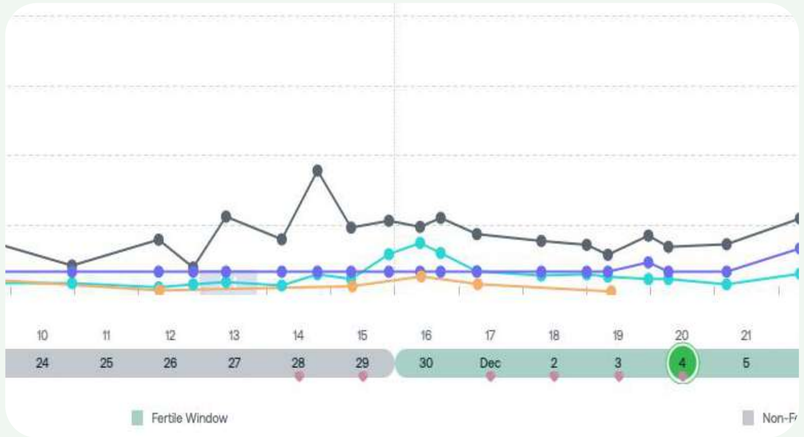
Lack of or minimal E3G changes prior to the LH surge.

3. Interpreting E3G pattern

Normal



Abnormal



2. Does E3G decline after the LH surge and have a second rise in the luteal phase?

After ovulation, the ruptured follicle transforms into the corpus luteum. This structure produces estrogen and progesterone to support the uterine lining and create a favorable environment for a potential pregnancy.

Yes - Normal

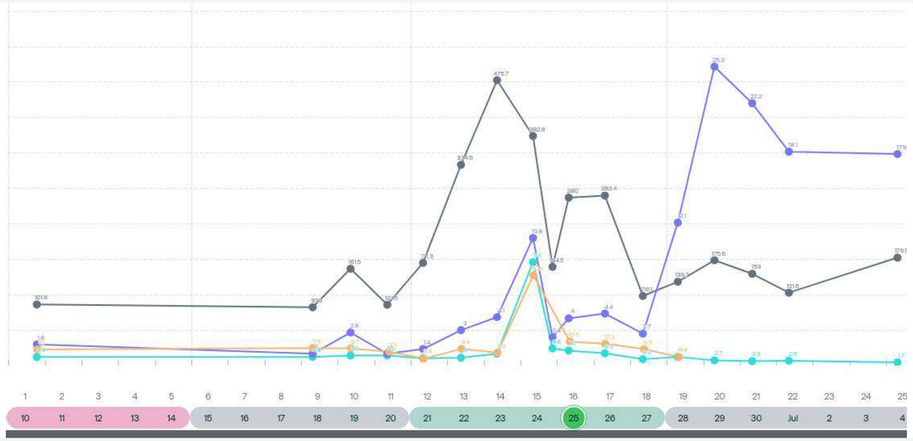
Smaller second rise in E3G during the luteal phase.

No - Abnormal

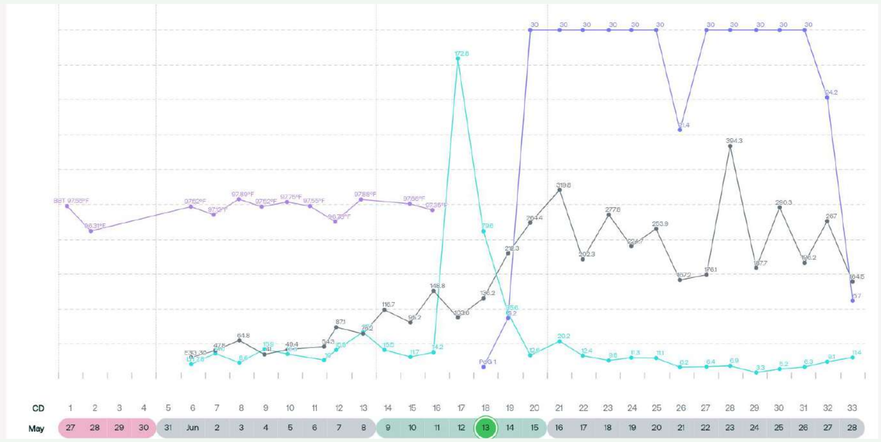
Lack of second rise in E3G in the luteal phase.

3. Interpreting E3G pattern

Normal



Abnormal



3. Is E3G higher in the follicular phase than luteal phase?

Elevated estrogen levels in the luteal phase compared to the follicular phase can be problematic. Conditions such as ovarian cysts, polycystic ovary syndrome (PCOS), or other endocrine disorders may also be linked to this hormonal imbalance.

Yes - Normal

E3G levels should be higher in the follicular than luteal phase.

