



FERTILITY
associates

a better understanding

TE RAUHANGA O TE WHARETANGATA

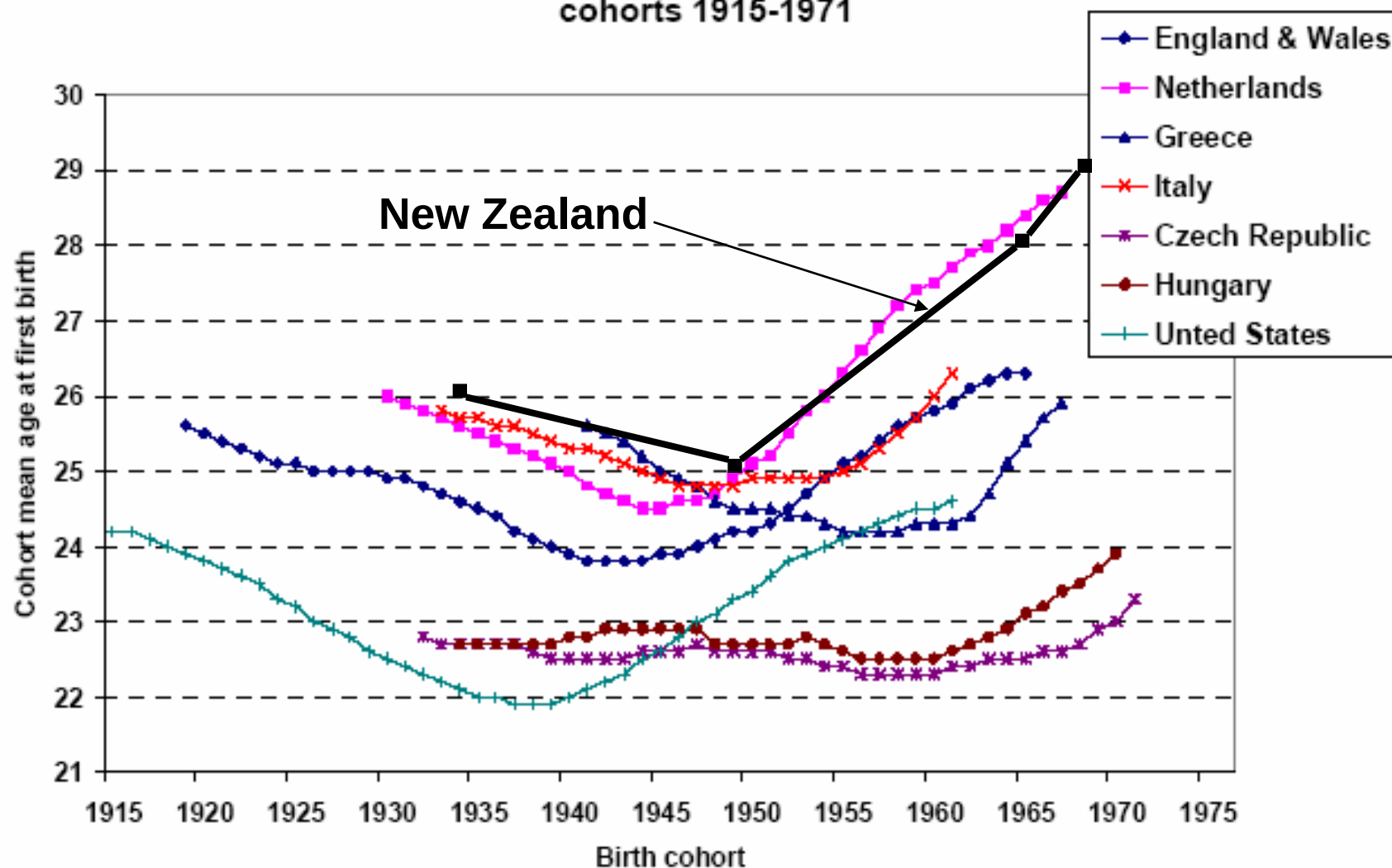


LEADERS IN FERTILITY

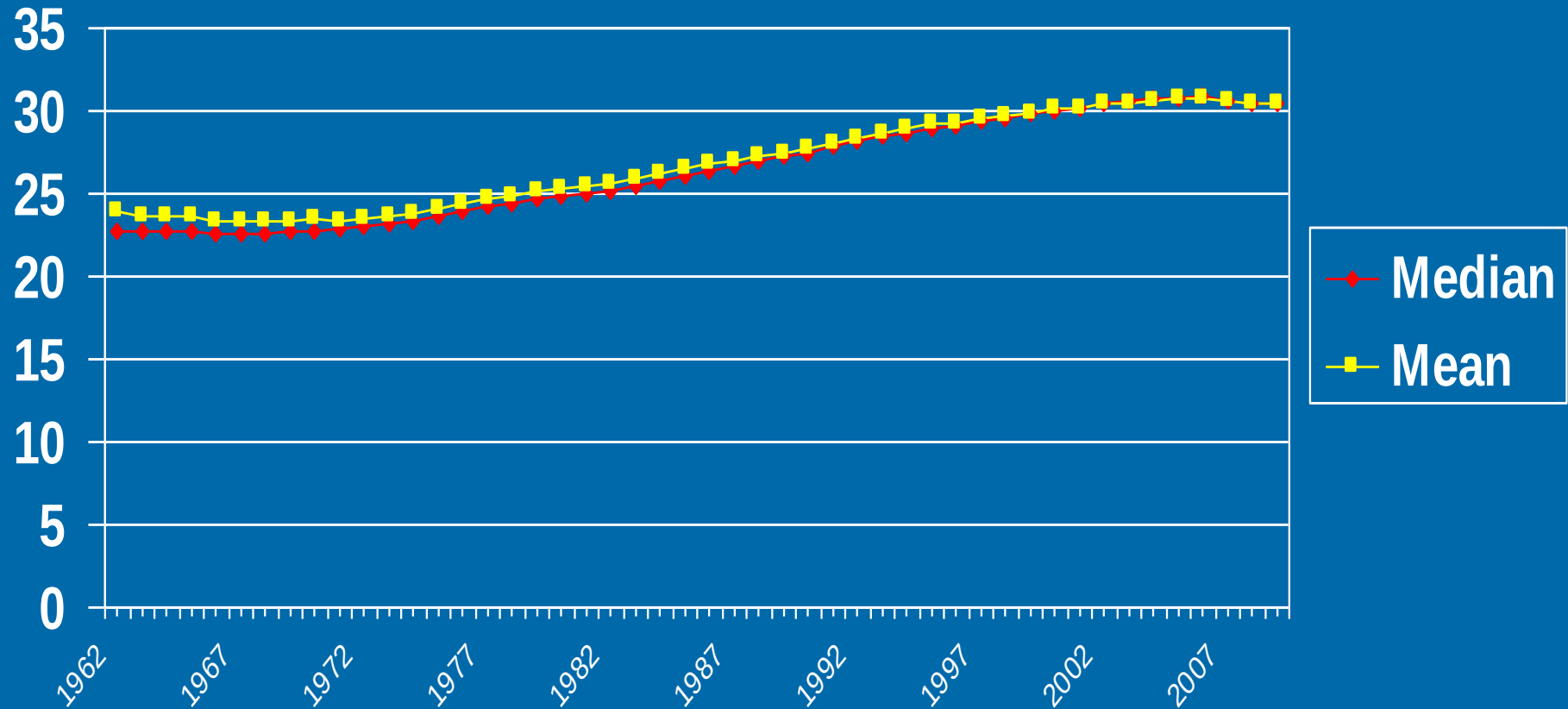
Presentation to Medico-Legal Society

Richard Fisher
Fertility Associates

Figure 4 - Cohort mean age at first birth, selected countries, birth cohorts 1915-1971



Average age of mother at first birth in New Zealand



