



PATIENT INFORMATION LEAFLET

INTRA-CYTOPLASMIC SPERM INJECTION (ICSI)

WHAT IS ICSI

Intra-cytoplasmic sperm injection (ICSI) is a form of assisted conception technique that involves injecting a single sperm directly into the egg to try and achieve fertilisation and create an embryo.

ICSI is carried out by a highly trained embryologist using a specialised, high magnification microscope in cases where conventional IVF would either not work or risk low number of embryos created, offering couples hope of a successful pregnancy.

WHY YOU MAY NEED ICSI

Your doctor may recommend using ICSI as a preferred choice of technique instead of conventional IVF to try and create embryos for you if:

1. A sperm problem has been identified during a routine diagnostic semen sample test. This may be in form of lower than normal sperm concentration (numbers), motility (speed of sperm movement) and/or morphology (appearance of sperm).
2. Sperm parameters unexpectedly fall below the normal range suitable for IVF on the day of your egg collection treatment. If this happens, your doctor or embryologist will speak to you about it and will recommend switching from IVF to ICSI instead to reduce the risk of failed fertilisation.
3. You had a previous IVF cycle with very low or no fertilisation despite normal sperm parameters and no obvious problem with your eggs.
4. You are using surgically retrieved TESE or PESA sperm.

HOW IS ICSI PERFORMED

A few hours after your egg collection, your eggs are prepared for the ICSI procedure by removing the outer cells (cumulus) surrounding the eggs. This allows the embryologist to assess each egg for its maturity.

Only mature eggs can be injected using ICSI. Immature eggs are excluded as they do not have the capacity to fertilise normally. You can expect about 80% of your eggs to be mature and therefore suitable for ICSI.

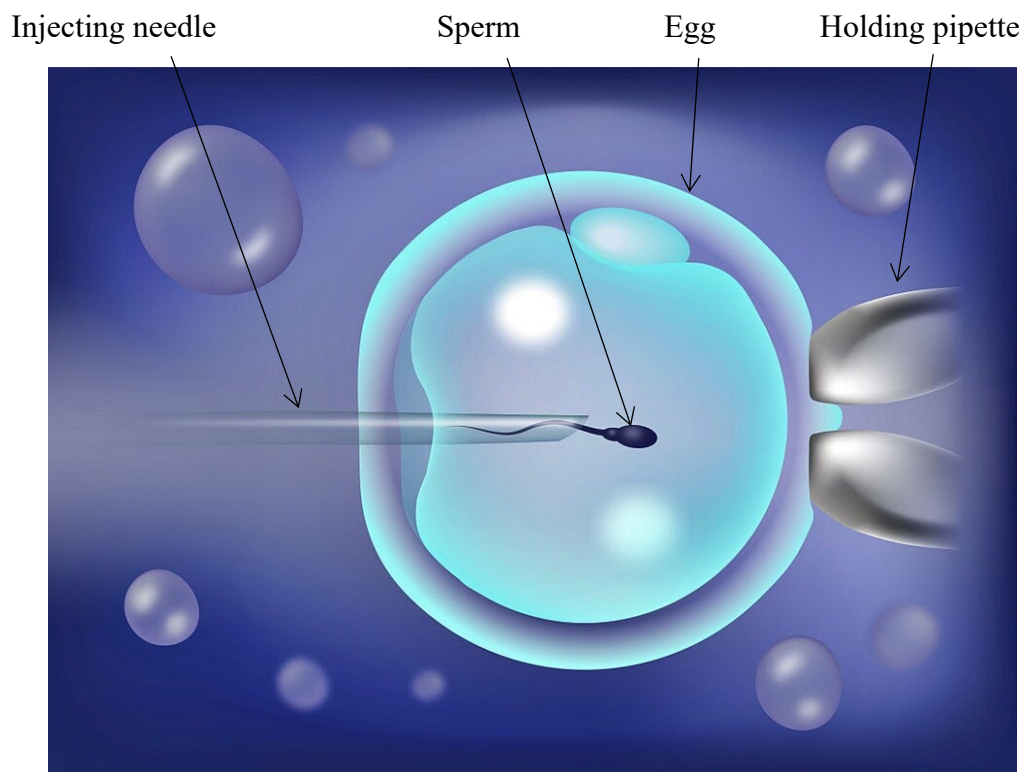
After it has been produced, your sperm is prepared for the treatment.

During the ICSI procedure, the embryologist, using a high magnification microscope, picks out an individual sperm with the most normal appearance and motility. The sperm is immobilised and picked up into a fine injecting needle.

Using a holding pipette, the embryologist then secures in place one of your mature eggs and carefully injects the sperm directly into the centre of the egg.

The sperm selection and injection process are repeated until all of your mature eggs have been injected.

The injected eggs are placed in an incubator overnight and checked for fertilisation following morning.



HOW SUCCESSFUL IS ICSI

It is important to understand that, despite injecting the sperm directly into the egg, fertilisation of the egg is not guaranteed. Once the sperm and egg have been put together via the ICSI injection, they need to initiate fertilisation by themselves through a series of chemical processes.

Occasionally, it is possible for an egg to get damaged and not survive the injection procedure.

You can expect approximately 60% of your injected eggs to fertilise and create embryos.

Following successful fertilisation following ICSI, embryo development is similar to IVF.

Following embryo replacement, pregnancy rates are similar between ICSI and IVF created embryos.

RISKS ASSOCIATED WITH ICSI TREATMENT

The majority of children born using ICSI show no abnormalities.

In 2005, a major European review of children born as a result of IVF and ICSI was carried out. It followed the children's development until they were 5 years old. It found that the incidence of major birth defects, affecting about 2% of babies born through natural conception, rose to 4% in IVF children and 6% in ICSI children. A large proportion of these defects were of urinary or genital origin and presented mainly in boys. They were found to be caused by genetic factors from the father and not the ICSI procedure itself. They were all correctable by surgery.

In the same review, the incidence of minor birth defects, normally present in around 20% of naturally conceived children, rose to 31% in IVF children and 29% in ICSI children. Minor birth defects are those that do not have serious medical, functional or cosmetic consequences for the child.

More recent studies reported no difference in the risk for any abnormality or specific abnormalities to children born following IVF or ICSI.

CONTACT DETAILS



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<https://mft.nhs.uk/saint-marys/services/gynaecology/reproductive-medicine/in-vitro-fertilisation-ivf/>