No - Abnormal

E3G levels are higher in the luteal phase than follicular phase.

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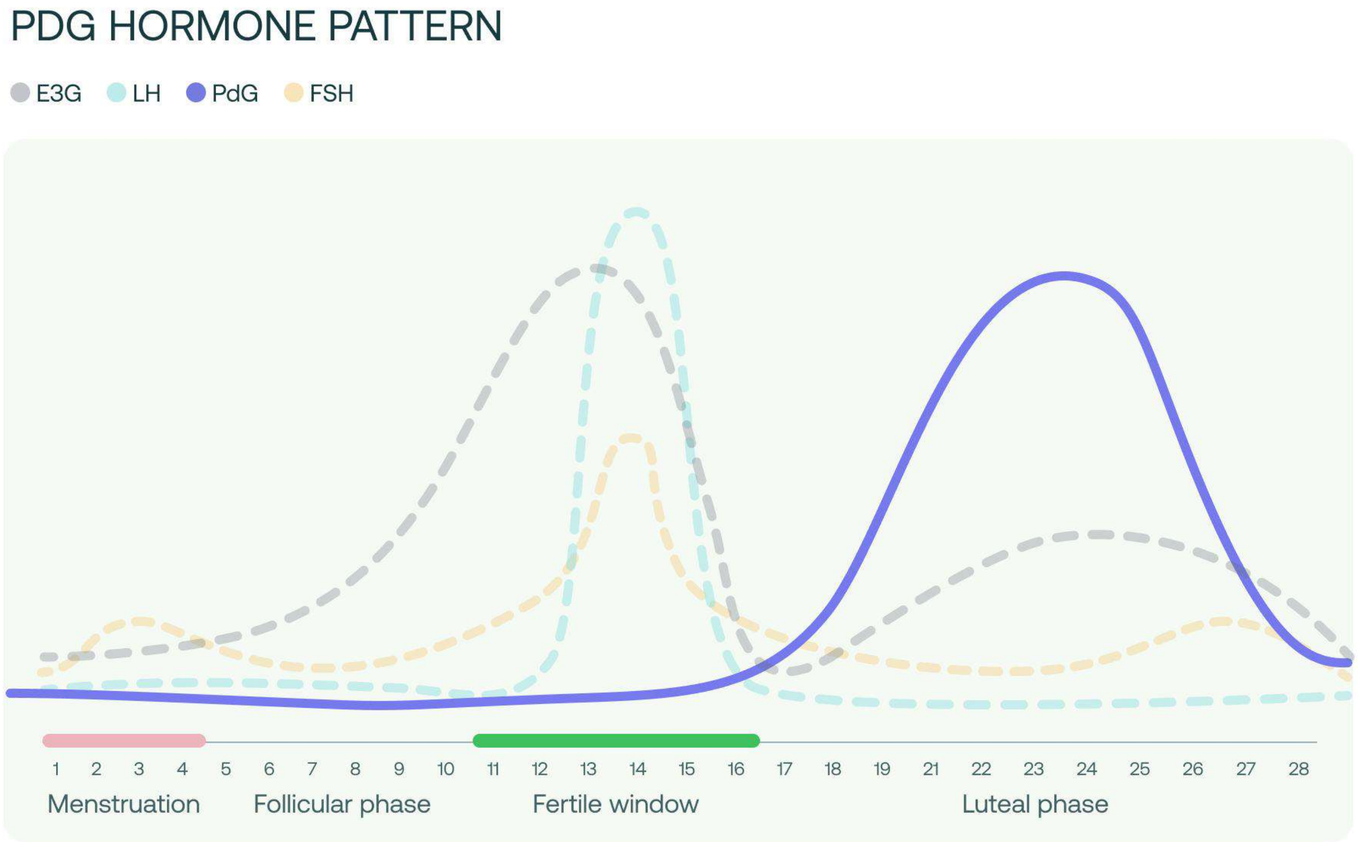
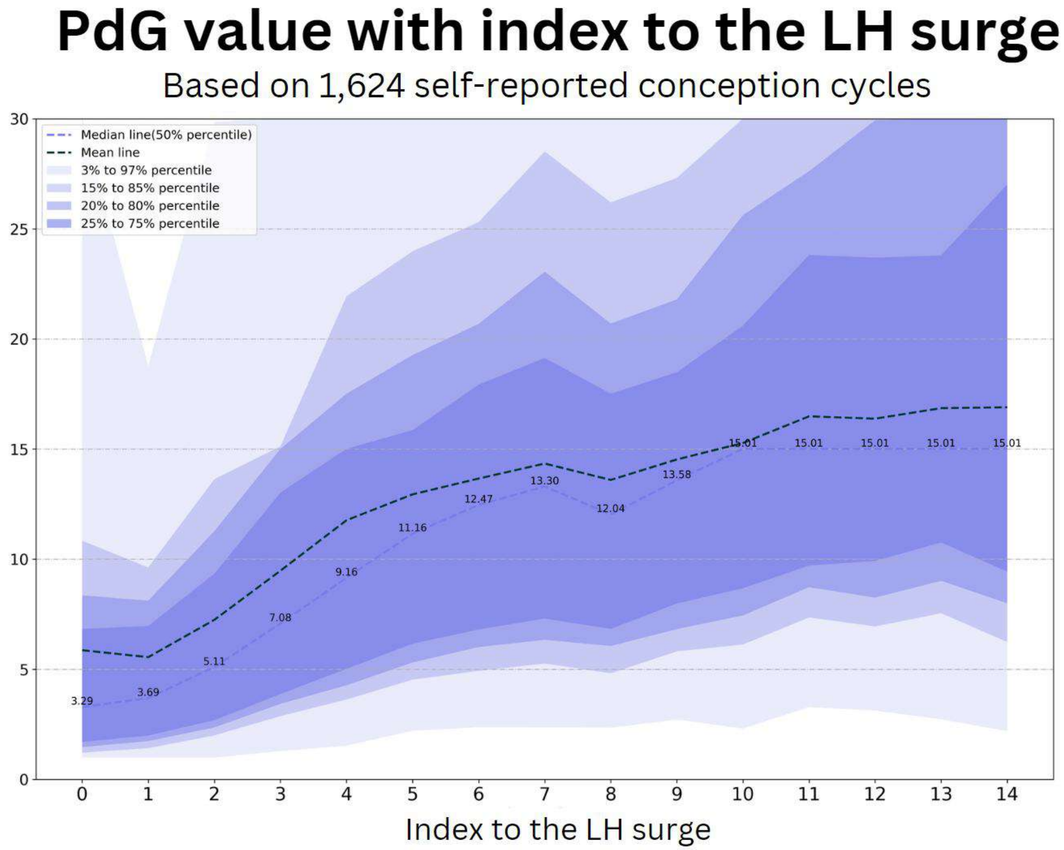


