

Trying to get pregnant: New Advances in Technology for Ovulation Induction and Treatment

The cliché “The clock is ticking” often comes up during discussion of fertility. While this phrase can have a negative connotation and often denotes the difficulty in conceiving associated with getting older, using the clock or more precisely the correct timing may actually enhance one’s fertility. Traditional methods of home fertility testing identify the surge in hormones (LH and/or estradiol) that precede ovulation. However, these older modalities typically only give a couple 12 – 24 hours notice before ovulation. In addition, monitoring for urine LH may give false results with certain conditions such as PCOS (polycystic ovarian syndrome). Although it is the least expensive, many experts feel that basal body temperature charting is the least accurate method of ovulation testing. The OVWatch™ and OvaCue® are two of the latest methods to detect a woman’s fertility window based on fluctuations in the salts (chloride, sodium or potassium) that occurs throughout the menstrual cycle or prior to ovulation. The OVWatch™ is a lightweight biosensor worn on the wrist while sleeping. The OvaCue® relies on daily sampling of the saliva and use of a vaginal probe around the middle of the cycle to predict ovulation. The detection of the chloride surge occurs 3 days prior to the estrogen surge, 4 days prior to the LH surge and 5 days prior to ovulation. This early notice of the impending ovulation is crucial, as numerous studies have indicated that fertility can be optimized and the time to conception shortened with correct timing of sexual relations. While sperm may remain viable for up to a week in the female reproductive tract, the egg appears to only remain capable of being fertilized for 12 – 36 hours after ovulation. In essence, sperm must be present in the fallopian tubes before or at the time of ovulation for pregnancy to occur. In head to head comparisons, the OV-Watch™ identified the entire fertile window in approximately 6 times more women than a urine LH monitor. This longer window of opportunity reduces the stress of many couples and can increase the pregnancy rate by two-thirds in just 6 months. Preliminary data also indicates that the OV-Watch™ may be used to monitor response to treatments or time inseminations after clomiphene citrate.

Women who have irregular cycles or those in whom testing indicates no evidence of ovulation must rely on medical therapy to induce release of an egg or oocyte. Clomiphene citrate (Clomid, Serophene) and letrozole (Femara) are medications that increase the signals from the brain (FSH, LH) to induce ovulation. Although, clomiphene has been the primary oral agent for ovulation induction, many women experience significant side effects (hot flashes, headaches, mood swings). In addition, clomiphene may have an anti-estrogenic effect on the uterine lining and cervical mucous that reduces the response to treatment. Letrozole was developed as a treatment for breast cancer and is used off-label as an alternative to clomiphene. The primary advantage of letrozole over clomiphene is that letrozole has a much shorter half-life making the anti-estrogenic side effects less likely. Pregnancy rates are comparable with both and the incidence of multiple pregnancies is predicted to be lower with letrozole. Letrozole and clomiphene citrate appear to be equally safe when used prior to pregnancy. Women who are not ovulating and overweight may also benefit from lifestyle modification with increased exercise and weight loss. Likewise, metformin has been shown to increase pregnancy rates and decrease miscarriage rates in women with PCOS. Women who do not respond

to these therapies may need consultation with a fertility specialist, injectable medications or In Vitro Fertilization.