# OOVA

# Clinical Case Study: 45-year-old patient conceives naturally after monitoring three cycles with Oova

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A 45-year-old female and her husband present with the complaint of a possible fertility problem in conceiving their third child. The couple has two children, both conceived with the help of intrauterine insemination (IUI). The patient had undergone three unsuccessful rounds of IUI prior to beginning working with clinician Aimee Raupp. The patient reports good overall health, although she has been diagnosed with hypothyroidism and rhinitis. She reports that her periods were regular but due to age was nervous about successfully conceiving without assisted reproductive treatment. The patient was put on multiple natural supplements and was taking 88 mcg/day of Synthroid for her hypothyroidism. Raupp was concerned about her progesterone levels during the luteal phase and recommended the patient utilize Oova to monitor hormone levels during both the follicular and luteal phases. The patient monitored three cycles with Oova and successfully conceived naturally on her third cycle.

## Introduction

Infertility affects as many as 13.1% of women of childbearing age in the United States. Consequently, it is imperative to find methods to help women overcome infertility so that they may conceive a healthy child.

Many of the current treatments for infertility are costly, have low success rates, and have the potential to negatively affect long-term health. The common medical interventions used for infertility include fertility medications, in-vitro fertilization (IVF), and intrauterine insemination (IUI). Fertility medications, such as clomiphene and gonadotropins, stimulate growth of the ovarian follicle. These medications are often used in conjunction with IVF and IUI. IVF is an assisted reproductive technology that includes combining an egg and a sperm in a laboratory and then transferring the fertilized embryo into the uterus. IUI involves placing the sperm inside of the uterus to help with fertilization. Research suggests a link between a variety of health conditions and subsequent infertility, including polycystic ovarian syndrome (PCOS), hypothyroidism, advanced maternal age, and poor ovarian reserve.

Among these issues are additional variables such as irregular ovulation, hormone imbalances, and inaccurate detection of the fertile window. A big problem is there are few solutions that address these issues with the clinical accuracy required but at an affordable cost and with an attainable level of convenience. The Oova test provides women and clinicians with accurate hormone measurements for both luteinizing hormone and progesterone daily, enabling both the patient and clinician to identify the fertile window, confirm ovulation, and detect hormone imbalances for appropriate intervention.

The case being presented here describes the journey of a woman trying to conceive naturally at advanced maternal age with the help of natural remedies and Oova.

## Case Presentation

The patient struggled to conceive from the age of 40. Patient reported no known reproductive disorders and an average cycle length of 26 days. She consulted with a fertility doctor and got pregnant on her first IUI resulting in a live birth. She then tried to conceive baby #2 and got pregnant naturally but had an ectopic pregnancy. This pregnancy resulted in one fallopian tube to be removed. Afterward, she sought out more fertility treatments and got pregnant with her second IUI at the age of 42, which resulted in a live birth. The patient then tried to conceive baby #3 at the age of 45 and was unsuccessful naturally and after three rounds of IUI with Clomid and letrozole. She then began working with a clinician, Aimee Raupp in April 2020.

## Management and Outcome

Clinician's initial recommendation included monitoring progesterone 5-7 days post-ovulation. She suggested capturing these measurements using an Everlywell Kit, Let's Get Checked, or Oova. It was also recommended that the patient begin facial cupping for sinus issues, increase bone broth consumption, cut back on gluten and dairy, add collagen peptides to snacks to increase protein intake, and increasing consumption of wild caught fish by at least 3-4 times per week.

During the second evaluation, one month later, the patient reported she had noticed a shift in afternoon energy after increasing fish, bone broth, and collagen peptides to her day to increase protein intake.

At the third evaluation, it was determined that ovulation was late this cycle. The patient was urged to try Oova to help track cycle more accurately. The patient was asked to get her thyroid tested as well.

The thyroid test reported elevated TSH at a value of 3.1 mlU/L (average range is 0.4-4.0 mlU/L). The patient decided to begin using Oova to help understand her hormone levels.

