

# Clinical Aspects of PGD

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**In PGD,  
the number of embryos available  
for transfer is  
significantly lower than  
in regular IVF**

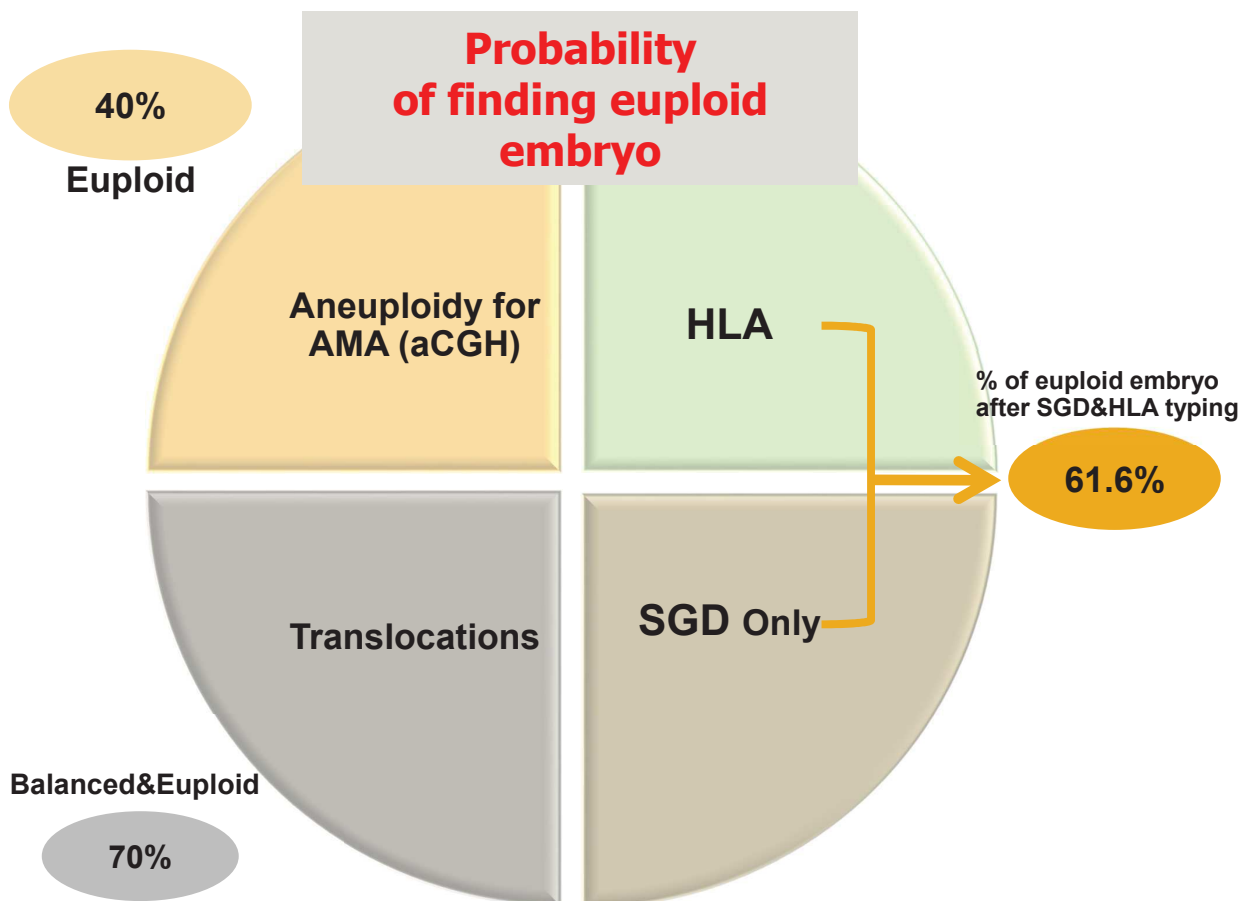
# Embryos **unsuitable** for transfer according to PGD indication

