



University  
of Glasgow

# IVF in Medical Disorders: when to say no

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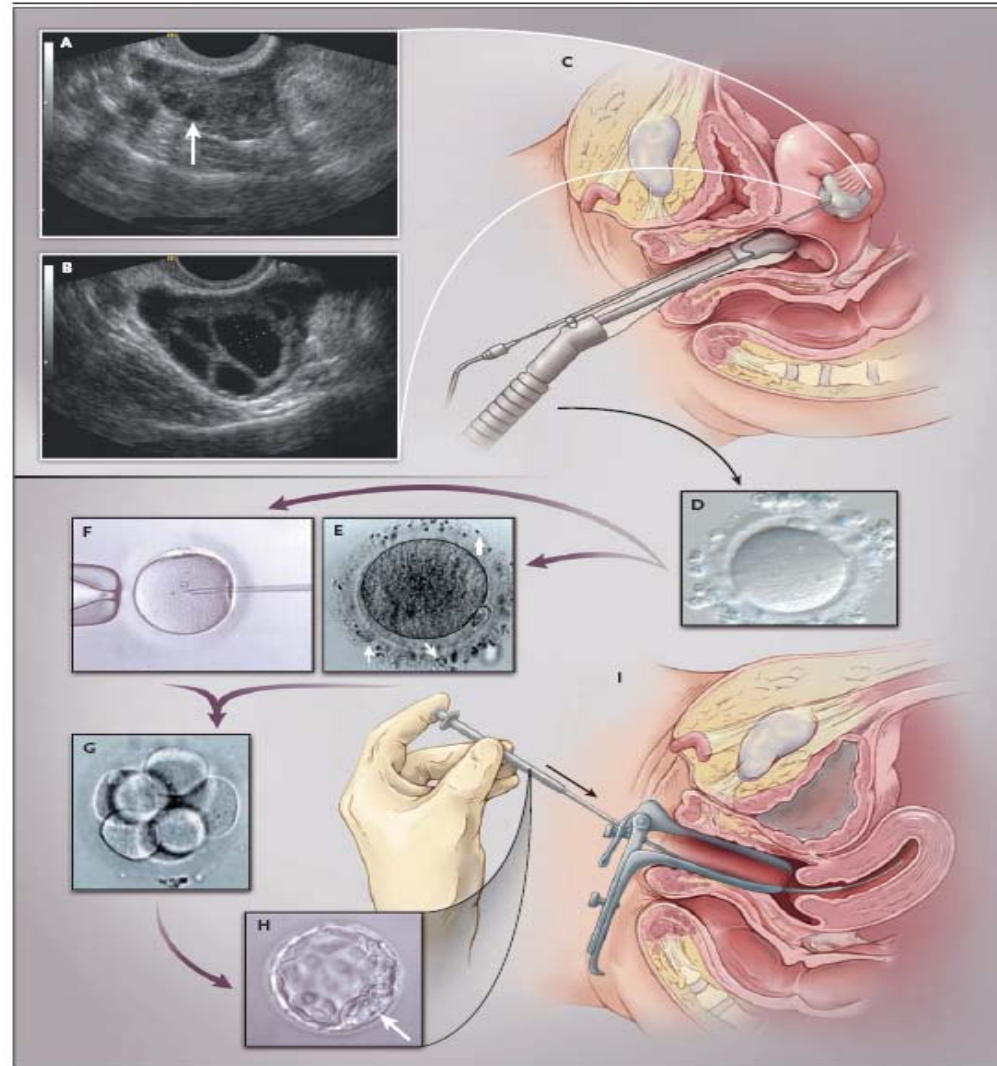
Scott Nelson

Muirhead Chair in Obstetrics & Gynaecology

# We rarely say no - so what I will cover today

- The consequences of non personalised care
- How we can predict IVF outcomes
- How we can personalise treatment and minimise risk

# How we do IVF



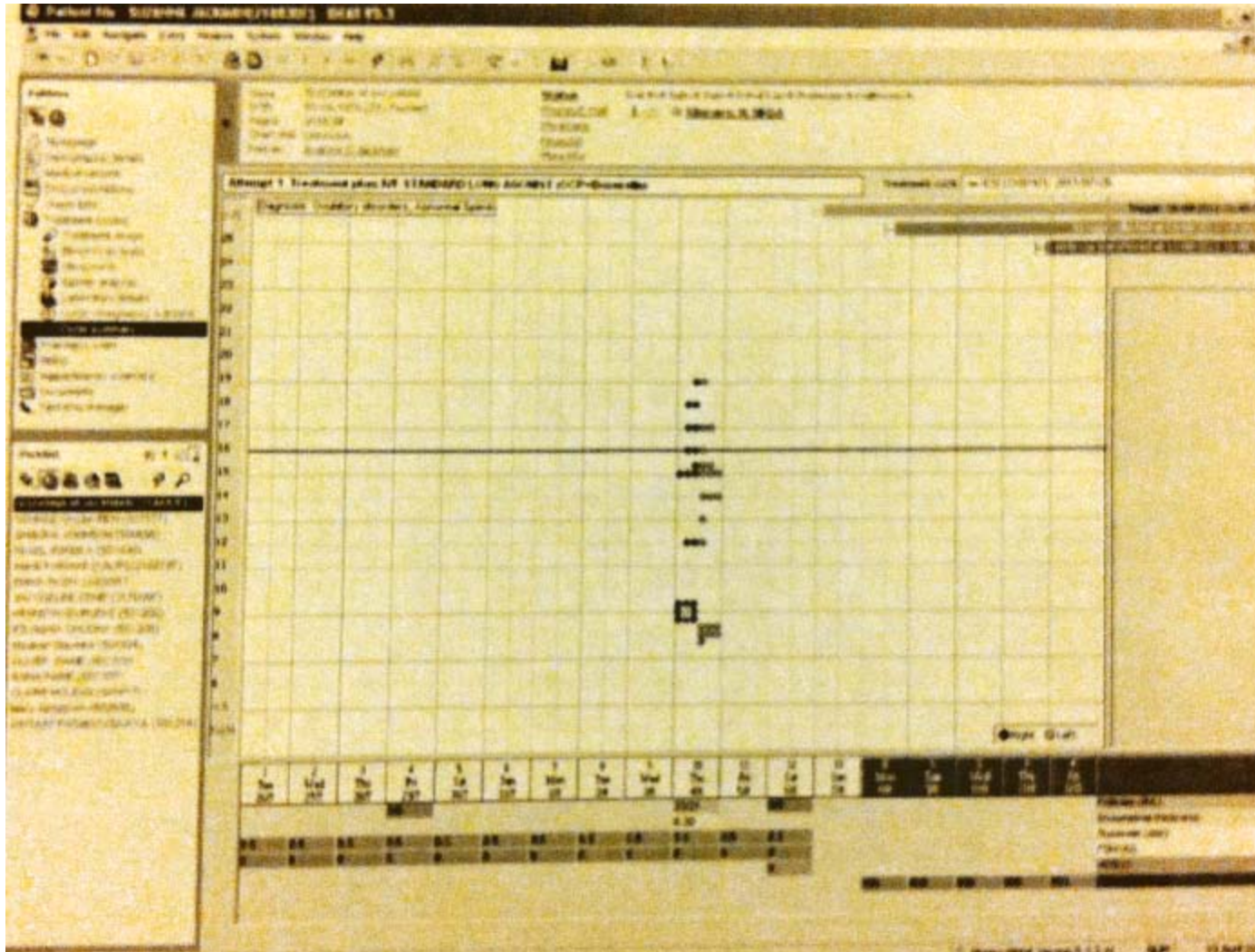
# The consequences of non personalised care

# The disadvantage of one size fits all

- 33 year old
- Stage 4 endometriosis
- Regular cycle
- FSH 4.3
- Antral Follicle Count 28
  
- What happens next?