### Prior Conditions
- Hypothyroidism
- Rhinitis

### Medications
- Synthroid (88 mcg/day)
- Flonase spray (as needed)

### Supplements
- CoQ10 (200 mg)
- Vitamin D (5,000 IU/day)
- Fermented cod liver oil (6 capsules/day)
- Magnesium gummies (4-5/day)
- Prenatal vitamin
- Probiotic
- Liver
- Greens

### Caffeine
Limited to matcha tea 3/week

### Sleep
7-9 hours of sleep per night

### Exercise
- 30-40 minute walks daily
- Yoga 2-3 times/week

### Symptoms
- Headaches
- Sinus congestion
- Cold hands and feet
- Back pain
- Dry hair, skin, and nails
- Low energy crash in the middle of the day
- PMS symptoms of increased hunger and bloating
- Mild cramps and extreme fatigue on CD1

### Period Flow
Flow is heaviest on CD1 and slightly lightens on CD2. Flow tapers off during CD3-6.

### Diet
Vegetarian and consumes gluten 1x/week. Dairy is consumed regularly with more sugar consumption than recommended (15 g/day or more).

At the next evaluation, patient had begun using Oova and was able to capture her fertile window. This showed an LH surge, however, the LH peak was not very high (49.16 mIU/L) (**Figure 1**) and learned her progesterone levels were low (**Figure 2**). Her average progesterone level during the luteal phase was 5.58 ng/mL. As the levels for both LH and progesterone were low, the clinician asked the patient to begin Progest Avail after she ovulates.



**Jun 22, 2020 - Jul 18, 2020 Luteinizing Hormone (LH) Levels**          PDF report:  View
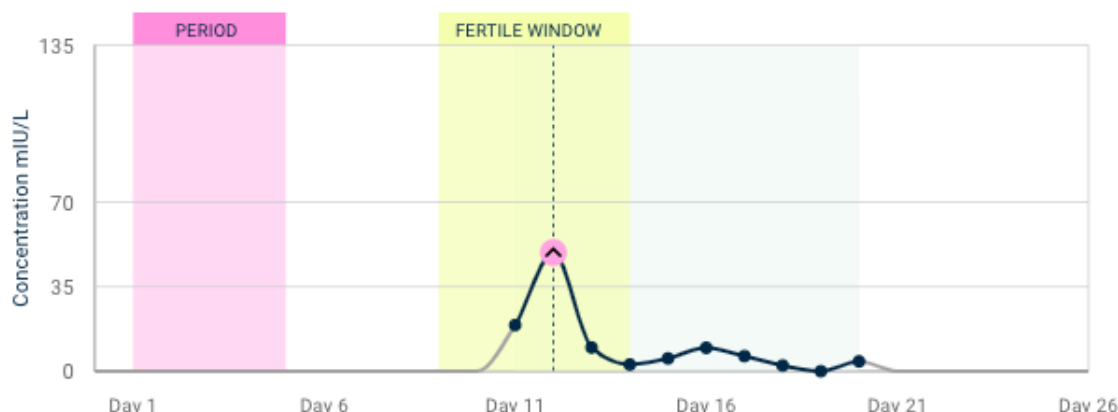
Figure 1: Luteinizing hormone trend captured during first cycle with Oova. The first cycle patient monitored with Oova was between 6/22/2020 – 7/18/2020. The chart displays the length of her period, the fertile window based on LH data, and specifies the day the woman experienced her LH peak (marked by pink circle with arrow and dashed line).



