



Helping your patients conceive

Using Tempdrop & BBT charting

Tempdrop®



This guide is intended to assist clinicians in learning how charting basal body temperature (BBT) with Tempdrop can help your PCOS patients who are trying to conceive.



Who is Tempdrop?

Tempdrop, the first wearable BBT sensor, was launched in 2017 to address a growing need in women's health. As technology has expanded fertility options, women have sought alternatives to expensive fertility treatments and hormonal birth control to track their cycles. Fertility awareness-based methods (FABMs) are entering the mainstream industry and countless apps have emerged in the field with the promise of making NFP accessible to every woman.

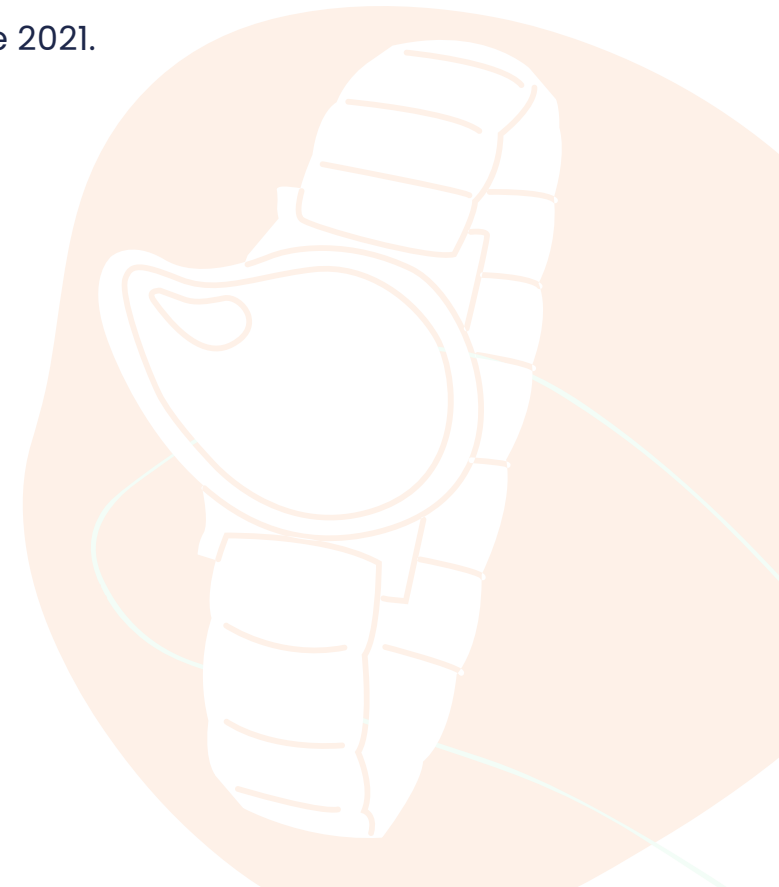
This is the backdrop for founder Michael Vardi's own story. A biomedical engineer by training, Michael came up with the idea for Tempdrop as a way to bridge the gap between fertility apps and hassle-free tracking.

Each Tempdrop contains multiple sensors that measure the wearer's temperature continuously throughout the night.* Using its proprietary algorithm, Tempdrop filters and analyzes the raw data received from the sensors to learn the nightly and monthly temperature patterns of a user.

At this time, Tempdrop has analyzed over 128,500 cycles and 4,365 conceptions have been identified. ◇

*"Studies have shown that continuous measurement of skin temperature at the axilla is as good as episodic axillary temperature measurement, even in a hyper-sensitive population such as cancer patients after chemotherapy treatments" - **Dr. Joseph Hasson, MD Gynecology, Obstetrics & Infertility specialist.**

◇ Figures as of June 2021.





Helping your PCOS patients:

Have you recently had a patient come to you with PCOS (or suspected PCOS) who is struggling to conceive?

Perhaps they've told you they are concerned that pregnancy will not occur naturally.

You and I of course know different—that by understanding our cycle, its patterns, and biomarkers, your patient can identify **IF** and **WHEN** they are ovulating, and get pregnant naturally.

