

Intra Cytoplasmic Sperm Injection (ICSI)



**AUSTRALIAN
CONCEPT
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CENTRE**

ICSI is a procedure whereby a single sperm is artificially inserted directly into an egg instead of penetrating the egg in the normal way. If the egg fertilizes, the resulting embryo is then placed into the woman's uterus.

Who considers ICSI?

ICSI may be used in the following circumstances:

- Male factor infertility
- The avoidance of transmission of infectious diseases e.g. HIV
- For cases where fertilization was not successful using IVF
- In cases where only one or two eggs are available for fertilization
- Men with a blockage
- Men who have had a vasectomy.

- Gender selection (Family Balancing)

Approximately one man in 25 has sperm qualities which make it impossible for him to father children normally.

About 13% of these men have untreatable infertility many having no sperm at all. Some do produce sperm which are either not motile (do not swim) or do not have the normal shape and structures which are required for normal penetration of eggs. These men, plus a further 10% who have either very low sperm counts, very low percentage of motile sperm or a very large percentage of their sperm being abnormally shaped, and those men whose sperm do not adequately

fertilize eggs in normal IVF would be likely to benefit from ICSI.

Where couples who have tried IVF and no fertilization (or only occasional fertilization) was achieved and where the cause of this reduced fertilization rates can be attributed solely to the poor fertilizing ability of the sperm, then couples will be offered ICSI.

Couples, where the male's sperm count is extremely low may be advised by their gynecologist to attend a Genetic Counselling session before commencing treatment.

The basic stages involved in the ICSI procedure are similar to IVF and are detailed below;

- Suppression of the natural cycle
- Growth and maturation of several eggs
- Monitoring egg development
- Trigger injection
- Collection of the eggs
- Injection of each of the eggs with one sperm
- Transfer of the embryo into the uterus
- Progesterone treatment and pregnancy test
- Further treatment cycles

Suppression of the natural cycle

Medications used to suppress the cycle can either be started one week before the period is due (long down regulation cycle), the day after onset of the period (Flare Cycle) or when serial ultrasound indicates appropriate timing for

commencement (Antagonist Cycle). These medications are Lucrin and Synarel, which belong to a group known as Gonadotrophin Agonists, or Orgalutran and Cetrotide, which belong to a group known as Gonadotrophin Antagonists. Use of these medications allows control of the cycle and accurate timing of oocyte collection which dramatically improves the success of oocyte collection.

At present it is not known whether ART procedures such as ICSI or IVF increase the risk of a child being born with a congenital abnormality. Many research studies have examined this issue but conflicting results have been presented. In a study of nearly 6000 children born after IVF or ICSI, researchers in Belgium did not observe any increased risk of major malformations or neonatal complications. In a smaller study from Western Australia the researchers reported an observed increase in abnormalities in children born after ICSI and IVF.

Whether the observed increase in this study is due to the treatment procedures or parental fertility related issues is not known, although recent reports suggest that parental factors might be involved.

For men whose infertility is caused by a condition known as "Y chromosome micro deletion" there is an increased risk that this condition will be inherited by their sons after ICSI.