

# Enhancing IVF Success with AI: Revolutionizing Embryo Selection and Patient Care

"Since AI is an objective tool, when a transfer with a high-grade embryo fails and we want to investigate the reason, we can now remove human error or human bias as the cause"

This statement was made by **Dr. David Walsh, Director and Co-Founder of First IVF Clinic in Ireland**, on a panel discussing digital transformation in the IVF clinic at the ESHRE 39th Annual Meeting. The panel of experienced clinicians discussed the benefits and challenges of using artificial intelligence [AI] solutions in the IVF clinic and lab.

Since implementing AI at First IVF over a year ago, Dr. Walsh has reported a significant increase in success rates, specifically related to frozen embryo transfers. "Using AI is even more important when we see a very high-grade embryo for a patient whose transfer failed. As clinicians, we can take this case to the consultation room and discuss it with the whole team in order to find the answers. Since AI is an objective tool, when a transfer with a high-grade embryo fails, we can remove human error or human bias as the cause and investigate other parameters".

"The inclusion of an objective decision support tool in the embryo selection process instills confidence in patients, prioritizing their security and peace of mind throughout their fertility treatment journey", said Walsh.

Walsh added that he believes AI is a tool that assists with patient interactions. Because EMA™ by AIVF provides a numerical grade, the clinician can present easy to understand information to the patient. "A patient looks to the professionals to provide robust information and the clearer the professionalism about what they should be doing, the better, and the patients will perceive and get confidence from that. In addition, they love learning", said Walsh.

**Connor Harrity, Medical Director at First IVF, Ireland** added, "AI has the advantage of being universally applicable and ensuring that the same parameters are tested on all patients from different backgrounds and populations. For example, PGT or morphological changes in the embryo. All embryos are examined in the exact same way".

"AI empowers time-lapse incubators"

Declared **Marcos Meseguer Escrivá, Scientific Supervisor and Senior Embryologist at IVI RMA Valencia**.

With time-lapse, the amount of data is substantial compared to a single image. AI is able to analyze large amounts of data in seconds. Using EMA scoring, embryologists can devote more time to their precision tasks that require their human expertise.

A new technique on the horizon, non-invasive PGT-A using AI, may also empower time lapse systems. Proprietary algorithms hold potential to reduce the need for biopsy and vitrification, processes which may have negative impact on the embryos no matter how effectively they are conducted.



## “AI enabling risk management”

Claimed **Alexia Chatziparasidou, MSc, PMI-RMP, Clinical Embryologist Consultant and the Director and Co-Founder of Embryolab Fertility Clinic, Greece**. Alexia introduced the concept of risk management and how important it is in today's environment, when embryologists are in short supply everywhere while maintaining zero tolerance for human errors.

Embryologist must accomplish multiple tasks in a short period of time with no room for error. In this environment, where critical decisions have to be made such as which embryo to transfer and which sperm to choose, the embryologist must not make mistakes. Embryologists can gain confidence from new technologies. More time will be available for them to invest in patient care. They'll feel safer.

There is a growing demand for embryologists, but not enough trained embryologists to meet the demand. It is our duty to encourage new candidates to join this amazing field and embrace new technologies such as AI so that they won't be afraid of burnout and overwhelming stress.

“There will be greater transparency. This will enable embryologists to devote more time to research and intellectual engagement rather than the routine, manual tasks that they perform every day”. added Alexia.

## “AI will never replace the expertise of an embryologist, but it is certainly an important tool for data analysis”.

Stated **Achilleas Papatheodorou, the Lab Director at Embryolab Fertility Clinic**. “It will be possible to share more information with patients when the entire clinic is digitized. There will be greater transparency. This will enable embryologists to devote more time to research and intellectual engagement rather than the routine, manual tasks that they perform every day”.

When asked about the value of AI in embryology, **Riccardo Talevi, Embryologist, Professor at University of Naples Federico II**, noted that AI could be a very useful tool for training embryology staff, thereby enhancing their skillset and aiding in the efficiency of conventional embryo evaluation.

AIVF is a reproductive technology company driving the next generation of IVF. The company's proprietary suite of digital solutions harnesses data and AI to empower the fertility care team and their patients with knowledge and transparency. The core technology is evidence-based and driven by real-world clinical use to help patients on a smoother, quicker and more accessible path to parenthood.