Istanbul Memorial Hospital

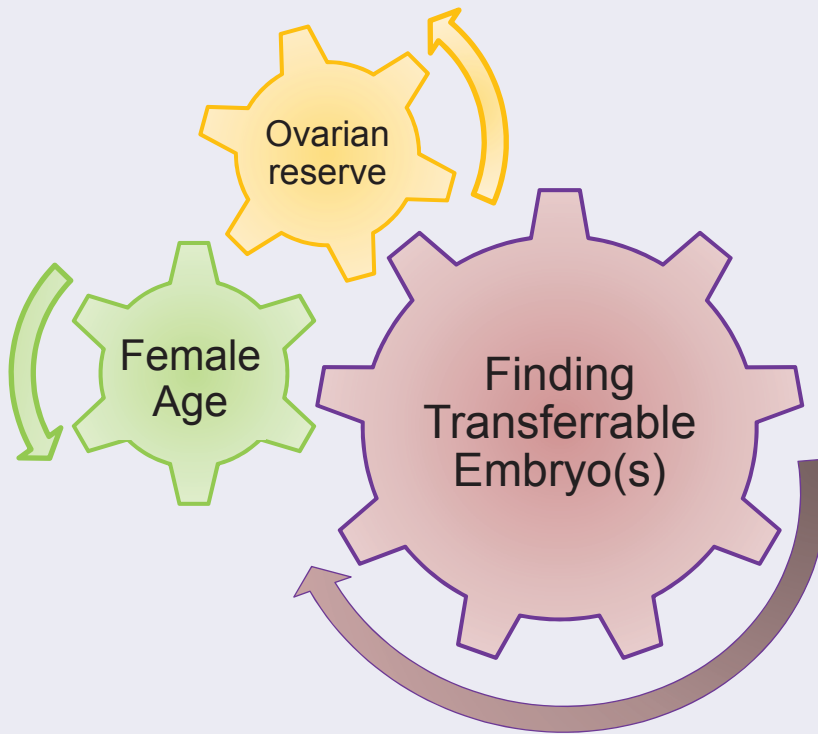
**665** PGD cycles with aCGH and **2558** trophectoderm biopsies

- **Advanced Maternal Age( $\geq 39-44$ ): 80.2% **aneuploid****
- **Translocation: 71.6% **unbalanced****

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# Determinants of Clinical Success

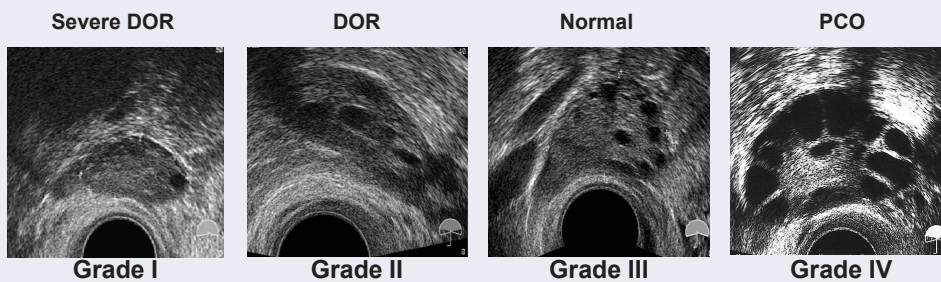


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## Role of Ovarian Reserve

Most effective current methods for the assessment of ovarian reserve

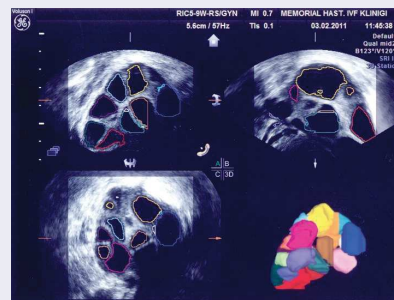
### Antral Follicle Count (AFC)



### Anti-Mullerian Hormone (AMH) (ng/ml)

- <0.5: severe DOR\*
- 0.5-1: DOR
- 1.1-3.5: Normal
- >3.5: Hyperresponder

\* Diminished ovarian reserve



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## We looked at....

