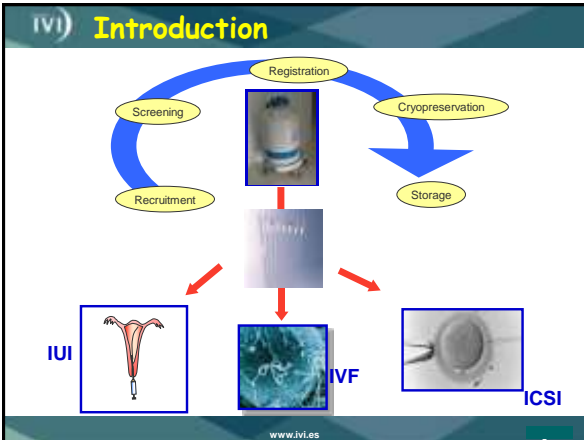


Assisted reproduction using donor sperm bank

Dr. Alberto Pacheco Andrology Laboratory
IVI Madrid



IVI Introduction

Country	By IVI	Programs (%)	Programs (N)	Beginners	o	Non-o	o	Beginners
Belgium	10	100	10	10	100	0	10	10
Denmark	100	100	100	100	100	0	100	100
France	100	100	100	100	100	0	100	100
Germany	100	100	100	100	100	0	100	100
Italy	100	100	100	100	100	0	100	100
Spain	100	100	100	100	100	0	100	100
UK	100	100	100	100	100	0	100	100
USA	100	100	100	100	100	0	100	100
Sweden	100	100	100	100	100	0	100	100
Switzerland	100	100	100	100	100	0	100	100
Spain (IVI)	100	100	100	100	100	0	100	100
Spain (Total)	100	100	100	100	100	0	100	100
Mean pregnancy rate								21,27%

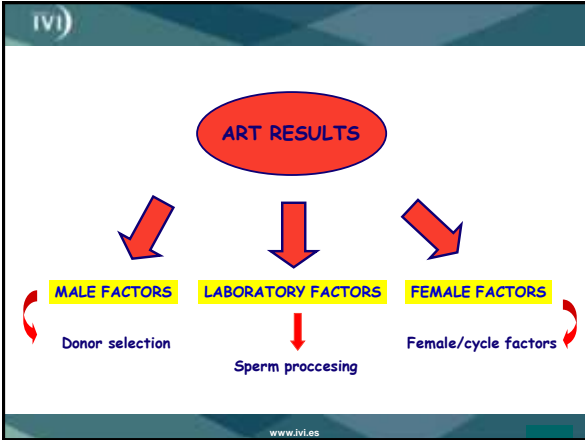
Andersen AM, 2009

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IVI) **Introduction**

Which factors could influence pregnancy rates ?

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IVI) **IVI experience (1998-2009)**

Retrospective study of treatments using donor sperm bank in all the IVI centers

	DONOR IUI	DONOR IVF
Number of treatments	7122	5140
Number of patients	3137	3771
Mean number of cycles	2.27	1.36
Mean Age	34.26	38.68

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IVI) Overall success rates

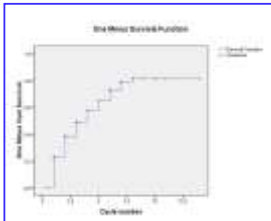
IUI		IVF	
Number of patients	3137	Number of patients	3771
Number of treatments	7122	Number of treatments	5140
Mean number of cycles	2,27	Mean number of cycles	1,36
Pregnancy rate per cycle	26,8 %	Pregnancy rate per cycle	51,30 %
Delivery rate per cycle	20,4 %	Delivery rate per cycle	49,6 %
Multiple pregnancy rate	12,9 %	Multiple pregnancy rate	28,3 %
Miscarriage rate	23,9 %	Miscarriage rate	29 %
Ectopic pregnancy rate	0,2 %	Ectopic pregnancy rate	1,5 %

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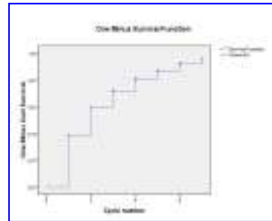
IVI) Cumulative Livebirth rates

✓ The cumulative live birth rate gives information about the chances of achieving a live birth after a given number of cycles.