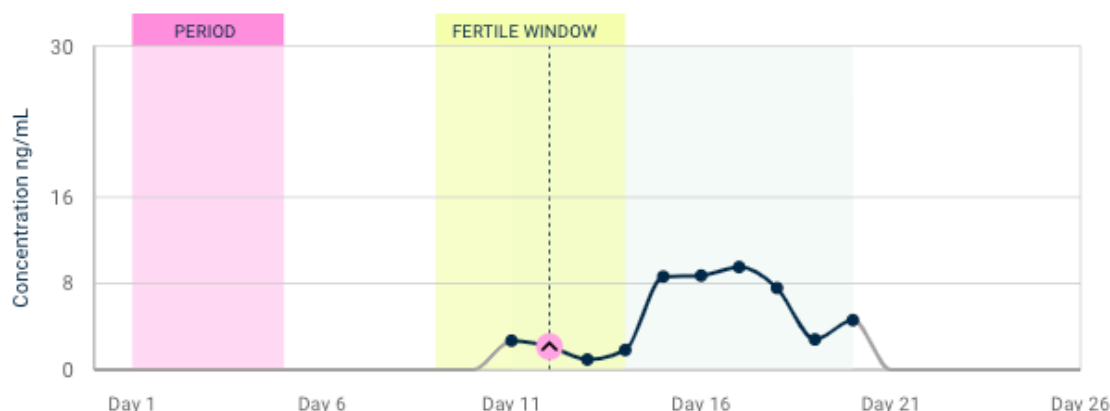**Jun 22, 2020 - Jul 18, 2020 Progesterone Levels**          PDF report:  View

Figure 2: Progesterone trend captured during first cycle with Oova. The first cycle patient monitored with Oova was between 6/22/2020 – 7/18/2020. The chart displays the length of her period, the fertile window based on LH data, and specifies the day the woman experienced her LH peak (marked by pink circle with arrow and dashed line).

In the second cycle of using Oova, the patient showed a healthy LH surge and progesterone rise in the luteal phase (**Figure 3**, **Figure 4**). The LH peak during this cycle was 45.58 mIU/L and the average progesterone during the luteal phase was 8.64 ng/mL. As the patient's levels had improved, she decided to schedule an IUI since it worked for her twice before and she felt her health was in the best shape.

## Jul 17, 2020 - Aug 10, 2020 Luteinizing Hormone (LH) Levels
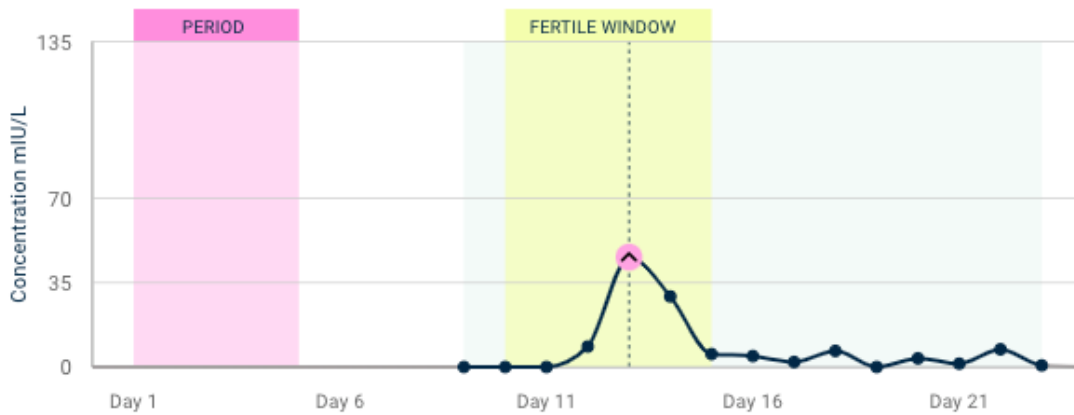
PDF report: View



**Figure 3: LH trend captured during second cycle with Oova.** The second cycle patient monitored with Oova was between 7/17/2020 – 8/10/2020. The chart displays the length of her period, the fertile window based on LH data, and specifies the day the woman experienced her LH peak (marked by pink circle with arrow and dashed line).