- **Euploidy Rate (ER):** (rate of euploid embryos per diagnosed embryo)
- **Probability of finding euploid embryo(s) per cycle (POE)**

### According to

- Maternal age
- Ovarian reserve: (AMH level)
- Ovarian response

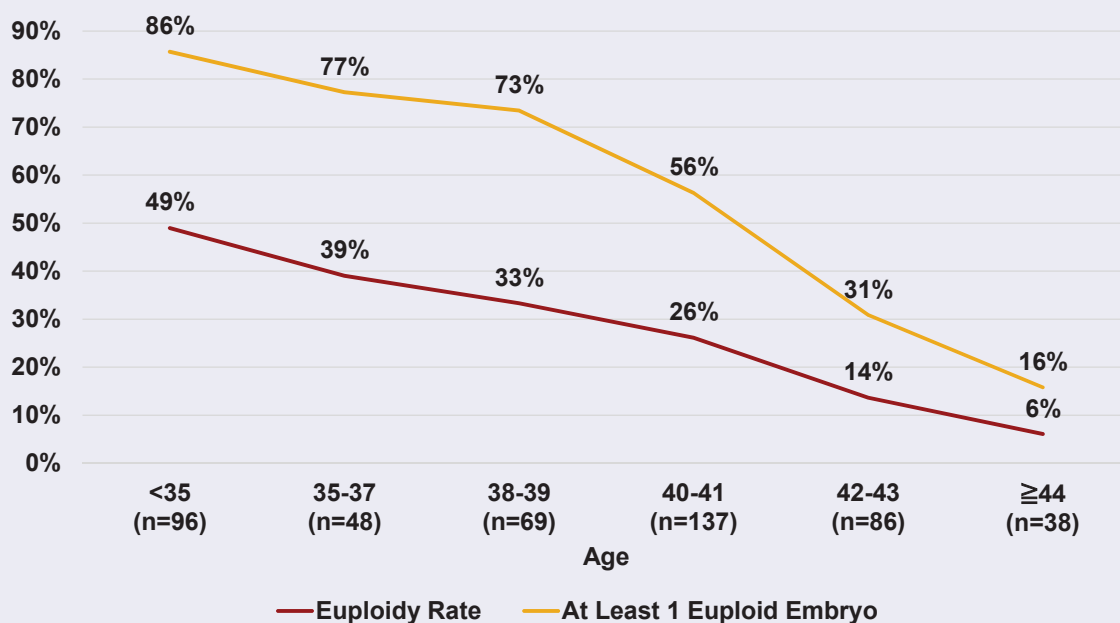
No of cumulus oocyte complexes (COCs)

No of mature oocytes (MII)

No of biopsied embryos

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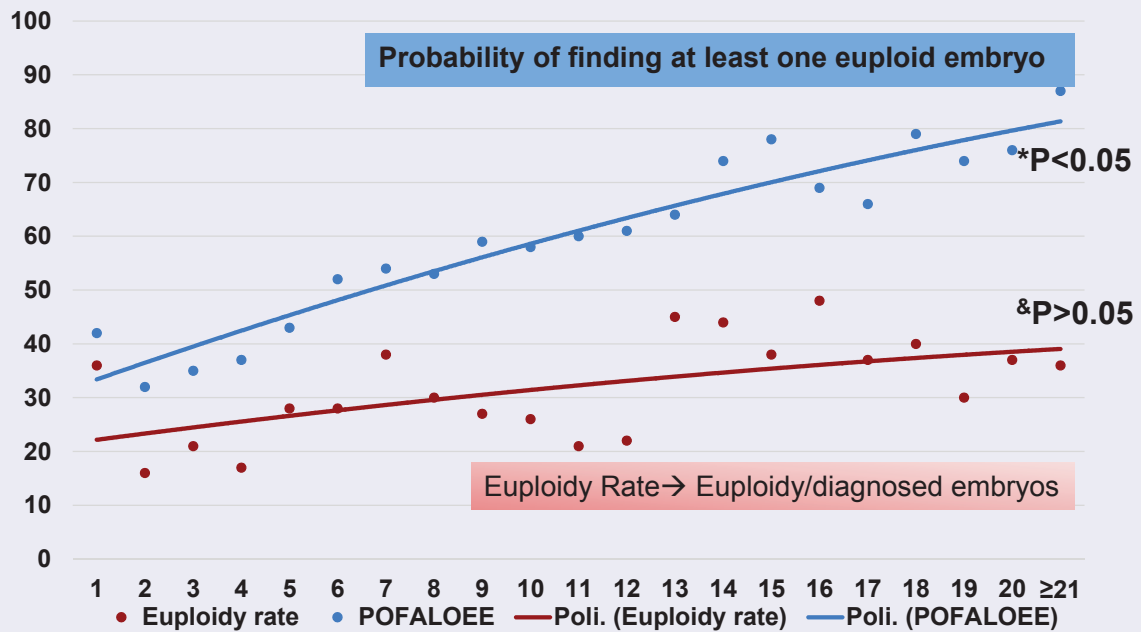
## Euploidy Rate & Probability of Finding Euploid Embryo per Cycle According to Maternal Age



