

A guide to in vitro maturation (IVM)



Fertility Facts

In vitro maturation (IVM) is a variation of standard IVF treatment that involves the collection of immature eggs from the ovaries. Once the eggs have been collected, they continue their maturation in the laboratory then undergo intracytoplasmic sperm injection (ICSI) in order to achieve fertilisation. From fertilisation, they are cultured in the same manner as standard IVF and resulting embryos can be replaced into the uterus to achieve pregnancy.

This guide is designed to be a supplement to that provided for in vitro fertilization (IVF) treatment.

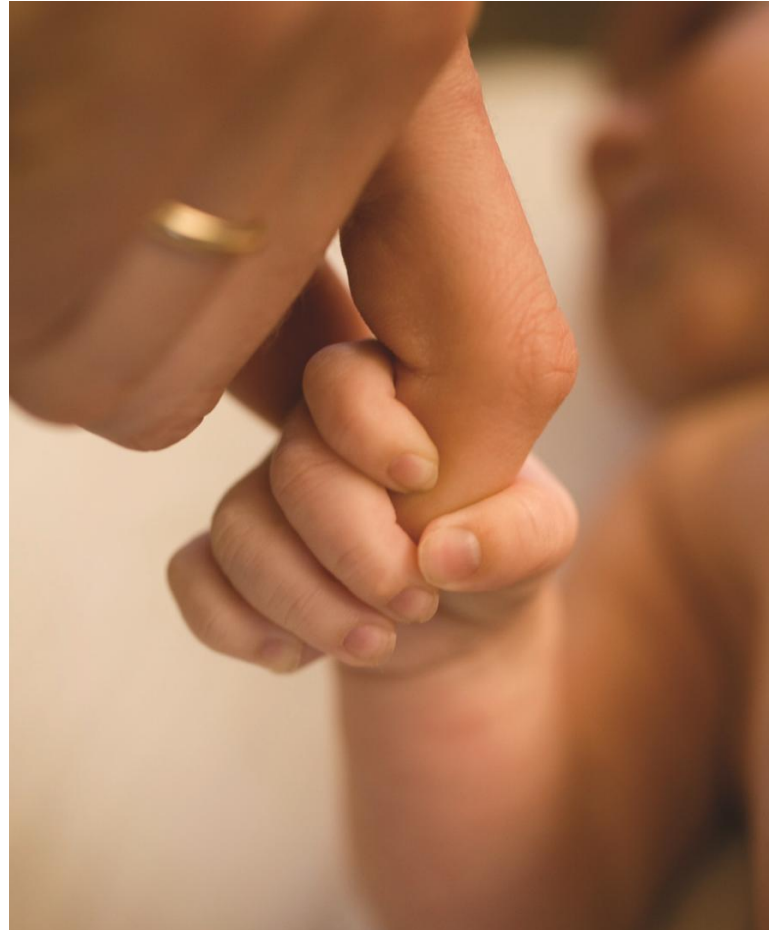
IS IVM AN OPTION FOR ME?

Definition of IVM

In vitro maturation is a variation of standard IVF treatment that involves the collection of immature eggs from the ovaries.

Once the eggs have been collected, they continue their maturation in the laboratory then undergo intracytoplasmic sperm injection (ICSI) in order to achieve fertilisation. From fertilisation, they are cultured in the same manner as standard IVF. The embryos that are created are frozen and transferred later in a natural or manufactured cycle. A natural or manufactured menstrual cycle provides a better environment for the embryo to implant, rather than the cycle in which the eggs were collected.

The main benefit of IVM treatment is that patients do not require at least a week and a half of injections of medication to stimulate the ovaries, as is done in traditional IVF. With an IVM cycle there may be no medications administered at all, though in common with many centres offering this treatment, we may wish to 'prime' the ovaries with a few days of injections just prior to egg collection.



IVM Fees

To encourage patients at high risk of developing OHSS from standard IVF to opt for the safer option of IVM, we offer IVM as a package of up to two cycles to attempt a pregnancy.

For the latest IVM fee please see your local clinic.

The use of no, or very small amounts of medication avoids the side effects that can occur with these medications. In addition there is no risk of ovarian hyperstimulation syndrome (OHSS), a complication that can develop when these medications are used.

For whom is IVM suitable?