GnRH agonist 225IU FSH

# The consequences of one size fits all



First scan day 10  
11 follicles  $\geq 16$  mm – Thursday

HcG Saturday  
OR Monday – 32 oocytes  
17 immature, 15 2PN

Admitted with OHSS Tuesday  
9L paracentesis drained Wednesday

Two day 3 Embryos replaced Thursday  
Two day 3 frozen

# The negative outcome



# How we can predict IVF outcomes



# We can predict live birth using IVFpredict.com

- 144,000 fresh IVF cycles
- Baseline characteristics
- Freely available

## Online Calculator

### IVFpredict.com Information Summary

Woman's age: 36

Trying for: 3 years

Own or donor eggs? Own eggs

Cause: Unknown

IVF attempts: First

Unsuccessful IVF attempts: Zero

Pregnancy history: No IVF, no pregnancy

Medication: Gonadotrophin

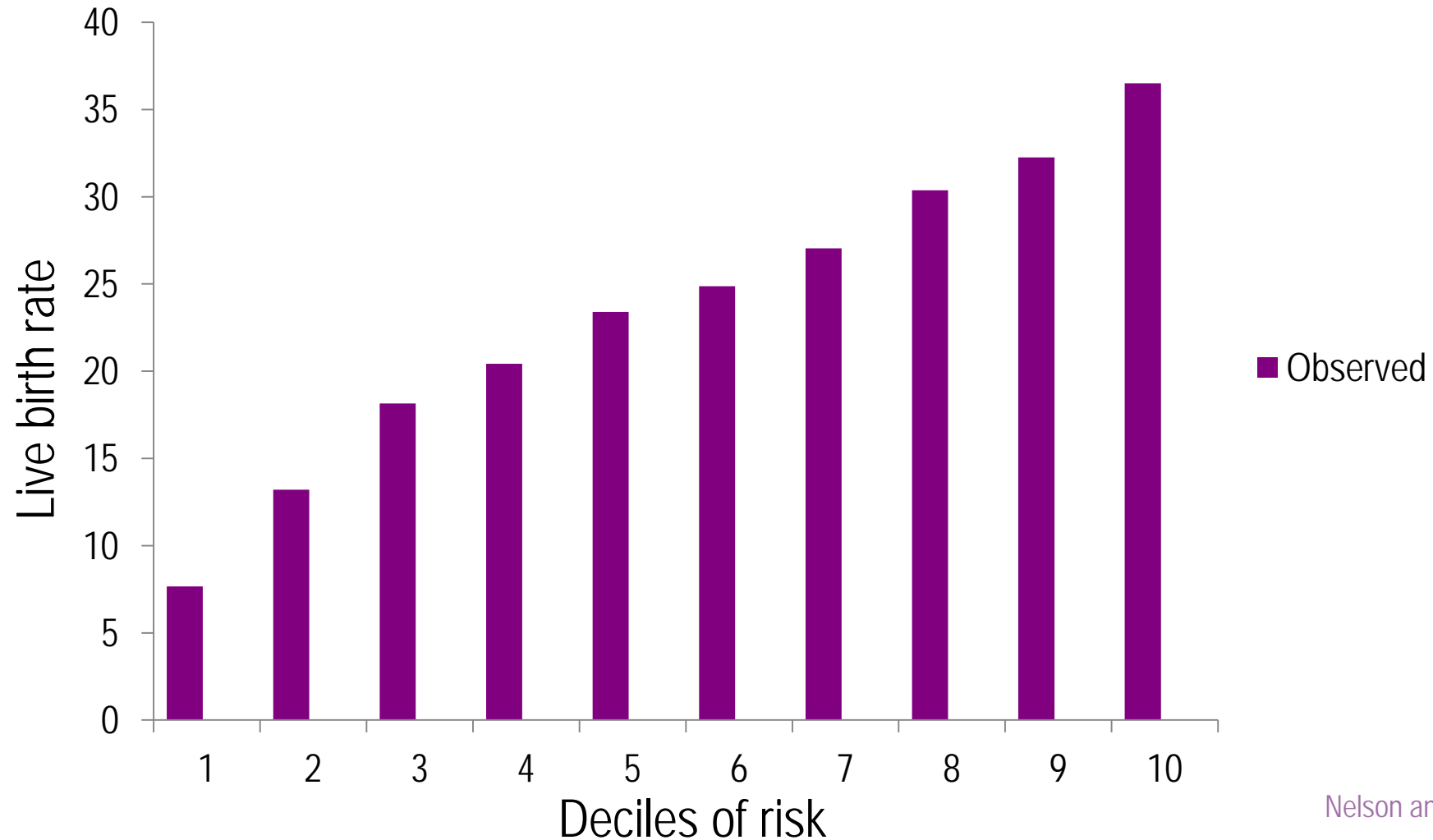
Will ICSI be used? No

[Reset and start again](#)

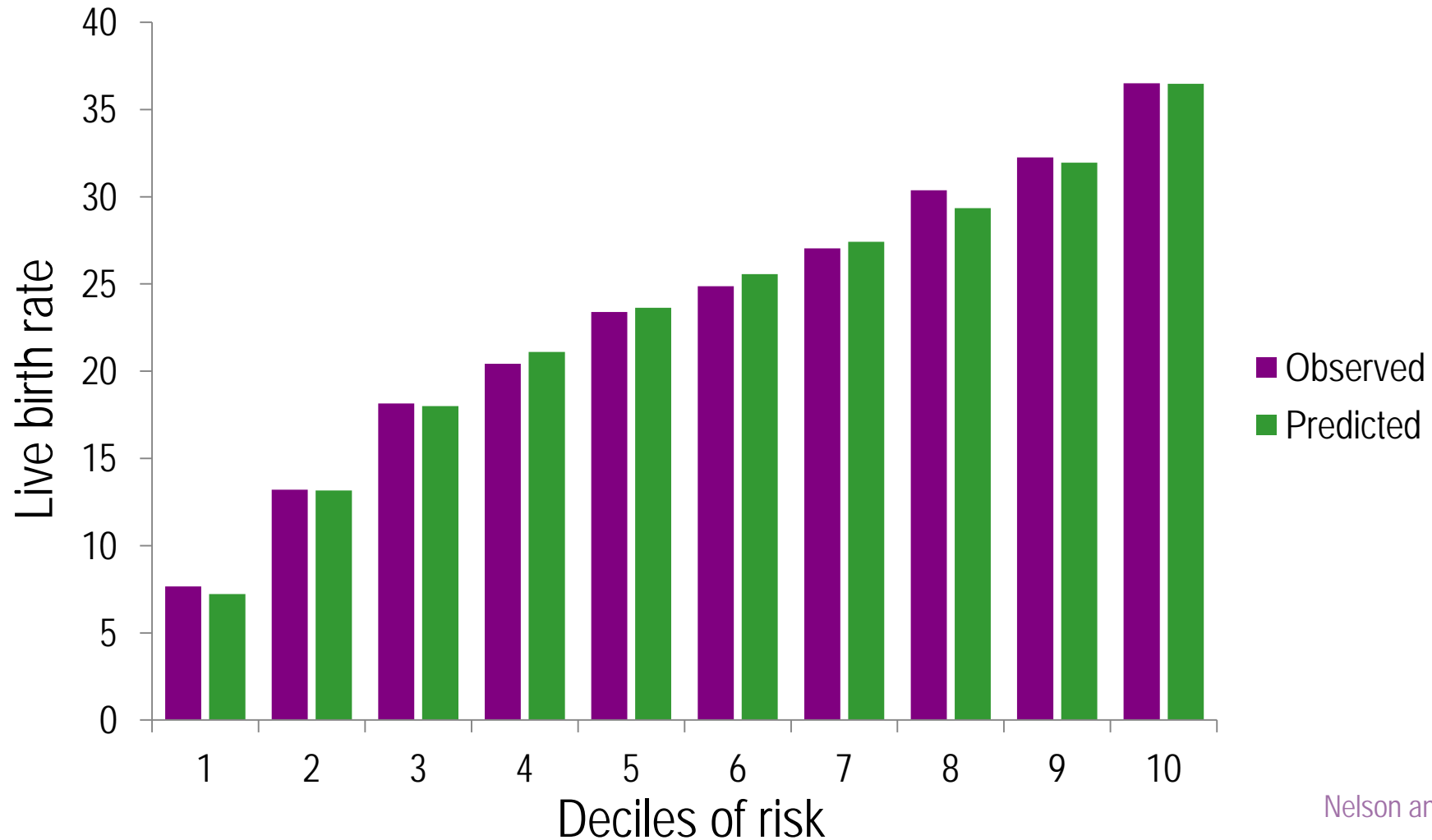
**Your chance of a live birth per IVF attempt is:**

22.8 %

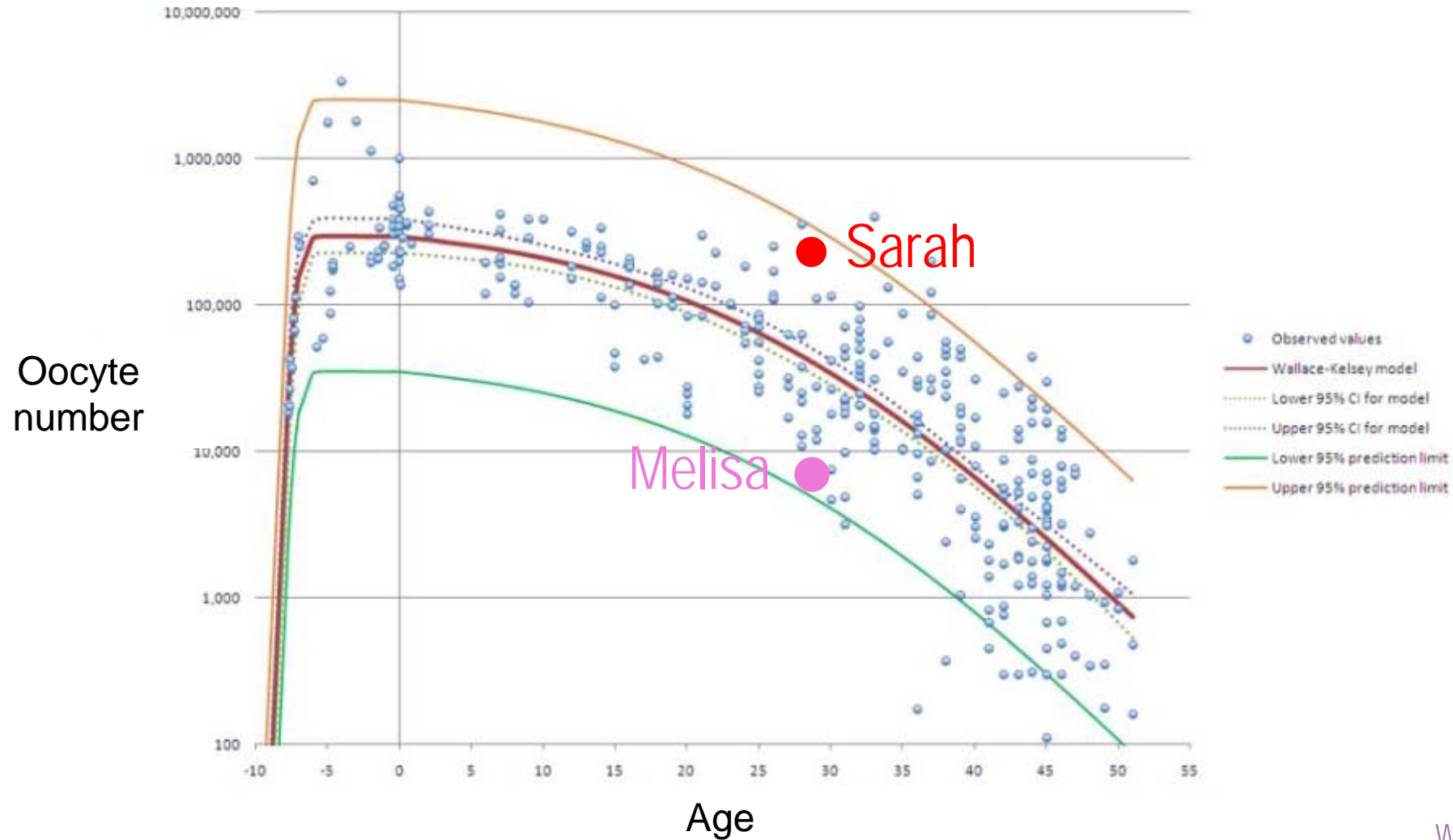
# IVFpredict accurately helps us to predict live birth