Monthly fecundity by age

Years

%

25

25

30

20

35

16

37

11

40

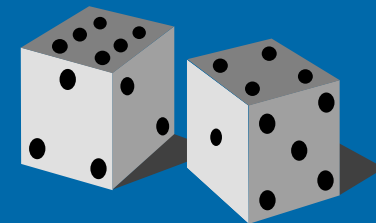
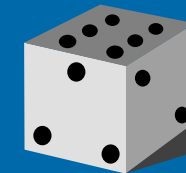
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42

4

44

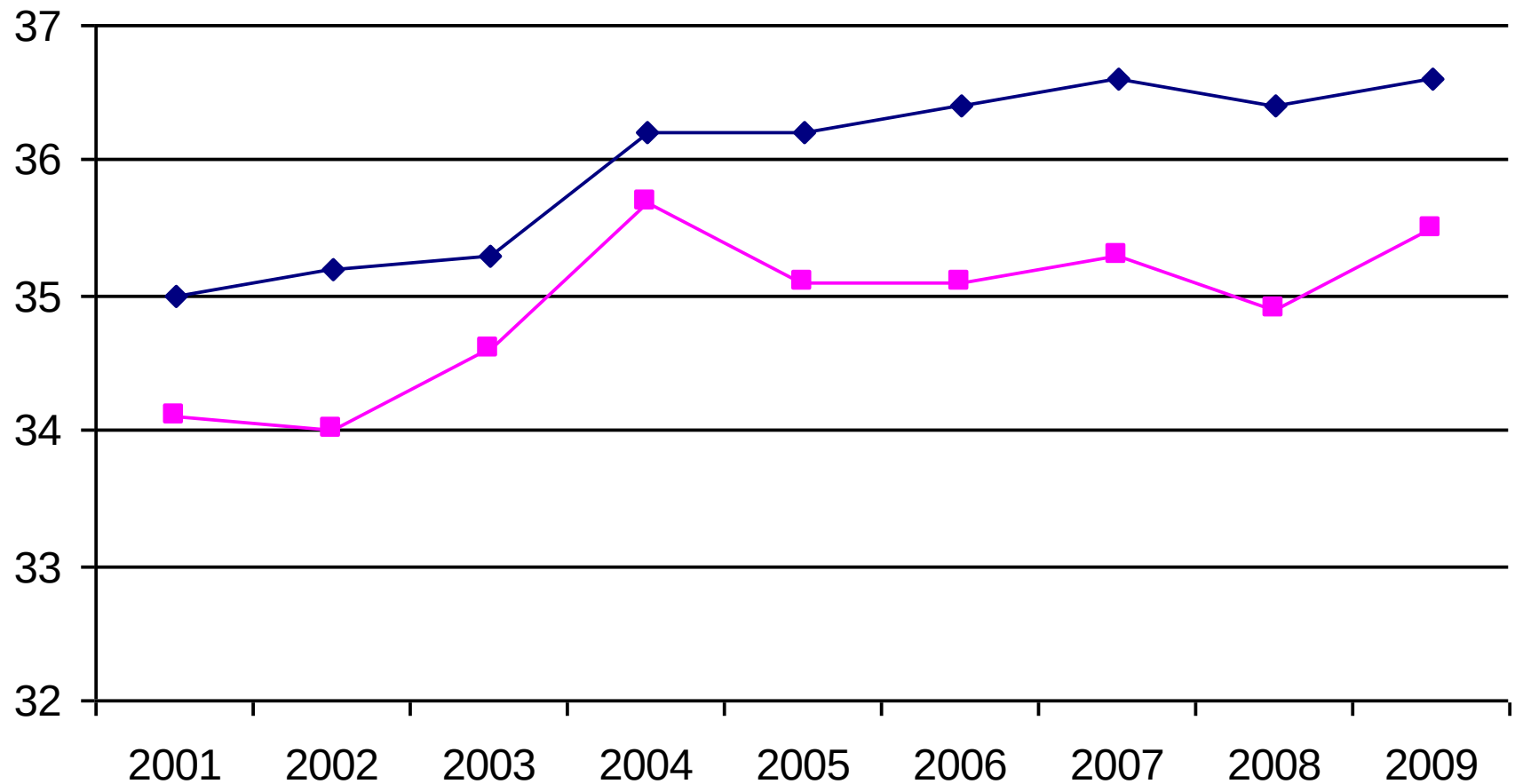
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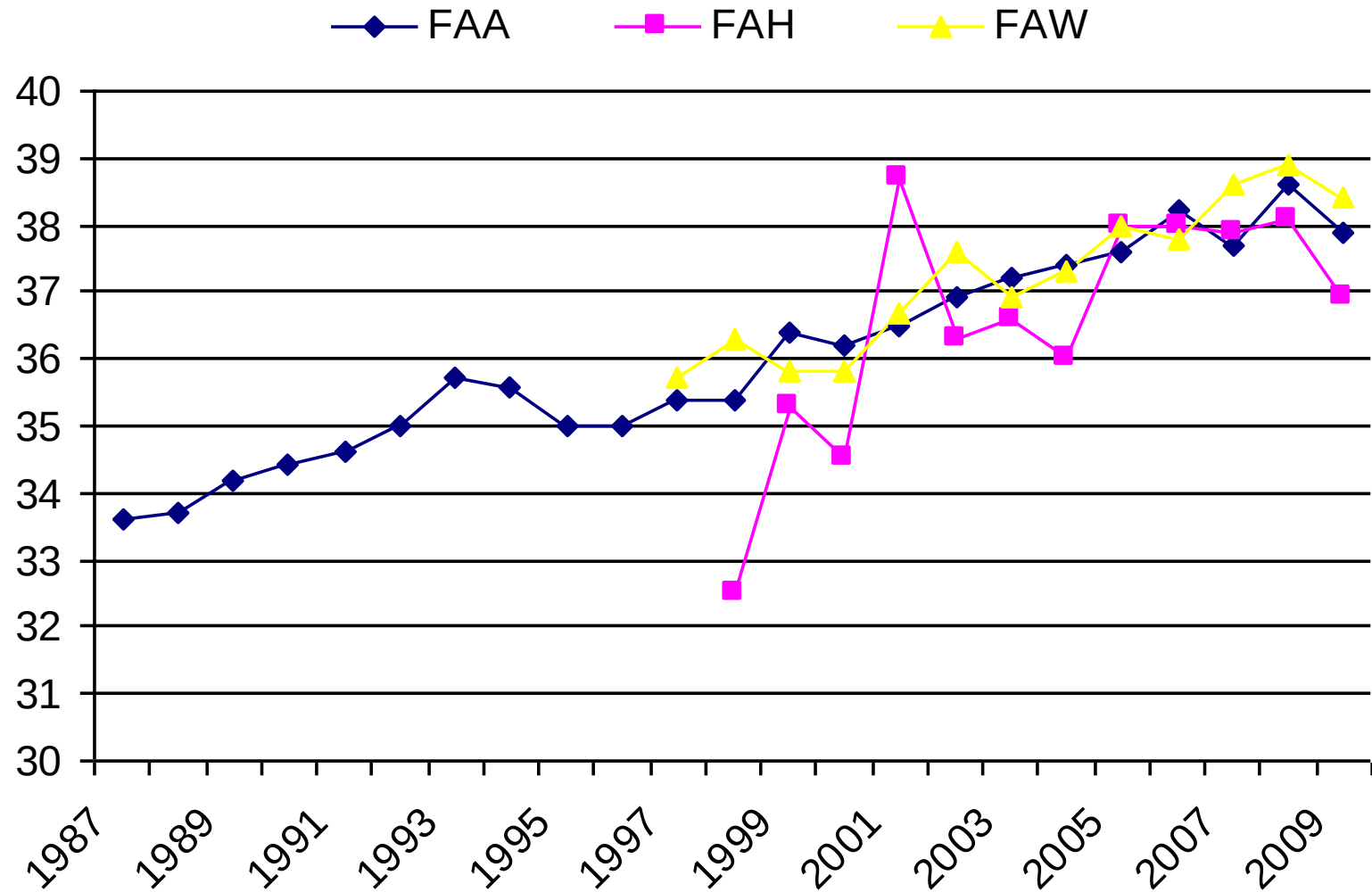
Average age at consultation

