



Critique of BBT monitoring - DuoFertility rebuttal

The DuoFertility system is an extremely expensive proposition claiming to increase the chances of natural conception. See <http://www.duofertility.com/> and <http://techcrunch.com/2013/04/01/duofertility/> .

It is based on the well known technique of monitoring and charting the basal body temperature [BBT], which is also well known for NOT ANTICIPATING but only confirming that ovulation has occurred, recognized via a detected increase in the BBT record. Nothing has changed about this meaning of the BBT with the DuoFertility offering. Nothing has changed, either, about the fact that the BBT is an indirect physiological metric.

Even the retrospective timing of ovulation from temperature records is uncertain since the post-ovulation temperature rise may be delayed by several days. This is because the small increase in the woman's temperature after ovulation is an indirect indicator, driven by a post-ovulation increase of a hormone concentration in blood circulation. It is suspected in specialist literature that, while the woman's temperature-regulating mechanism is sensitive to the sex hormone progesterone, the primary modulator of temperature regulation is norepinephrine, and that progesterone triggers its release. It is well known that many aspects of health and life-style affect the body temperature, and each temperature reading may be influenced by factors other than the phase of the menstrual cycle.

The precision of the detected BBT increase has been improved by the DuoFertility technique of temperature measurement, so that the rise in the temperature is taken by them with confidence as the sign of the day after ovulation. Before DuoFertility, a woman using an ordinary thermometer and the classical method of taking the temperature upon awakening before raising from bed, she would have to hope that the next two days' elevated readings would confirm the temperature increase. DuoFertility does not provide any evidence that this improved confidence is really the case.

However, more fundamental is the fact that the BBT (however accurately measured) simply cannot anticipate ovulation but does only more or less reliably indicate that ovulation has occurred. This is not sufficient, and DuoFertility promoters know it. They know that the egg (ovum) can be fertilized only for about 12 hours (some may say up to 24 hours) after ovulation. Because the sperm are viable for at most 3 days, it is essential to do that which the BBT cannot do, namely, to anticipate ovulation and anticipate it sufficiently well ahead of the ovulation event.

What does the DuoFertility system do about it? They rely on the woman noting and contributing her subjective observations, some of which have been used by [NFP \[Natural Family Planning\]](#) for decades, such as changes in their "mucus", the vaginal fluid wiped from the vaginal opening and examined for stretchability and appearance. They also ask for recording of "ovulatory pain which can include feelings of heaviness, abdominal swelling, rectal pain or discomfort and lower

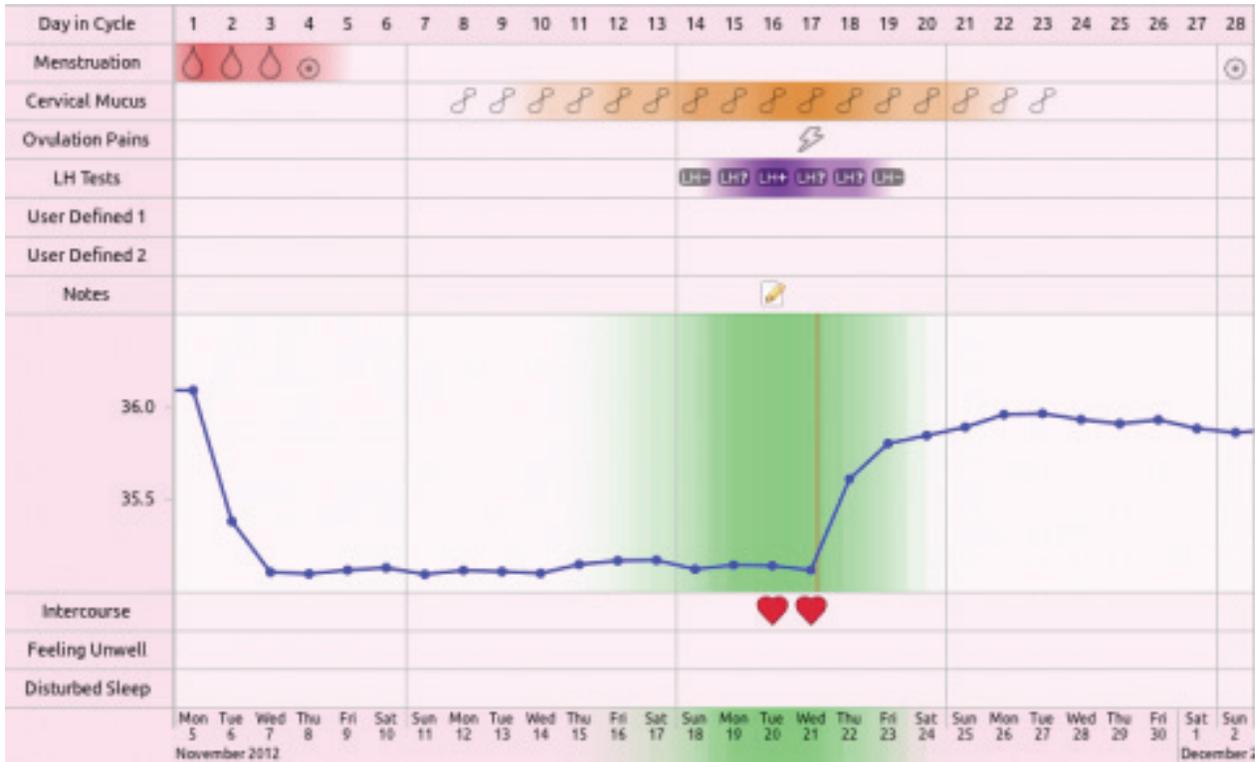
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abdominal pain or discomfort. Pain can occur just before, during or after ovulation” [citing from their patent].