p<0.05, Linear Regression  
p<0.05, Binary Logistic Regression

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## ER and POE per cycle according to retrieved oocytes (COCs) after adjusted for age

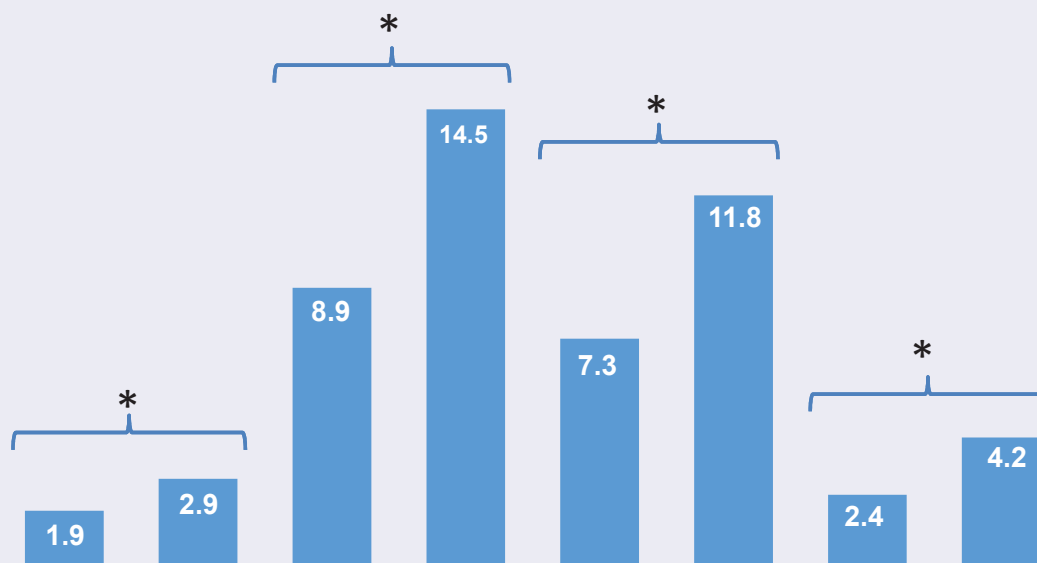


\*binary logistic regression adjusted for age

&linear regression adjusted for age

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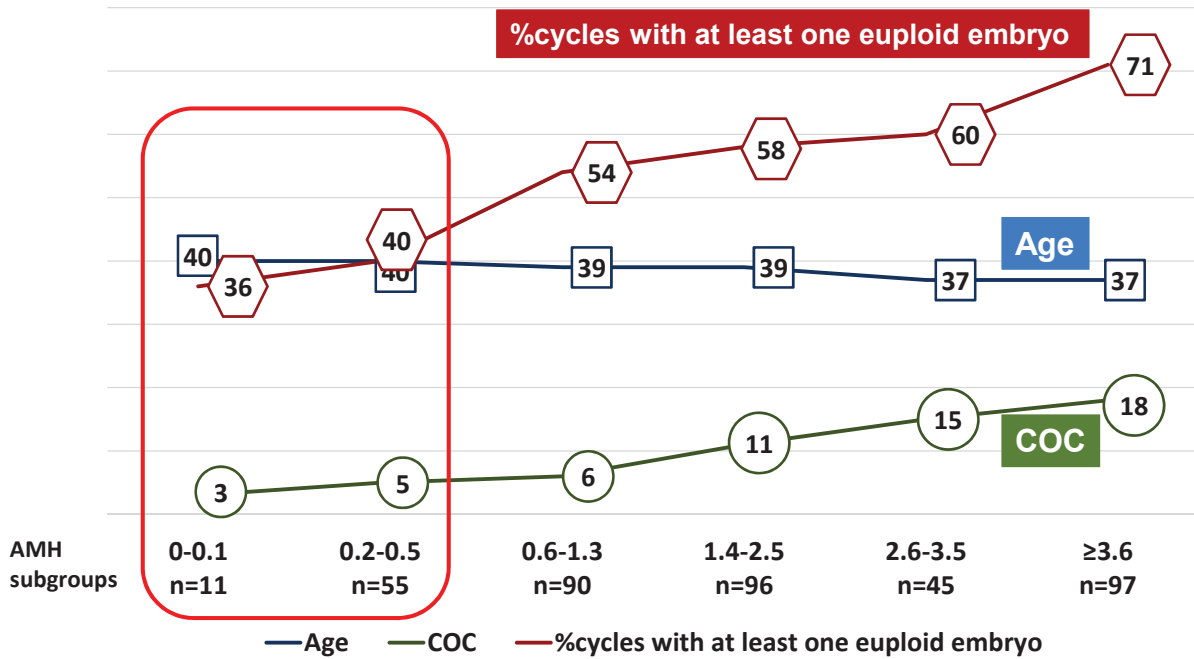
## Euploid or no euploid embryos according to ovarian reserve and response