—◆— FAA private

—■— FAW all

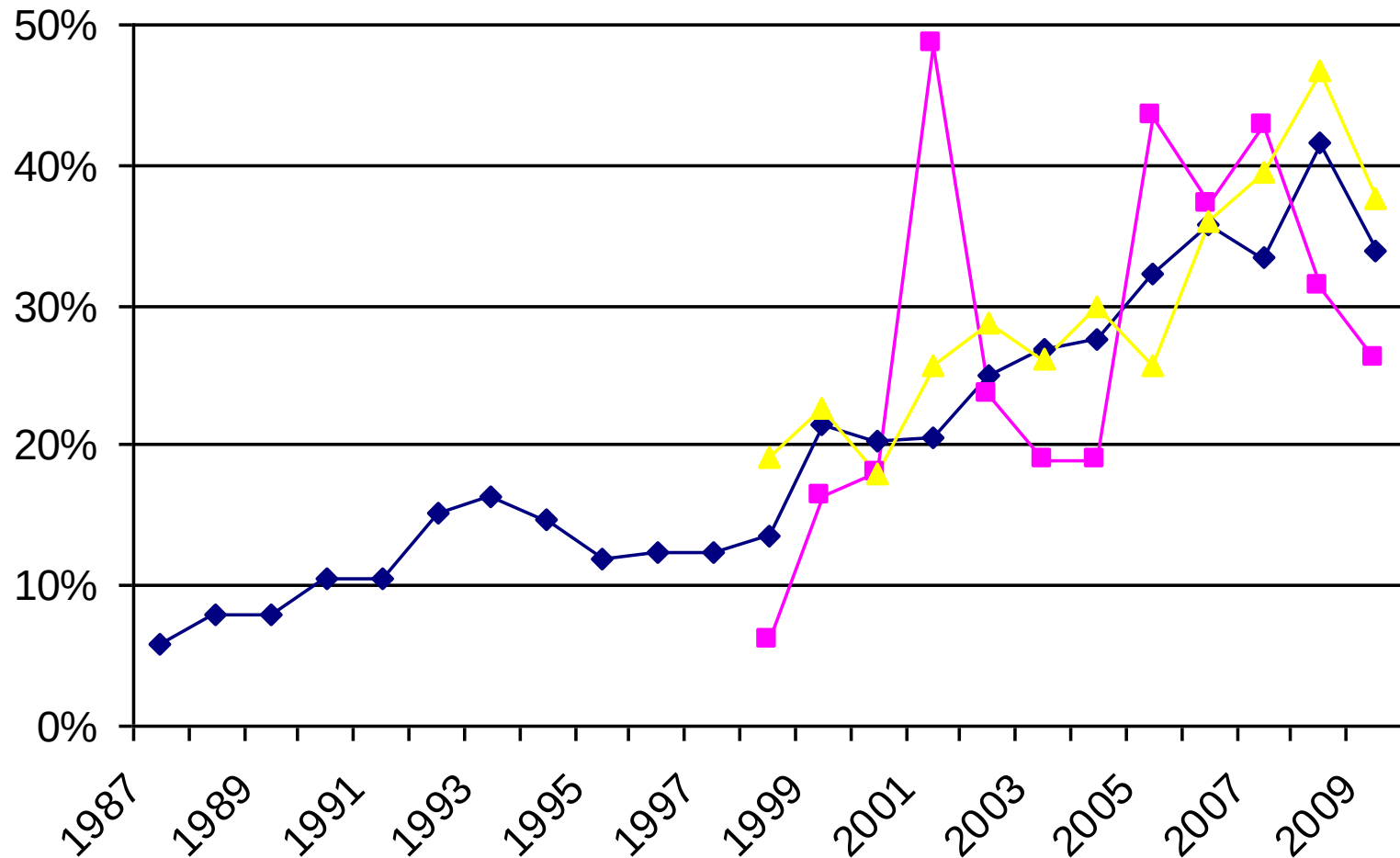


Age at starting private IVF cycle (incl DO)

