

Ovarian stimulation in IVF



Fertility Facts

There are several different types of ovarian stimulation used in IVF treatment and each type can have variations in the way it is used. Your doctor will choose a stimulation protocol for you based on your age, FSH and AMH levels, and other factors.

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There are a variety of types of ovarian stimulation, all of which use drugs that are the same as, or mimic, the body's own reproductive hormones. Our information magazine covers the drugs and how they work in detail. Here we just use their common abbreviations, such as GnRH, FSH, hCG.

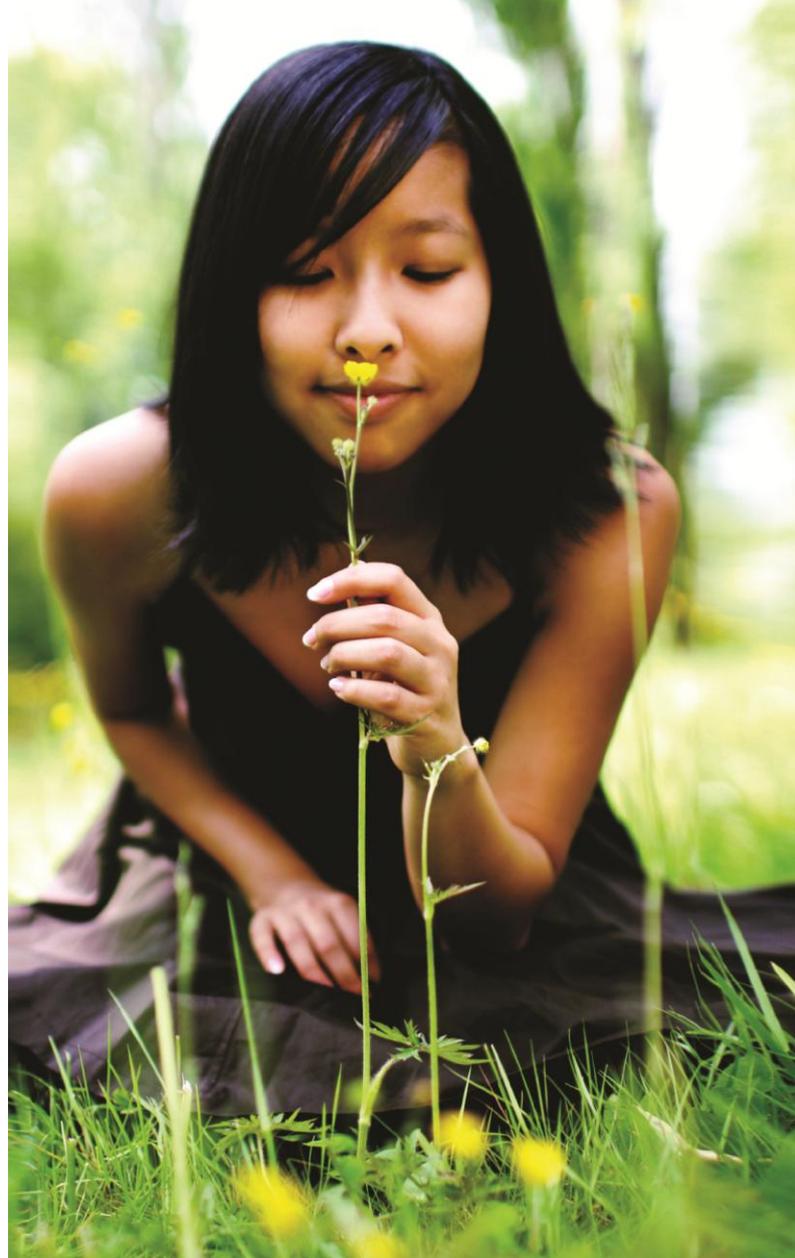
Down regulation

A GnRH agonist (eg, Buserelin) is used to stop the pituitary gland from secreting its own FSH and LH – this is called 'down regulation'. Often the contraceptive pill is added before the GnRH agonist to reduce the chance of cysts developing. Down-regulation is usually checked by a blood test for estradiol (E2). FSH injections (trade names Gonal F or Puregon) are then started, and follicle growth monitored by blood tests for E2 and ultrasound scans to measure the diameter of the follicles. Once the leading follicles have reached the right size, final maturation is triggered by an injection of hCG (trade name Ovidrel).

Why do we want to stop the body from secreting its own FSH only to give injections of the same hormone? There are two reasons. One is that the body normally tries to limit the number of follicles that are ovulated each month to one, and it does this by reducing FSH secretion as the cycle progresses. Turning off the body's own FSH gives better control of stimulation. The other reason is that down regulation stops the body from triggering ovulation by itself. This prevents the body from triggering ovulation while the follicles are too small, or at a time that would make egg collection inconvenient, such as the middle of the night.

Microdose flare

This variation is usually used for women who are unlikely



to respond well to the down regulation protocol. The dose of GnRH is much smaller, and has to be given twice a day to be effective. The FSH initially released from the pituitary gland in response to the GnRH agonist (called FSH 'flare') supplements the FSH injections.

Antagonist

FSH injections are used to stimulate follicle growth. At a set day in the cycle, or when the largest follicle reaches a certain size, daily injections of a GnRH antagonist (trade names Cetrotide, Orgalutron) are started to prevent the body from triggering ovulation. The contraceptive pill may be given before starting FSH injections to make treatment more reliable. It does this by preventing one or two follicles getting ahead of the others.

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Ovarian stimulation in IVF continued...

Clomiphene

Clomiphene tablets are used instead of, or as well as, FSH injections for ovarian stimulation. Usually FSH injections are continued once the Clomiphene is stopped. A GnRH antagonist needs to be given to stop premature or untimely ovulation. Clomiphene works by tricking the pituitary gland into releasing more FSH than usual. While it is much cheaper than FSH injections, it is also less predictable and may sometimes have a negative impact on the lining of the uterus.

Which stimulation is right for me?

Each type of ovarian stimulation has advantages and potential disadvantages. Fertility Associates' doctors and scientists have fine tuned the various approaches to give a range of stimulation protocols to match people's various needs. There are a few general principles:

- There is generally no advantage to using more than 300 iu FSH per day
- Down regulation and antagonist protocols probably have similar efficacy in good responders, although no studies have yet shown antagonists to be more effective than down regulation
- There is some evidence that antagonist protocols are less effective in 'poor responders' and in older women
- Prior use of the pill reduces the chance of cancellation, but on average adds another 1-2 days of FSH injections when using an antagonist. The pill does not have this effect in down regulation protocols.

Your doctor will suggest a stimulation protocol and a starting dose of FSH based on guidelines that take into account your age, BMI, FSH levels and AMH levels, whether or not you have endometriosis or Polycystic Ovaries (PCO), and of course response in any previous IVF cycle.