4. Interpreting PdG pattern



A normal PdG pattern should show an increase following the LH surge, generally forming a bell curve.

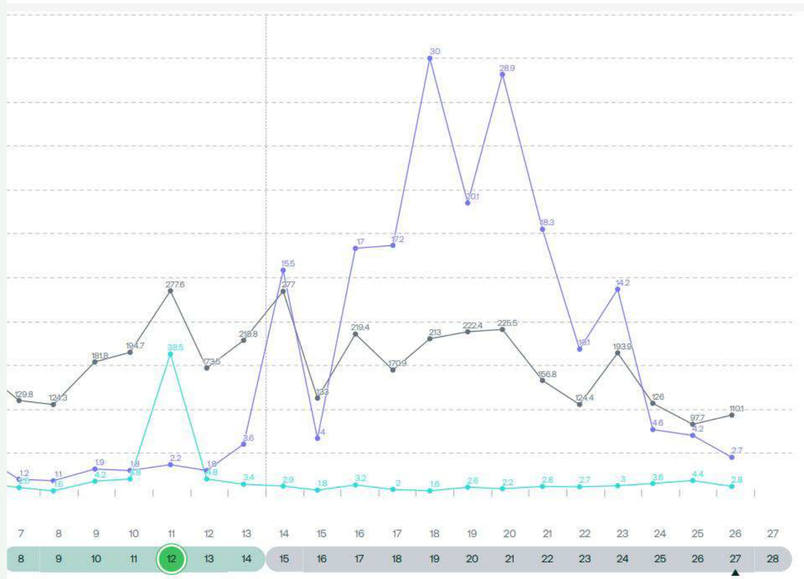
Note: It is a normal variation to see a rise of PdG during the LH surge.

Checklist

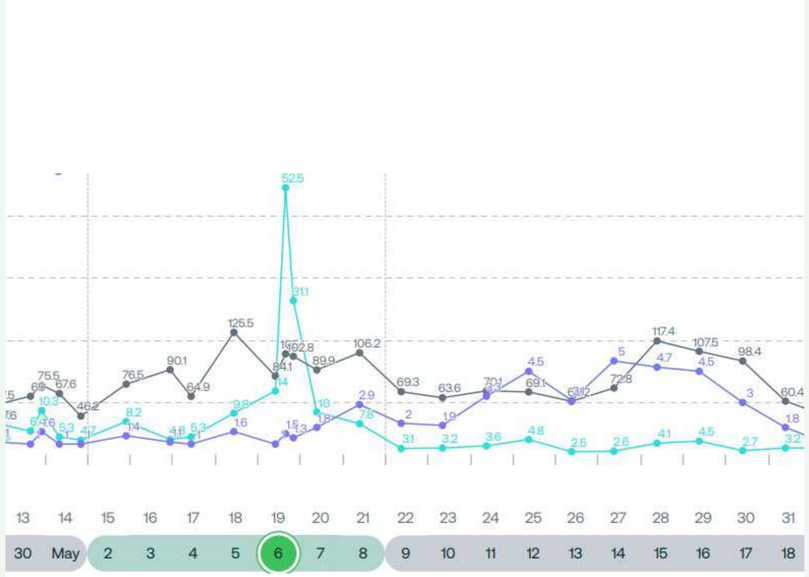
1. Are the PdG levels within the reference range and higher than E3G during the luteal phase?
2. Is the luteal phase between 11-16 days?