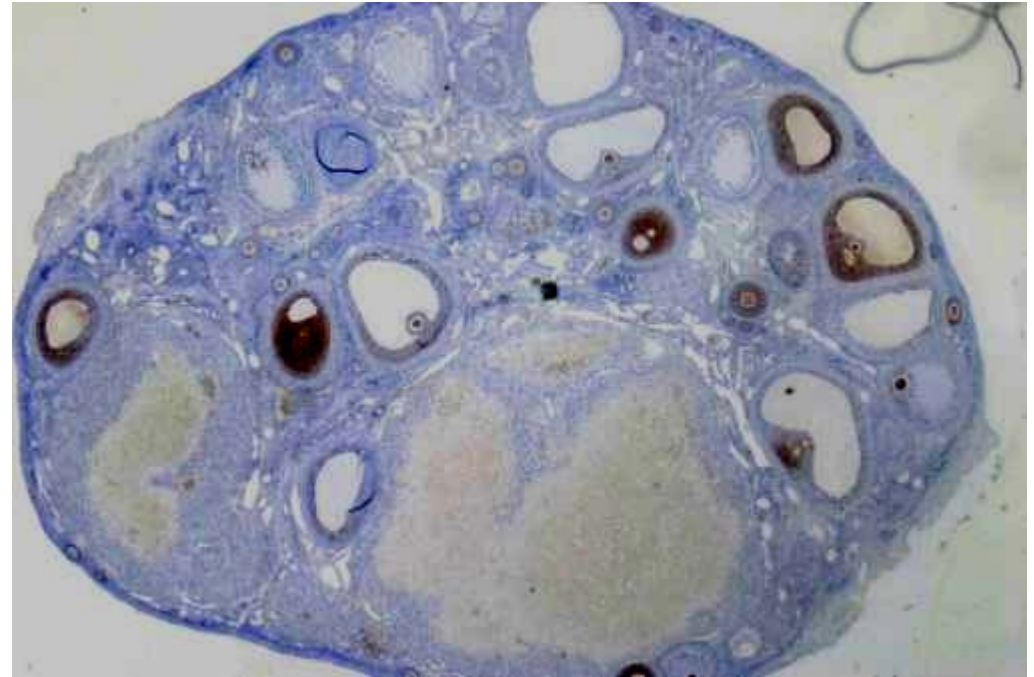
# IVFpredict accurately helps us to predict live birth



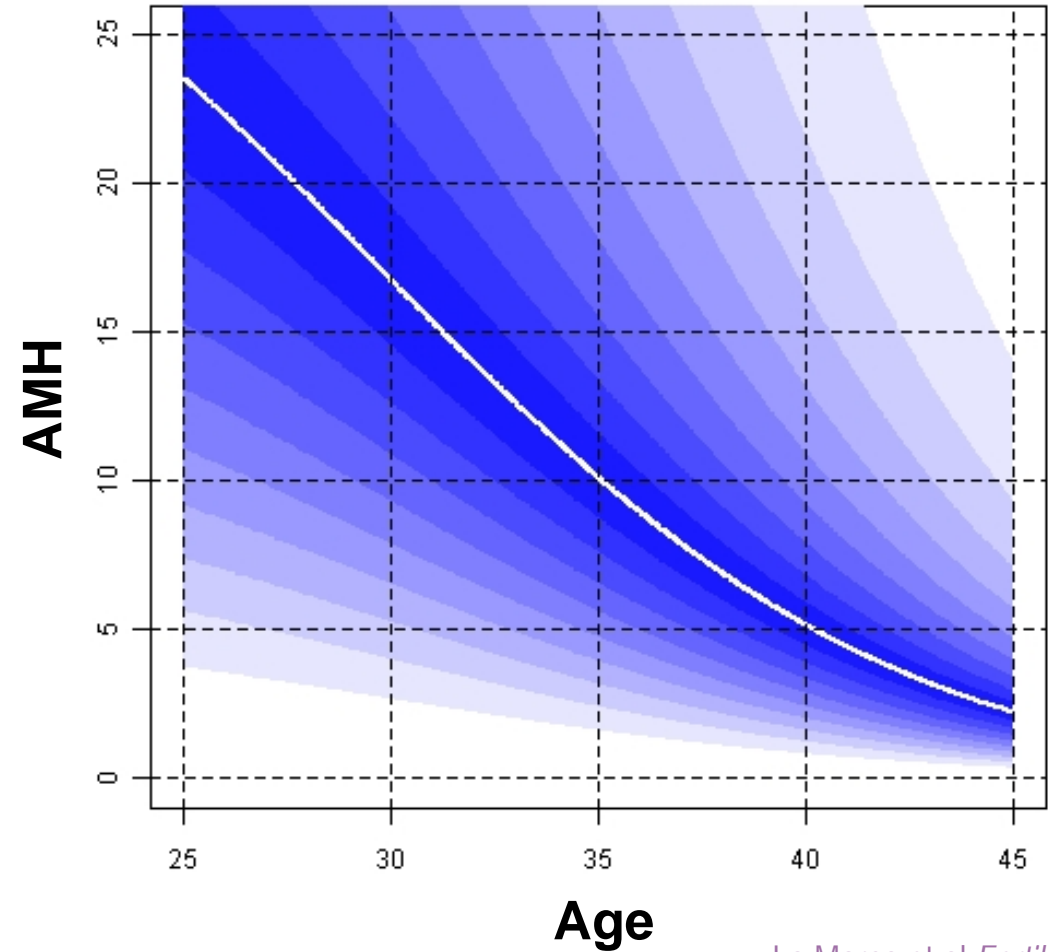
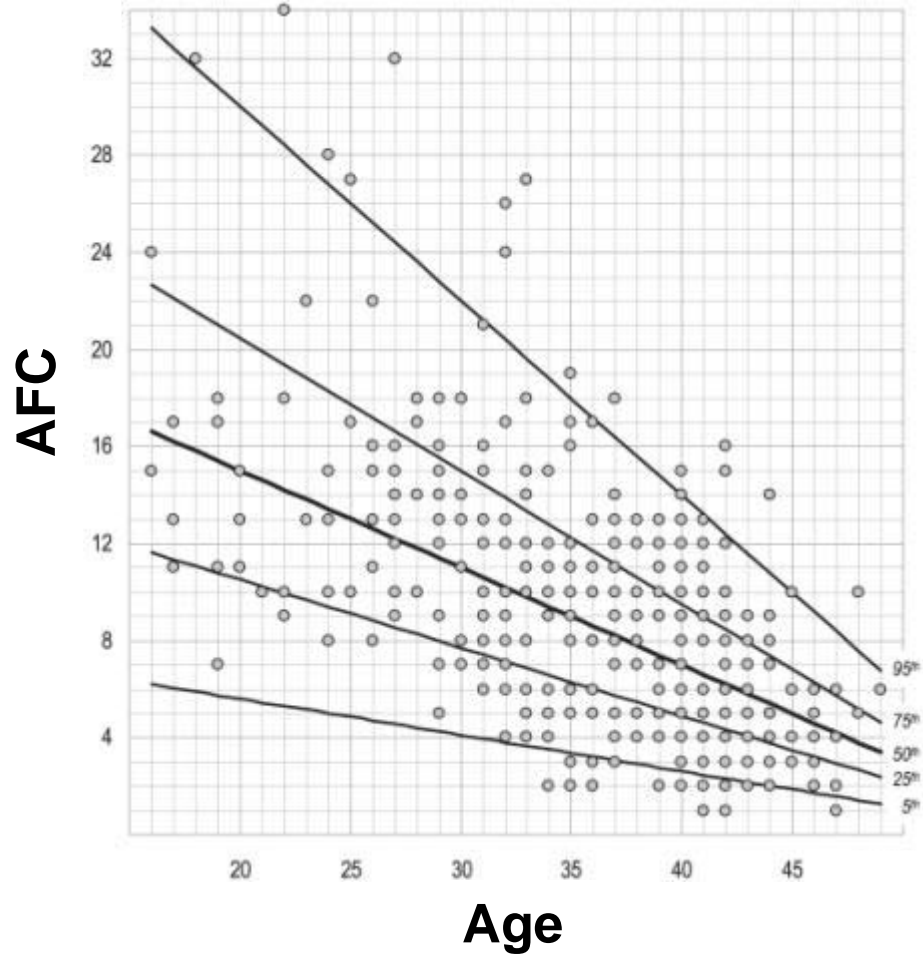
# The big challenge of assessing variability



