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IVF Treatment Add-Ons

How to Interpret the HFEA Ratings Guide

-  On balance, findings from high-quality evidence show this add-on is **effective** at improving the treatment outcome.
-  On balance, it is **not clear** whether this add-on is effective at improving the treatment outcome. This is because there is conflicting moderate/high-quality evidence – in some studies the add-on has been found to be effective, but in other studies it has not.
-  We **cannot rate** the effectiveness of this add-on at improving the treatment outcome as there is insufficient moderate/high-quality evidence.
-  On balance, the evidence from moderate/high-quality evidence shows that this add-on has **no effect** on the treatment outcome.
-  There are potential **safety concerns** and/or, on balance, the findings from moderate/high-quality evidence show that this add-on may reduce treatment effectiveness.

EmbryoGlue (Hyaluronate-Enriched Medium)

What is Hyaluronate enriched medium (EmbryoGlue)?

Hyaluronate enriched pre-transfer culture medium contains a substance called hyaluronan, which may improve the chance of the embryo implanting in the womb. It is added to the solution in the dish in which the embryos are kept before being transferred to the patient. EmbryoGlue is an example of a hyaluronate enriched pre-transfer culture medium.

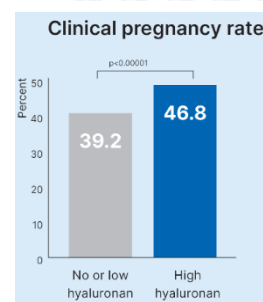


What is the evidence for Hyaluronate-enriched Medium?

Two high-quality studies show that the use of hyaluronate enriched pre-transfer culture medium may be effective at improving the chance of having a baby, other studies in the review were of moderate quality. ^[1, 2]

Is this treatment add-on safe?

Hyaluronate enriched pre-transfer culture medium does not carry any additional known risks for the person undergoing fertility treatment or the child born as a result of fertility treatment.



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Time-Lapse Imaging (Embryoscope)

What is Time-Lapse Imaging (Embryoscope)?

Time-lapse incubation and imaging allow the embryologist to take thousands of images of the embryos as they grow without disturbing them. Not only does this mean the embryos do not have to be removed from the incubator, it also allows the embryologist to get a continuous view of each embryo as it develops, rather than just viewing them once a day. Time-lapse imaging has been shown to be a convenient and effective way to incubate embryos and provide a continuous view of embryo development which could offer benefits like enabling the embryologists to observe all fertilisation and developmental aspects of an embryo without disturbance.



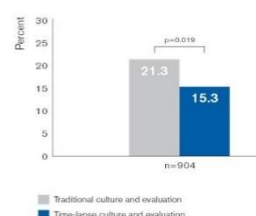
Are there any risks?

Time-lapse imaging and incubation do not carry any additional known risks for the person undergoing fertility treatment or any child born as a result of fertility treatment.

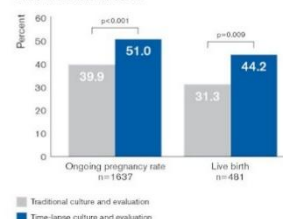
What is the evidence for Time-Lapse Imaging?

There have been several studies, including 5 moderate/high-quality studies, investigating whether there are improvements in the chances of having a baby when using a time lapse incubator with automated or manual grading of embryos. Overall, the evidence from RCTs shows that time lapse imaging is not effective at improving the chances of having a baby for most patients undergoing IVF.^[3]

