

On Fertility

Infertility, heterosexual definition:

A couple does not conceive after 12 months of regular (randomly timed) intercourse, without birth control, in women less than 35; or after six months of intercourse without birth control in women 35 and older.

Non-heterosexual "definition":

"Most health insurers do not cover the costs of semen and office insemination for lesbians or single women who are presumed fertile and want to become pregnant until there have been 12 cycles of insemination without conception." -- www.uptodate.com

Fertility evaluation in primary care (from www.uptodate.com):

- If the woman has any history of pelvic infections (or chlamydia), and has not been able to get pregnant despite trying, she should consider seeing a gynecologist for a dye scan of the uterus and tubes (**hysterosalpingogram**), to make sure they are not blocked.
- A mid-luteal phase serum **progesterone level**, obtained approximately one week before the expected menses (e.g., day 21 of a 28-d cycle). A progesterone level >3 ng/mL is evidence of ovulation. If the progesterone concentration is <3 ng/mL, the patient is evaluated for causes of anovulation (serum prolactin, TSH, FSH, and assessment for polycystic ovary syndrome).
- For women over 35 or younger women with suspected ovarian failure, we suggest testing ovarian reserve with a day 3 **FSH level**. Women with good ovarian reserve have sufficient production of ovarian hormones from small follicles early in the menstrual cycle to maintain FSH at a low level. In contrast, women with a reduced pool of follicles and eggs have insufficient production of ovarian hormones to provide normal inhibition of pituitary secretion of FSH, so FSH rises early in the cycle. A highly abnormal result (we use FSH >20 mIU/mL) suggests that pregnancy will not occur from the woman's own eggs. We obtain a day 3 FSH concentration and consider a value less than 10 mIU/mL suggestive of adequate ovarian reserve, and levels of 10 to 15 mIU/ml borderline.
- We also check a cycle day 3 **estradiol level**, although there are conflicting data as to whether it is predictive of ovarian reserve. We consider a value <80 pg/mL suggestive of adequate ovarian reserve. Elevated basal estradiol levels are due to advanced premature follicle recruitment that occurs in women with poor ovarian reserve. High estradiol levels can inhibit pituitary FSH production and thus mask one of the signs of decreased ovarian reserve in perimenopausal women. Measurement of both FSH and estradiol levels helps to avoid false-negative FSH testing.
- **Anti-müllerian hormone (AMH)** is expressed by the small early follicles. The AMH level reflects the size of the primordial follicle pool. In adult women, AMH levels gradually decline as the follicle pool declines with age; AMH is undetectable at menopause. The AMH level appears to be an early, reliable, direct indicator of declining ovarian function; however, there is no consensus on the appropriate threshold value. A serum AMH level above 0.5 ng/mL is consistent with good ovarian reserve, while lower levels suggest the presence of a depleted ovarian follicle pool. Levels less than 0.15 ng/mL suggest the patient will have a poor response to IVF. AMH can be measured any time during the menstrual cycle.

Basal temperature charting:

- A **basal thermometer** measures temperature in tenths of a degree. It is used to measure your temperature at rest. To use it, check your temperature when you first wake up, before getting out of bed. You can use the thermometer either in your mouth (before drinking anything) or vaginally, to get a "core" temperature. See www.babycenter.com/detecting-ovulation to print a chart.
- The first half of your menstrual cycle is called **the follicular phase**. Right before ovulation you will have a slight drop in temperature followed by a sharp rise in temperature. Not all women will have a drop in temperature before ovulation but if you notice your temperature drop, that indicates ovulation will be soon.
- Around the time of ovulation, you will see a rise in temperature. By the time you notice this, you have already ovulated. What you are looking for is a rise in temperature of about 0.4 degrees or more. If your temperature rises and remains higher for three days or more, then you can assume you have ovulated.

- The second half of your cycle is called **the luteal phase**. It begins right after ovulation and generally lasts around 12-14 days. The corpus luteum of the ovary makes progesterone. If you have a problem with your corpus luteum, you may not make enough progesterone to sustain a pregnancy.
- Progesterone causes the rise in temperature that is visible on a basal temperature chart during the second half of your cycle. Normally, a woman's basal temperature stays up for about 12-14 days before menstruation. You can tell how long your luteal phase is by looking at your temperature chart. If your luteal phase (higher temperature) is shorter than 12 days, you may have a luteal phase problem.

About ovulation kits:

Over-the-counter urinary ovulation prediction kits detect luteinizing hormone (LH) and the LH surge that reliably indicates ovulation. (Urinary LH levels typically increase about 12 hours after LH rises in the bloodstream, and can be detected by a blood test) Ovulation usually occurs 24-36 hours after the urine LH surge is documented. Home kits have a 5-10% false positive and false negative rate.

Remedies for luteal phase problems:

- Vitamin B6, 50-100mg daily. More is not better! Don't overdo it. It helps morning sickness, too.
- Progesterone cream, 1/4 to 1/2 teaspoon, spread on the inner arm, inner thigh, neck, and chest - alternating places - twice a day from ovulation to menstruation or until the 10th week of pregnancy. Progesterone is regulated as beauty product, so is available over the counter without a prescription. This unfortunately means you can't tell if the product really contains what it says it does. It must say "Progesterone USP" to really contain bioidentical progesterone. "Natural" or "herbal" preparations that don't say this, may not work.
- Alternatively, you can ask your prescriber for a progesterone pill prescription, for use during the luteal phase (from ovulation to menstruation or until the 10th week of pregnancy).
- Clomid (clomiphene), a prescription fertility drug - see below.