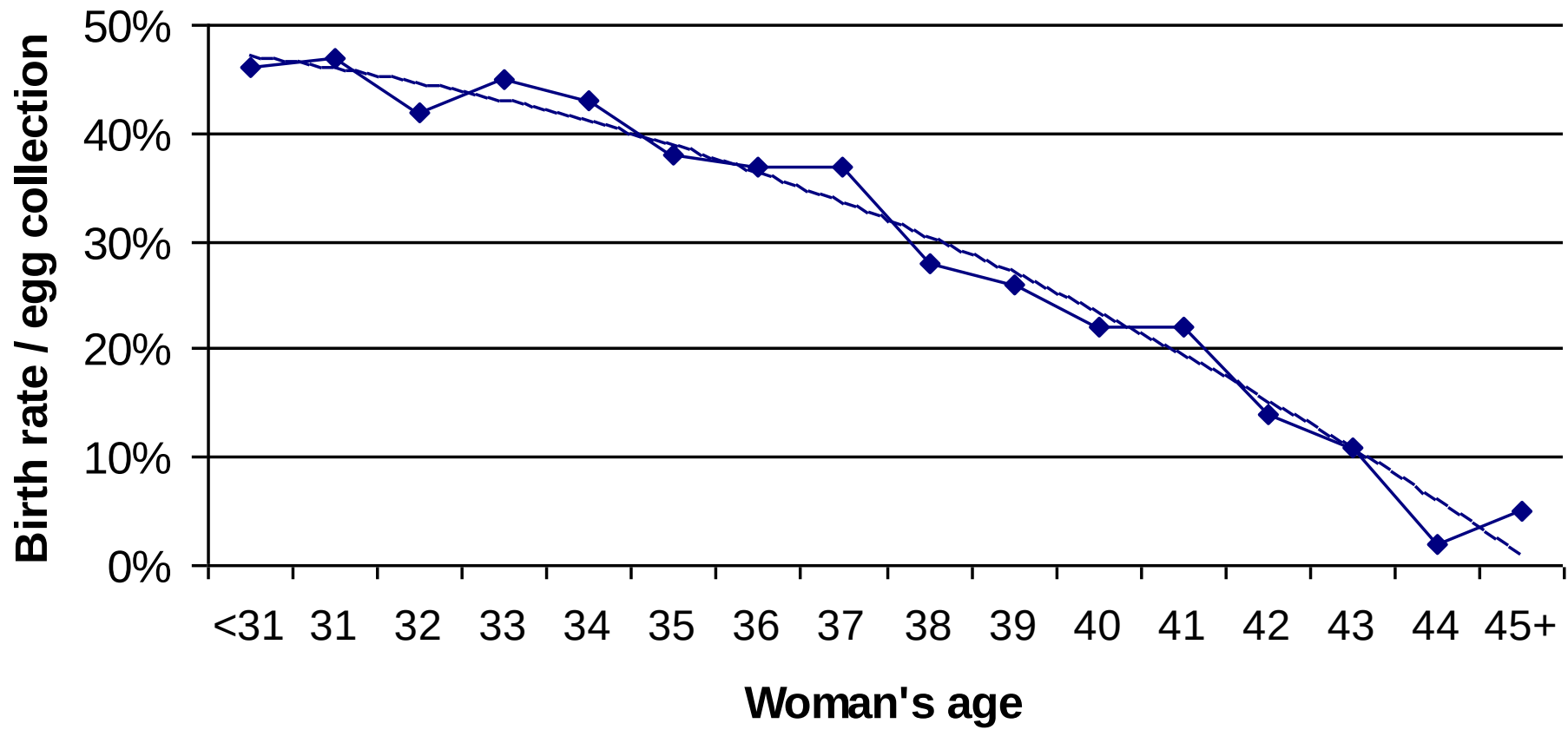


Women ≥ 40 on starting private IVF (incl DO)