Not many women can perform these subjective observations, so DuoFertility also allows for the urine LH kit measurement data such as by the Clearblue ovulation test.

Just look at their example of a DuoFertility chart:



From: <http://www.duofertility.com/duofertility/why-duofertility/accurate>
How Accurate is DuoFertility?

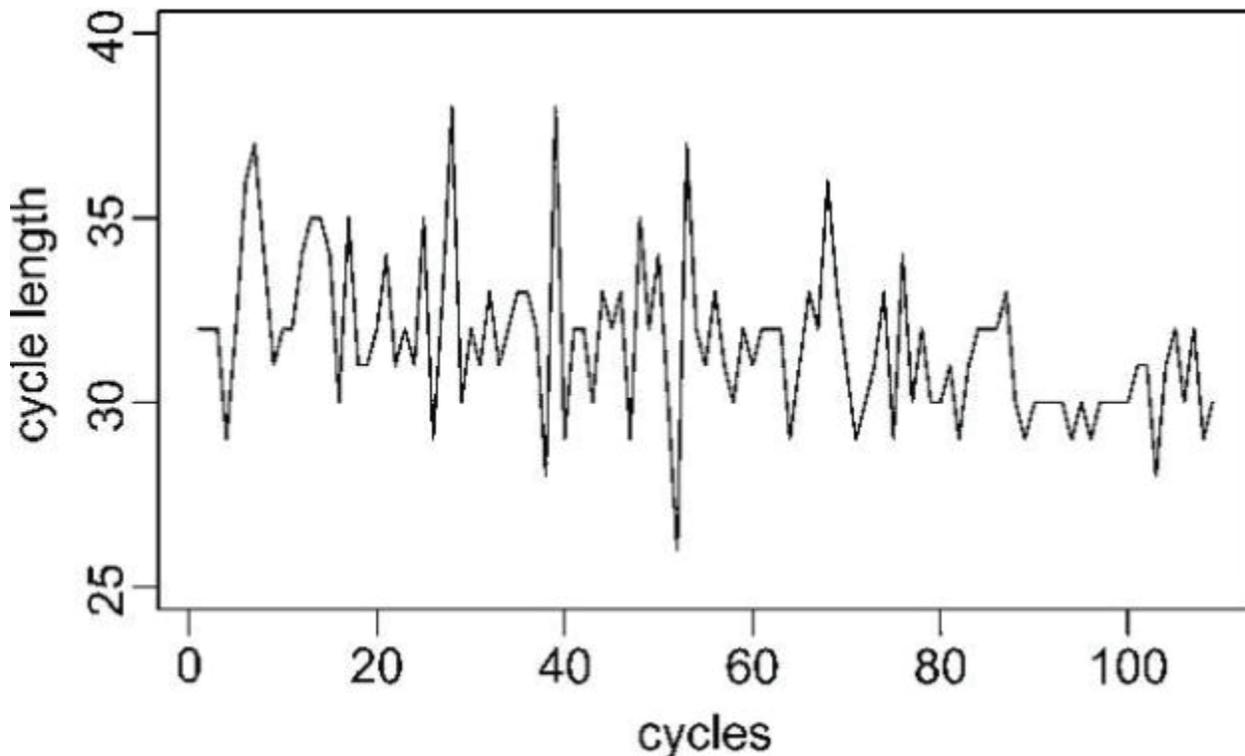
You see here a “smoothed out” record of the BBT, which is DuoFertility’s patented achievement, having removed the usual “noise” from the BBT record, and you see how clearly the BBT goes up, which to them means with confidence that ovulation has occurred. There is no evidence that it really did, but let’s assume it did (and that it always does right when the BBT is up).

