



Women's Health with Dr. Minoos Hosseinzadeh **Infertility Treatment Options - Part II: High Tech**

On December 28, 1981, the first *in vitro fertilization (IVF)* baby was born. IVF is a method of assisted reproduction where a woman's eggs and a man's sperm are combined in a dish in the laboratory. The goal is for the eggs to be fertilized, in which case the fertilized eggs or embryos are then transferred to the woman's uterus. There are several chronological steps involved in this procedure, including:

- Ovarian Stimulation
- Egg Retrieval or Harvesting of the Eggs
- Fertilization of the Eggs
- Embryo Transfer

Initially, IVF was used to treat women who had problems with their fallopian tubes, such as blocked, damaged or absent tubes. Now, it is also indicated in patients who have undergone the low tech (IUI) treatments (See last month's April issue of OCPC to learn more) without success, male factor infertility, unexplained infertility, endometriosis, and in cases of genetic disease testing.

High Tech Solution – In Vitro Fertilization

Ovarian stimulation involves taking two types of medications. The first medication stimulates the ovaries to produce multiple follicles. The second medication prevents ovulation from occurring. Most of these medications are injectable drugs, and on occasion, several injections a day have to be administered. The patient's response is monitored with transvaginal ultrasounds and by measuring hormone levels in the blood. Once the patient's response is judged to be adequate, she is scheduled for the egg retrieval.

Egg retrieval is a minor surgical procedure and is usually performed transvaginally, under ultrasound guidance. Anesthesia is usually given. A needle is passed through the vagina into each follicle in the ovary and the fluid is aspirated. The fluid is then examined by an embryologist under the microscope in order to look for the eggs.

Insemination of the eggs occurs when the sperm parameters are normal, and the eggs and sperm are incubated together in a dish. When there is concern about the quality of the sperm, *intracytoplasmic sperm injection (ICSI)* can be performed. During this procedure, a viable sperm is injected directly into an egg. The next day, the eggs are assessed to see if fertilization has occurred successfully. They are then grown in the lab for a few days and transferred into the uterus anytime between two and six days after the egg retrieval.

Embryo transfer is a relatively simple procedure where embryos are transferred through the cervix into the uterus. Anesthesia is not required. The number of embryos transferred will depend on a number of factors, which should be discussed by your physician. Extra embryos of good quality that are not transferred can also be frozen and stored for several years.

The pregnancy test is performed a few days after the embryo transfer. The pregnancy rates depend on a number of factors, some of which include the patient's age, egg quality, partner or donor's sperm quality and the patient's uterine lining.

Be sure to look in next month's issue for a detailed exploration of how IVF can be used to screen for genetic diseases in embryos, thereby preventing transmission of genetic diseases – such as hemophilia, Down's syndrome, and Huntington's disease – to the offspring.

OCPC Readers: E-mail questions to Women's Health with Dr. Minoos Hosseinzadeh at DrMinoos@OCPCmagazine.com.

Dr. Minoos Hosseinzadeh is a nationally recognized specialist in reproductive endocrinology at the largest and most-established locally-based fertility center in Orange County, Calif., Coastal Fertility Medical Center (<http://www.coastalfertility.com>). Double-board certified in Obstetrics and Gynecology and Reproductive Endocrinology & Infertility, she is also a member of the American Society of Reproductive Medicine, Society for Reproductive Endocrinology and Infertility, American College of Obstetrics and Gynecology and the Royal College of Physicians and Surgeons. She has presented at several national and international fertility meetings and authored numerous papers on hormone replacement therapy and age-related female infertility. She is a member of UC Irvine's clinical faculty and teaching in the division of Reproductive Endocrinology & Infertility.

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