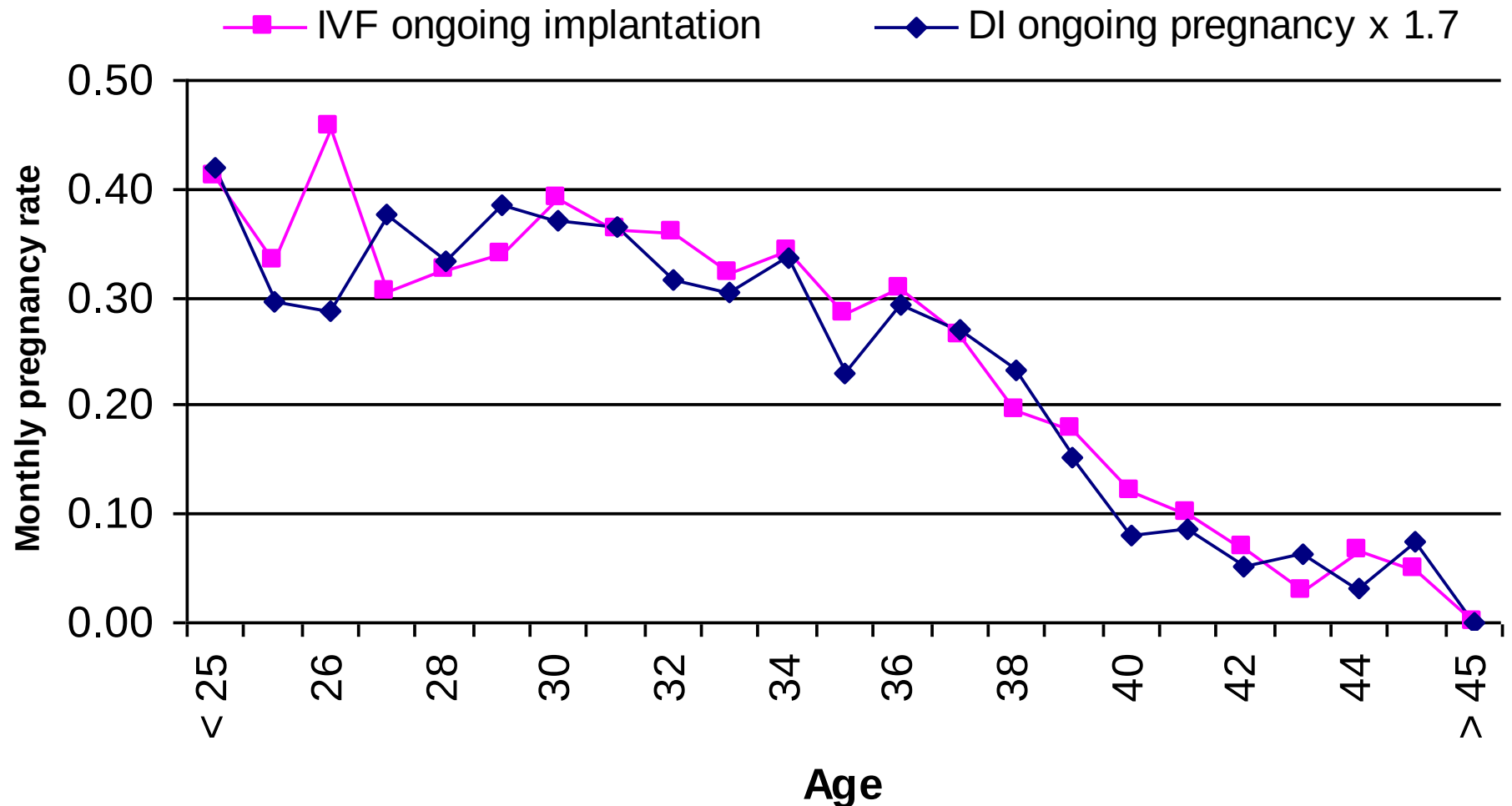
—◆— FAA —■— FAH —▲— FAW



Chance of baby, own eggs

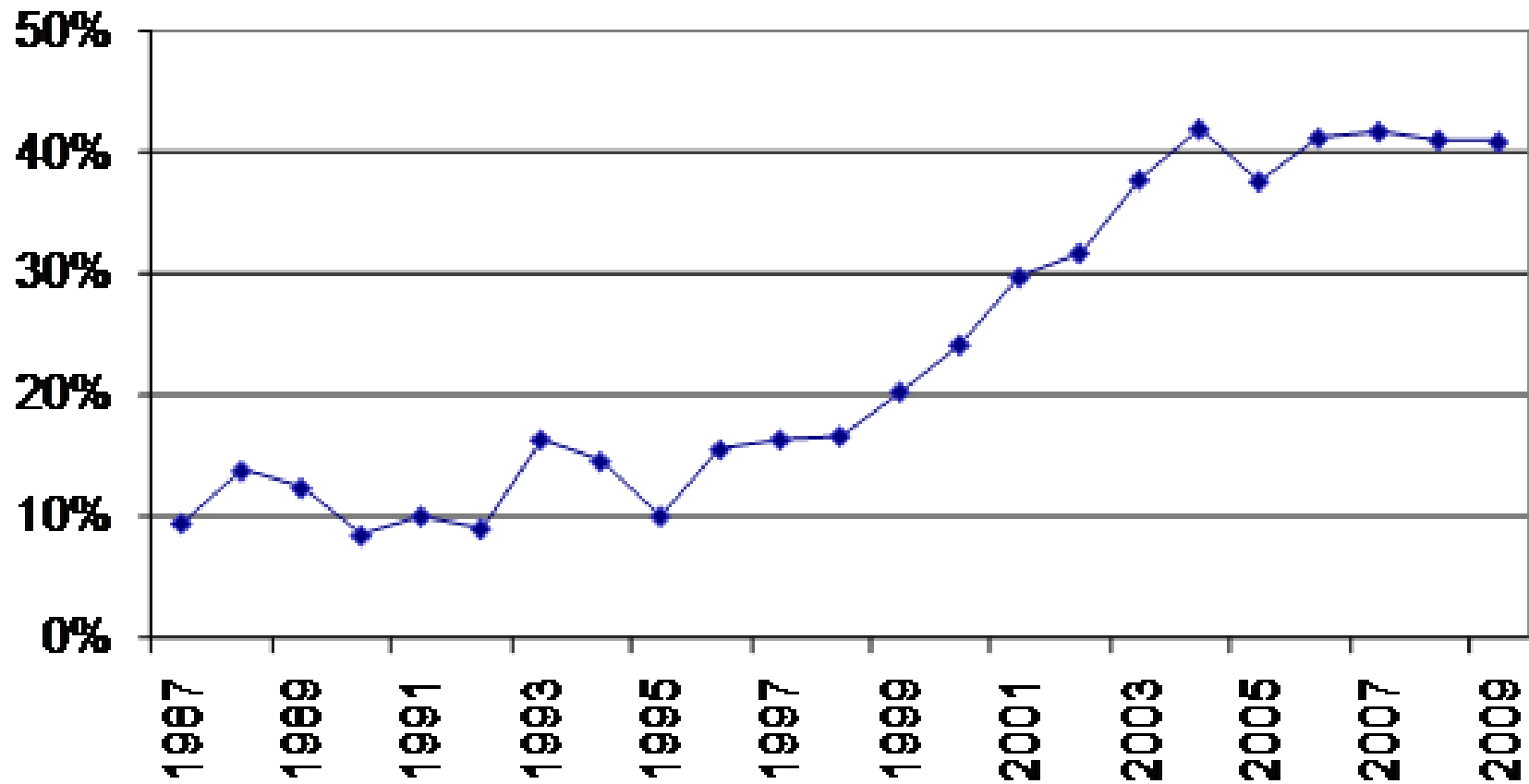


Decline in fertility with age

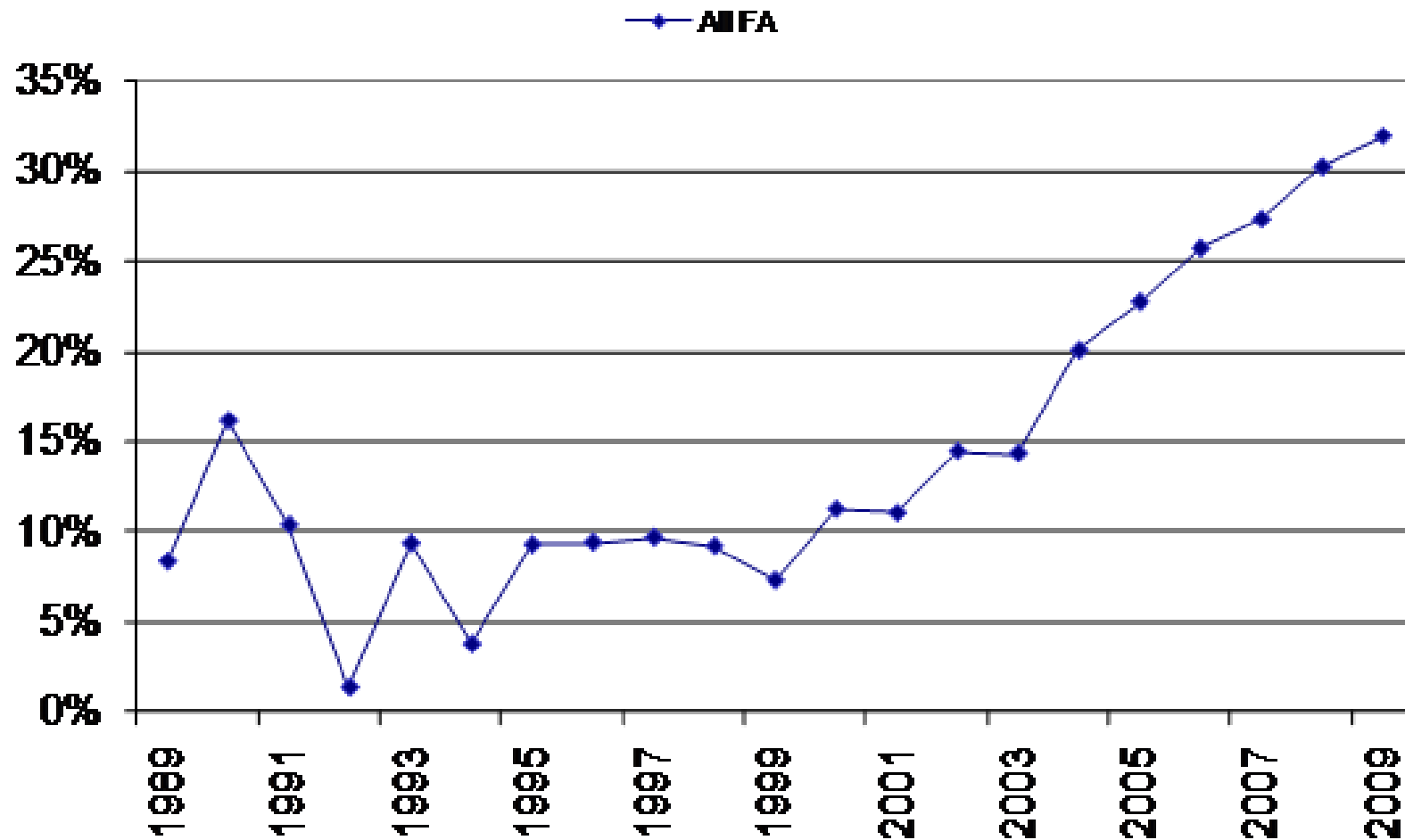


Implantation rates in women ≤ 37 per ET

—♦— All FA



Implantation rates in women ≤ 37 per TER



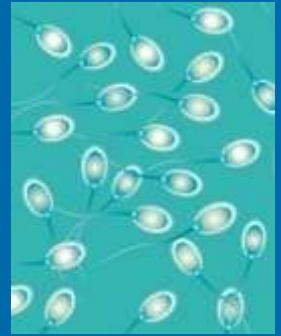
What about men?

Some Facts about Ageing, Men and Sperm



- As men age the testes get smaller and softer, sperm morphology and motility tend to decline
- DNA fragmentation increases
- IVF pregnancy rate decreases as DNA fragmentation increases
- Paternal age >50 leads to doubling the chance of fetal death
- Paternal age >40 leads to increased rate of miscarriage independent of maternal age

Some Facts about Ageing, Men and Sperm



Conception rate adjusted for female age

Years	Rate
< 25	1.00
30-34	0.62
35-39	0.50
> 40	0.51

Some Facts about Ageing, Men and Sperm



Paternal age is a robust risk factor for the incidence of:

- Schizophrenia in offspring
 - At 45+ odds ratio 3.0 = 1:46 chance (Malaspina 2001)
 - Specific for schizophrenia
- Increase in autism
 - Compared with 30 years
 - >40 3 x the risk
 - >50 5 x the risk
- Increase in achondroplasia

Some Facts about Ageing, Men and Sperm



Effect of Weight on Infertility (Nguyen 2007)

Independent of sexual frequency, age, smoking

Normal weight	:	1.0
Overweight	:	1.2
Obese	:	1.36

Effect of Temperature on Infertility (U.S.C. study)

- Infertile men spend >30 mins / week in a hot tub
- Total motile sperm increased 490% at 3-6 months after stopping

The problem is a social one
requiring a social solution

Social consequences of reproductive ageing

- Altered family relationships
- Grandparents
- Have dependents at both end of life scale
- Increased requirements for state social support

A new species?

IVF-lings...

- Girls born lighter
- Taller when compared to MPH
- There is a trend towards a lower BMI in the IVF groups
- Lower fasting triglycerides and LDL levels
- Higher HDL levels
- Trend to lower fasting insulin levels
- Trend towards higher IGF I levels



What is IVF?





What is ICSI?



