TOPIC 13 · IVF: WHAT REALLY AFFECTS SUCCESS

What we know about age, oocytes, embryos, PGT-A, embryo transfer, implantation and cumulative success.

Why 8 core sources?

Eight is the ideal number here. This is the most complex topic in the Library and requires a clear distinction between strong predictors, treatment technique and commonly promoted add-ons. These sources cover age, embryonic chromosomal competence, number of embryos transferred, embryo-transfer technique, recurrent implantation failure, fresh/frozen outcomes and normal biological attrition across the IVF pathway.

The evidence in context

IVF success is not determined by a single factor. Age and the quality/chromosomal competence of oocytes and embryos are among the strongest predictors. Ovarian response affects how many oocytes and potentially embryos are available, but more oocytes do not translate into unlimited gains in success. Embryo-transfer quality, the uterine environment and selected clinical factors also matter. At the same time, many popular IVF add-ons have not been shown to improve live birth for all patients. The most meaningful endpoint is a healthy live birth and, where possible, the cumulative chance from one egg collection and all subsequent transfers - not merely the pregnancy rate from a single transfer.

1. HFEA (2026)

Fertility treatment 2024: trends and figures

Original source

What it studied → UK national IVF outcome data for 2024, including birth rates by age group and per embryo transferred.

What it found → Average IVF birth rate per embryo transferred was 30%. Age had a major effect: 38% for ages 18-34 versus 8% for ages 43-44 using own eggs.

What it means in practice → Age is one of the strongest and most consistent predictors of IVF success. It cannot predict an individual outcome precisely, but it should be central to counselling.

Limitations → Observational national data. Rates are influenced by patient selection, protocols, embryo selection and whether own or donor eggs are used.

2. ASRM Ethics Committee (2025)

Assisted reproduction with advancing paternal and maternal age: an ethics committee opinion

Original source

What it studied → ASRM guidance on the effect of advancing maternal and paternal age on infertility, pregnancy loss and ART outcomes.

What it found → Advancing maternal age is associated with lower reproductive potential, more aneuploidy and greater pregnancy-loss risk. Donor oocytes can largely bypass the age-related decline in implantation and birth rates.

What it means in practice → Much of the age effect is driven by oocyte age/quality rather than uterine age alone.

Limitations → Ethics/clinical guidance rather than an intervention trial. It describes population-level risk, not individual prognosis.

3. ASRM Practice Committee (2024)

The use of preimplantation genetic testing for aneuploidy: a committee opinion

Original source

What it studied → Official ASRM review of PGT-A in IVF, evaluating pregnancy, miscarriage and live-birth outcomes across different populations.

What it found → The value of PGT-A depends on the population. There is evidence of benefit in selected older groups and per transfer, but routine use for all IVF patients is not supported.

What it means in practice → PGT-A can aid embryo selection in selected cases, but it is not a universal success 'booster'.

Limitations → The evidence is heterogeneous, with differing biopsy/testing technologies, per-transfer versus per-cycle outcomes and age groups.

4. ESHRE (2023)

Number of embryos to transfer during IVF/ICSI

Original source

What it studied → An evidence-based ESHRE guideline on the number of embryos to transfer during IVF/ICSI, aiming for healthy singleton birth and minimising multiple pregnancy.

What it found → Single embryo transfer is central to modern safe IVF when clinically appropriate. Transferring more embryos mainly increases multiple-pregnancy risk and is not simply a way to 'increase the chances'.

What it means in practice → Success should not be measured only as a positive pregnancy test. The goal is a healthy live birth with the lowest reasonable risk to mother and baby.

Limitations → A guideline on embryo-number strategy rather than overall IVF prediction. Recommendations depend on age, embryo quality, prior attempts and local practice.

5. ASRM Practice Committee (2017)

Performing the embryo transfer: a guideline

Original source

What it studied → A systematic guideline review of technical steps in embryo transfer, including ultrasound guidance, catheter placement and other procedural practices.

What it found → Some technical elements of embryo transfer have sufficient evidence of an effect on outcomes, while other common practices lack demonstrated benefit.

What it means in practice → Embryo-transfer quality matters. IVF outcome depends not only on the embryo, but also on evidence-based transfer technique.

Limitations → The guideline dates from 2017 and some technologies/practices have evolved. It does not quantify an individual patient's overall chance of success.

6. ASRM Practice Committee (2026)

Recurrent implantation failure: a committee opinion

Original source

What it studied → The newest ASRM guidance on recurrent implantation failure (RIF), its definition and which investigations or interventions have evidence-based value.

What it found → ASRM cautions that repeated failed transfers do not automatically prove a single 'implantation disorder'. Evaluation should be targeted, and many add-on tests/treatments remain insufficiently supported.

What it means in practice → After repeated failures, the whole clinical picture should be reassessed rather than reflexively adding unproven add-ons.

Limitations → A new committee opinion in an area with a limited and heterogeneous evidence base. Many clinical questions remain unresolved.

7. HFEA (2025)

Fertility treatment 2023: trends and figures

Original source

What it studied → National data on fresh and frozen embryo transfers and changes in pregnancy and birth rates in modern IVF.

What it found → In 2023, average pregnancy rate with frozen embryo transfer was 39% per embryo transferred and preliminary birth rate 33%. Frozen-transfer outcomes have improved markedly over the past decade.

What it means in practice → Fresh versus frozen is not a simple 'better/worse' comparison. Outcomes are influenced by embryo selection, patient characteristics and the fact that only embryos of sufficient quality are frozen.

Limitations → Registry data with selection effects. They cannot be used to claim that frozen transfer is superior for every patient.

8. ASRM (2025)

It takes more than one

Original source

What it studied → A patient-facing ASRM resource explaining attrition from oocytes to fertilisation, embryos, implantation and ultimately live birth.

What it found → Not all oocytes fertilise, not all fertilised oocytes develop into transferable embryos, and not all embryos implant. IVF success is a sequential process with attrition at each stage.

What it means in practice → Failure of one cycle does not necessarily mean that one specific thing 'went wrong'. IVF is a chain of biological stages, and the final chance reflects all of them together.

Limitations → An educational resource rather than a formal systematic review. It simplifies biology for patient communication.

Library conclusion

The website should reject the idea that one secret factor determines whether IVF works. Success emerges from age, ovarian response, embryo quality/chromosomal competence, good technique, clinical history and an element of biological chance that remains part of human reproduction. Add-ons should be evaluated individually and should not be assumed to be beneficial. For patients, the most honest metric is live birth and, where available, cumulative live-birth rate per egg collection - not only the pregnancy rate from one transfer.

Template for future maintenance

Maintain separate evidence categories for age/oocyte factors, ovarian response, embryo quality/euploidy, embryo-transfer technique, uterine/implantation factors, fresh vs frozen strategy, PGT-A/add-ons and cumulative live birth. Classify every new study by endpoint: fertilisation, blastocyst, implantation, clinical pregnancy, miscarriage or live birth. For every source: Full citation + link → What it studied → What it found → What it means in practice → Limitations → Date last reviewed.