4. Interpreting PdG pattern

Normal



Abnormal



1. Are the PdG levels within the reference range and higher than E3G during the luteal phase?

Progesterone levels should rise during the luteal phase following successful ovulation and the formation of the corpus luteum. When estrogen levels are higher relative to progesterone during the luteal phase, it may suggest estrogen dominance. Conditions such as ovarian cysts, polycystic ovary syndrome (PCOS), or other endocrine disorders may also be linked to this hormonal imbalance.

Yes - Normal

Elevated PdG in luteal phase in the shape of a bell curve

No - Abnormal

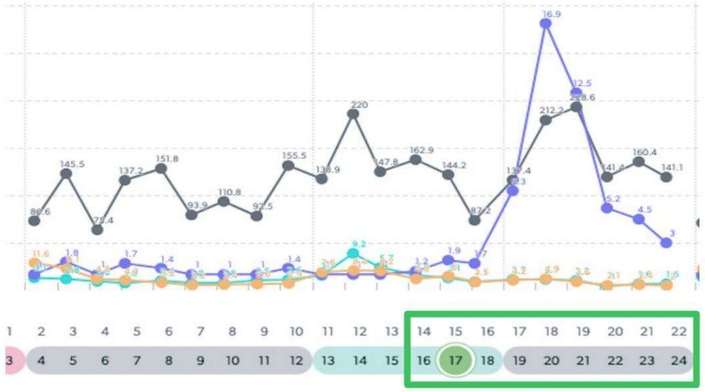
PdG is low and similar amplitude as E3G levels

4. Interpreting PdG pattern

Normal

Luteal phase is 14 days

Abnormal



Luteal phase is 9 days

2. Is the luteal phase between 11-16 days?

A normal luteal phase involves a rise in progesterone and lasts 11 to 16 days until menstruation begins. Progesterone peaks mid-phase and declines gradually if pregnancy does not occur. Implantation usually happens 7 to 10 days after ovulation.

Yes - Normal

Luteal phase length between 11-16 days.

No - Abnormal

Luteal phase is shorter than 11 days.

