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Midwest Reproductive Symposium international

FROM MULTIPLES TO SINGLETONS:
National Trends in Assisted Reproductive Technology–Associated Births, 2016–2019

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BACKGROUND

- Multiple gestation is a major driver of perinatal morbidity in pregnancies conceived with assisted reproductive technology (ART).
- Changes in embryo transfer practices may be reshaping plurality patterns in ART-associated births nationwide.
- We evaluated temporal trends in plurality among U.S. ART-associated births from 2016–2019.

METHODS

- Population-based retrospective analysis using final U.S. natality data from the CDC WONDER database.
- Study period: 2016–2019, the years in which ART use was consistently reported on birth certificates.
- ART-associated births were identified using the birth certificate indicator "Assisted Reproductive Technology Used."
- Births were stratified by plurality: singleton, twin, and triplet or higher-order births.
- Outcome: annual distribution of plurality among ART-associated births.

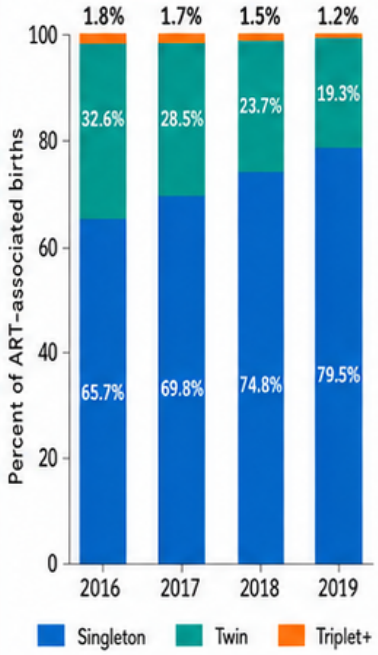
KEY RESULTS

- Singleton ART-associated births increased from 65.7% in 2016 to 79.5% in 2019.
- Twin ART-associated births decreased from 32.6% to 19.3%.
- Triplet or higher-order births decreased from 1.8% to 1.2%.
- Overall, the distribution shifted substantially toward singleton pregnancies over time.

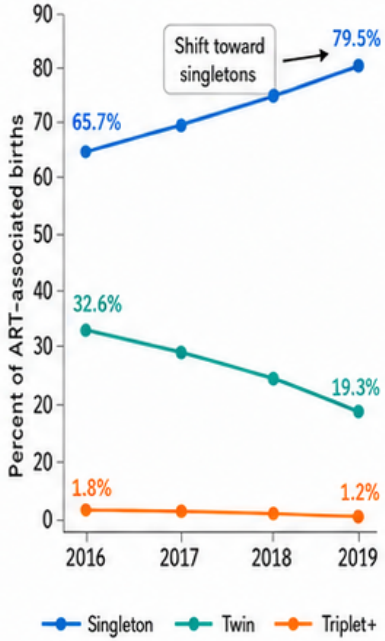
RESULTS

Figure. National trends in plurality among ART-associated births, United States, 2016–2019

A Distribution of plurality by year



B Temporal trends in plurality



C Key trend summary

Singletons
65.7% → 79.5%
(+13.8 percentage points)

Twins
32.6% → 19.3%
(–13.3 percentage points)

Triplet+
1.8% → 1.2%
(–0.6 percentage points)

Interpretation
ART-associated births in the U.S. increasingly resulted in singleton rather than multiple gestations from 2016–2019.

Data source: CDC WONDER natality data. ART-associated births identified using the birth certificate field "Assisted Reproductive Technology Used."

Across 2016–2019, ART-associated births increasingly resulted in singleton pregnancies, while twin and triplet or higher-order births declined nationally.

CONCLUSION

Among ART-associated births in the United States, there has been a marked shift toward singleton pregnancies from 2016 to 2019, accompanied by declining multiple gestations. These findings suggest evolving ART practice patterns and have important implications for perinatal outcomes and reproductive medicine counseling.

KEY TAKE AWAY

U.S. ART-associated births increasingly shifted from multiple gestations toward singleton pregnancies over the study period.

DATA SOURCE

- CDC WONDER natality data
- United States, 2016–2019
- Data extracted: 2026
- ART variable reported on birth certificates

MRSI 2026 Annual Meeting | July 26–29, 2026 | Chicago, Illinois