

## The Odds For a Large For Gestational Age Offspring Post Transfer Of Embryos That Were Thawed And Cultured Before The transfer: a Retrospective Cohort Study

*Vilk Ayalon N, Omer Vilk N, Sompolinsky Y, Godin M, Bentov Y, Esh-Broder E, Adler Lazarovits C, Ketzinel-Gilad M, Hizkiyahu R and Hershko Klement A*

The Reproductive Medicine and IVF Unit, Hadassah Mt. Scopus



יחידת הפריון וה-IVF  
הדסה הר הצופים

The Reproductive Medicine and IVF Unit  
Hadassah Mt. Scopus

### Background and Aim

Frozen embryo transfers (FET) are increasingly utilized due to their effectiveness and safety profile. However, FET has been linked to an elevated risk of large for gestational age (LGA) offspring. Limited data exist regarding the impact of post-thaw culture on LGA risk.

**This study aimed to evaluate the effect of post-thaw culture of vitrified embryos on the risk of LGA live births.**

### Methods

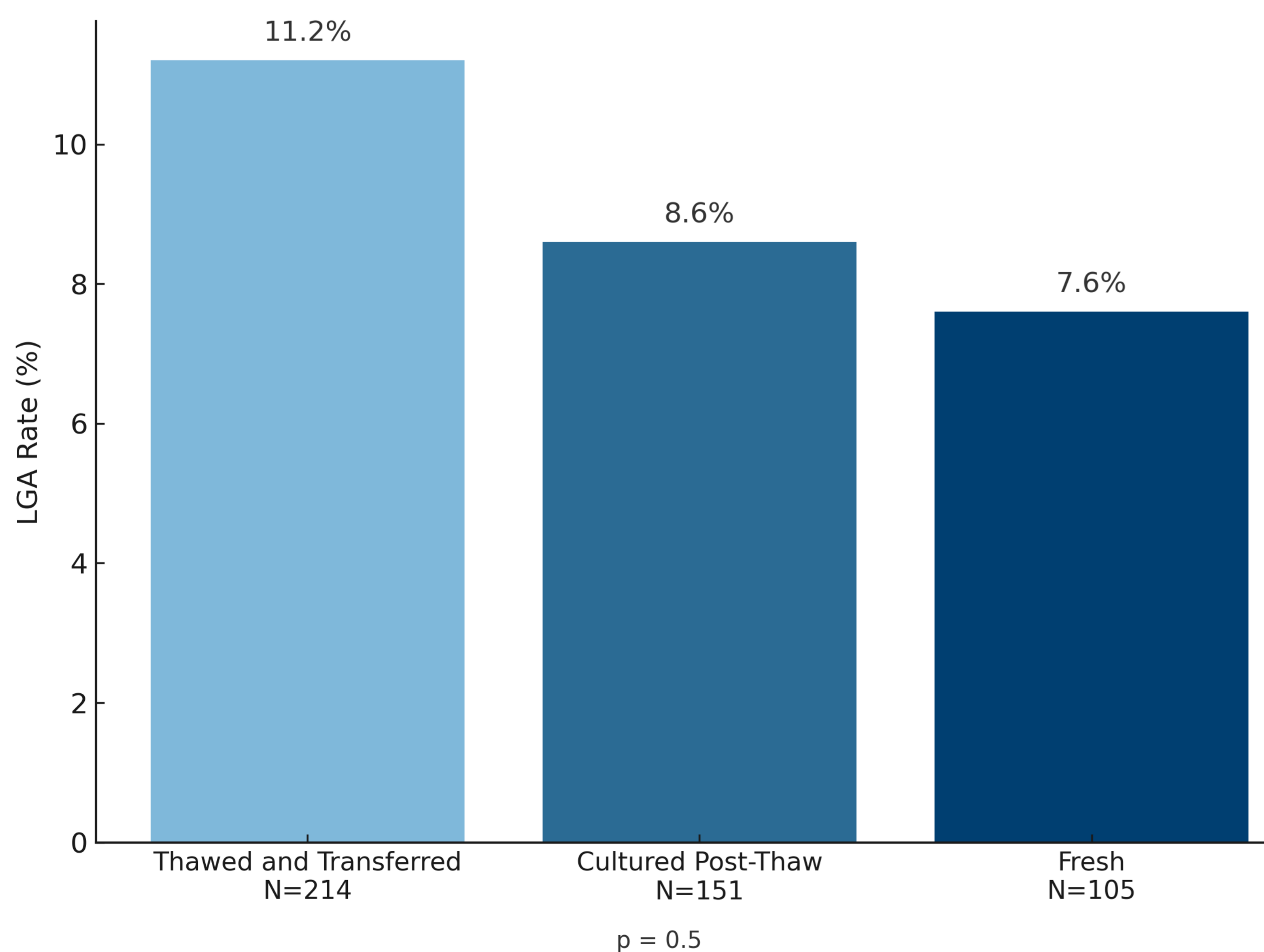
A retrospective cohort study including all IVF cycles performed between 2021 and 2023 in Hadassah Mt. Scopus.

470 singleton live births were included from both fresh and frozen embryo transfers. Data collected included maternal characteristics (age at oocyte retrieval, height, weight, parity), treatment details (indication, endometrial thickness), embryo characteristics (frozen or fresh, embryonic age at vitrification and on transfer day) and birth outcomes (weeks of gestation at birth, fetal gender and birth weight). LGA was determined according to Dollberg charts.

