



N o v a I n V i t r o F e r t i l i z a t i o n

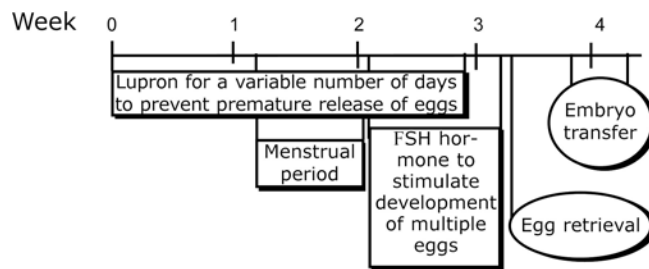
Treatment Protocol In Vitro Fertilization

In vitro fertilization (IVF) is one of the most effective treatments available to help infertile couples achieve pregnancy. Most couples will have a 25-50% probability of a live birth per IVF procedure. In addition to being a very powerful treatment for infertility, IVF is an excellent test of egg and sperm quality.

In vitro fertilization treatment consists of:

1. Ovarian stimulation to induce growth of multiple eggs within the ovaries
2. Ultrasound guided egg retrieval
3. Fertilization of the eggs
4. Transfer of the resulting embryos into the uterus
5. Establishment of pregnancy

This is an example of an IVF treatment sequence. Actual treatment is individualized.



1. Ovarian Stimulation

IVF treatment begins with the onset of a menstrual period. Oral contraceptives are started within the first seven days of the menstrual cycle. They prime the ovaries for an optimal response. One to two weeks before the estimated onset of the following menstrual period, Lupron injections begin. Lupron prevents premature release of the eggs from the ovaries prior to the egg retrieval procedure. The volume of the Lupron injection is very small and it is given subcutaneously (just under the skin). Any part of your body can be used for these injections. They are given for approximately three to four weeks.

After one to two weeks of taking Lupron your menstrual period will start. Within two weeks of the onset of your period, you will begin taking FSH (Follicle Stimulating Hormone) injections in addition to the Lupron. FSH stimulates maturation of multiple eggs on your ovaries. FSH injections, like Lupron, are given subcutaneously with tiny needles. Nova IVF provides information on the proper mixing and administration of these medications. You will be taking both Lupron and FSH injections every day for approximately ten days.

During this time your progress will be monitored by ultrasound and estrogen blood levels. Once the eggs are ready, you will be instructed to stop taking the Lupron and FSH and to take a single injection of HCG hormone. This is also a subcutaneous injection. This medication triggers the final stages of egg maturation. Thirty-six hours after the HCG injection, the eggs are nonsurgically retrieved from the ovaries.

2. Ultrasound Guided Egg Retrieval

The egg retrieval is an office procedure at Nova IVF. Your partner is invited to be present during the egg retrieval. Using ultrasound guidance, a tip of a thin needle is passed through the top of the vagina into the cul-de-sac (a space behind the uterus). The ovaries are located near the bottom of the cul-de-sac allowing the tip of the aspirating needle to enter the ovarian follicles and aspirate the follicular fluid from them. The fluid is examined under a microscope to identify the eggs. The egg retrieval takes approximately five to ten minutes. Medications are used for analgesia. Many women

do not feel the eggs being aspirated. Most will feel a short lasting menstrual-like cramp sensation when the tip of the needle passes through the top of the vagina (once for each ovary). The egg retrieval is a very safe procedure.

3. IVF Laboratory

On average, eight to fourteen eggs are aspirated during the egg retrieval procedure. The eggs are identified under the microscope and are placed in culture medium filled petri dishes which have been pre-labeled with your name and an identifying code. The composition of the medium resembles the fluid secreted by the Fallopian tubes. This allows the embryos to develop in either environment at the same rate.

The male partner collects a semen specimen the day of the egg retrieval. The semen can be collected outside of the office if the specimen can be delivered within thirty minutes of collection; otherwise it should be collected at Nova IVF.

The sperm and the eggs are combined six hours after the egg retrieval. The very act of fertilization takes place over a period of several hours during the night. Your infertility history may suggest a possibility of a male factor significant enough to keep the eggs from being fertilized this way. In this case, we will perform the ICSI (Intracytoplasmic Sperm Injection) procedure in which a single sperm is inserted into an egg. This can significantly increase the fertilization rate for selected couples.

Evidence of fertilization can be seen the next day, 14 to 16 hours after the insemination. We will contact you in the morning following the egg retrieval to let you know how many eggs have fertilized. The fertilized eggs, now called embryos, are transferred into growth medium and continue to be cultured in the IVF laboratory.

4. Embryo Transfer

The embryo transfer is done one to five days after the egg retrieval. The embryos are "loaded" into the tip of a very thin transfer catheter in a very small volume of transfer medium, the catheter is then passed through the cervical canal to within 5 mm of the top of the uterus and the embryos are gently released. The transfer usually takes a few seconds to complete. No resting is required afterwards and you can immediately resume your normal daily activities. You do not have to change your lifestyle as you go through the IVF treatment.

The gamete embryologists will assess the embryos prior to the embryo transfer to determine their likelihood of implantation. Most partners will usually select two to four embryos for the transfer. Approximately one-third to one-half of Nova IVF's IVF pregnancies are twins and there are very few triplet pregnancies.

There may be more embryos than you may wish to have transferred. It is possible to cryopreserve these "extra" embryos and store them in liquid nitrogen.

Approximately one-half to three-quarters of the embryos survive the cryopreservation/thawing process. The implantation rate of the surviving embryos is similar to the "fresh" embryos.

5. Establishment of Pregnancy

After the embryo transfer, the front and back walls of the uterus gently hold the embryos, keeping them within the uterus. There is no restriction of your physical or sexual activity. The lining of the uterus is made receptive for the embryos through the action of the hormones estrogen and progesterone produced by the ovaries. Your own progesterone production is supplemented with progesterone vaginal capsules for a period of twelve days.

Approximately two weeks after your embryo transfer, you will return to Nova IVF for a blood pregnancy test. Your results will be out the same day. If the pregnancy test is positive, an ultrasound examination is scheduled two weeks later to visualize the implantation site and to look for a heartbeat. Once a heartbeat is seen, there is a 90-95% probability that the pregnancy will continue to a live birth. Your treatment at Nova IVF usually ends at that time and you can return to your obstetrician for routine obstetrical care. From that point on, your pregnancy becomes indistinguishable from a pregnancy conceived through intercourse.

At Nova IVF, it is our goal to minimize the likelihood of a high order multiple pregnancy (triplets or higher). If you conceived with a high order multiple pregnancy and by the 10th week a spontaneous

reduction has not taken place, you may choose to have a selective reduction. This procedure would be performed by a specialist. The reduction carries with it 5-10% risk of losing the whole pregnancy.

If the pregnancy test is negative, your period would start within a few days. You could begin another IVF treatment cycle or, if you have cryopreserved embryos, you might decide to have them transferred. Either treatment could begin after one spontaneous menstrual cycle. This would give your ovaries time to rest after the stimulation.

The following graph shows how the cumulative probability of pregnancy adds up if a couple is going through one to four cycles of IVF. In this example, we used an arbitrary 35% live birth probability per treatment. Your actual likelihood of a live birth could be higher or lower.