Donor IUI



Donor IVF



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IVI)

MALE FACTORS

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IV) Male factor

- ✓ Strict donor selection ensures all the donor fresh semen samples are normozoospermic
- ✓ But freezing/thawing techniques and other procedures affect post thaw seminal characteristics

↓

**Do new seminal characteristics have impact on pregnancy rates?
Are they present in all the semen Banks?**

Study of semen quality and pregnancy rate after artificial insemination and IVF with donor sperm. Does it influence the selection of the bank?

Medical Service, Hospital Ramón y Cajal, Instituto de Diagnóstico y Referencia Epidemiológica, Servicio de Hematología, Hospital Universitario de La Latina, University of Madrid

Parameter	Group 1	Group 2	Group 3
Volume (ml)	2.5	2.2	2.1
Concentration (mill/ml)	75	70	68
Total motile sperm (mill)	18750	15400	14280
Recovery of motile sperm after thawing (mill)	3125	2870	2742

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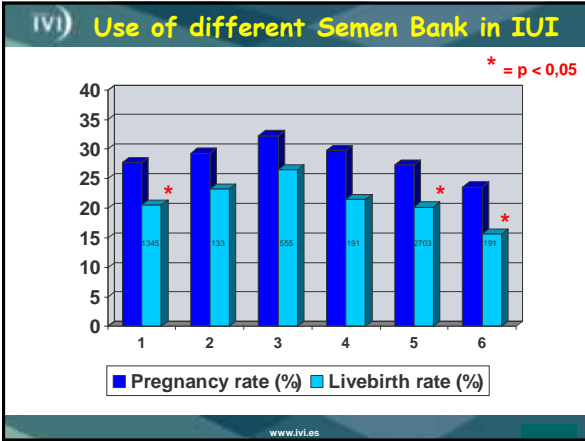
IV) Donor sperm selection criteria

SEMINAL CHARACTERISTICS REQUIRED FOR DONOR SELECTION

- Volume: > 2 ml
- % Motile spermatozoa: > 50 % A+B
- Concentration: > 70 mill/ml
- Total motile sperm: > 80 mill
- Recovery of motile sperm after thawing: > 30 mill

And... similar freezing/thawing protocol
similar semen processing protocol

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IVI

LABORATORY FACTORS

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IVI **Effect of sperm freezing/thawing process**

Different laboratory factors can influence pregnancy rates:

- ✓ Freezing/Thawing process
- ✓ Sperm selection procedures (gradient, swim up)
- ✓ Sperm characteristics after capacitation

Predictors of success with the use of donor sperm
 E. Nieschlag, MD, and Jennifer Adewole, MD
Gynecology, etc. (Am. J. Obstet. Gynecol. 2001;185:333-37)

Comparison of Semen Characteristics and Pregnancy Rates Using Washed Versus Unwashed Donor Sperm for Intrauterine Insemination (IUI)
 G. W. Barlow, C., J. Clark, A. N. Page, and R. E. Hooper

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IVI **Donor sperm characteristics**

Computer-Assisted Sperm Analysis (CASA) parameters and their evolution during preparation as predictors of pregnancy in intrauterine insemination with frozen-thawed donor semen cycles

Thomas Fréour¹, Miquel Jean, Sophie Minié, Sophie Dubouché, Paul Barré

Table 1
 Mean values and SD for sperm parameters after preparation with various methods in the pre-pregnancy and pregnancy periods (mean values are expressed as mean and standard deviation only)