Early pregnancy loss reduced¹

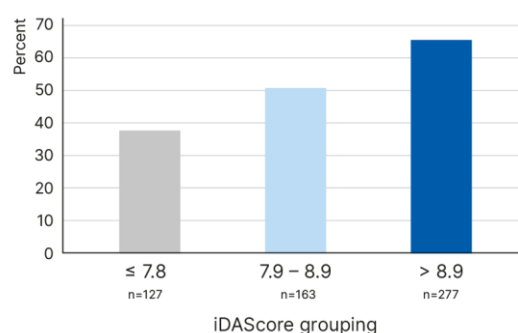
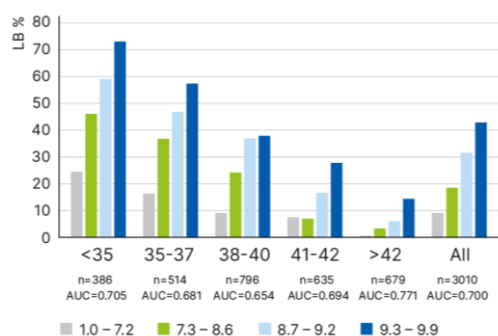


Improved ongoing pregnancy rate and live birth rate¹



AI-Assisted Embryo Assessment

- iDAScore is an AI-based scoring system that provides fully automated analysis of time-lapse sequences to objectively score embryos, predict viability, and improve selection for transfer, to boost pregnancy success.
- Live birth rate increases by iDAScore group in all age groups.
- The higher the iDAScore the higher the likelihood of implantation.^[5, 6, 7, 8, 9, 10]



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ZyMot Microfluidic Sperm Selection

What is ZyMot?

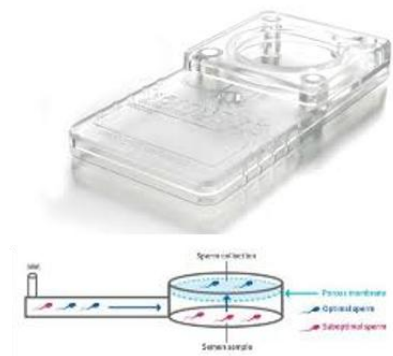
It is a method for semen sample preparation for fertility treatment using Microfluidic Sperm Selection Technique (MFSS).

Are there any risks?

- There is no risk associated with the use of ZyMot for sperm preparation.
- MFSS led to consistently higher motility post-processing and most importantly post-thaw.
- MFSS decreases sperm DNA fragmentation.

What is the evidence for ZyMot?

Improvement in euploidy rates. [\[11, 12, 13\]](#)



Intracytoplasmic Morphologically Selected Sperm Injection (IMSI)

What is IMSI?

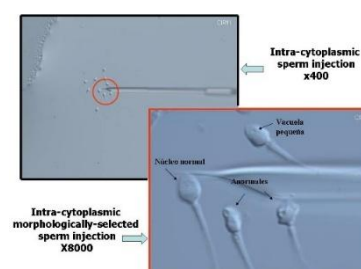
IMSI is a sperm selection method used in intracytoplasmic sperm injection (ICSI). The technique involves using a microscope to view detailed images of the sperm under very high magnification (over x6000) to select the sperm to inject.

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 is the Evidence for IMSI?

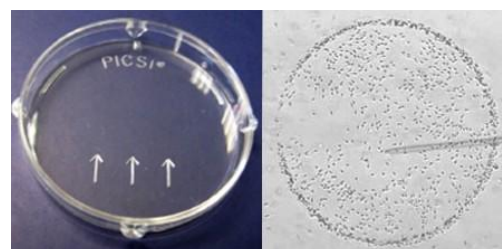
We cannot rate its effectiveness for most patients as there is insufficient moderate/high-quality evidence.



Physiological Intracytoplasmic Sperm Injection (PICSi)

What is PICSi?

PICSi is a technique used to select sperm to use in Intracytoplasmic sperm injection (ICSI) treatment. It involves placing sperm with hyaluronic acid (HA), a natural compound found in the body. PICSi identifies sperm that can bind to HA and these sperm are selected for use in treatment.



Are there any risks?

PICSi 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 PICSi. [Find out more about ICSI](#)

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What is the evidence for PICSI?

PICSI has only been studied in patients undergoing ICSI due to male factor infertility, and there is no benefit to having PICSI where treatment is not due to male factor infertility.

