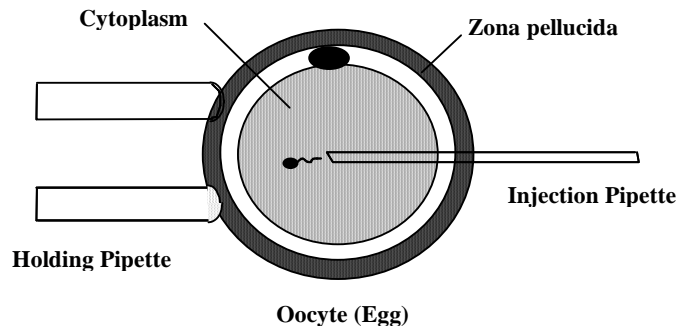




1 INTRA-CYTOPLASMIC SPERM INJECTION (ICSI)

Intra-cytoplasmic sperm injection (ICSI) was introduced into clinical treatment for certain types of infertility in 1992. ICSI is a type of IVF treatment that involves the injection of a single sperm straight into each egg.



1.1 When is ICSI used?

Circumstances in which ICSI may be appropriate include:

- When the sperm count is very low
- When the sperm cannot move properly or are in other ways abnormal
- When sperm has been retrieved through a needle, from the coiled tubing outside the testicles which store sperm (epididymis), this procedure is called Percutaneous Epididymal Sperm Aspiration (PESA)
- When sperm has been retrieved from the testicles using a needle called Testicular Sperm Aspiration (TESA) or from a biopsy of testicular tissue called Testicular Sperm Extraction (TESE)
- When sperm are retrieved from the urine or by electro-ejaculation, which involves the use of electrical stimulation to aid production of a semen sample in a paralysed man
- When there are high levels of antibodies in the semen
- When there have been previous fertilisation failures



1.2 What are the risks of ICSI treatment?

ICSI is an invasive technique and may also use sperm that would not otherwise be able to fertilise an egg. For these reasons, concerns about the potential risks to children born as a result of ICSI have been raised, and several follow up studies have been published. ICSI is a relatively new technique and all children conceived using ICSI are still very young. Consequently, these follow up studies involve relatively small numbers of children and do not include effects that may only be seen in older children or in the next generation. More studies are needed, but the use of ICSI has been potentially linked with certain genetic and developmental defects as explained below:

Inheritance of cystic fibrosis - some men who have no sperm in their semen are found to have congenital bilateral absence of the vas deferens (CBAVD). In this condition the tubes that carry sperm from the testes to the penis is missing. Research has shown that these men may be carriers of the cystic fibrosis gene. The genetic implications of this will require discussion and we advise a blood test to check on this. If this was positive specialist genetic advice would be sought

Sex chromosomes defects and the inheritance of sub fertility – a very small number of sub fertile men have parts of the Y chromosome missing (deleted). Certain genes on this chromosome have been shown to be involved in the production of sperm and the deletion of these genes may be responsible for some men having few or no sperm in their semen. Theoretically it is possible that these defects might be passed on to the boys of the next generation. As yet no children born through ICSI have reached adult life and thus we have no information as to whether these children will have reduced fertility.

Many hundreds of babies have now been born world-wide as a result of this revolutionary treatment. The health and development of these children is under close observation. The Assisted Reproduction Unit (ARU) is taking part with many others in a national study evaluating the health and development of children born through these techniques. Our own experience gives no obvious cause for concern at present.

If you have any questions about these important matters please discuss them with members of the ARU staff.