

# Association between meteorological season at the time of embryo transfer and pregnancy outcomes in freeze-all cycles: lessons from seasonal reproductive mammals



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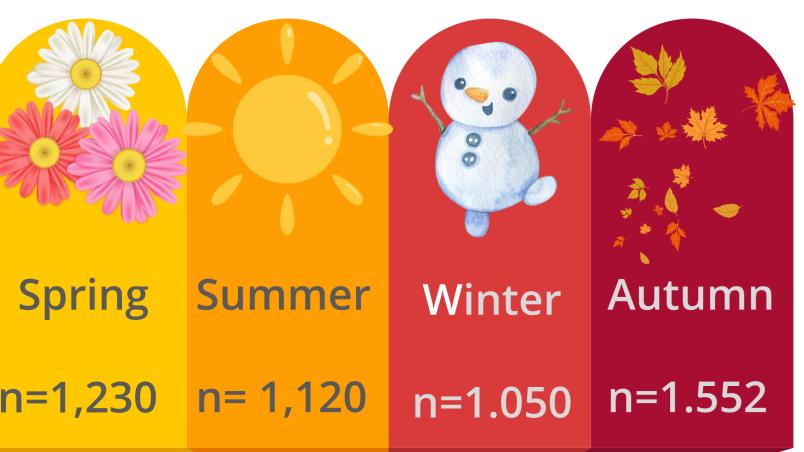
### INTRODUCTION

Extensive research has consistently shown that most mammals are seasonal breeders, and as day length increases, gonadotropin secretion increases, to anticipate reproduction in the spring and summer months. There is intriguing evidence that there is a seasonal variance in human reproduction, but the data are inconclusive. Therefore, the goal for the present study was to evaluate the effect the meteorological season at the time of embryo transfer on clinical outcomes of freeze-all cycles. The goal for the present study was to evaluate if there is any effect of meteorological season at the time of embryo transfer on clinical outcomes of freeze-all cycles?

### **METHODS**



4952 frozen-thawed embryos transferred to 3725 cycles



## Cycles split by season

Embryos survival and clinical outcomes were analyzed

Generalized linear models adjusted for potential confounders

Autumn was designated as the reference season for all analyses

### RESULTS

Mean maternal age was 37.0 ± 4.7 years

Embryos were cryopreserved for a mean of 8.1 ± 17.3 months

#### Comparison of implantation and pregnancy rates among meteorological seasons

Season	Spring	Summer	Winter	Autum
Pregnancy	51.8%	49.0%	45.8%	44.6
	.OR: 1.302, CI: 1.100 – 1.541	OR: 1.196, CI: 1.010 – 1.415	OR: 1.049, CI: 0.876 – 1.257	
	p=0.002	p=0.038	p=0.603	
Miscarriage	5.6%	10.4%	11.4%	13.9
	OR: 0.369, CI: 0.230 - 0.592	OR: 0.461, CI: 0.292 – 0.727	OR: 0.510, CI: 0.323 – 0.805	
	p<0.001	p=0.001	p=0.004	

### CONCLUSIONS

Optimal conditions for implantation appear to be associated with spring and summer. Embryo transfers performed in autumn or winter are associated with reduced ongoing pregnancy.