There have been several studies comparing PICSI with standard ICSI for patients undergoing ICSI for male factor infertility and one high-quality large RCT was carried out which showed that using PICSI did not increase the chances of having a baby.

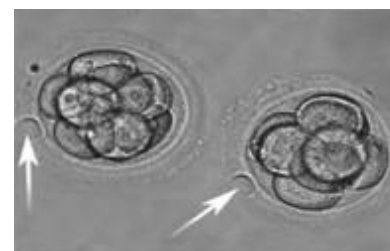
The results of this large RCT did suggest that PICSI may be beneficial in [reducing the chance of miscarriage](#). However, it is important to keep in mind that this evidence was a secondary outcome, this means that the study was not designed to investigate the effect of PICSI on miscarriage rate, making these secondary results less reliable. For this reason, it is important to discuss your individual circumstances with your doctor.



Assisted Hatching

What is Assisted Hatching?

The egg and early embryo are surrounded by a thick layer of special proteins called the zona pellucida. Before an embryo can implant in the womb it has to break out or 'hatch' from its zona pellucida. Assisted hatching using acid, lasers or other tools to thin or make a hole in the zona pellucida is thought to help the embryo to 'hatch'.



Are there any risks?

Assisted hatching does not carry any known additional risks for the person undergoing fertility treatment. However, there is always some risk of damaging embryos with these types of procedures.

What is the evidence for Assisted Hatching?

Some believe assisted hatching can lead to higher birth rates in specific subgroups of patients. There is however no high-quality evidence to support the use of assisted hatching for any patient.

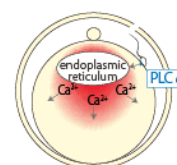
NICE guidelines also says that further research is needed to find out whether assisted hatching influences birth rates and to examine the consequences for children born as a result of this procedure.

Artificial Egg Activation (Calcium Ionophore)

What is Egg Activation?

When a sperm meets an egg, it triggers a process called 'egg activation' which starts off the process of embryo development, while at the same time allowing only one sperm to fertilise the egg. If the egg doesn't activate, then it won't develop.

Egg (or oocyte) activation may be stimulated by chemicals called calcium ionophores. These chemicals can be added to the embryo in the lab.



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Are There Any Risks?

In theory, egg activation using calcium ionophores could cause embryos to have abnormal numbers of chromosomes, which would cause the pregnancy to miscarry. Currently, there's not enough evidence to decide whether these risks are a serious concern.

Given the possible risks, clinics offering this treatment should only do so for selected patients who have had failed fertilisation and should be able to justify their reasons for doing so.

What is the evidence for Egg Activation?

In August 2023, the Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS) published professional guidelines on best practice use of artificial egg activation which states that:

- Artificial oocyte activation (AOA) should not be used routinely with ICSI as its safety, in terms of the potential developmental consequences and birth outcomes, has yet to be established.
- ICSI with AOA may be used where two previous routine ICSI cycle(s) have resulted in <30% or no fertilisation.
- Where AOA is used, patients should be advised that safety, in terms of the potential developmental consequences and birth outcomes, has not been established.
- Patients should be provided with safety data relating to the specific AOA technique used.

SpermMobil

What is SpermMobil?

- For patients with inactive spermatozoa, SpermMobil is generally used to find highly active sperm for ICSI.
- It is utilized in clinical settings to perform in vitro examination of immotile sperm cells (immotile) extracted from testicular tissue because it provides motility to immotile sperm.



Are There Any Risks?

There is no significant risk associated with the use of SpermMobil.

What is the evidence for SpermMobil?

1. Improves treatment outcomes for patients with poor prognoses
2. May provide additional benefits, such as improving sperm quality and increasing the success of ICSI. [\[14, 15\]](#)

Please discuss the potential benefits, limitations, risks and costs of any treatment add-on with your clinical team before deciding whether it is appropriate for your individual circumstances.

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