

IN VITRO FERTILISATION (IVF)



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DID YOU KNOW

In general, about 20 to 25% of healthy fertile couples become pregnant each month they try. In contrast, the pregnancy rate among couples with infertility is usually about 2 to 5% per month. Various treatments have been used in an attempt to improve these pregnancy rates.

In-vitro fertilisation (IVF) is a process used to treat infertility that has failed to respond to other medical or surgical interventions. Since the world's first IVF baby, Louise Brown, born in 1978, more than 3,000,000 babies have been born as a result of IVF.

WHAT IS IVF?

Literally IVF means "fertilisation in glass". An IVF treatment cycle has six different treatment phases:

1. PITUITARY SUPPRESSION PHASE

In a natural menstrual cycle, hormones from the pituitary gland (LH and FSH) cause the growth of an egg within the fluid-filled space (follicle) in the ovary. Although several follicles start to grow each month, in a natural cycle only one will become mature enough to release its egg. Release of the egg (ovulation) is triggered by a sudden surge of the hormone LH at mid-cycle.

In contrast, during an IVF cycle it is desirable for several eggs to mature simultaneously. To prevent a premature LH surge from triggering early release of these eggs, a GnRH agonist is used to temporarily turn off your own LH and FSH secretion. These medications are used at various stages of the IVF cycle.

2. OVULATION STIMULATION PHASE

Daily injections with a Follicle Stimulating Hormone (FSH) (Gonal F or Puregon) for 8-12 days. This stimulates the growth of several follicles instead of just 1 or 2. The response of the ovaries is monitored by ultrasound and occasionally by the use of blood tests. Most women learn to give their own injections to reduce the number of visits to the clinic.

3. EGG RETRIEVAL PHASE

Once the ultrasounds indicate a reasonable size and number of follicles, an injection of hCG is given, causing final maturation and loosening of the egg from the wall of the follicle. The egg retrieval occurs two mornings after this final injection (34 to 36 hours later).

The egg retrieval is performed by an ultrasound guided needle puncture through the top of the vagina. The fluid is drained from each follicle and examined under the microscope for the presence of an egg.

4. FERTILISATION PHASE

The sperm sample is washed and concentrated, then added to the eggs a few hours after retrieval. The eggs are examined the next day for signs of fertilisation. We expect about 70% of the eggs to fertilise if the sperm sample looks normal. Not every follicle will contain an egg. Not every egg will fertilise. Not every egg that fertilises will go on to form a good quality embryo.

5. EMBRYO TRANSFER PHASE

Two to five days following egg retrieval, the fertilised eggs (embryos) are transferred to the uterus using a fine plastic tube (transfer catheter). The exact number transferred depends on the woman's age and embryo quality. This procedure takes only a few minutes and is usually not uncomfortable.

Some couple will have extra embryos that are suitable for freezing. The best quality embryos (those most likely to result in pregnancy) are usually transferred in the treatment cycle. To be selected for freezing, embryos must show minimal or no sign of fragmentation (cell breakdown) and no sign of abnormal development. Obviously, not all embryos will meet these criteria.

6. LUTEAL PHASE AND PREGNANCY TEST

You are encouraged to limit your activity for 24 hours after the embryo transfer. Your activity can be gradually increased over the next few days to non-strenuous, non-aerobic activity. Many women return to work after a few days if their jobs are not strenuous. After 14 days, a blood test or home pregnancy test will determine whether a pregnancy has occurred.

POSSIBLE RISKS ASSOCIATED WITH IVF

There are some potential risks and side-effects associated with IVF procedures including;

- An exaggeration of usual menstrual cycle symptoms (e.g. bloating, breast tenderness, mood swings) because the ovaries have been stimulated to produce more than one follicle.
- In about 1% of cases, ovarian hyperstimulation syndrome (OHSS) develops. The ovaries become extremely enlarged and extra fluid accumulates in the abdomen. This complication requires rest, close monitoring, intravenous fluids or even drainage of the abdominal fluid. In rare cases, if we feel you are very high risk for developing OHSS, the embryos may be frozen rather than being replaced.
- If more than one embryo is transferred into the uterus, a multiple pregnancy may occur. Multiple pregnancies carry a higher risk of preterm delivery and other associated problems. Twins can occur in 10-20% of cases.
- Fertility drugs have not been proven to increase the risk of breast, ovarian or uterine cancer; reassuring data is now available from several large follow-up studies. However, women who have never been pregnant have a higher risk of breast or ovarian cancer. Past or future use of the birth control pill will lower your risk of ovarian cancer. A yearly physical exam is important for the prevention and early detection of all diseases.

OPTIMISING YOUR CHANCES

Women who are underweight or markedly overweight may have difficulties during the treatment cycle or a resulting pregnancy. As medication doses and responses tend to be weight-related, overweight women may require much higher dosages of medication and may have difficulty absorbing it. As well, such women have an increased risk of pregnancy loss.

If you smoke, you should attempt to quit, or at least minimise the number of cigarettes smoked each day. Women who smoke have a lower chance of becoming pregnant and a higher rate of miscarriage.

We recommend a multivitamin supplement containing folic acid (0.5mg or 500mcg daily) for all women who are trying to become pregnant. This vitamin reduces the risk of some serious defects of the central nervous system in the foetus. It should be started a few weeks before treatment begins and taken until the 12th week of pregnancy.

IVF SUCCESS RATES

Several factors affect IVF pregnancy rates. One of the most important is the age of the female partner. Your individual circumstances will be discussed with you before you start your treatment cycle. Current pregnancy rates can be obtained by contacting the Centre.

COUNSELLING

Infertility and its treatment can be quite stressful from an emotional, physical and financial point of view. We encourage partners to be supportive and participate in the treatment process. It can also be helpful to develop a network of supportive friends and relatives.

In addition to our medical and nursing staff, a counselling session with our trained infertility counsellor is included in the cost of each IVF cycle. Our counsellors are experienced in infertility-related issues.

COST

Please contact City Fertility Centre to receive the most current IVF cost structure.



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