



IVF OUTCOMES IN WOMEN OVER 40: CHALLENGES AND EVOLVING STRATEGIES

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With a rising trend of delayed childbearing, an increasing number of women above 40 years seek assisted reproductive treatment, particularly IVF. Advanced maternal age poses unique biological challenges, most notably diminished ovarian reserve, reduced oocyte competence, and a substantially higher incidence of embryo aneuploidy. These factors collectively contribute to lower fertilization rates, reduced implantation potential, increased miscarriage risk, and significantly decreased live birth outcomes using autologous oocytes.

Current evidence from contemporary ART registries and clinical studies demonstrates a sharp decline in success rates with advancing age. Live birth rates fall to approximately 12–15% at 40–41 years, decrease to around 5% by 43 years, and drop below 2% after 44 years. Embryo aneuploidy is the predominant limiting factor, with more than 70% of embryos in women above 40 found to be chromosomally abnormal. Nevertheless, individualized controlled ovarian stimulation—such as antagonist protocols, mild stimulation, and dual stimulation (DuoStim)—can help optimize oocyte yield. Embryo banking across multiple cycles offers a practical strategy to improve the likelihood of obtaining at least one euploid embryo.

Preimplantation genetic testing for aneuploidy (PGT-A) can reduce miscarriage rates and shorten the time to transfer of a viable embryo, although its benefit is limited for patients with very low embryo numbers. Donor oocyte IVF remains the most effective approach for women in their mid-40s and beyond, restoring live birth rates to above 50% per transfer irrespective of the recipient's age.

IVF for women over 40 is challenging but increasingly supported by refined stimulation protocols, improved laboratory technology, and more precise embryo selection. Successful outcomes depend on realistic counselling, individualized treatment planning, appropriate use of embryo banking or PGT-A, and timely consideration of donor oocytes. As more women pursue motherhood at later ages, optimising evidence-based strategies remains central to enhancing outcomes in this growing patient population.