

IMSI Patient Information Sheet

What is IMSI?

Intracytoplasmic morphologically selected sperm injection (IMSI) is a sperm selection method used in intracytoplasmic sperm injection (ICSI). The technique involves using a microscope to view sperm under very high magnification (over x6000). This allows clinics to view detailed images of sperm.

Are there any risks?

IMSI is a non-invasive test performed on a semen sample as an additional step in the ICSI process. The risks associated with the use of ICSI also apply to IMSI; there are no significant additional risks to the patient or embryo.

What's the evidence for IMSI?

There have been several RCTs within the last decade. Systematic reviews suggest that IMSI could be beneficial in specific situations such as previously failed ICSI attempts. The research that has been carried out does not support the use of IMSI over standard ICSI for infertile men. One small study found that IMSI had improved pregnancy outcomes in older women, however this study was carried out with a small number of women and the link, if any, between IMSI and older eggs is not fully understood.

Lister opinion:

This is a modification of the standard ICSI procedure and one of a number of sperm selection techniques that have been suggested to potentially improve outcome. The major difference between IMSI and ICSI is that a higher magnification is used to assess sperm morphology allowing the embryologist to identify tiny defects in the sperm head that would not otherwise be visible with standard ICSI.

Reviews of randomized trials have shown a benefit in pregnancy but not livebirth rates so it cannot be justified in routine practice (Cochrane, 2013).

However, other trials of lower quality have suggested benefit over standard ICSI in certain groups such as those with previous failed ICSI cycles (Klement et al, 2013 Fertil Steril), significant male fertility (Balaban et al, 2011 RBMO), those undergoing PGS (Figeira et al, 2011) and in the selection of sperm with lower levels of sperm DNA damage (Hammoud et al, 2012 Andrologia).

We therefore use in selected cases such as those above.

IMSI is a selection tool, to aid embryologists in selecting the best sperm for ICSI. If the sperm count or motility already limits the number of sperm available for ICSI, IMSI will not be a suitable technique for you.

Should you require further information please speak to one of our doctors or embryologists

The HFEA “traffic light rating” for the use of IMSI is “red”, suggesting that no good evidence to show that it is effective and/or safe for routine use.

You can read more about the HFEA traffic light system on fertility “add ons” in the information provided in your cycle packs or on the following link <https://www.hfea.gov.uk/treatments/explore-all-treatments/treatment-add-ons/>.

A fertility “add-on” is an “optional extras that you may be offered on top of your normal fertility treatment, often at an additional cost. They’re typically emerging techniques that may have shown some promising results in initial studies but haven’t necessarily been proven to improve pregnancy or birth rates.”