

OOCYTE COMPETENCY IS NOT AFFECTED BY DURATION OF CRYOPRESERVATION

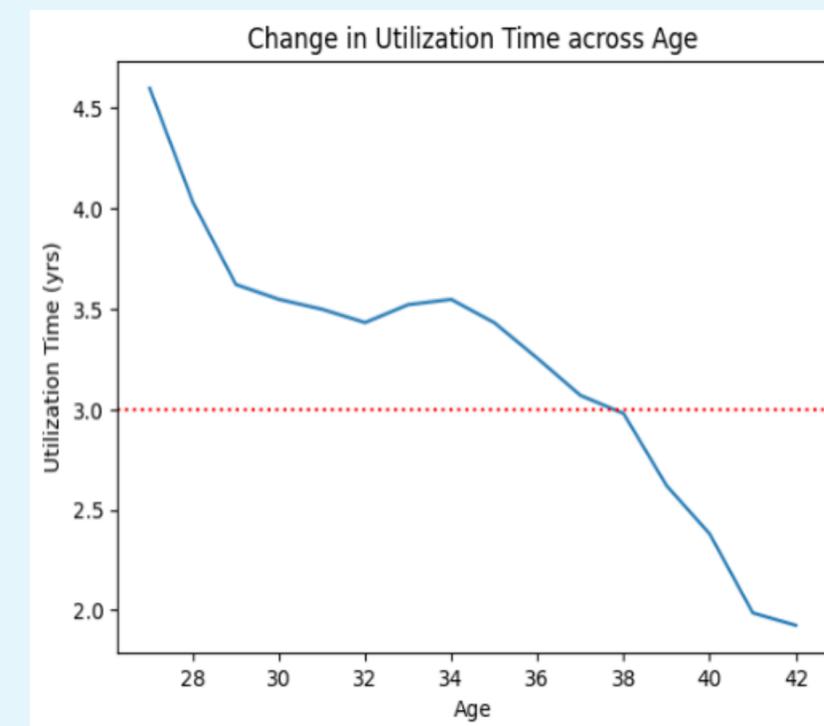


Gaya Murugappan, MD¹, Mark Sikder, MS¹, Debra Minjarez, MD¹, Julia Kim, MD¹, Joseph Chervenak, MD, MBA¹, Peter Klatsky, MD¹, Nam Tran, MD, PhD, HCLD¹
Spring Fertility, Sunnyvale, CA

Objective

To explore whether oocyte competency declines with duration of cryopreservation and to explore whether time to utilization of cryopreserved oocytes varies by age at time of cryopreservation.

Oocyte competency was unchanged over the 10-year study duration



Method

Retrospective cohort study from a single fertility center of all autologous oocyte cryopreservation (OC) cycles with subsequent thaw from 2016-2025. Patients using donor oocytes and patients over 42 years of age at time of OC were excluded. Oocyte competency was defined as total number of blastocysts and number of euploid blastocysts per mature oocyte and compared between groups using Chi-Square stratified by age. The magnitude of difference between the groups was further analyzed using the effect size (Cramer's V).

- When stratified by age, blastocyst development and euploid blastocyst development per mature oocyte were similar when utilizing oocytes within 3 years of OC or when utilizing oocytes after 3 or more years (Table)

Results

- 1,083 oocytes were thawed** among 731 patients during the study period.
- 54% of patients thawed within 3 years.
- There was an **inverse relationship between time to oocyte utilization and age at time of OC** (Figure)

| Age (yrs) | No. Oocytes Thawed (N) | Euploid Blastocyst Rate per MII oocyte | | P-value; V; Power |
|-----------|------------------------|----------------------------------------|----------------------------------|-------------------|
| | | OC Duration < 3 years (Mean, SD) | OC Duration ≥ 3 years (Mean, SD) | |
| 18-34 | 437 | 535/2,556 (20.9;0.8) | 744/3,753 (19.8;0.7) | 0.30;0.01; 0.18 |
| 35-37 | 367 | 375/2,236 (16.8;0.8) | 330/2,072 (15.9;0.8) | 0.48;0.01; 0.11 |
| 38-40 | 222 | 124/1,198 (10.4;0.9) | 87/646 (13.5;1.3) | 0.05;0.04; 0.49 |
| 41-42 | 57 | 14/314 (4.5;1.2) | 2/65 (3.1;2.1) | 0.87;0.01; 0.05 |