\*p<0.05 conducted by Student's t-Test

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## % of cycles with at least one euploid embryo based on AMH subgroups in AMA patients (n=394)



## Probability of Finding at Least One Euploid Embryo According to Number of Biopsied Embryo and Age

		Number of Biopsied Embryo(s)				
		1	2	3	4	≥5
Age	35-37					
	38-39					
	40-41					
	42-43					

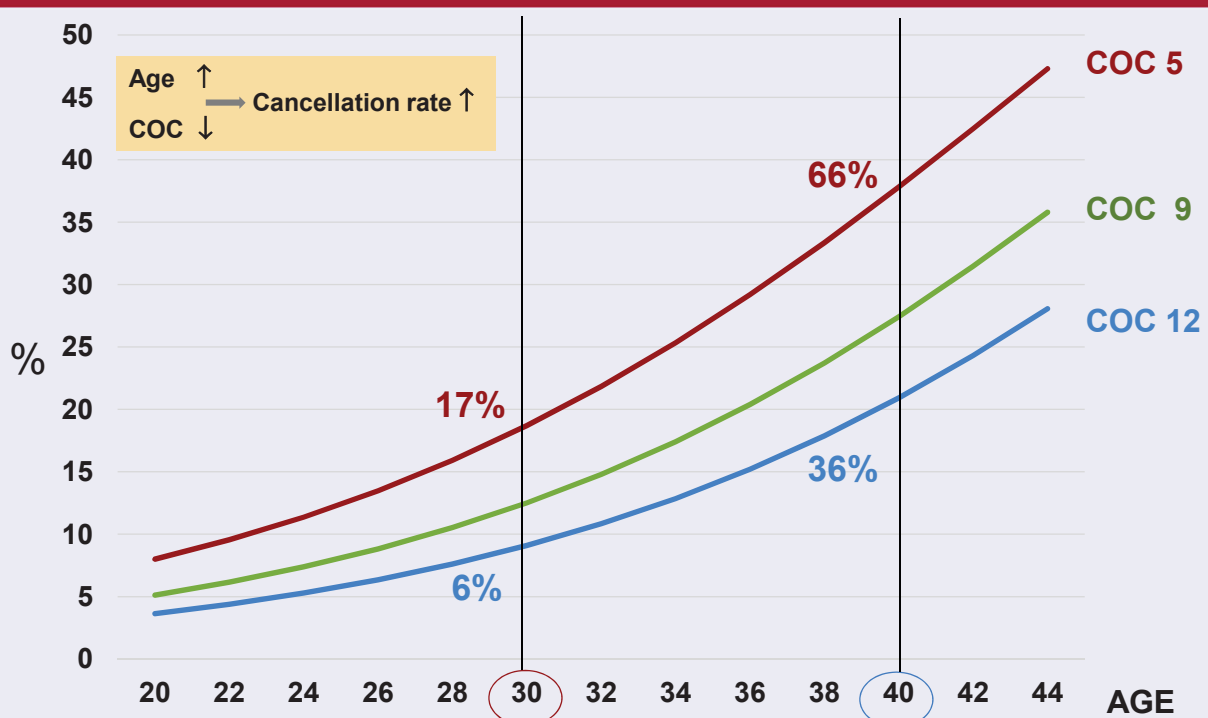
## Euploid or no euploid embryos according to cycle characteristics

