

## ● WHAT IS ICSI?

Intra-cytoplasmic Sperm Injection (ICSI) was developed in 1991 and the first baby conceived following ICSI technique was born in 1992.

ICSI is a technique that has been developed to assist fertilisation when sperm quality is particularly poor. This technique involves injecting a single sperm directly into an egg in order to fertilise it. The fertilised egg (embryo) is then transferred to the woman's uterus. The procedure for ICSI is similar to that of IVF but instead of fertilisation taking place in a dish, the embryologist selects a single sperm and injects it directly into each egg. The injected eggs are checked the day after to see if fertilisation has occurred.

ICSI is a time-consuming procedure. It requires skill and high technology equipment. The whole process is done under microscopic visualisation and manipulation. Before the sperm is injected into the egg, it is immobilised. The egg is held in place and the sperm is injected into the egg by puncturing a tiny hole in the zona pellucida of the egg using a micro injection needle. The needle will go through this hole and deliver the sperm into the cytoplasm. The tiny hole will seal by itself and recover.

## ● WHEN IS ICSI USED?

ICSI is often recommended if:

- The patient has a very low sperm count
- The patient has a very low sperm motility (movement)
- The patient has poor sperm morphology (abnormally shaped)
- The patient's sperm has been collected from the testicles or epididymis
- There are high levels of antibodies in the semen
- During previous IVF attempt, there was either failure of fertilisation or an unexpectedly low fertilisation rate
- The patient has had problems obtaining an erection and ejaculation
- The patient sperm count is zero and donor insemination is not wanted

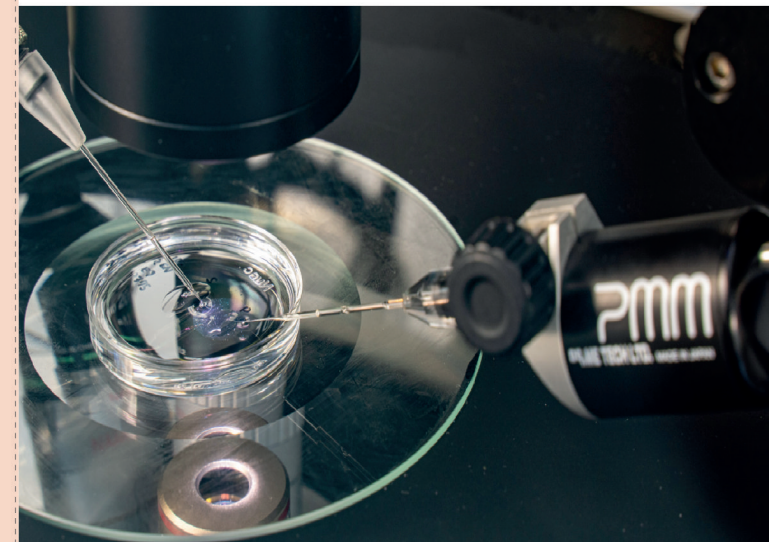
## ● WHAT ARE THE DISADVANTAGES OF ICSI?

- Not all eggs collected maybe of suitable quality or mature enough to undergo the injection procedure
- Due to the nature of the procedure, 10% of the eggs will be damaged and therefore cannot fertilise
- It is possible that none of the eggs will be suitable for ICSI

# PIEZO ICSI

**PIEZO ICSI IS A MORE ADVANCED TECHNIQUE OF ICSI. THIS TECHNIQUE IS ABLE TO MINIMISE DAMAGES TO THE EGG & THEREFORE INCREASE FERTILISATION RATE AND QUALITY OF EMBRYOS RESULTING IN HIGHER PREGNANCY RATE**

**WE ARE THE ONLY FERTILITY CENTRE IN SINGAPORE USING THIS ADVANCED ICSI TECHNIQUE**



**ALPHA INTERNATIONAL WOMEN'S SPECIALISTS  
(SINGAPORE) PTE LTD**

(UEN: 201837990C)

101 Irrawaddy Road #12-12

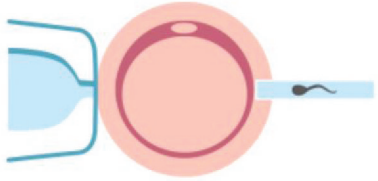
Royal Square At Novena, Singapore 329565

Tel: +65 6860 8888 Fax: +65 6860 8889

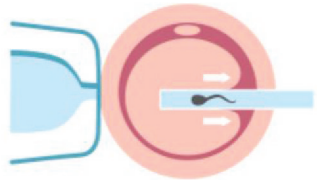


**ALPHA IVF CENTRE  
ALPHA WOMEN'S SPECIALISTS**

## PIEZO-ICSI

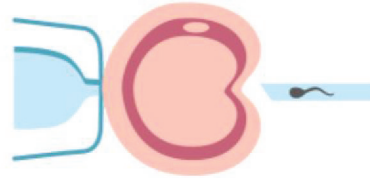


Without deforming the oocyte, the blunt pipette penetrates the zona pellucida.

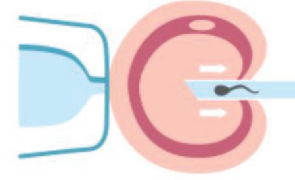


Perforation of the plasma membrane with a simple footswitch control to activate the PIEZO driver

## Conventional-ICSI



The oocytes are deformed with a sharp pipette in the attempt to penetrate the zona pellucida



The timing of plasma membrane perforation is difficult to predict thus damaging the oocyte is a distinct possibility.

### • WHAT IS PIEZO-ICSI?

PIEZO-ICSI is an advanced ICSI technique which minimizes damage to the egg and increases egg fertilisation rate compared to conventional ICSI. To date, studies demonstrated that PIEZO-ICSI has the lowest egg degeneration rate (1%) and the highest fertilisation rate (89%).

Compared to conventional ICSI, PIEZO-ICSI uses a finer injection tip and the injection tip is blunt rather than sharp. Hence the possibility of damaging the egg is reduced.

### • IS IT SAFE?

Study demonstrated that PIEZO-ICSI does not adversely affect oocyte cytoskeleton and has no effect on oocyte chromosomal segregation during cellular division. It was also demonstrated that the aneuploidy rate of blastocysts derived from PIEZO-ICSI was comparable to conventional ICSI.

