

ESTIMATED NUMBER OF MATURE OOCYTES NEEDED FOR FERTILITY PRESERVATION PATIENTS BASED ON THE NUMBER OF EUPLOID BLASTOCYSTS DIAGNOSED FOLLOWING PREIMPLANTATION GENETIC SCREENING (PGS)

Jason Barritt, PhD¹, David Hill, PhD¹, Mark Surrey, MD^{1,2}, Sophia Tormasi, MS³, Catherine Welch, BS, MBA³ and Santiago Munne, PhD³. ¹ART Reproductive Center, 450 North Roxbury Drive Suite 520 Beverly Hills, California, United States, 90210; ²Southern California Reproductive Center, 450 North Roxbury Drive Suite 500 Beverly Hills, California, United States, 90210 and ³Reprogenetics, 3 Regent Street Suite 301 Livingston, New Jersey, United States, 07039.

Objective: For oocyte fertility preservation patients there are no well-established guidelines for how many eggs should be frozen to attain a pregnancy in the future. The goal of this study is to determine how many mature oocytes (MII) are needed to be frozen to produce enough euploid blastocysts to achieve implantation and pregnancy, categorized by SART age group.

Design: Retrospective data analysis at a private fertility clinic

Materials and Methods: Patients who underwent PGS cycles, using micro-array comparative genomic hybridization (aCGH) and blastocyst biopsy, were analyzed to determine number of MII oocytes collected, number of blastocysts produced, euploid embryos diagnosed and implantation rate.

Results: See Table

| Age Group | Cycles Analysed | Average MII Oocytes | Average Blastocysts | Average Euploid Embryos | Average MII's/Euploid Embryo | Implantation Rate |
|-----------|-----------------|---------------------|---------------------|-------------------------|------------------------------|-------------------|
| <35 | 50 | 11.7 | 7 | 4.7 | 2.5 | 31.1% |
| 35-37 | 33 | 11.7 | 5.6 | 3.6 | 3.3 | 31.5% |
| 38-40 | 31 | 11.5 | 5.2 | 2.3 | 5.0 | 25.5% |
| 41-42 | 28 | 9.7 | 4.3 | 0.9 | 10.8 | 26.3% |
| >42 | 30 | 12 | 3.0 | 0.5 | 24 | 33.3% |

Conclusions: Our results demonstrate that the number of MII oocytes needed to obtain a diagnosed chromosomally normal embryo is highly variable across the SART age groups. Increases of greater than 100% in the number of oocytes required between the ages 38-40, 41-42 and >42, are extremely important findings for patients. Additionally, we discovered that the implantation rates between age groups do not differ when diagnosed euploid embryos are transferred after trophectoderm biopsy and aCGH screening. Counseling of potential oocyte fertility preservation patients, as to the number of mature oocytes needed to achieve an expectation of a euploid embryo in the future, can now be accomplished for each SART age group based on the clinical results from >100 PGS cycles analyzed at a single fertility clinic.