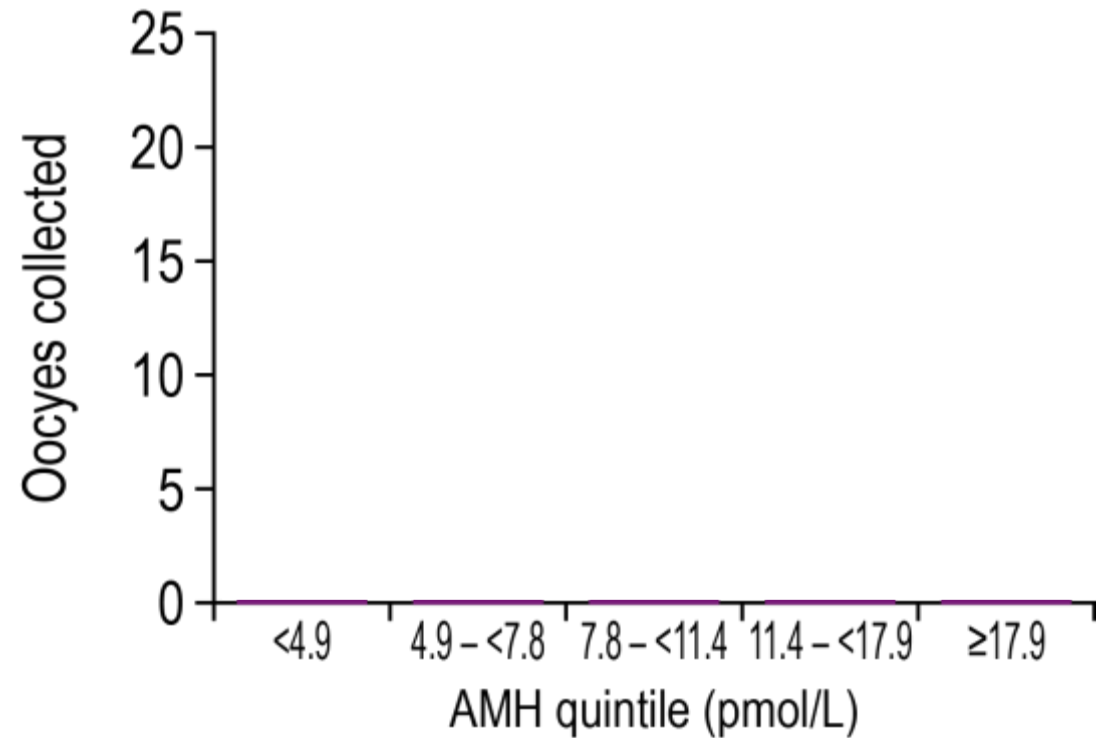
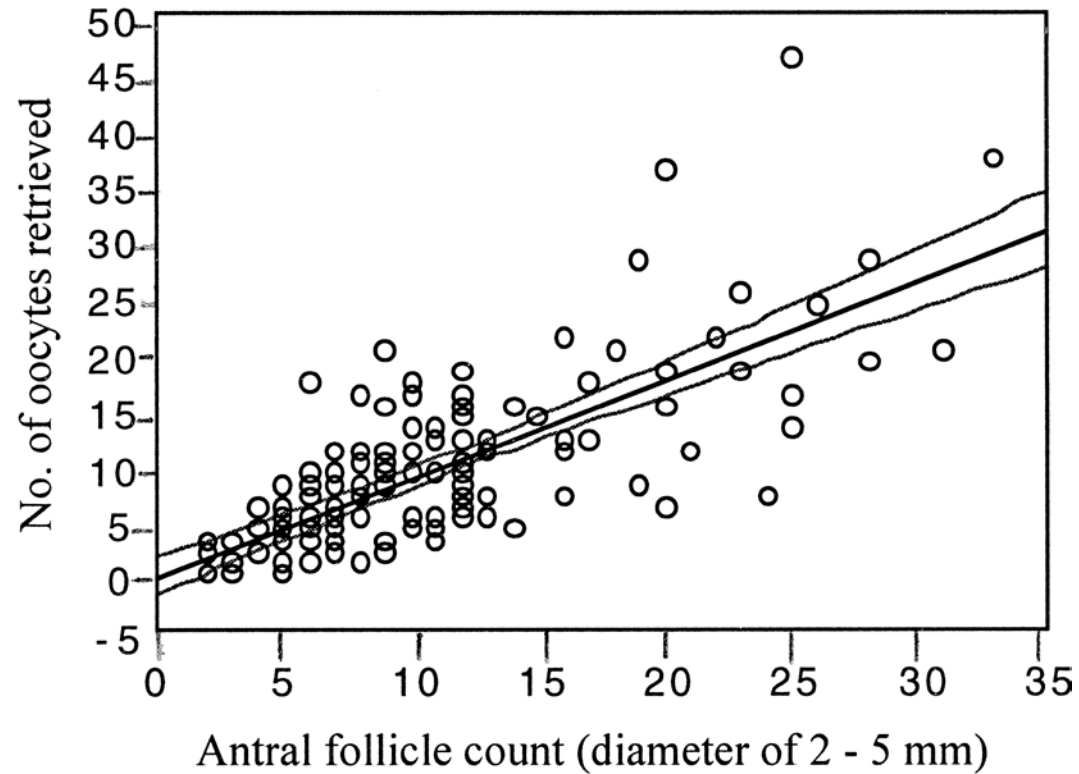
# AFC and AMH can help us predict ovarian reserve