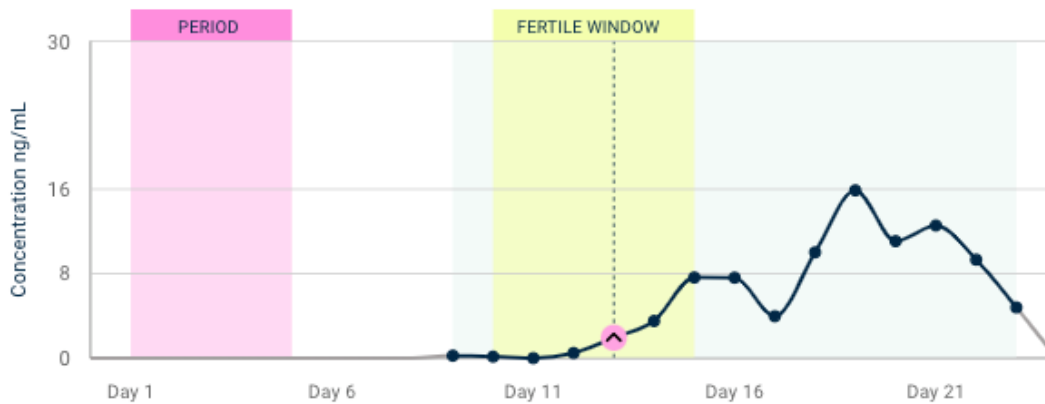## Jul 17, 2020 - Aug 10, 2020 Progesterone Levels

PDF report: View



**Figure 4: Progesterone trend captured during second cycle with Oova.** The second cycle patient monitored with Oova was between 7/17/2020 – 8/10/2020. The chart displays the length of her period, the fertile window based on LH data, and specifies the day the woman experienced her LH peak (marked by pink circle with arrow and dashed line).

During her next session, the patient reported a long cycle and Oova did not display a fertile window during her normal window (**Figure 5**, **Figure 6**). Her fertility specialist had delayed the IUI as a follicular cyst was identified via ultrasound at her initial appointment. Since this cycle was so long, the patient stopped monitoring with Oova. The patient also shared that she had seen some cervical mucus and felt some cramping on one ovary. The clinician recommended unprotected sex an testing for ovulation.

**Aug 12, 2020 - Sep 07, 2020 Luteinizing Hormone (LH) Levels**
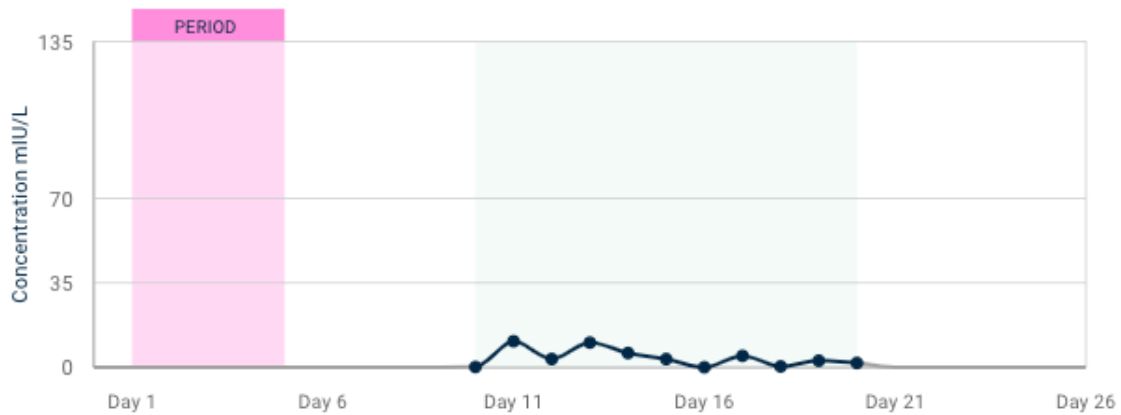
PDF report: View

Figure 5: LH trend captured during third cycle with Oova. The third cycle patient monitored with Oova was between 8/12/2020 – 9/7/2020. The chart displays the length of her period. No fertile window was detected during this cycle during the testing phase.



