

Preventive Powers of Ovulation and Progesterone

Indicators of Ovulation

by Dr. Jerilynn C. Prior, Scientific Director, Centre for Menstrual Cycle and Ovulation Research.

I believe that ovulation with a normal luteal phase length – and normal amounts of progesterone to counterbalance and complement estrogen – is of key importance for women's bone, breast and heart health.

In the previous two issues we discussed:

- 1) Regular cycles can be anovulatory (with plenty of estrogen but no progesterone) or have short luteal phase lengths (meaning plenty of estrogen but not enough progesterone).
- 2) Ovulation disturbances – meaning not ovulating or ovulating with too short a time from ovulation until the period (short luteal phase cycle) – are commonly caused by emotional, social, nutritional or physical stress (like illness or too much exercise for a woman's adaptation or food intake). Ovulation disturbances are especially common in the 10-12 years after menarche (the first period) because the brain is just learning how to ovulate. Ovulation disturbances are also extremely common in perimenopause. In perimenopause the coordinated system is falling apart. At this time, the ovary's primary goal is to "get rid of" any remaining estrogen producing cells to avoid a rogue period at 80. (Aging of women's reproduction is a totally different topic that we will cover in the next series of newsletters.)

How can I tell if I am ovulating?

That's a very important question for a woman who wants to be healthy. The simple answer is - we're still in the process of finding out. When we have completed the analysis of a recent study, we hope to know. We have just completed the Menstruation and Ovulation Study (MOS) in which 610 women participated, answered a question about their cycles, collected urines throughout the cycle and kept the daily Menstrual Cycle Diary© [\(1\)](#) during one menstrual cycle. The purpose of MOS was to determine whether a woman can reliably tell, by the way she feels, that her period is coming. This set of experiences that indicates ovulation is called "Molimina."

What is Molimina?

Molimina, from the Greek word meaning the "work" of bringing on the flow, includes all the experiences that are specific for ovulation. This is not a laboratory test but rather is something you can observe. The Molimina Question: "Can you tell, by the way you feel, that your period is coming?" is an important question to ask

yourself every cycle.

Before we get to what I currently think can tell us that we are ovulating, we need to realistically discuss the problems with studying this question. One of the first is that, as women, we are taught to ignore, not to pay attention to, our menstrual cycles. Even those of us who pay attention to our periods, don't likely attend to the changing experiences inside our cycles. Another problem is that there are cultural ideas that tend to surface when we don't really know the answer to the molimina question. For example, in this culture the only time it is "ok" to be ravenous, irritable or bitchy, is before a period. We expect to have so called "PMS" or premenstrual syndrome. This expectation may override our actual experiences or colour what we perceive. Then, finally, there are more subtle issues that influence our experiences themselves, such as our inherited metabolism of ovarian hormones, or possibly environmental toxins (like phthalates in plastics, or cadmium in oysters) that can interfere with the breakdown of estrogen.

Many years ago I was excited by the notion that women could know the important fact of whether or not they were ovulating. I asked the Molimina Question of 61 consecutive regularly menstruating women that I saw in my clinical endocrinology practice. As it turns, although menstruating regularly, all of these women had [Anovulatory Androgen Excess](#) (AAE, also called Polycystic Ovary Syndrome or PCOS) (2). Each woman described whether or not she could tell that her period was coming (the majority had no clue). I decided, based on my idea of experiences indicating ovulation, whether or not she had molimina, and then asked each woman to get a progesterone blood test during the week before her next period (within 7 days but not counting the day before flow). What I found was: Not being able to tell that the period was coming was an extremely reliable indicator of anovulation and low progesterone levels. What we are learning from MOS is whether that is also true for women who don't have AAE.

I believe a woman is ovulatory who both:

- knows that her period is coming, and,
- experiences tenderness in the high side part of her breasts up under her armpits. She may also experience fluid retention.

If – however, she only reports moodiness, hunger or front of the breast tenderness – that suggests estrogen is high just before flow and that she is not ovulating. (Estrogen levels should be dropping at that time of the cycle).

Using the first morning temperature to tell about ovulation

Progesterone, as we have discussed, is produced in high levels by the part of the follicle that has released the egg. This remaining hormone-producing nubbin of tissue, called the "corpus luteum" which means yellow body in Latin, makes all the progesterone for that one cycle. Progesterone works in every tissue of the body

including the brain. One of progesterone's actions in the brain is to talk to the temperature centre in the hypothalamus and to raise our internal temperature.

Although the "basal body temperature" or BBT method to assess ovulation has been used by many generations of women, it is not reliable. By BBT the temperatures are plotted on a graph (difficult for women, or anyone, to do accurately) and then one simply "eyeballs" the graph.

Only since the 1970s have we developed scientific, quantitative ways of assessing ovulation by temperature (3). The most reliable and easy way to use Quantitative Basal Temperature (QBT) methods to determine ovulation and luteal phase length is to take your first morning temperature and write it down on the bottom of the daily Menstrual Cycle Diary sheet. At the end of the cycle, get out your calculator, add up all the temperatures and divide by the number of days for which you have a reading. This gives you the average temperature. Now look at your list of temperatures. Where your temperature goes above and stays above the average until at least the day before flow is your luteal phase length. It should be 10-16 days. (See instructions [here](#) [PDF]).

How about using a "fertility" test with LH to assess ovulation?

I prefer the Quantitative Basal Temperature method because we care about progesterone and it can also tell us about the length of luteal phase. The luteinizing hormone (LH) peak occurs over a day or so and triggers the release of the egg. However, even the best of the LH kits with sticks that you stick in urine, will miss ovulation about 20% of the time. And, although rarely, you can have an LH peak and still not release an egg. Finally, these kits are not cheap.

In the next newsletter we will discuss the ways that doctors and researchers can determine about ovulation.

For next time:

How can a doctor tell if I am ovulating? Short of doing an operation and observing the egg actually squirting out of the ovary, [as happened recently](#), there are only indirect ways of telling about ovulation. The three main ways are...

To be continued!

Reference List for "Is Ovulation (and are normal Progesterone levels) Important for the Health of Women?"

1. Prior JC. Exercise-associated menstrual disturbances. In: Adashi EY, Rock JA, Rosenwaks Z, editors. Reproductive Endocrinology, Surgery and Technology. New York: Raven Press, 1996: 1077-1091.

2. Prior JC. Ovulatory disturbances: they do matter. Can J Diagnosis 1997; February: 64-80.
3. Prior JC, Vigna YM, Schulzer M, Hall JE, Bonen A. Determination of luteal phase length by quantitative basal temperature methods: validation against the midcycle LH peak. Clin Invest Med 1990; 13:123-131.

Originally published October 2008