# Both indicate a woman's ovarian reserve at any age

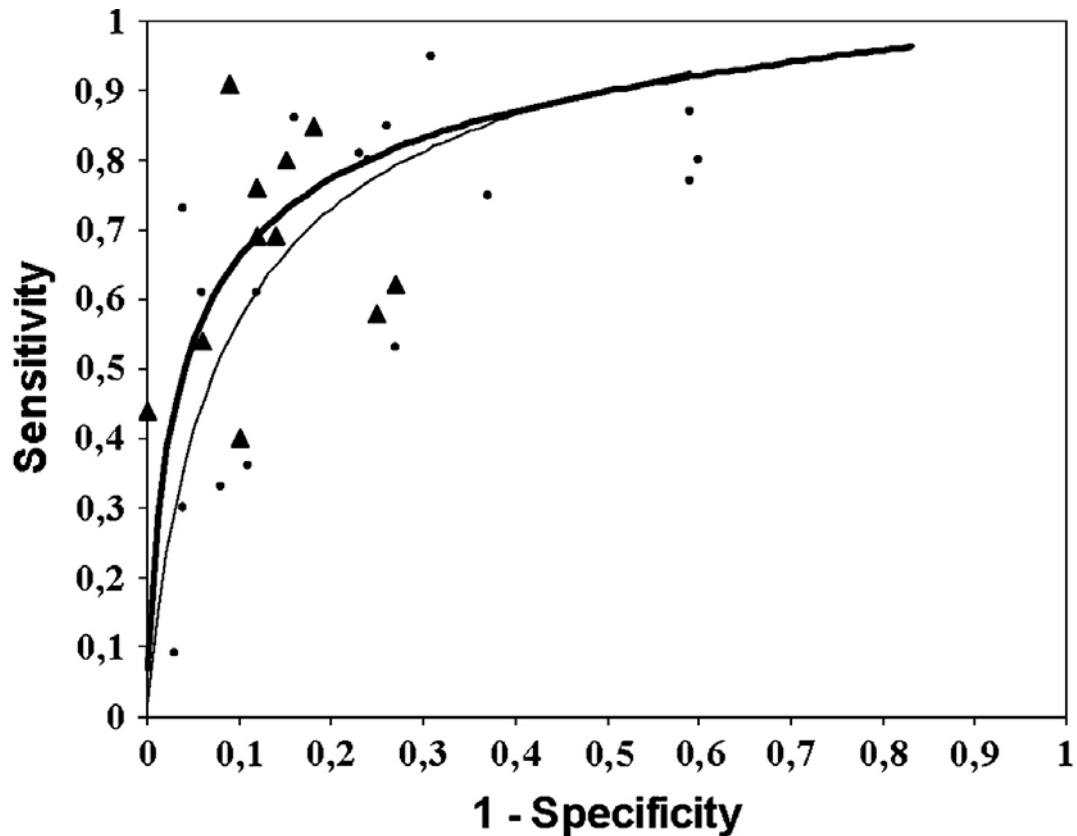


# Both help us predict oocyte yield

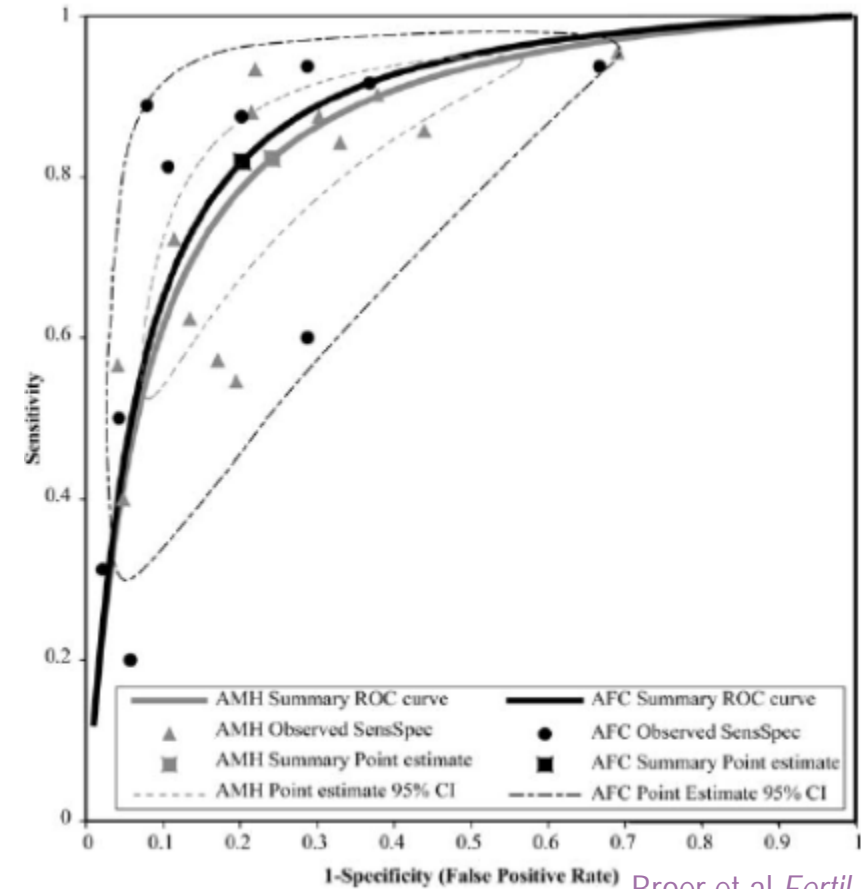


# Both help us predict extremes of ovarian response

## Poor

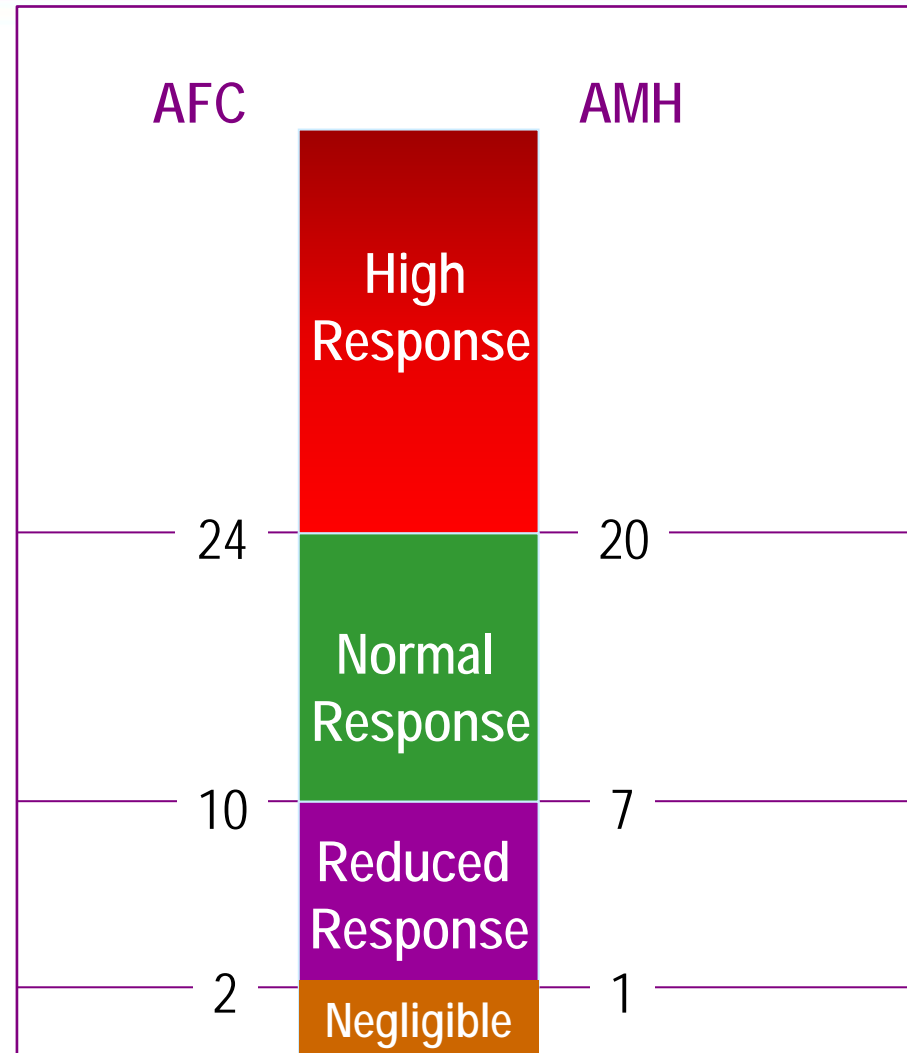


## Excessive

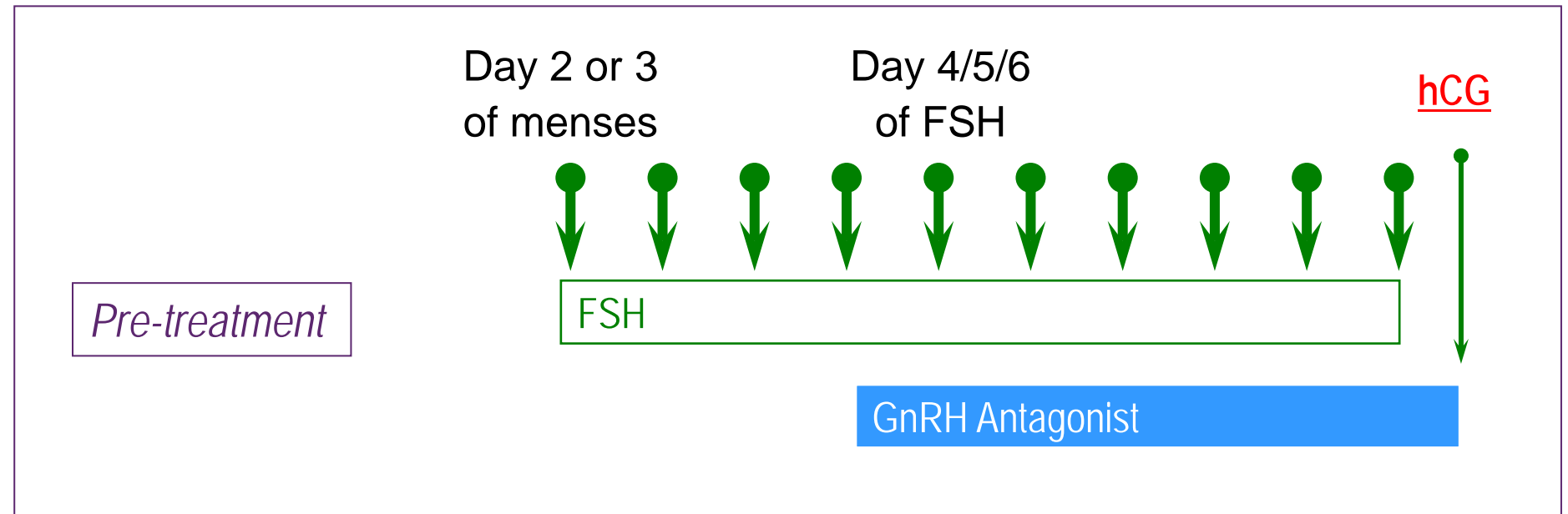
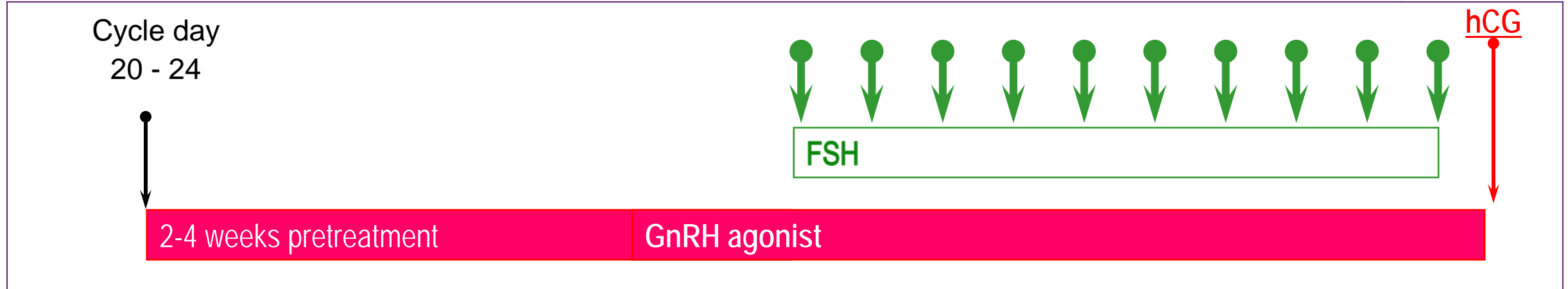