		N	Mean	SD	p value
<b>D3 FSH (mlu/ml)</b>	No euploid	135	8.2	3.3	0.083
	Euploid	118	7.5	2.8	
<b>Total Gnt dose (IU)</b>	No euploid	248	2227.9	1085.3	0.008
	Euploid	407	2017.2	795.8	
<b>Mean Gnt dose (IU)</b>	No euploid	248	265.3	86.6	0.008
	Euploid	406	236.9	70.2	
<b>Days of stimulation</b>	No euploid	248	8.2	1.9	0.05
	Euploid	406	8.5	1.7	

\*Independent samples t-test

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## Embryo Transfer Cancellation Rate According to Maternal Age and Number of Retrieved Oocytes



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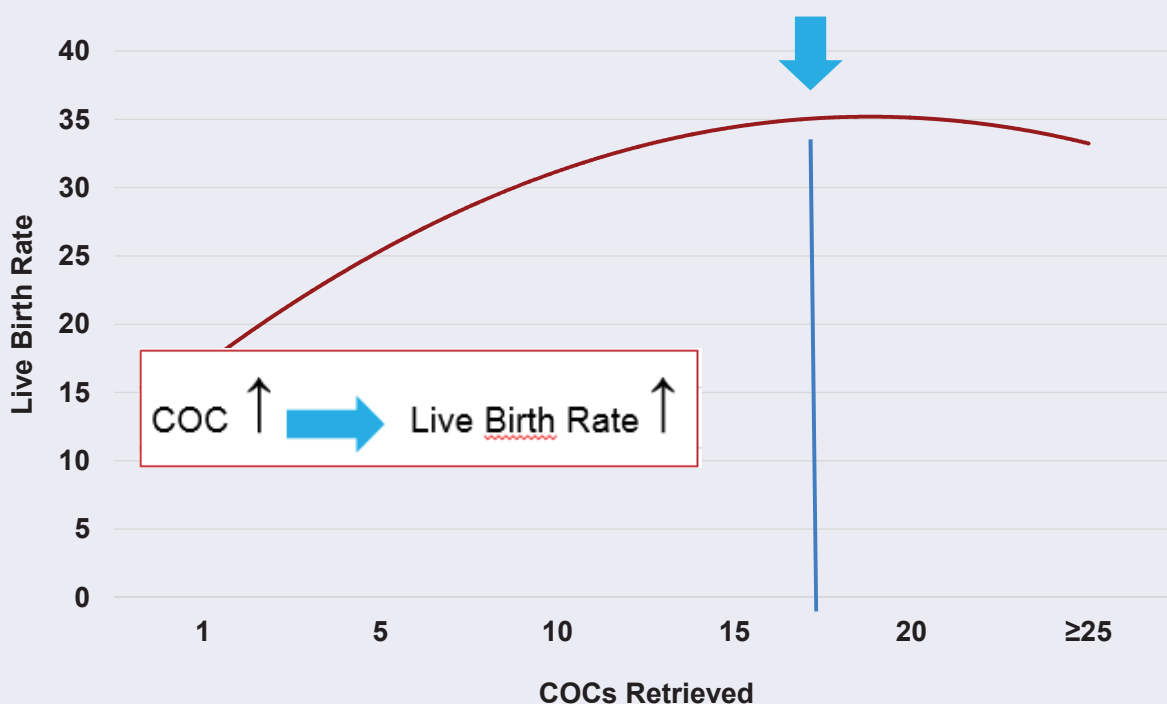
## Variables effecting finding euploid embryo

		OR	95.0% CI
Ovarian reserve	AGE	0.81	0.76-0.87
	AMH(ng/ml)	1.17	1.04-1.31
Ovarian response	AGE	0.80	0.75-0.85
	COC	1.09	1.06-1.13
	AGE	0.80	0.75-0.85
	MII	1.13	1.08-1.18
	AGE	0.81	0.76-0.87
	Biopsied embryo	1.66	0.43-1.92