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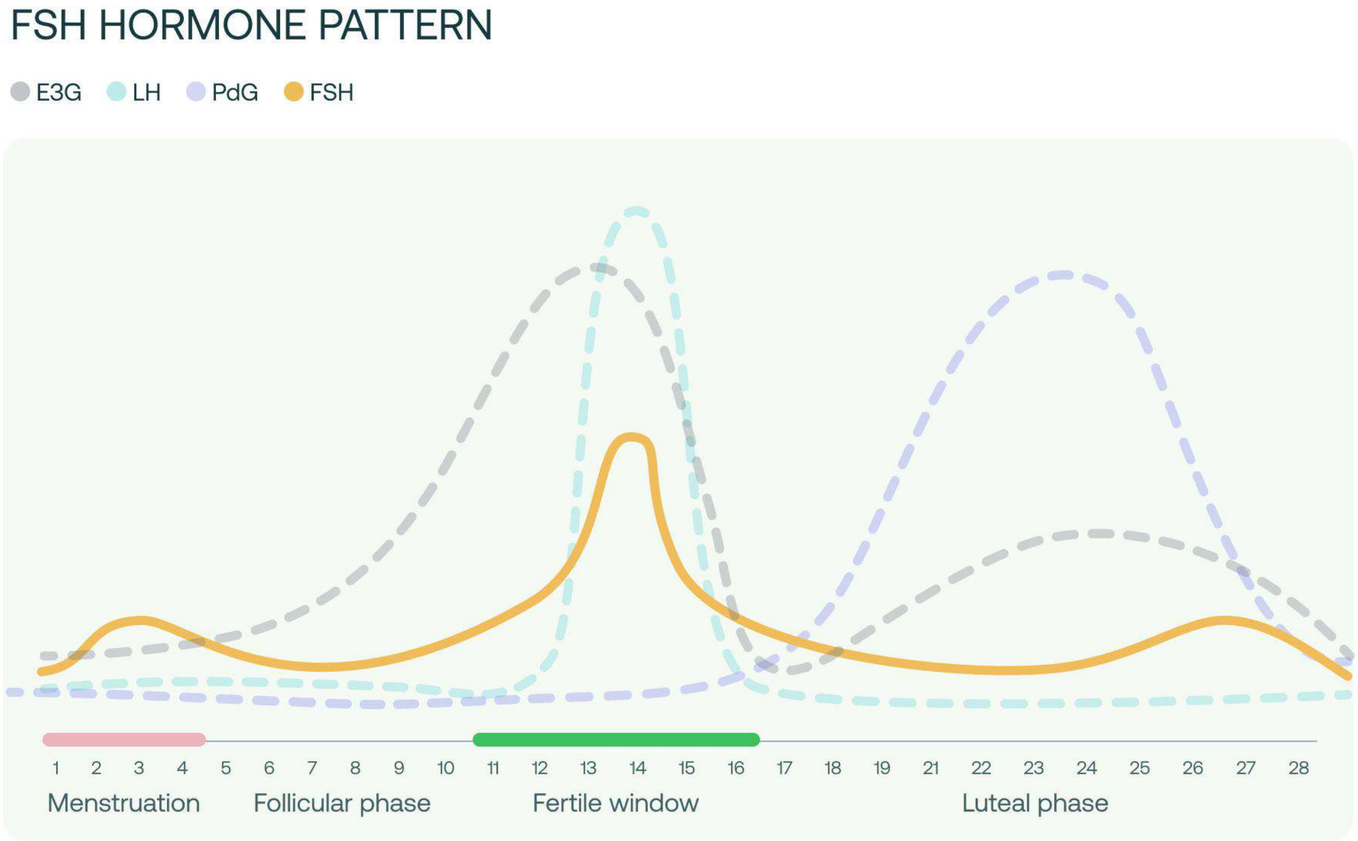
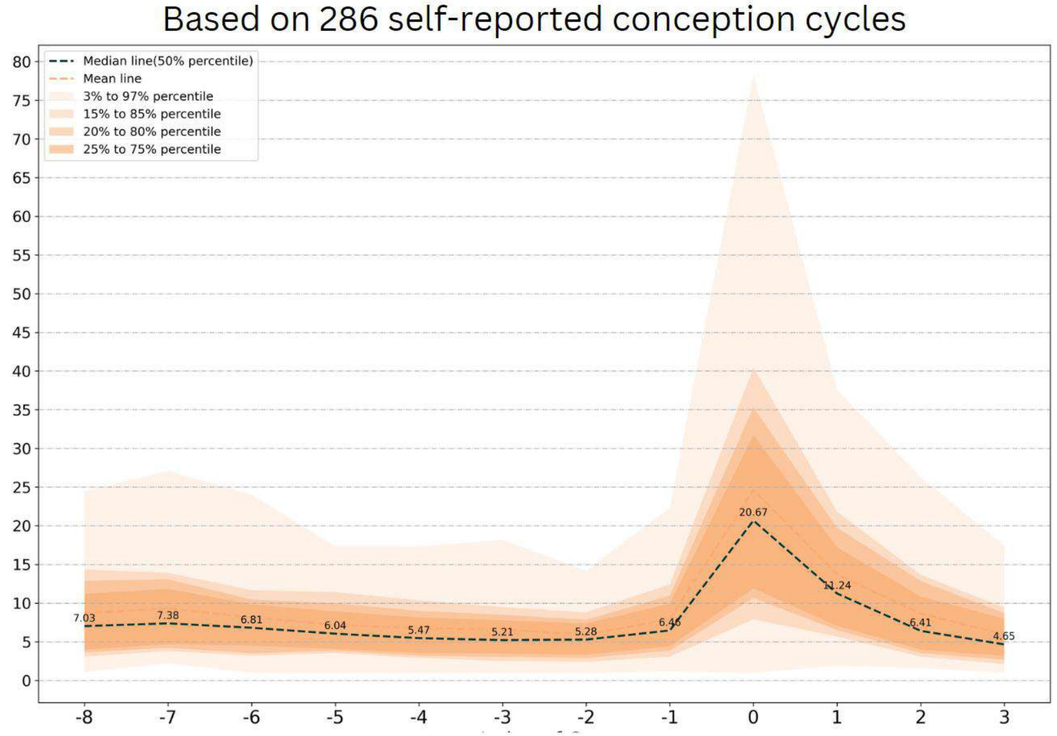