# Both can help us personalise treatment



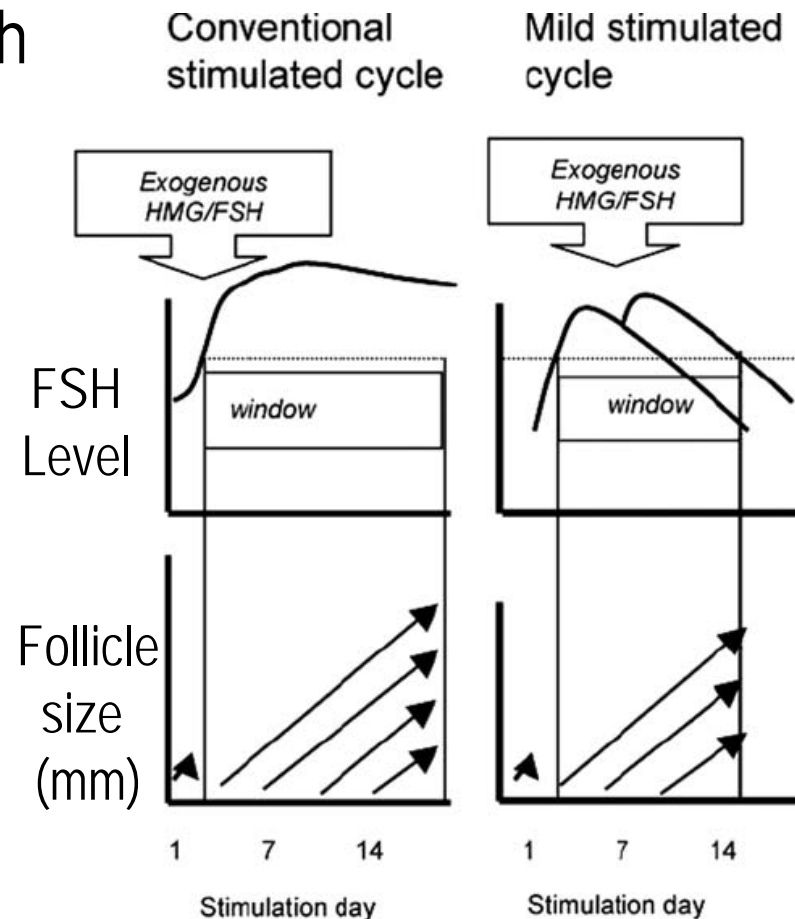
# This can guide our type of ovarian stimulation



# The strengths and weaknesses of the two approaches

- GnRH agonist approach

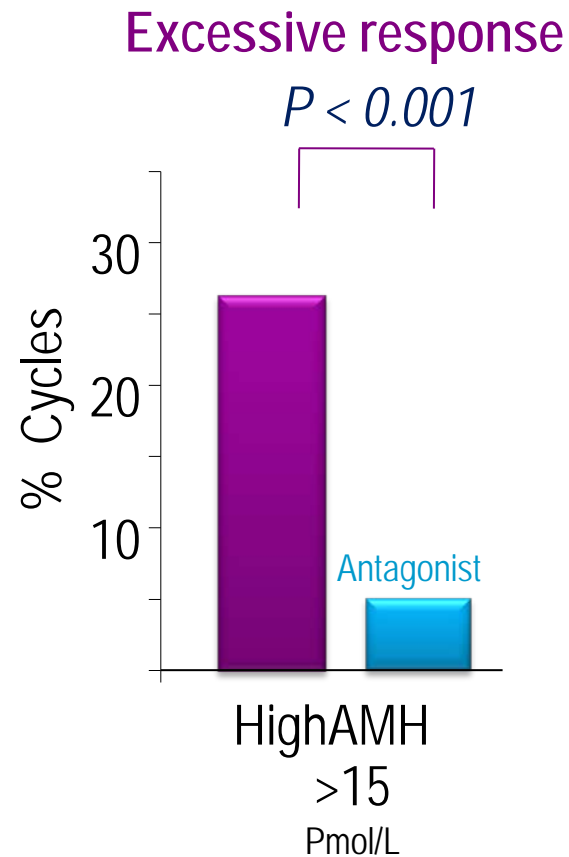
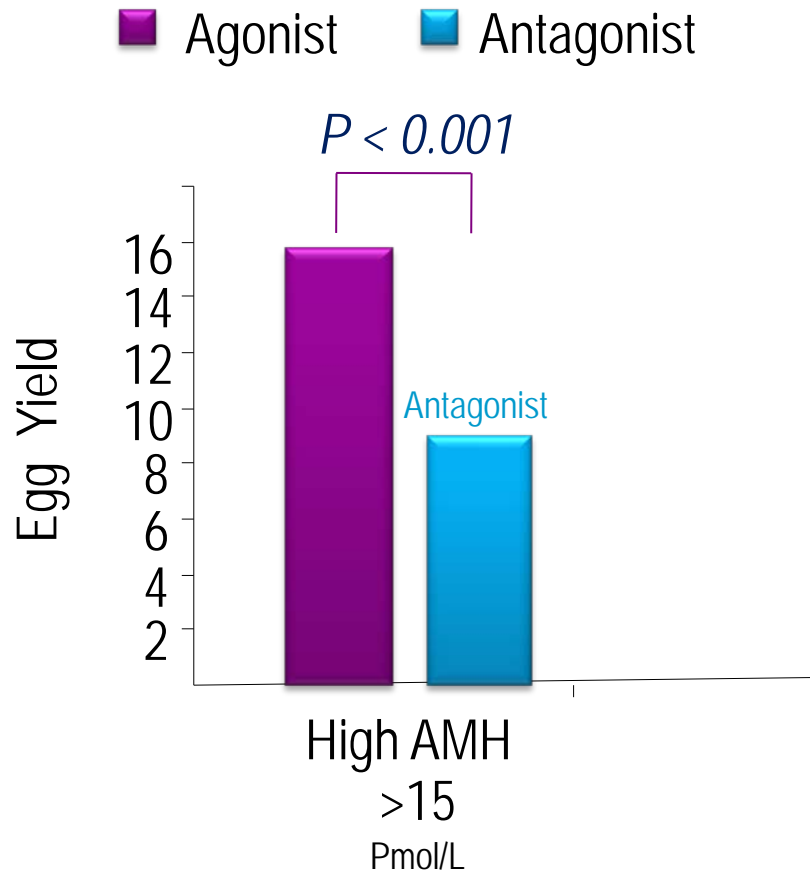
- Maximal follicular recruitment
- Robust
- Significant OHSS



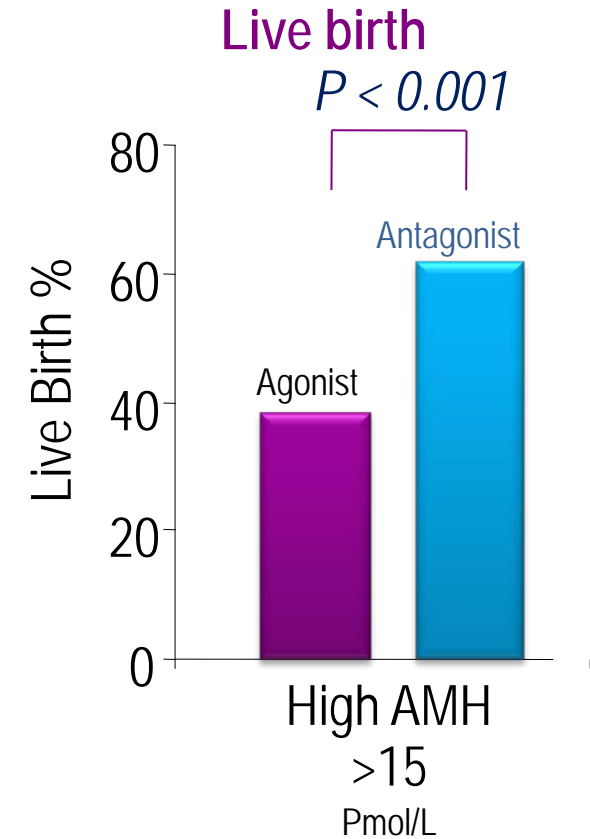
- GnRH antagonist approach

- Reduced follicular recruitment
- Reduced OHSS
- Lower live birth rates
- Fewer embryos
- Cycle programming issues
- Premature luteinisation
- GnRH agonist trigger

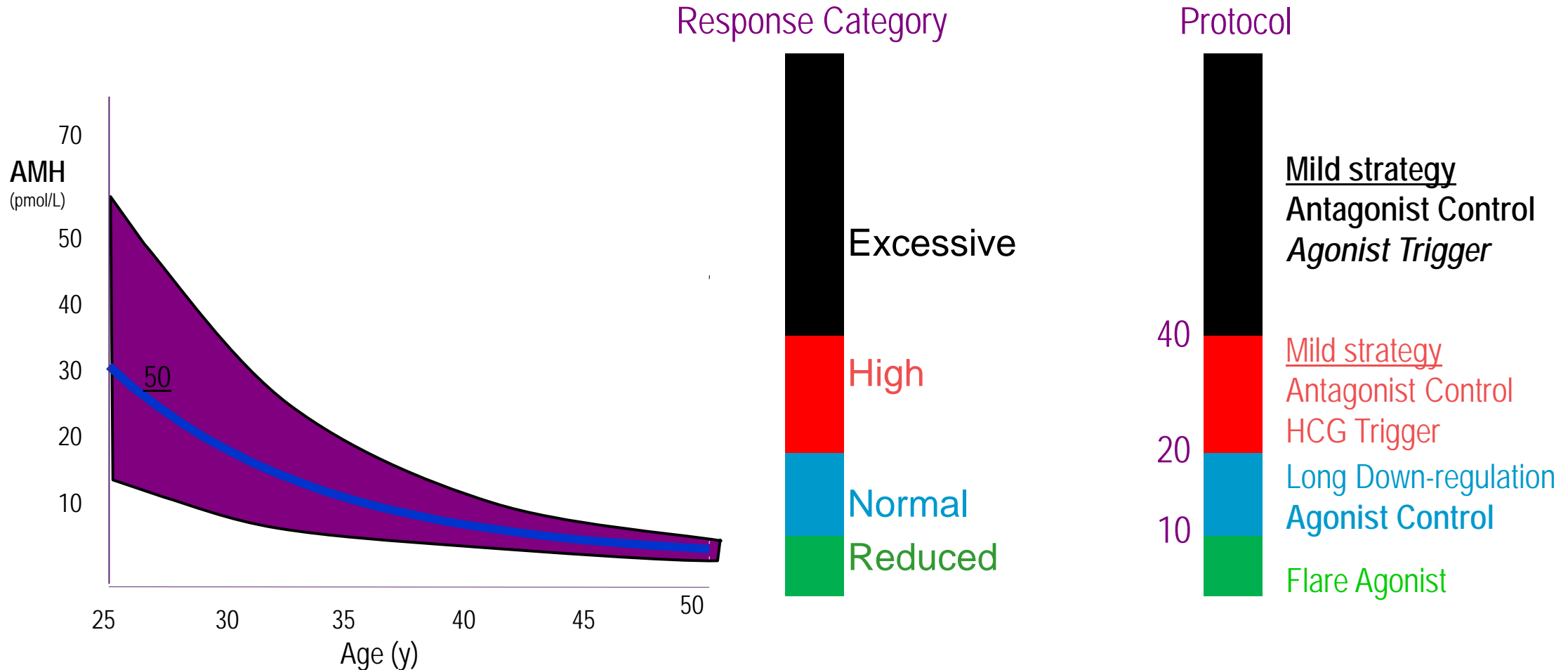
# AMH stratification can help us prevent OHSS