Binary Logistic Regression Analysis

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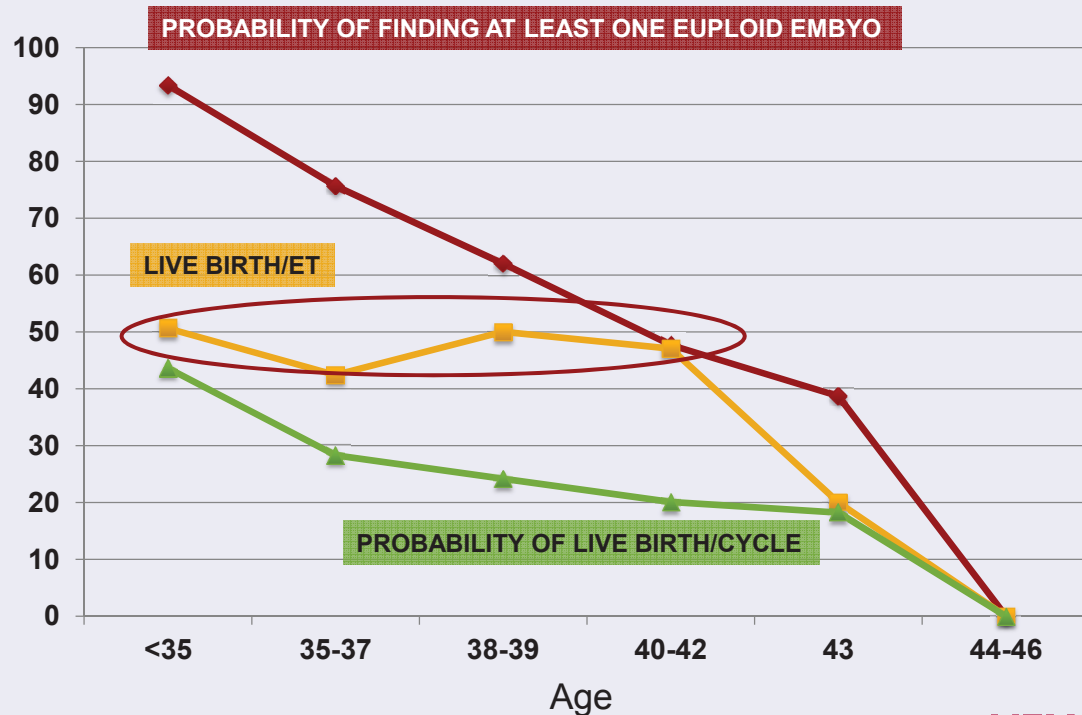
## Live Birth Rate per cycle According to Number of Oocytes Retrieved for all Age Groups



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## What is the **LIVE BIRTH RATE/ET** after finding an euploid embryo?



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## Conclusions Euploidy Rate

- **Age** is the most significant predictor
- **Euploidy rate** does not directly correlate with the **number of oocytes retrieved** after adjusted for age

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# Conclusions

## POE

- **Probability of finding at least one euploid embryo** decreases significantly with the advancing maternal age

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# Conclusions

## Ovarian reserve and response

- **AMH level, number of COCs, number of MII oocytes and number of biopsied embryos** are the main variables effecting **finding at least one euploid embryo** after adjusted for age .

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## Conclusion

### lowest probability

Finding a euploid embryo and reaching a live birth



AMH < 0.6 ng/ml



< 5 COCs

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## Conclusion

### Highest probability

Finding a euploid embryo



> 15 COCs

Finding a euploid embryo



≥ 5 biopsied  
blastocysts

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## Conclusion

### highest probability

Resulting in a live birth



15-20 COCs



≥5 biopsied blastocysts

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## Conclusion

### lowest probability according to age

Finding a Euploid Embryo &  
Resulting in a Live Birth



>42 years of age



> 42 years of age

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## Conclusion

- Counseling patients for their chances of finding an euploid embryo based on **their age** and **number of retrieved oocytes or biopsied embryos** is the best approach.

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we do need to remember the importance

**evaluate** and **counsel** patients for risk factors which may consequently affect their success rate.

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