**Aug 12, 2020 - Sep 07, 2020 Progesterone Levels**
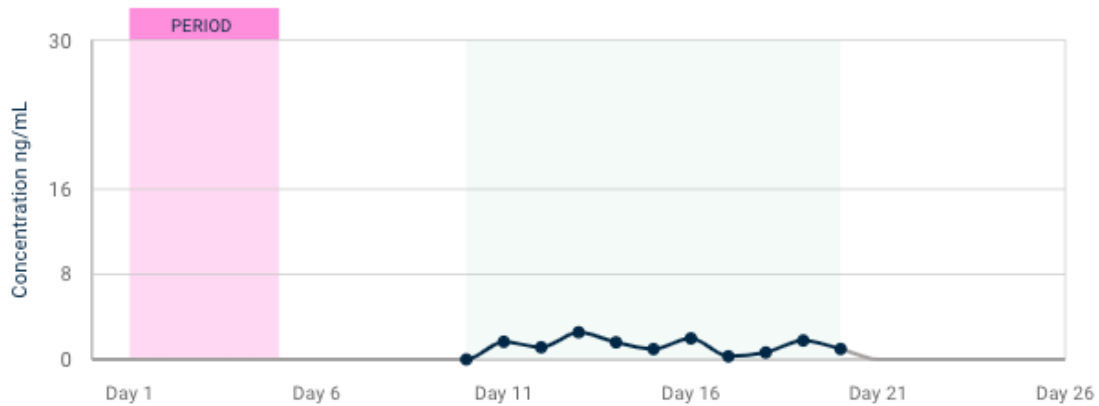
PDF report: View

Figure 6: Progesterone trend captured during third cycle with Oova. The third cycle patient monitored with Oova was between 8/12/2020 – 9/7/2020. The chart displays the length of her period. No fertile window was detected during this cycle during the testing phase.

The patient used Oova the following day and the test showed a rise in progesterone, confirming ovulation. Her app reported an LH reading of 3.4% (equivalent to 4.25 mIU/L) and a progesterone measurement of 59.71% (equivalent to 14.93 ng/mL) (**Figure 7**). She began to take progesterone and luteal phase herbs. The next day, the patient took a pregnancy test and received a positive result.

Figure 7: Screenshot of the patient's app on the day she randomly tested with Oova. The patient used Oova to see if she was ovulating to find that she had indeed ovulated several days prior as her progesterone level was elevated. This can be seen by the 59.71% reported in her fertility status.

## Discussion

Infertility is on the rise worldwide because women prioritize professional goals and put off childbearing until they are ready. However, fertility is impacted for both genders with the progression of age. The case discussed here is further complicated with the patient presenting with hypothyroidism. The prevalence of hypothyroidism is 2-4% in women of reproductive age. Hypothyroidism can affect fertility due to anovulatory cycles, luteal phase defects, hyperprolactinemia, and sex hormone imbalance.

Tracking a woman's cycle is beneficial for several reasons. For women trying to conceive, understanding the timing of their cycle is valuable for determining the ideal time to get pregnant. While there are many standards used to time intercourse, it is important to recognize that every woman is different. Knowing when a woman might be ovulating and having intercourse at the ideal time can enhance the odds of getting pregnant. However, there are limited resources available for women to accurately monitor their cycles to identify their personal fertile window. Oova fills this gap by measuring hormone levels and detecting fluctuations in the hormones to pinpoint each woman's personal fertile window and confirm if ovulation occurred.

In the presented case, Oova helped identify that the patient was indeed ovulating, even though the LH and progesterone levels were initially reduced. In the final cycle being monitored by Oova, the follicular cyst may have been the cause of the patient experiencing delayed ovulation. Follicular cysts occur when a sac on the ovary does not release an egg, and the sac swells with fluid. With clinician intervention and continued monitoring, Oova was able to confirm ovulation and informed the patient to have intercourse at the appropriate time resulting in a successful pregnancy. The patient is currently 21 weeks pregnant and doing very well.

## Consent

Written informed consent was obtained from the patient and clinician for the publication of this case study, including any identifiable data or images that might reveal patient's identity.