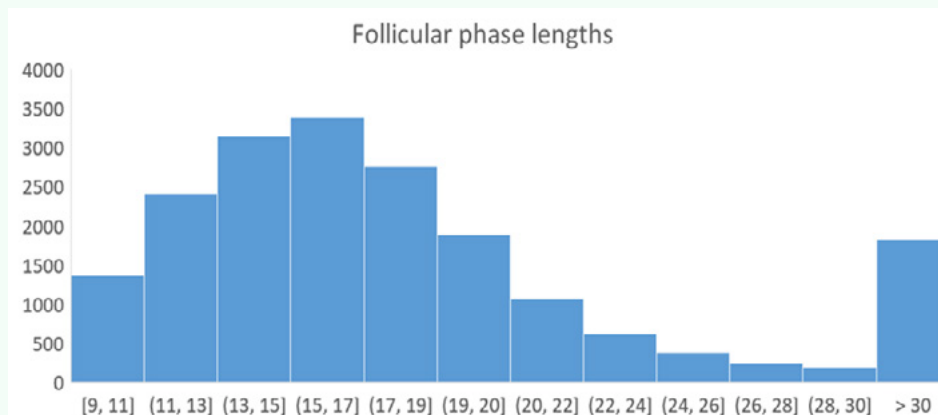


Figure 1: Tempdrop analyzed over 128,500 cycles. Follicular phase lengths of the cycles analyzed demonstrate ovulation can occur before or after day 14

We also acknowledge temping in the traditional way can be time consuming and requires diligence, which can be difficult for many patients. However, the popularity and medical acceptance of fertility apps is on the rise, specifically those like Tempdrop, which rely on a scientifically proven sympto-thermal method; since the method relies on tracking daily symptoms (cervical mucus and basal body temperature that oscillate throughout the menstrual cycle based on alternating hormone levels).

In the case of Tempdrop, the sensor continuously records temperature data throughout the night, meaning the patient only needs to wear the sensor as they sleep to capture the relevant data you need as a clinician to understand their cycle behavior. We have tracked over 128,500 cycles and analyzed over five million sleep sessions to provide accurate, trustworthy data that enables women to identify their fertile window.

What can Tempdrop temperature data tell me as a clinician?

A woman's temperature is periodic with her monthly cycle and is affected mainly by the hormone progesterone. Monitoring it can predict and identify the fertile window, which can be used to avoid or achieve pregnancy naturally, even in cases of PCOS*.

*Further calculations can be used to identify cycle phases, pregnancies, some health conditions, such as PCOS, and other abnormalities.

We know the number one key when it comes to conception is identifying ovulation. But for PCOS patients, it can be tricky for them to personally identify. In some cases, they may be having anovulatory cycles, but believe they are ovulating because of regular bleeding.



Figure 2: A regular cycle chart tracked in Tempdrop's charting app, showing the fertile window for purposes of trying to conceive and the temperature shift confirming ovulation.

In addition, many PCOS patients have consistently elevated luteinizing hormone (LH) throughout the follicular phase, making LH strips a poor indicator for those patients. Where LH strips fail, temperature and other biomarkers don't.

Tracking basal body temperature with Tempdrop will give you the extra data you need to confirm if and when ovulation is occurring in a patient. After ovulation, temperatures will jump slightly and remain in an elevated range until hormones drop and a new cycle begins.

After tracking for a sufficient amount of time, you can discern the following:

- If your patient is ovulating
- When in their cycle they are ovulating
- Understand how long their luteal phase is (long enough to support a pregnancy i.e. 12 days in length?)

This data enables you as a clinician/practitioner to support your patient with a relevant treatment plan that:

- Enables them to ovulate (if they are not already)
- Times hormone testing optimally (i.e 7dpo rather than CD21)
- Increases their progesterone levels to support a pregnancy if needed
- Makes relevant referrals to fertility clinics and specialists



How else can Tempdrop help?

Tempdrop enables cervical mucus tracking within its app. In addition, we have many support tools and information for the patient to understand how they should observe their cervical mucus at home.