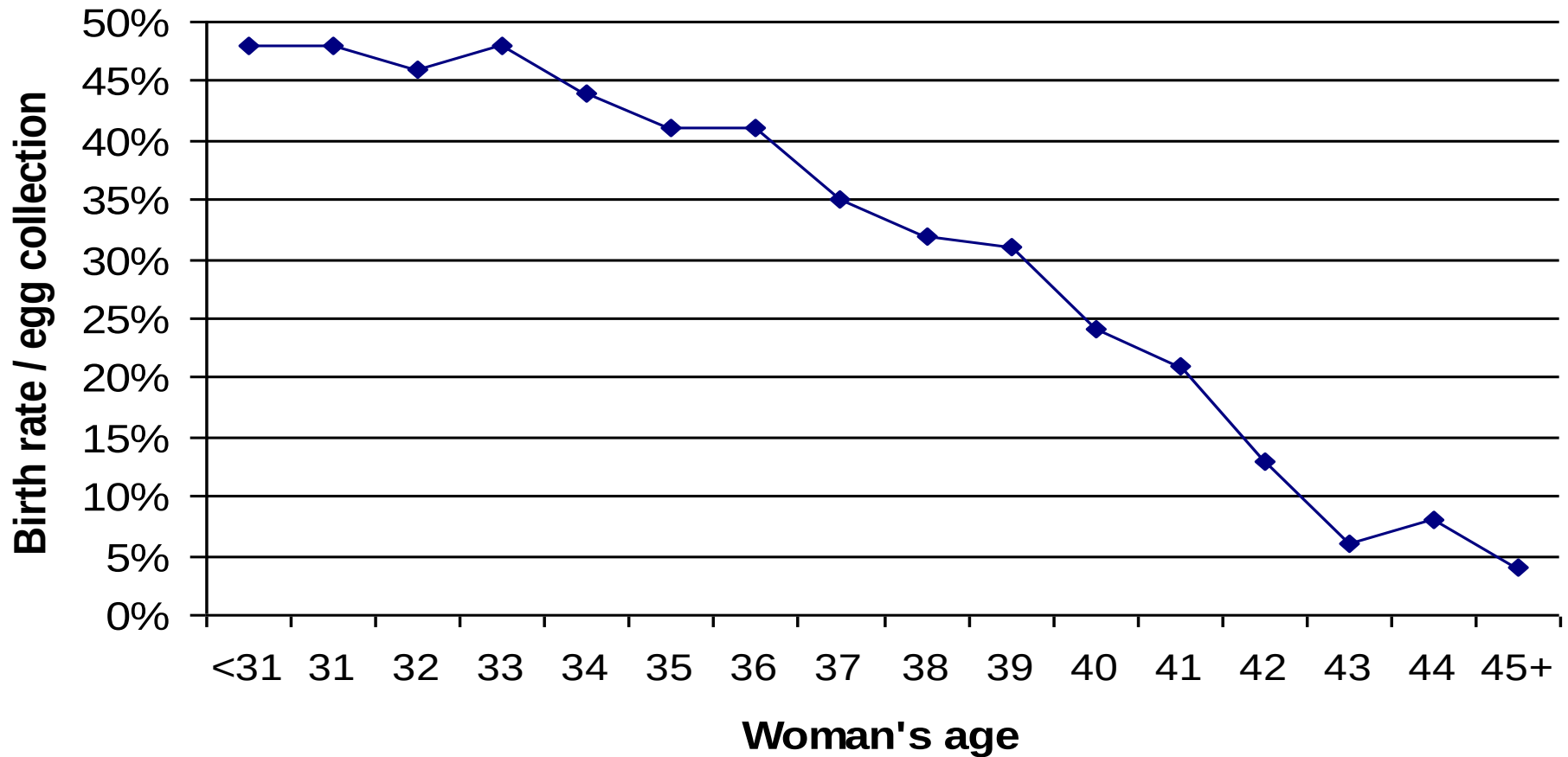
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What is PGD?



IVF success rates



Freezing things

- Embryos
- Eggs
- Sperm



Oocyte freezing – who might benefit?

- Prior to chemotherapy (not the only option)
- Prior to surgical management of endometriosis
- Mosaic Turners Syndrome
- Family history of early menopause (with early evidence)
- ‘Social’

Sperm freezing - who might benefit?

- Prior to chemotherapy
- Prior to vasectomy
- In men with family history of declining sperm counts
- 'Social'



The future



- Sex for fun
- Insemination for conception
- IVF using frozen eggs for 'insurance'

What is the legislative framework?

HART Act

Principles of the Act

- Health and wellbeing of children...important consideration
- Health, safety, and dignity of future generations ...protected
- ...Health and wellbeing of women protected
- Informed choice and informed consent
- Donor offspring...access to genetic origins
- Needs and values of Maori
- Different ethical, spiritual, cultural perspectives...respect

HART Act (2004)

Prohibitions (ii)

- Embryos beyond 14 days
- Gametes or embryos stored beyond 10 years
- Sex selection (defence)
- Obtaining gametes from minors (defence)
- Commercial supply
- Surrogacy agreement not enforceable

HART Act (2004)

Prohibitions (i)

- Cloning for reproductive purposes
- Hybrids
- Human / animal implantation
- Genetic modification
- Derived from embryo or fetus

HART Act (2004)