5. Interpreting FSH pattern



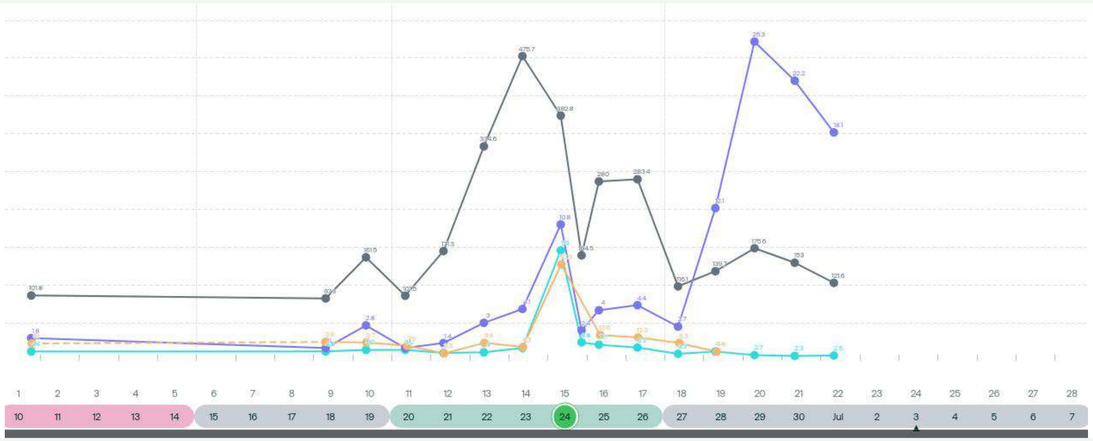
FSH typically rises three times during the menstrual cycle: at the start, during the LH surge, and before the next period. The FSH peak around ovulation usually aligns with the LH peak, though it is often lower in amplitude. An LH surge without a corresponding FSH surge may indicate that ovulation is not occurring.

Checklist

1. Is FSH significantly elevated at the beginning of the cycle?
2. Is FSH elevated throughout the cycle?
3. Does LH and FSH surge at the same time?

5. Interpreting FSH pattern

Normal



Abnormal

1. Does LH and FSH surge at the same time?

During the LH surge, FSH aids in the final maturation of the follicle. The simultaneous surges of LH and FSH coordinate the completion of follicle development and trigger ovulation. Note: If there is no coordination between FSH and LH, it is more likely to be an non-ovulatory LH surge

Yes - Normal

LH and FSH surge at the same time.

No - Abnormal

Lack of simultaneous LH and FSH surge.

5. Interpreting FSH pattern

Normal

Abnormal

2. Is FSH significantly elevated at the beginning of the cycle?

Significantly elevated FSH levels at the start of the cycle may indicate a reduced ovarian reserve, suggesting fewer viable eggs are available.

No - Normal

FSH levels are slightly elevated but remain within the reference range at the start of the cycle.

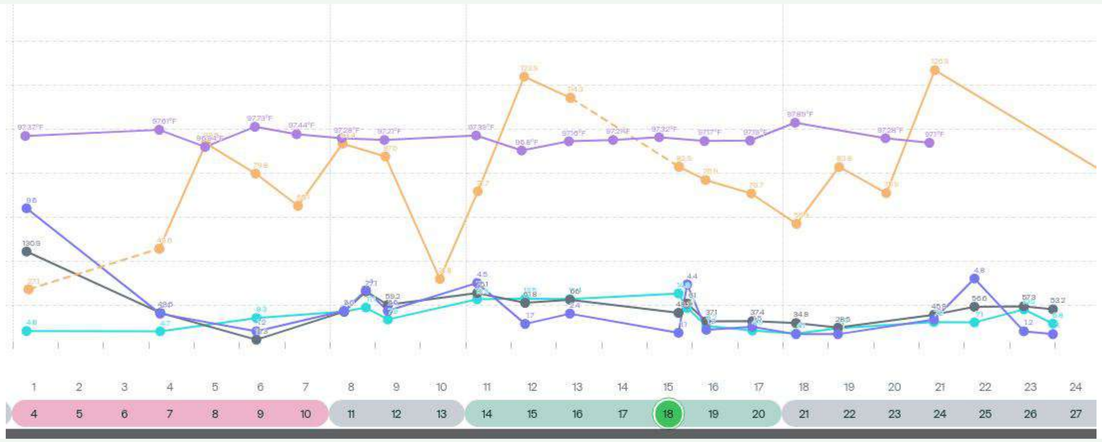
Yes - Abnormal

FSH levels are significantly elevated and above the reference range.

5. Interpreting FSH pattern

Normal

Abnormal



3. Is FSH elevated throughout the cycle?

Consistently high FSH levels can suggest to primary ovarian insufficiency (POI), where the ovaries are not functioning correctly or have stopped functioning prematurely. Additionally, high FSH may signal hormonal imbalances or conditions impacting the menstrual cycle, such as polycystic ovary syndrome (PCOS) or other endocrine disorders.