About Clomid:

- Clomid works by suppressing the amount of naturally circulating estrogen and "tricks" the pituitary into producing more follicular stimulating hormone (FSH) and Luteinizing hormone (LH).
- Take Clomid (50mg) for 5 consecutive days per cycle, beginning cycle day 3 or 5 with urine LH testing starting cycle day 10 to 12. (Expect to ovulate 5-8 days after the last pill is taken.)
- Once a morning urine LH surge is documented, inseminate that day and again 24 hrs later.
- Alternate method: Inseminate at least every other day, beginning the third day after your last pill is taken and continuing for one week, or until a rise in basal temperature or ovulation kit indicates that you've ovulated.
- More than half the women taking Clomid will get pregnant during the first three cycles.
- Most doctors will only prescribe Clomid for six (6) cycles. The presumption is that if it hasn't happened by then, additional attempts won't make any difference.
- Clomid is available (generic, clomiphene) on the big-box-store discount drug list (example, WalMart, Target), usually \$24 for 90 days' worth.

Clomid possible side effects:

- Hot flashes, headaches, visual disturbances and abdominal discomfort.
- Clomid produces a twin rate of approximately 10% and a triplet rate of less than 1%.
- Thin endometrium (uterine lining) and thick cervical mucus (which can block off the cervix).
- The most severe adverse effect is the development of ovarian hyperstimulation syndrome (OHSS). Severe OHSS may result in enlarged ovaries in mild cases, to rapid fluid accumulation in the abdominal, lung, and chest cavities, along with the development of clotting abnormalities in critical cases.

Guaifenesin and cervical mucus:

Clomid can cause thick, sticky mucus in 30% or more of women using it. Guaifenesin (Mucinex, Robitussin, etc.), an expectorant that thins out mucus, can help to improve this. Take guaifenesin (200mg daily) for five days before and including the day of ovulation for a total of 6 days during your cycle.

Clomid vs. metformin:

If you have low fertility caused by PCOS (polycystic ovarian syndrome), metformin (a diabetes drug) may help fertility more than Clomid. Metformin is usually used to help with weight loss and prevent diabetes caused by overweight. It is a prescription medicine taken by many people of all ages in the US. See www.aafp.org/afp/2005/1215/p2530.html for more.

Clomid vs. insurance:

"My wife and I just started looking into this Clomid issue on Friday, when she was turned down for health care coverage... She took Clomid for 5 days, got pregnant and we now have a beautiful, healthy baby... [The insurance company] told her that she was not eligible for coverage until 5 years from the date she took Clomid. No one warned us that taking Clomid would make her ineligible for health care coverage, not our doctor nor the insurance company." - from www.tryingtoconceive.com

Insemination basics:

The best timing is the day before LH surge, day of LH surge, and next 2-3 days, the last day or two being insurance. If you don't have all those options, the day of the LH surge and the day after are best. The success rate for this method is about the same as with intercourse.

- Buy an oral medicine syringe at just about any drugstore near the children's thermometers. Buy the syringe with a plunger, not a "turkey baster" bulb end.
- Take a clean cup, baggy, or collection condom* and have the male ejaculate into it. Sperm sample volumes range from 0.5cc to 4cc, with an average of about 1cc to 2cc. (1cc=1 mL. 5cc=1 tsp.)
- You might have better luck getting the semen out of a cup, but you may get a larger sample with the baggy or condom. You can empty the baggy into the clean cup. You can add a tiny bit of sterile saline, without additives/preservatives, to help get as much sperm as possible into the syringe, but you don't need to worry too much about leaving a little behind. If you are using frozen sperm, ask the sperm bank for directions on thawing.
- *Slowly* draw up the semen into the syringe, and tap/eject air bubbles. Go slowly to avoid turbulence that can damage sperm.
- With the mom resting comfortably, with hips gently tilted upward (use pillow/blanket), deposit the semen *slowly* as close to the cervix as possible. Do not squirt it into the cervical opening, which can cause cramps and expulsion. (Wash supplies with hot water or saline, for reuse.)
- The mom should stay lying down, with hips somewhat elevated, for at least 30 minutes. Consider trying for the mom having an orgasm, e.g. vibrator. This helps the cervix dip into the vaginal pool and draw up the semen.

See www.therainbowbabies.com for lots more helpful articles about how to do this.

*A collection condom contains no chemicals that might be harmful to sperm.

Intrauterine insemination (IUI):

- If you get medical assistance, you could buy "washed" (hypo-allergenic, cramp-free) sperm and have it directly injected inside your uterus, through a thin tube.
- The chances per cycle for women with IUI alone (no medications) is approximately 25% per month for patients less than 35 years of age. For women over 40, chances are much lower. (These figures are the same as natural heterosexual intercourse.)
- One study found the cumulative pregnancy rate over four months, for couples with unexplained or male infertility, was 18% with IUI alone (no medications), as compared to 10% with vaginal insemination. The average age of the women in this study was 32.
- See www.pacificfertilitycenter.com/treat/iui.php for more about these statistics.

See also:

Many links, <http://www.creatingafamily.org>

Supplies by mail order, <http://www.babyhopes.com>

Pacific Reproductive Services sperm bank, <https://www.pacrepro.com>

International Council on Infertility Information Dissemination, <http://www.inciid.org>