Reduced OHSS

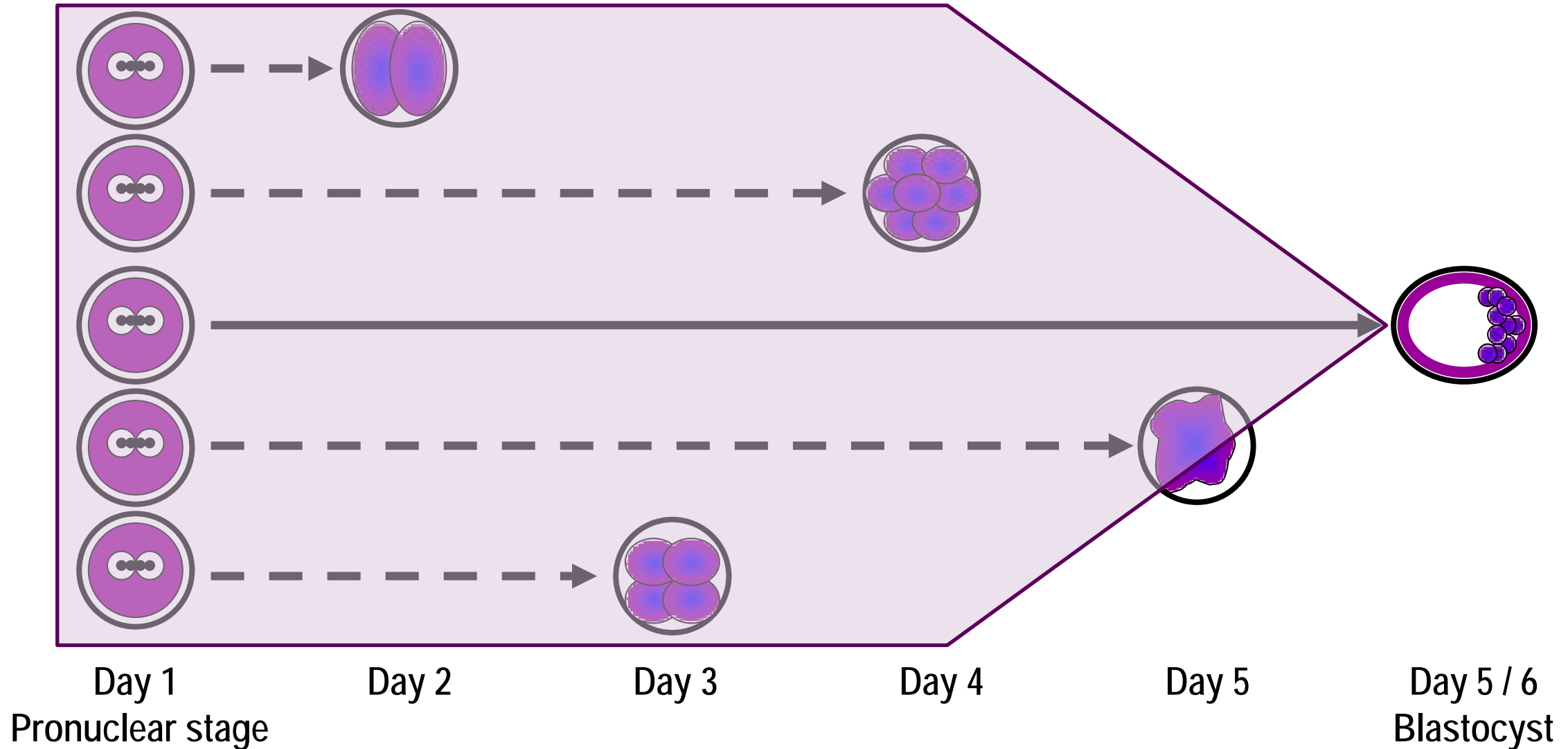


# We can individualise treatment - iCOS

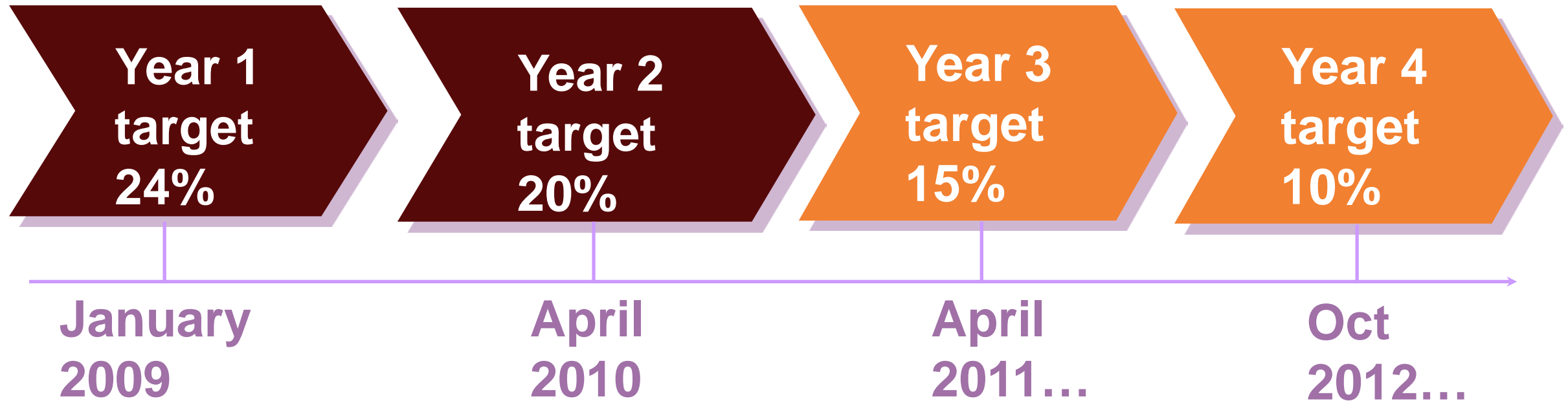


# How we can reduce the risk of multiples

# We can use culture selection



# We can use legislation to achieve reduction

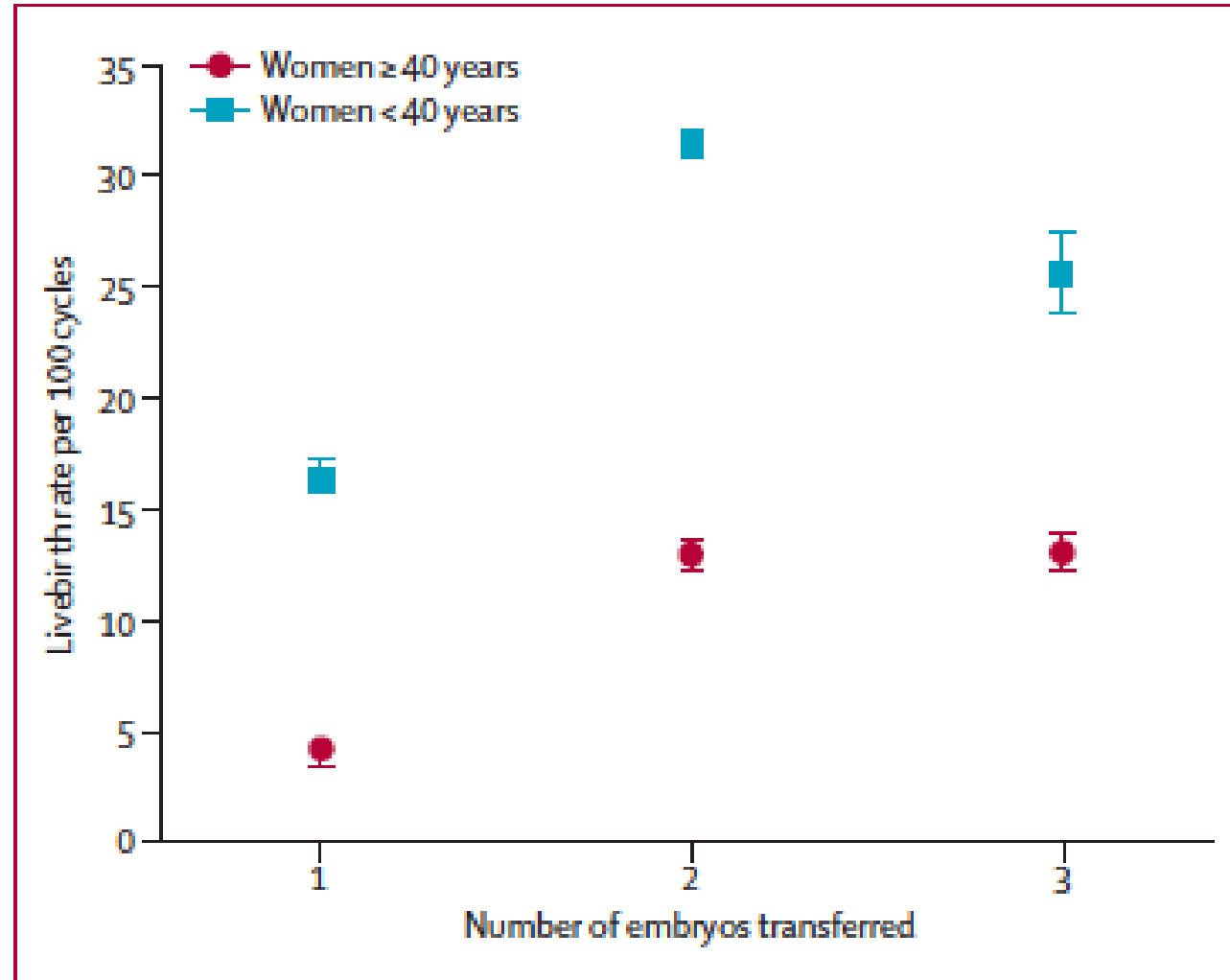




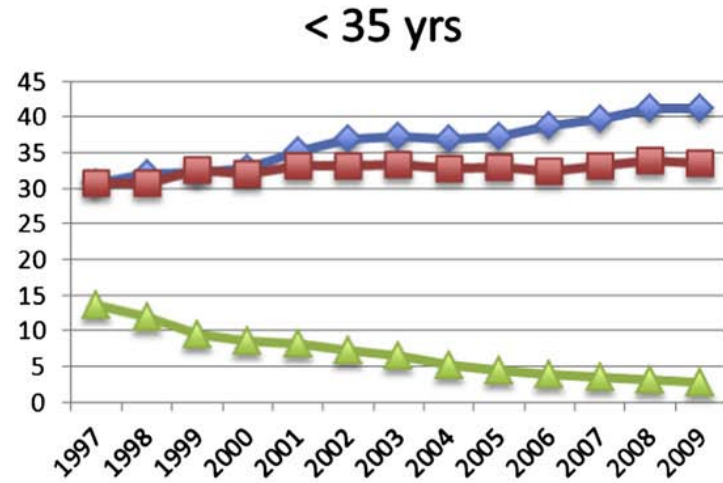
# We can limit the number of embryos to transfer



# We can limit the number of embryos to transfer



# But for the US still an uphill struggle



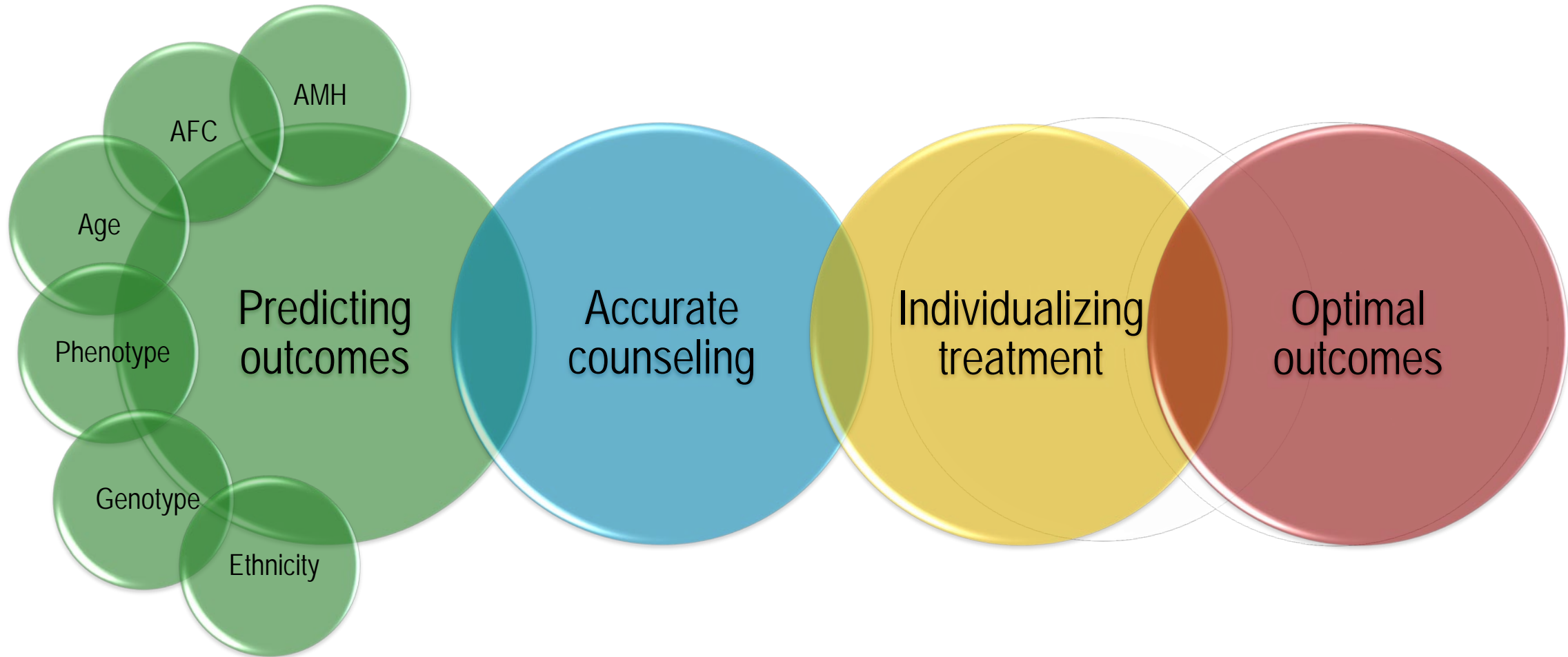