No - Normal

FSH is not elevated throughout the cycle.

Yes - Abnormal

FSH is chronically elevated.

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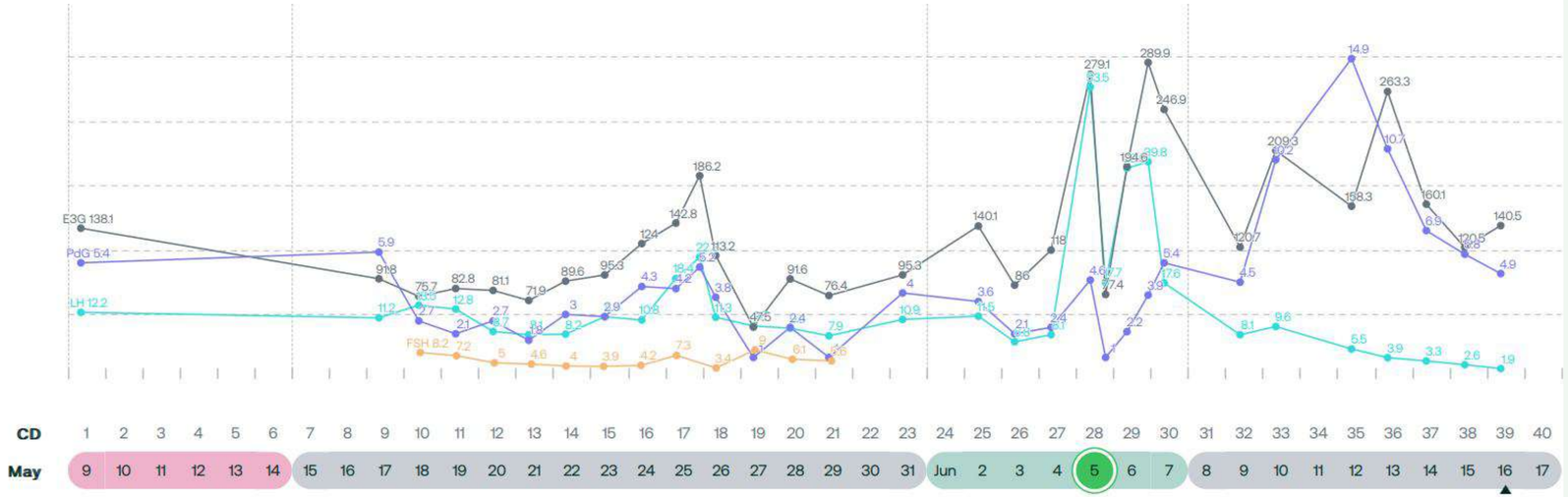
6. Abnormal Findings



LH surge on CD 17 and CD 18. Suspicion for unsuccessful attempt due to a lack of FSH and LH coordination. Determined to be non-ovulatory due to a lack of PdG change.

Second LH surge on CD 28-30 determined to be ovulatory due to PdG changes following the LH surge.

