

## Less Invasive Stimulation Protocol in IVF

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Nowadays more and more couples are facing difficulties to conceive a child. According to date, collected by the World Health Organization, it is estimated that approximately 13 - 15% of couples worldwide are facing a fertility problem. In Greece, it is established that there is a higher infertility rate (15 - 20%), which is attributed to the high incidence of gynecological problems (e.g. endometriosis, blocked fallopian tubes, polycystic ovaries, etc.) combined with the fact that today Greek women become mothers at an older age.

Infertility is considered as a common-public health-problem as it does not only affect the couple's live, but also has a negative impact on health services and generally in the wider social environment. The infertile couples are experiencing many feelings including depression, grief, guilt, shame, failure, and of course social isolation. Although in the past it was believed that the female partner is mainly responsible for infertility problems, nowadays it has been scientifically proven, that about half of the infertility problems are due to male factor. Therefore, assisted reproduction techniques become imperative in order to address all these problems. And of course IVF procedure is not always the first method that a couple chooses in order to have a child. Other techniques, less invasive, are preceding depending on the infertility cause.

*In Vitro* Fertilization (IVF) is a method of assisted reproduction by which an egg is fertilized by a sperm outside the woman's body in an IVF laboratory. IVF is not one simple procedure, but a series of several steps. The first step of IVF is the hormonal stimulation of the female ovaries performed to increase the number and the size of follicles. This is achieved by administering injectable hormones for a time (which is determined by a number of parameters) so as to produce a sufficient number of mature eggs. One of the most important advances in recent years is the design of genetically recombinant hormones (recombinant FSH like corifollitropin alpha), to promote multiple follicular development increasing the success of IVF. At the Mediterranean Fertility Institute in Chania because of the advent of corifollitropin alpha, we are allowed to significantly reduce the number of injections for the benefit of achieving an easier and painless ovarian stimulation. Furthermore, a new class of drug, the so-called 'competitors of LH' (like Ganirelix) allows a fullest control of the ovulation time, so that it will happen in the appropriate scheduled time. The above medications have also dramatically helped to reduce the negative side-effect of ovarian hyper-stimulation, which has caused in the past medical problems. Thus, the IVF protocol becomes straightforward and the female patients suffer less physically and mentally.

The next step of IVF is the gamete collection i.e. sperm and egg collection. The egg collection (oocyte retrieval) process is performed in the laboratory with the use of vaginal ultrasound that guides the suction of the ovarian follicles produced by the woman during the hormonal ovarian stimulation. The man will either provide a semen sample on the day of oocyte retrieval, or in cases of severe male problem the spermatozoa can be retrieved by the male reproductive system with an invasive technique. Fertilization takes place on the same day of the oocyte retrieval and the fertilized eggs (embryos) are transferred back to the woman's uterus in three to five days.

Statistically and according to the European Society of Human Reproduction and Embryology, the IVF success rates (achieving pregnancy) per embryo transfer is an average of 30%. The success rate for young women is much higher and rises to 40 - 50%, while for older women is much lesser, which is completely normal. However, the percentage of live births is not higher than 25% per embryo transfer. At the Mediterranean Fertility Institute we aim to achieve the highest percentages of success by providing a customized treatment to each patient. Our care is of the highest standard and our personnel strive to help patients fulfill their dream of holding their own baby.

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