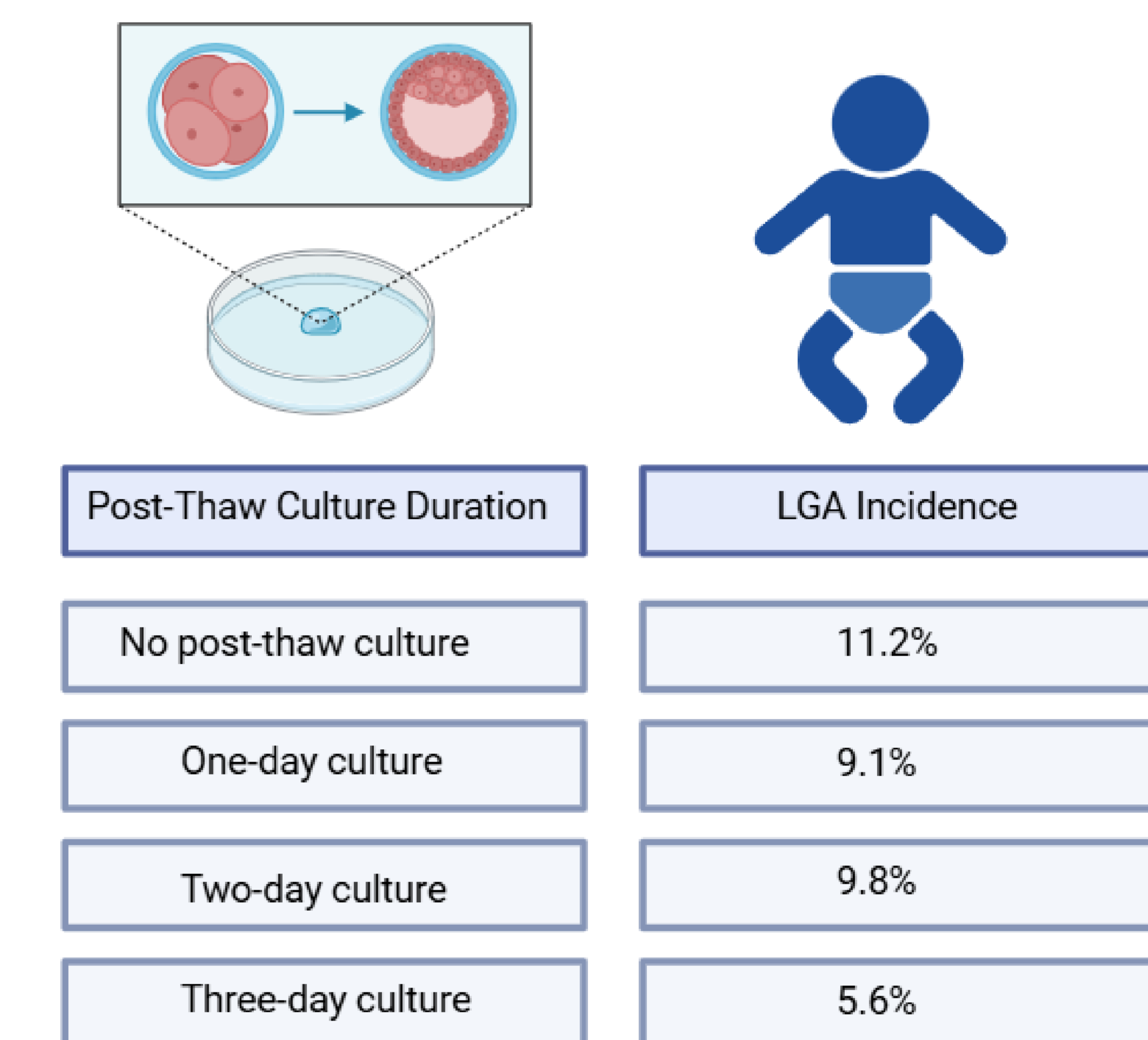
**The study included three groups: fresh embryo transfers, vitrified embryos transferred on the day of thawing, and vitrified embryos thawed and cultured for at least 24 hours before transfer.**

### Results

LGA Rate According to Culture Type



LGA Rate According to Post-Thaw Culture Duration



p > 0.5

Table 1: Univariate Analysis According To Large-for-gestational-age (LGA) Diagnosis Of The Neonate

	LGA (Above 90th%) N=45	Non LGA (Below 90th%) N=425	P-value
Maternal Age (years)	32 ± 6	32 ± 11	>0.5
Maternal Height (cm)	167 ± 6	163 ± 6	0.03
Maternal Weight (kg)	74 ± 14	68 ± 14	0.04
Parity	0.38 ± 0.8	0.42 ± 0.9	>0.5
Endometrial Thickness (mm)	8.1 ± 2.1	8.6 ± 2.4	0.3
Treatment Indication			>0.5
Male Factor	42.2%	41.5%	
Unexplained Infertility	31.1%	36.0%	
PCOS	4.4%	3.8%	
Mechanical Factor	8.9%	3.6%	
Other non-Male	11.1%	12.3%	
PGD	2.2%	2.8%	
Treatment Group			0.5
Thawed and Transferred	11.2%	88.8%	
Cultured post-thaw	8.6%	91.4%	
Fresh	7.6%	92.4%	
Embryonic stage			>0.5
Day 5-6	53.3%	50.9%	
Day 2-4	46.7%	49.1%	

Continuous variable presented as mean±SD, categorical variables as proportions.

Table 2: Conditional Logistic Regression Model for Large-for-gestational-age (LGA) Diagnosis Of The Neonate

	β	S.E.	Sig.	Odds Ratio (OR)	95% C.I. For OR
Maternal Height	0.123	0.53	0.02	1.13	1.02-1.25
Embryonic stage (day 5-6 versus day 2-4)	1.69	0.79	0.03	5.41	1.15-25.40

### Conclusions

Post-thaw culture of vitrified embryos does not appear to influence the risk of LGA. However, maternal height and embryo age at transfer are significant predictors of LGA. A larger sample size is needed to enable subgroup analyses like culture duration.