

12.3.8.1 INTRACYTOPLASMIC SPERM INJECTION (ICSI)

WHAT IS ICSI?

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 fertilises, the resulting embryo is then replaced 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 eg HIV.
- Prior to pre-implantation genetic diagnosis
- For cases where fertilisation was not successful using IVF.
- In cases where only one or two eggs are available for fertilisation.
- Men with a blockage
- Men who have had a vasectomy.

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% (approximately) who have either very low sperm counts, very low percentage of sperm being motile or a very large percentage of their sperm being abnormally shaped, or a mixture of these problems and whose sperm do not adequately fertilise eggs in normal IVF, would be likely to benefit from ICSI.

Where couples who have tried IVF and no fertilisation (or only occasional fertilisation) was achieved and where the cause of this reduced fertilisation rates can be attributed solely to the poor fertilising ability of the sperm, then couples will be offered ICSI. Eventually it is expected that with fertilisation rates less than 40% ICSI will be the treatment of choice.

ICSI may also be used for couples where there is an expectation that only one or two oocytes (eggs) will be available for attempted fertilisation. Evidence suggests that in these cases of low numbers of oocytes, ICSI has a higher success rate for fertilisation than standard IVF.

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BENEFITS OF ICSI

ICSI has been shown to achieve fertilisation rates of about 70%, similar to that of IVF.

ICSI has resulted in pregnancy rates which are similar to IVF success rates. These rates depend to a large extent on:

- 1) Age of the woman
- 2) The woman's infertility status and cause.
- 3) Number of embryos replaced.

At Concept IVF success rates vary between 25% - 30% depending on these factors. (Refer: 12.1.12 Live Birth Rates at Concept Fertility centre).

DISADVANTAGES OF ICSI

A small number of eggs might be damaged during the ICSI procedure. Should this happen these will not continue to fertilise or develop into embryos.

Whilst there is evidence from a study in Brussels that the incidence of abnormalities in fetuses and children resulting from ICSI procedures is no greater than in the normal population, there may indeed be an increased risk of abnormalities using ICSI. We cannot say categorically that these risks will be at the same rate as in the "normal" population. Please refer to the patient information sheet titled "Risks & Side Effects associated with ART Technologies 12.1.10".

There is an extra fee for couples who wish to use ICSI, above what is normally charged for IVF. Please speak to the Co-Ordinating Sister who will be discussing the costs with you before you decide to commence treatment.

MANAGEMENT OF ICSI

Concept does not wish for couples to attempt ICSI unless it is absolutely necessary.

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

ICSI/IVF TREATMENT CYCLE

All women are treated as for all IVF treatments (Refer In Vitro Fertilisation Information Sheet).

Men will be required to provide a semen sample in the morning of the egg collection.

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In the event a man is required to undergo aspiration of sperm from the testicles or epididymis, this will be discussed with him by his urologist first and the aspiration will be performed prior to the egg collection.

The sperm are then washed and prepared in a way that allows the sperm head to be able to break down to release its chromosomes once it is injected into the egg.

The egg is examined to ensure it is mature and a single sperm is drawn up into a very small glass injection pipette which is injected into the egg and the sperm is released.

The eggs are placed in culture and examined the following day to see whether they have fertilised normally.

The balance of the procedure is similar to IVF.

Should you require any further information please make an appointment to see your gynaecologist or the Scientific Director.

CURRENT STATUS OF ICSI - BIRTH/FETAL OUTCOMES

Please refer to the live-birth table 12.1.12 for the latest results & the Risks & Side effects associated with ART technologies (12.1.10)