◆ Live birth rate   ■ Twin   ▲ Triplet...

# US guideline is still to replace up to 5 embryos

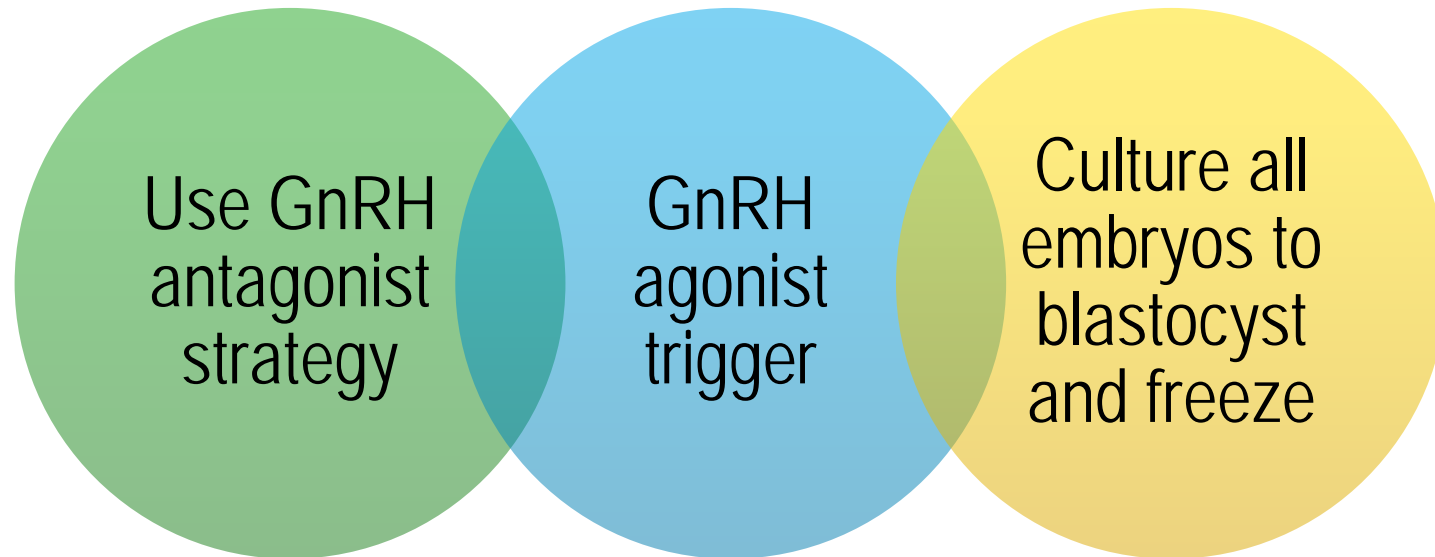
Prognosis	<35	35 - 37	38 - 40	41 - 42
Day 3				
Good	1 - 2	2	3	5
Poor	2	3	4	5
Day 5				
Good	1	2	2	3
Poor	2	2	3	3

# How we can personalise treatment and minimise risk

# We can personalise IVF



# A safe approach to women with medical complications



Completely removes  
OHSS and VTE risk

# A safe approach to women with medical complications