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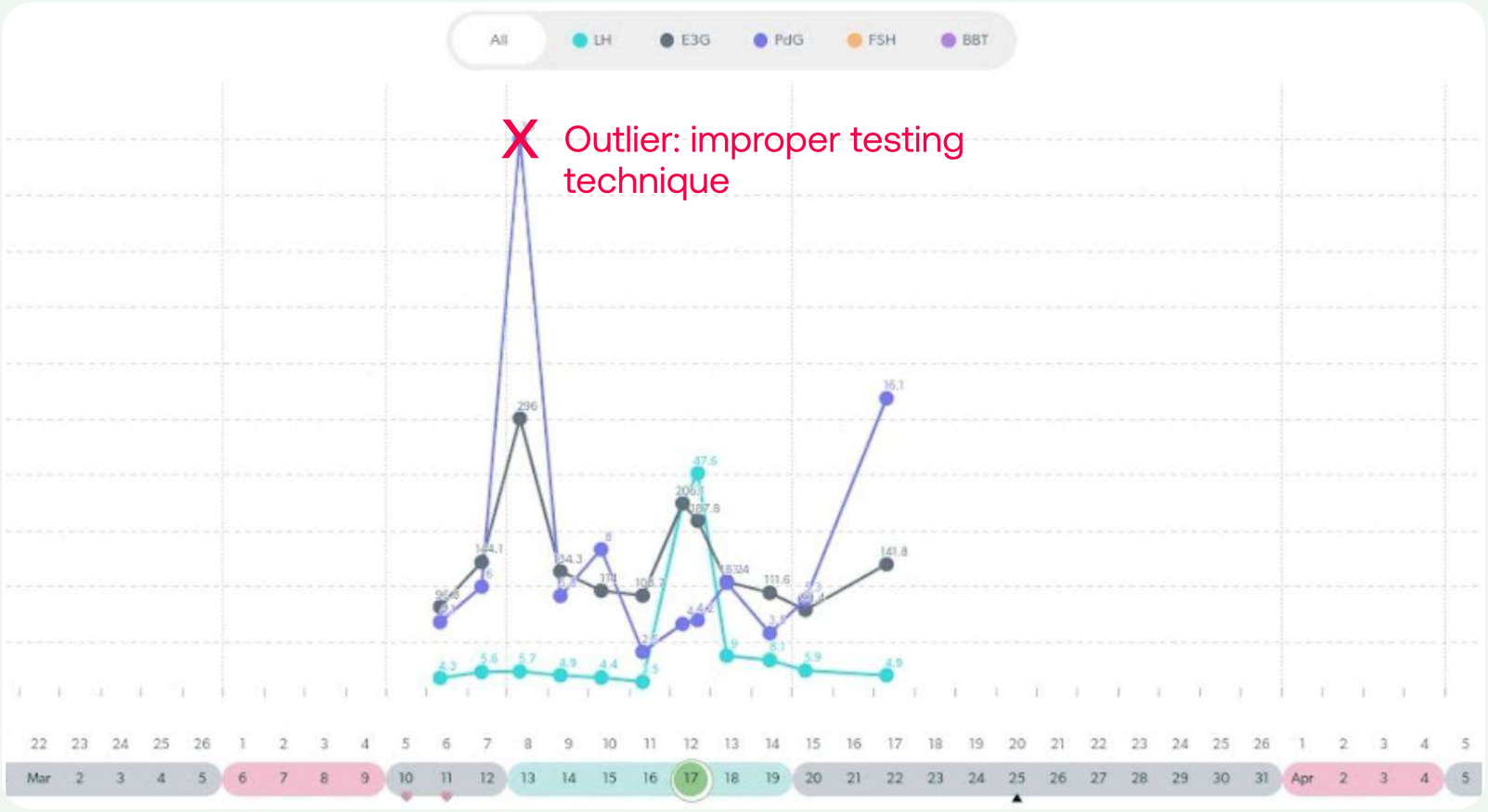
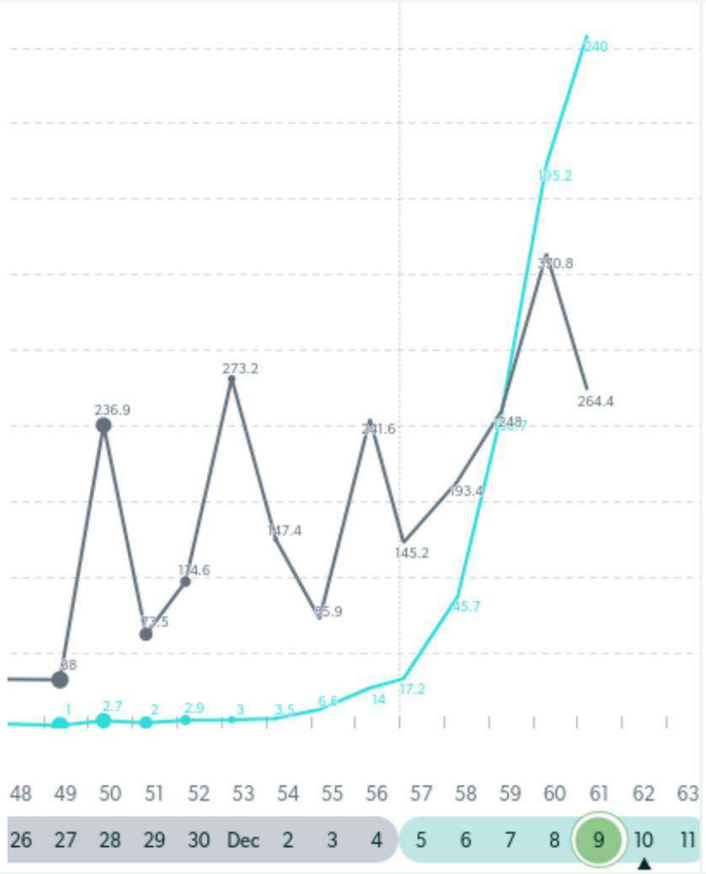
7. Troubleshooting



Improper testing technique can produce inaccurate results

7. Troubleshooting



Abnormally high or climbing LH can indicate rising HCG.

LH and HCG have cross reactivity: when hCG starts to rise, LH on Mira will rise as well.

7. Troubleshooting

- Progesterone supplementation that raise serum levels will raise PdG levels.
- Administered progesterone will be metabolized and excreted in urine as PdG.
- May reach max threshold of 30.