More important is the fact that the pre-ovulation window of opportunity is evidently based on the subjective observations and the LH tests.

Note this well: Just like with any other of the currently promoted conception-aiding devices and methods, what DuoFertility offers to their customers is helping them to perform “focused intercourse”, an effort to get pregnant by focusing on trying to hit some of the days of the 3-day brief

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fertile window, which occurs at varying times within the menstrual cycle that is almost never of constant length in successive menstrual cycles of a woman. Read about the variability in <https://biozhena.wordpress.com/2010/03/07/variability-of-menstrual-cycles-and-of-ovulation-timing/>, where you can also see a very good example of cycle length variability in the data of a woman who charted well over a hundred of her menstrual cycles:



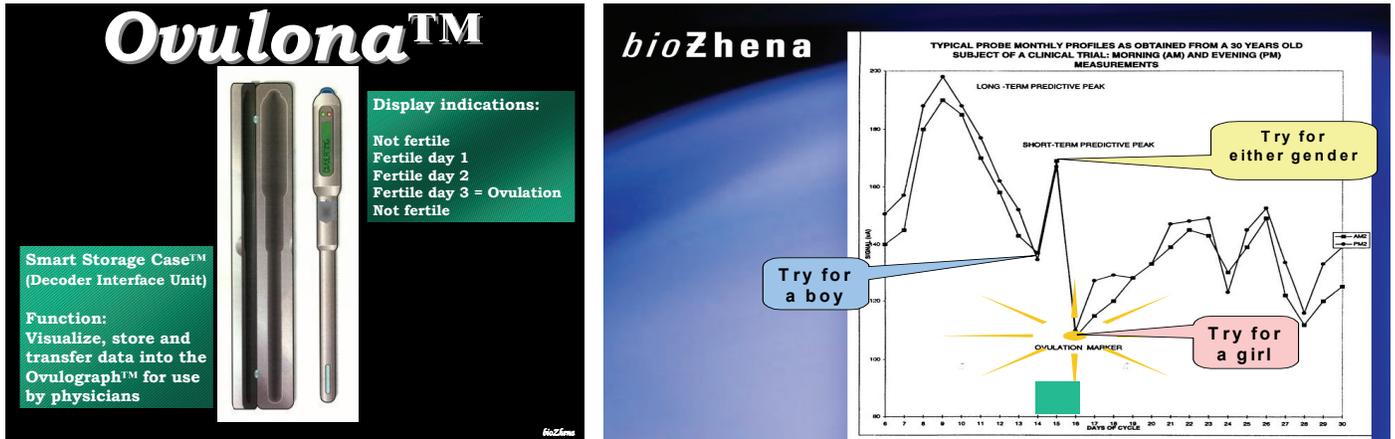
Variability of menstrual cycle lengths of a woman who charted more than 100 cycles

Although the old imperfect methods of estimating ovulation (including instrumental monitoring of urine samples and/or monitoring the BBT such as with the extremely expensive DuoFertility or the similarly expensive BabyComp monitors) give only inaccurate estimates, they [should help to focus on the right time when the probability of conception exists](#). That is because outside of the fertile window, the women trying to get pregnant do not have a chance to conceive.

To read more about this, go to: “The fallacy of ovulation calculators, calendars and circulating-hormone detectors” at <http://biozhena.wordpress.com/2012/02/13/the-fallacy-of-ovulation-calculators-calendars-and-circulating-hormone-detectors/> .

If any of these products or methods did work to determine the fertile window, it would be used as a pregnancy-avoidance tool, which is not the case.

Now, contrast the above DuoFertility chart with our Ovulona:



*The personal home-use device determines the 3 days during which conception can occur, generating a new useful profile for the medical profession. The profile tracks folliculogenesis:
The dominant follicle maturation, ovarian response, the estrogen to progesterone switch at ovulation, and follicular waves after ovulation.*

It is clear that our Folliculogenesis In Vivo™ cyclic profile [FIV™], as generated by the Ovulona, has a much higher information content than the BBT profile (illustrated above in the DuoFertility chart). As a result, we can offer a significantly superior reliability in determining the fertile window for the woman user. We also offer a new means of patient profiling to healthcare providers. The FIV cyclic profiles of patients should replace the BBT charts as a tool for longitudinal monitoring of patients. This will become even more practical when we transform the Ovulona probe into the planned semi-permanent vaginal insert, the telemetric cervical ring Halo™.

Medical publications supporting the above statement about “focused intercourse”:

http://www.ncbi.nlm.nih.gov/pubmed?Db=pubmed&DbFrom=pubmed&Cmd=Link&LinkName=pubmed_pubmed&LinkReadableName=Related+Articles&IdsFromResult=17288684&ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_SingleItemSuppl.Pubmed_Di