The eggs collected during IVM treatment are from much smaller follicles than those collected during IVF making it a more difficult procedure. As a consequence it is ideal that patients have a good number of follicles to begin with as we would preferably want to retrieve ten or more eggs.

As such, IVM is most suitable for women who have polycystic ovaries. These ovaries often contain many more follicles than normal ovaries, making them ideally suitable for IVM.

Patients with polycystic ovaries are also at particularly high risk for ovarian hyperstimulation following standard IVF treatment and so IVM will avoid this complication.

Contact us

www.fertilityassociates.co.nz | phone 0800 10 28 28



FERTILITY | *a better understanding*
associates | TE RAUHANGA O TE WHARETANGATA

A guide to in vitro maturation continued...

In the future it is possible that IVM will become available to a wider group of patients including those with normal ovaries.

Limitations

IVM is subject to most of the limitations that apply to fertility treatment. It does not overcome the fall in fertility that is seen when women reach their late 30's. It does not overcome the biological ageing of the ovary.

At present IVM is not a preferred option for women with normal ovaries when compared to IVF treatment.

Our current practice is to use ICSI to maximize the chance of fertilizing in vitro matured oocytes, however simpler IVF insemination may be offered as an option in the future.

As eggs mature in the laboratory, they will not be ready for insemination until the day following egg collection. This would mean that we would have to process the sperm sample on that day, so if coming from out of town, please allow for trips to the clinic on consecutive days. It has been shown that IVM treatment may have a lower chance of pregnancy than from standard IVF treatment when embryos are transferred fresh. The normal process now is to freeze all suitable embryos and use them later.

PREPARATION FOR IVM TREATMENT

The principles of preparing for IVM treatment and optimizing the success of the treatment are the same as for IVF treatment outlined in the patient guide.

WHAT HAPPENS DURING IVM TREATMENT?

The six steps in IVM

1. Monitoring the menstrual cycle with ultrasound scanning
2. Collecting the immature eggs from the ovaries
3. Maturing the eggs in the laboratory overnight
4. Injecting sperm into the matured eggs (ICSI) and growing the embryos in the laboratory
5. Freezing suitable embryos
6. Transferring thawed embryos into the uterus later in a natural or manufactured menstrual cycle

NB. The laboratory steps are the same as outlined in the patient guide.

Medication used in IVM treatment

IVM treatment does not require a full course of hormonal injections prior to collecting the eggs, though for a proportion of women small doses over a day or two may be of benefit.

Most studies have shown that oocytes mature best in culture media using serum. We will take blood from you

and prepare a sample of your own serum to add to the media.

RISKS OF IVM TREATMENT

The risks and side effects of IVM treatment are similar to that outlined for IVF in the patient guide, with the exception that the side effects and potential complications related to ovarian stimulation medication are avoided.

The risks of infection and bleeding after egg collection/embryo transfer remain the same.

IVM Children

Whilst IVM is a relatively new treatment compared to IVF, there have been over 3000 children born worldwide as a result of IVM treatment over the last twenty years.

The IVM registry has pregnancy and delivery data available for around 1500 infants conceived through IVM treatment.

From this data there does appear to be an increased risk of miscarriage but it is possibly linked more with the higher proportion of women with PCOS rather than the IVM process.

The risk of pre-term delivery and low birth weight appears to be lower than for standard IVF/ICSI pregnancies.

The chance of having a congenital abnormality would be expected to be around 3-5%, which is similar to that for children conceived naturally or by IVF treatment.

Studies following IVM conceived children up to the age of 2 have been reassuring with respect to growth and developmental potential.

Outcomes for children born from assisted reproduction in general are discussed in more detail in the patient guide.

SUCCESS RATES FOR IVM

Information on the success rates for IVM can be quite confusing. The majority of data comes from a few large centres where IVM is the main form of treatment. Their data frequently show pregnancy rates which are similar to those of standard IVF for selected patients, although often more embryos have been replaced in order to achieve those rates, therefore increasing the risk of multiple pregnancy.

We have very limited information from our own clinic. We expect the pregnancy rate from a package of two IVM cycles to have a similar pregnancy rate to one cycle of conventional IVF but without the risks of OHSS.

A guide to in vitro maturation continued...

Figure 1. Timetable for IVM treatment

