

## Background

- The number of patients pursuing oocyte cryopreservation has increased rapidly, but only 10–40% of patients ultimately return to use their cryopreserved oocytes.<sup>1,2</sup>
- The most reported reason for oocyte cryopreservation is the absence of a partner.<sup>3</sup>
- Some patients may ultimately pursue pregnancy using donor sperm.

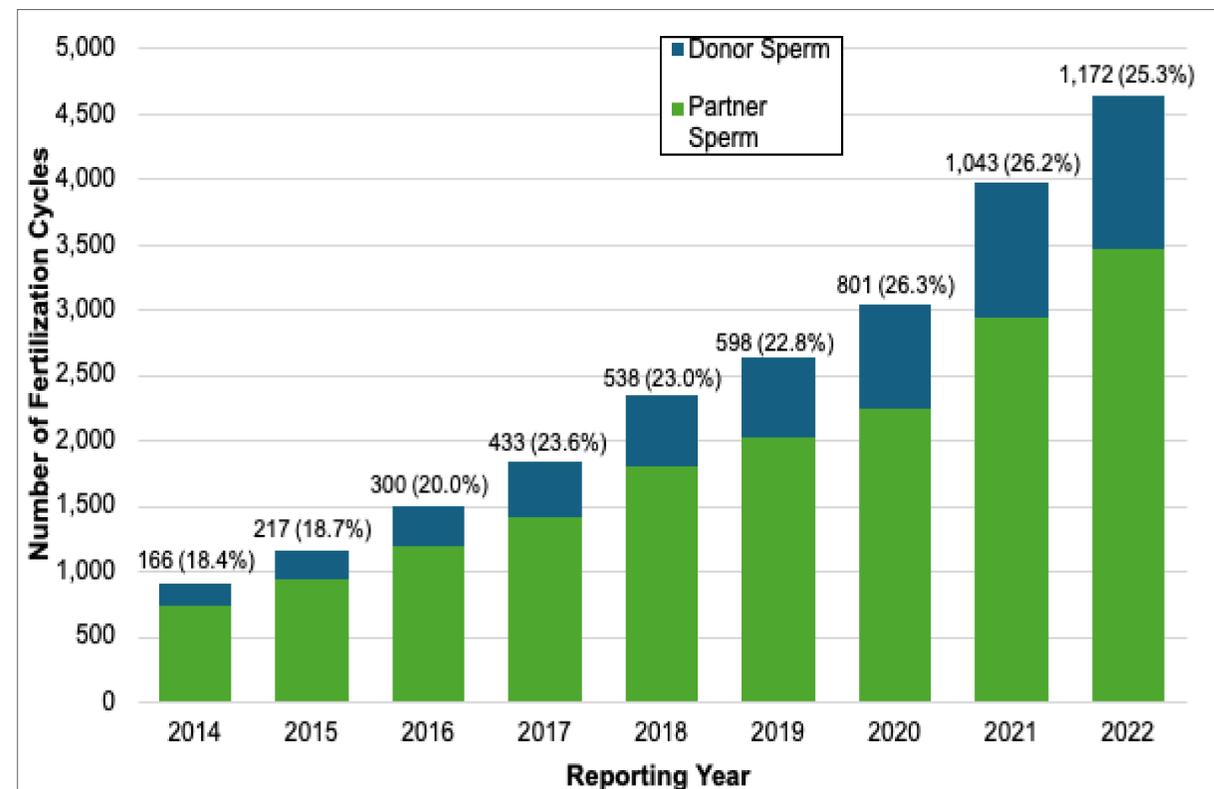
## Objective

- Characterize trends and outcomes of autologous frozen oocyte in vitro fertilization (IVF) cycles using donor sperm compared to those using partner sperm

## Methods

- **STUDY DESIGN:** Retrospective cohort study using the Society of Assisted Reproductive Technology (SARTCORS) database
- **STUDY POPULATION:** Autologous oocyte cryopreservation retrieval cycles and subsequent autologous oocyte thaw and IVF cycles (n=22,031) from 2014-2022
- **PRIMARY OUTCOME:** Probability of clinical pregnancy and live birth following fresh embryo transfer
- **STATISTICAL ANALYSIS:** Descriptive statistics were used to compare patient characteristics. Incidence of clinical pregnancy and live birth were compared between groups following fresh embryo transfer. Multivariable generalized estimating equations were used to calculate adjusted risk ratios (aRRs) and 95% confidence intervals (CI) for these clinical outcomes adjusting for patient age, race, body mass index, parity, specific infertility diagnoses, number of embryos transferred, and use of gestational carrier.

## Results



- **Across all autologous oocyte thaw cycles, 76% (n=16,763) used partner sperm and 24% (n=5,268) used donor sperm.**
  - **The percent of thaws using donor sperm increased from 18% in 2014 to 26% in 2021.**
- **Patients using donor sperm were more likely to be ≥41 years at time of oocyte thaw (50% vs. 36%), non-Hispanic Black (11% vs. 8%), and have no prior live births (90% vs. 79%).**
- **Among fresh embryo transfer cycles (n=8,644), use of donor sperm was associated with higher probability of clinical pregnancy (partner: 41% vs. donor: 46%, p<0.001) and live birth (partner: 32% vs. donor: 36%, p<0.001). This difference persisted after multivariable adjustment.**

The use of donor sperm in cryopreserved autologous oocyte cycles has increased over time and pregnancy and live birth outcomes are slightly higher than with partner sperm. These findings can assist with counseling patients considering single parenthood with cryopreserved autologous oocytes and donor sperm.

## References

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2. Kirubarajan A, Patel P, Thangavelu N, Salim S, Sadeghi Y, Yeretsian T, Sierra S. Return rates and pregnancy outcomes after oocyte preservation for planned fertility delay: a systematic review and meta-analysis. *Fertil Steril.* 2024 Nov;122(5):902-917. doi:10.1016/j.fertnstert.2024.06.025.
3. Tandoğan, Ö., Küğcümer, G., & Satılmış, İ. G. (2025). Acceptance rates and reasons for social oocyte cryopreservation among women: systematic review and meta-analysis. *Journal of Assisted Reproduction and Genetics*, 42(5), 1525–1538. doi.org/10.1007/s10815-025-03425-5