

## STRATEGY FOR EUPLOID EMBRYO BANKING

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**OBJECTIVE:** Implantation rates do not decrease with maternal age for women <43 when euploid embryos are replaced (Harton et al. in press), and cohort sizes are not linked to aneuploidy rates (Atta et al. 2012). These two observations can help to better manage advanced maternal age patients by determining how many cycles would be needed to bank embryos in order to have a high probability of transferring a single euploid embryo and achieving a successful singleton pregnancy. This study aims to determine if there are significant differences per center regarding the production of euploid embryos as a function of maternal age, which is key to predict how many cycles may be required for adequate banking.

**DESIGN:** multicenter comparative study

**MATERIAL AND METHODS:** Cycles of PGD with array CGH and blastocyst biopsy were evaluated from a large reference laboratory receiving samples from many centers. Four fertility centers with large referrals were included individually and compared to the aggregate. Cycles were sorted by maternal age and number of euploid cycles. An average of cycles needed to produce 3 or more euploid blastocysts was calculated based on the observation that SET and DET yield similar pregnancy rates if euploid embryos are replaced from a sizable (av. 5) cohort of blastocysts (Scott et al. 2013).

### RESULTS:

center	# patients	av. Blastocysts	av. euploid blastocysts	# patients with euploid blastocysts equal to:				Av. # cycles needed for >2 eupl blastocysts
				0	1	2	>2	
age 35-39 years								
1	76	4.9	3.0	6	17	11	42	1.8
2	55	5.7	3.1	5	12	12	26	1.9
3	72	4.4	2.5	7	17	22	26	2.1
4	89	5.4	2.5	15	22	20	32	2.2
5	49	4.4	2.3	9	13	10	17	2.3
all centers	686	5.2	2.5	96	173	162	256	2.2
age 40-42 years								
1	37	4.8	1.8	12	7	9	9	2.6
3	41	3.6	1.5	12	14	6	9	2.7
2	38	4.1	1.1	13	15	7	3	3.0
5	23	3.5	1.3	10	7	2	4	3.0
4	87	3.4	0.7	46	31	4	6	3.3
all centers	444	4.2	1.1	188	142	61	53	3.0

CONCLUSION: Embryo banking allows providers to better manage patients of advanced maternal age avoiding patient fatigue and treatment drop out. The present results indicate great variability between patients of the same age regarding the production of euploid blastocysts. On average, patients 35-39 would need two cycles to accumulated 3 or more euploid blastocysts. For patients 40-42 the average is three cycles, however, there are notable (analyzed this statistically??) differences between centers (2.6 to 3.3 cycles needed) in this group. Consequently, each center would be advised to calculate its own specific number of required cycles.