

Assisted reproductive technology – IVF and ICSI

Summary

- IVF (in-vitro-fertilization) and ICSI (intracytoplasmic sperm injection) are assisted reproductive treatment (ART) procedures in which fertilisation of an egg occurs outside the body.
- IVF and ICSI involve a series of steps taken over several weeks.
- Your own personal circumstances and medical history must be taken into account when you estimate your chance of having a baby with IVF or ICSI.
- In the hands of experts, IVF and ICSI are safe, and medical complications are rare.
- In Australia, Medicare covers some of the costs associated with IVF and ICSI (as does private health insurance) but there are also substantial out-of-pocket costs.

This page provides a general overview of two types of assisted reproductive treatment (ART) – in-vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI). For more information about IVF and ICSI and other assisted reproductive technologies, visit the [Victorian Assisted Reproductive Treatment Authority \(VARTA\) website](#).

What IVF and ICSI involve

IVF and ICSI are forms of assisted reproductive treatment (ART) in which eggs are fertilised with sperm, outside the body. IVF is used for female infertility and unexplained infertility, and ICSI is used when there is a male cause of infertility.

The procedure for these two treatments is as follows, and is summarised in the diagram below.

The woman's ovaries are stimulated with a course of injectable fertility drugs. When the eggs are mature they are collected while the woman is under light anaesthetic.

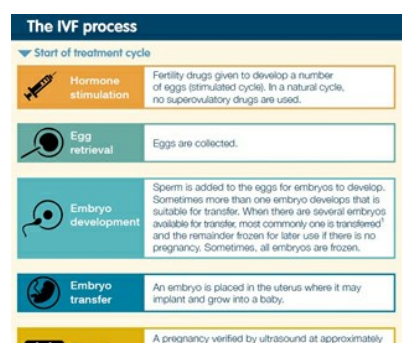
- In IVF, sperm from the male partner or a donor are added to the eggs to allow them to be fertilised.
- In ICSI, the scientist picks up a single sperm and injects it into each egg using a microscopic needle.

The eggs and sperm are then kept in the laboratory for two to five days (depending on clinic practice) for embryos to develop.

If the eggs fertilise and embryos develop, one embryo (sometimes two) is placed into the woman's uterus in a procedure called embryo transfer. Sometimes several embryos develop, and they can be frozen for use in later embryo transfer procedures.

Two weeks after the embryo transfer the woman has a blood test to see if the treatment has been successful. If the test is positive, an ultrasound examination is scheduled two weeks later to check that the pregnancy is developing normally.

If the test is negative the woman will have a period and will then need to decide whether to try again. If she has frozen embryos these can be replaced one by one without the need to stimulate the ovaries.





Understanding IVF and ICSI success rates

Clinics report success rates in different ways. When comparing clinics' success rates for IVF and ICSI you need to make sure you compare like with like, or 'apples with apples'. And, most importantly, your own personal circumstances and medical history must be taken into account when you estimate your chance of having a baby with IVF or ICSI.

Find out more about [understanding IVF success rates](#).

Possible health effects of IVF and ICSI

In the hands of experts, IVF and ICSI are safe procedures and medical complications are rare. However, as with all medical procedures, there are some possible health effects to consider for women and men undergoing treatment and for children born as a result of treatment. Risks associated with IVF and ICSI include:

- an excessive response to fertility drugs (**ovarian hyperstimulation syndrome, OHSS**)
- multiple birth (twins and triplets)
- premature labour and low birth weight
- a small increased risk of birth defects compared with spontaneously-conceived babies
- caesarean delivery.

IVF and ICSI are also psychologically demanding and emotional health effects are common. In Australia, counselling services are available in all fertility clinics. Women who have IVF treatment, and their partners, are encouraged to use these if they experience emotional difficulties.

[Read more on possible health effects of IVF](#).

Cost of IVF and ICSI

In Australia, Medicare (and private health insurance) covers some of the costs associated with IVF and ICSI but there are also substantial out-of-pocket costs.

The difference between the Medicare benefit and the amount charged by the clinic is the 'out-of-pocket cost'. These costs vary, depending on the treatment, the clinic and whether a patient has reached the **Medicare Safety Net threshold**.

Read more on the [cost of IVF](#).

Deciding what to do with unused embryos

Sometimes people have embryos in storage that they don't intend to use. Most commonly this is because they have completed their family but for some people, health reasons prevent them from using their stored embryos. At the end of the storage time limit, which in Victoria is five years, people have to decide what to do with unused embryos. There are four options available:

1. applying for an extension of storage time
2. disposing of the embryos
3. allowing the embryos to be used for research
4. donating the embryos to another infertile person or couple.

Couples who have frozen embryos that they are not intending to use often find it difficult to decide what to do with them. Victorian Assisted Reproductive Treatment Authority (VARTA) has an **interactive decision-making tool** designed to help people who are find it hard to decide what to do with their unused embryos.

Where to get help

- Your local doctor

- Obstetrician or gynaecologist
- Your local community health centre
- Family planning clinic
- IVF clinic

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Victorian Assisted Reproductive Treatment Authority

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