- ACART
- ECART

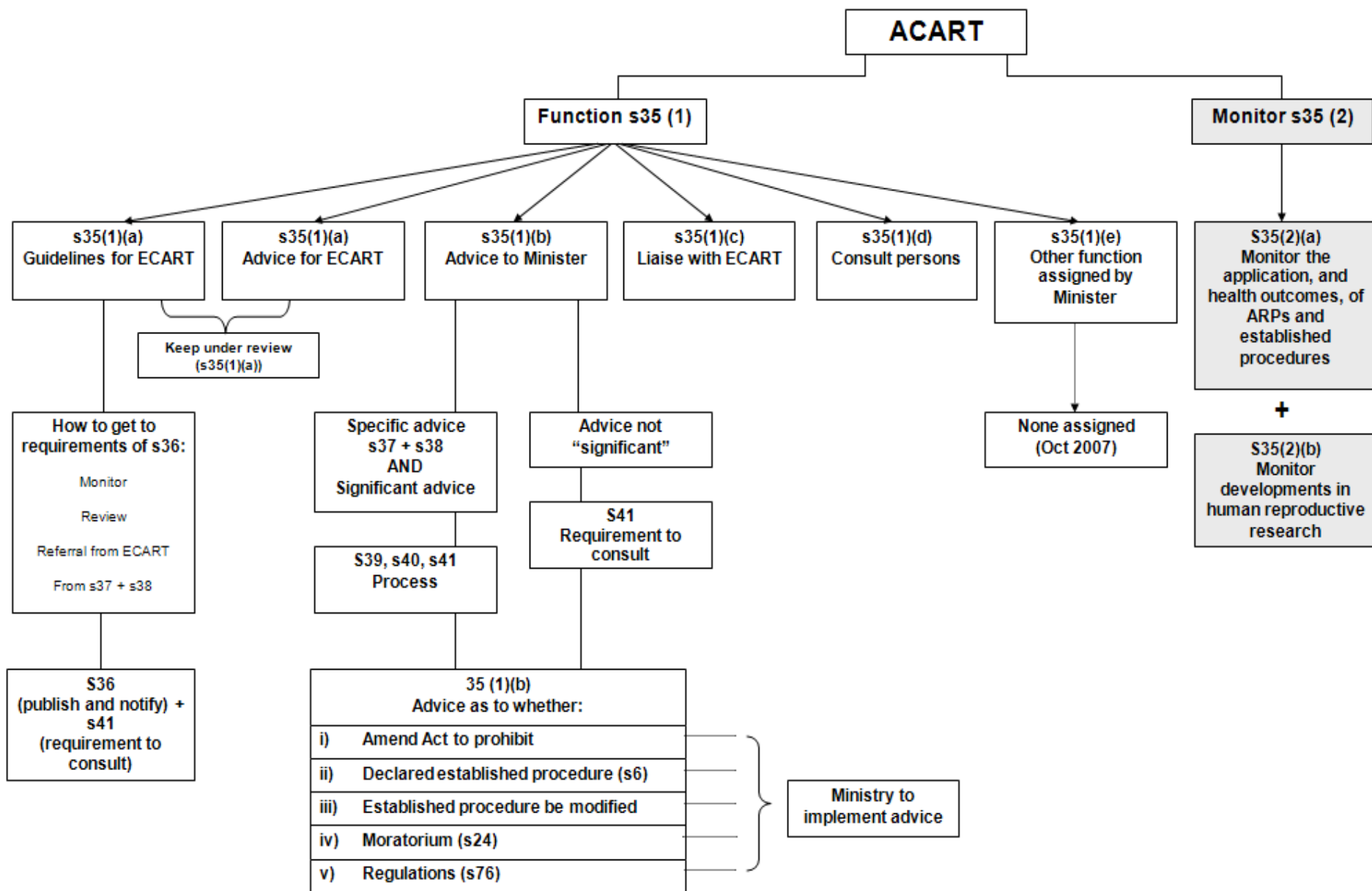
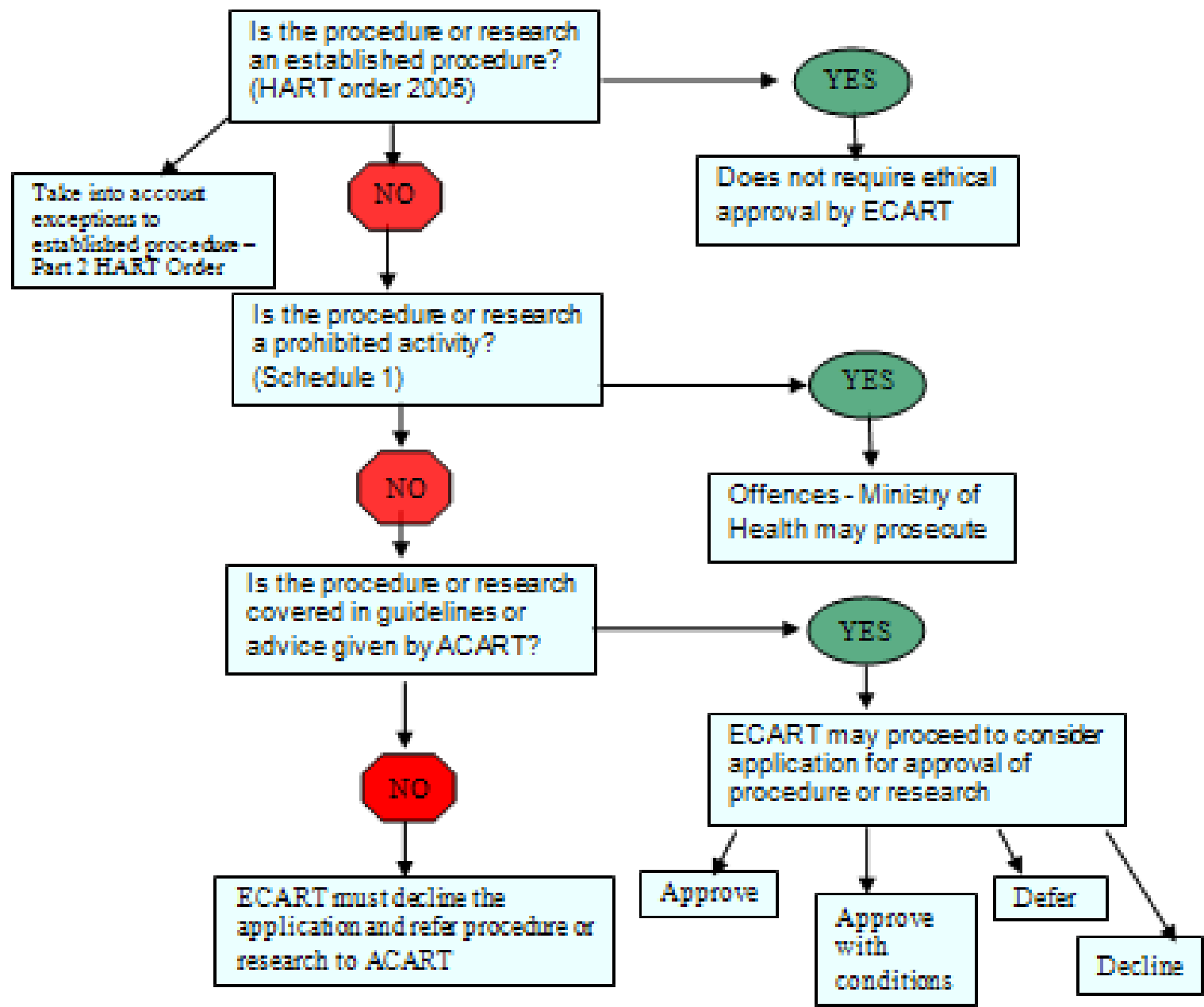


Figure 1 – Process for ECART in determining approvals for procedures or research



HART Act (2004)

ECART

- A.R.P.
 - Donation between certain family members
 - Surrogacy
 - Embryo donation
 - Research

NOTE: No specific ethical advice role

HART Act (2004)

ECART review by application all ARP's

- Prohibitions (ii) sex selection, commercial supply
- Travel

HART Act (2004)

Who does it protect?

From what?

Current best example is donor eggs

Does the ECART process really offer additional value?

HART Act (2004)

Future Issues

- Import / export
- Research on embryos
- Disposal of embryos / extended storage
- Age of recipients
- Replacement of frozen / thawed ovarian tissue

Thanks