They can also add other key information to the app, such as:

- Cervical position
- OPK test results
- Intercourse
- Symptomatic data, such as energy levels

This data enables you as a clinician/practitioner to identify potential issues, for example, if the patient isn't producing enough cervical fluid. It also allows you to better support your patient with a relevant treatment plan through:

- Bio-identical hormones
- Dietary recommendations
- Supplement recommendations
- Alternative treatments, such as vaginal steaming



Your questions answered by Dr. Alicia Thompson, a board-certified obstetrician-gynecologist, practicing in the United States of America.



I'm planning to refer my patient to a fertility specialist, is there any need to still track cycles?

Keeping track of menstrual cycles can provide very useful information to fertility specialists. Short cycles, long cycles, irregular cycles, abnormal bleeding, and other markers can help guide you to the correct diagnosis and treatment options. Furthermore, if a woman has been documenting acts of intercourse consistently in her fertile window, often called "appropriately timed intercourse," she may be offered earlier diagnosis and testing, for example after six months rather than the commonly used 12-month standard.

When it comes to hormone testing, are the standard recommended times of CD3 and CD21 going to suit all women?

No, the standard CD3 and CD21 will not suit all women. First, some hormone levels are remarkably different at times throughout the cycle, so it's important to know where in the cycle the patient is.

Second, CD3 assumes that the bleeding a woman is experiencing is a normal period. Not all bleeding is a period. For women who have abnormal bleeding, it can be difficult to decipher what is the true period from what isn't. Menstrual charting with biomarkers of fertility (cervical fluid production, cervical changes, BBT, urinary hormones, etc) can

help distinguish the actual period from abnormal bleeding events. This will help them know when CD3 is.

Third, CD21 is meant to be a test of hormones in the middle of the phase after ovulation, called the luteal phase. While CD21 may be useful for many women, for those with irregular cycles (a very common problem in those with subfertility and infertility), CD21 can be in the wrong phase or done too early or too late in the luteal phase. Menstrual charting can be used to target the labs at the appropriate time.

How can a patient increase her cervical mucus production?

- Drink plenty of water in the fertile window.
- Avoid antihistamines and decongestants which can dry up cervical fluid.
- A few supplements have shown benefits in limited studies, including B-complex vitamins taken daily, guaifenesin in the fertile window, and FertileCM, taken daily.
- Otherwise, it is important to discuss low mucus with a FABM-knowledgeable healthcare provider as this may indicate an underlying problem that may warrant further investigation.



Useful PCOS resources

Tracking BBT

Measurement of body temperature in adult patients: a comparative study of accuracy, reliability, and validity of different devices: <https://pubmed.ncbi.nlm.nih.gov/21145551/>

Continuous non-invasive monitoring of the skin temperature of HSCT recipients: <https://pubmed.ncbi.nlm.nih.gov/19396473/>

Physiology, Ovulation And Basal Body Temperature: <https://www.ncbi.nlm.nih.gov/books/NBK546686/>

The importance of confirming PCOS diagnosis.

<https://blogs.bmj.com/bmj/2021/03/30/driven-by-good-intentions-why-widening-the-diagnostic-criteria-for-polycystic-ovary-syndrome-may-be-harming-women/>

Fertility potential

Long-term follow-up of patients with polycystic ovary syndrome: reproductive outcome and ovarian reserve: <https://pubmed.ncbi.nlm.nih.gov/19168874/>

Natural treatments

A clinical study on the short-term effect of berberine in comparison to metformin on the metabolic characteristics of women with polycystic ovary syndrome: <https://pubmed.ncbi.nlm.nih.gov/22019891/>

The use of berberine for women with polycystic ovary syndrome undergoing IVF treatment: <https://pubmed.ncbi.nlm.nih.gov/23869585/>

Zinc and homocysteine levels in polycystic ovarian syndrome patients with insulin resistance: <https://pubmed.ncbi.nlm.nih.gov/24664271/>

Melatonin Treatment May Be Able to Restore Menstrual Cyclicity in Women With PCOS: A Pilot Study: <https://pubmed.ncbi.nlm.nih.gov/28558523/>

If you would like further information or if you have questions about any of the information presented in this document, please email contact@temp-drop.com and address your query to Gemma Rigby.



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