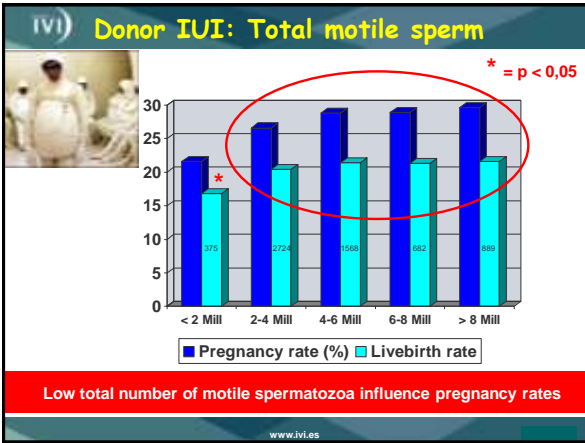
Parameter	Non-pregnant (N=151)		Pregnant (N=132)	
	Mean	SD	Mean	SD
SW (µm)	18.75	4.00	18.85	4.00
SW (µm)	10.5	4.00	10.5	4.00
SW (µm)	10.5	4.00	10.5	4.00
Amplitude of lateral head displacement (ALH) (%)	1.42	0.28	1.42	0.28
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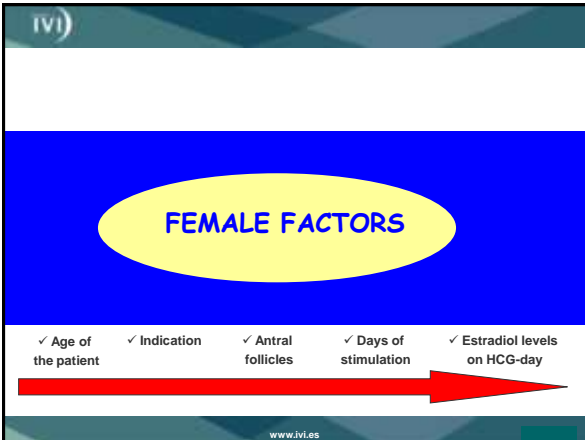
Figure 1

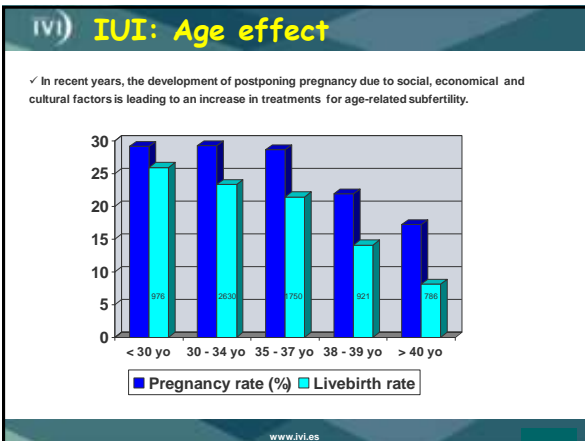
- ✓ N = 168 IUI cycles in 132 couples with NOA
- ✓ Pregnancy rate: 18.4%, after 2,5 IUI cycles on average
- ✓ Significant differences in Amplitude of lateral head displacement (ALH) between pregnant and non-pregnant cycles

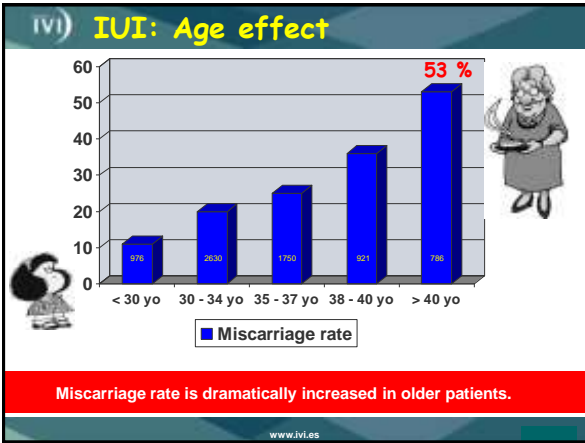
Fréour T et al. (2010)

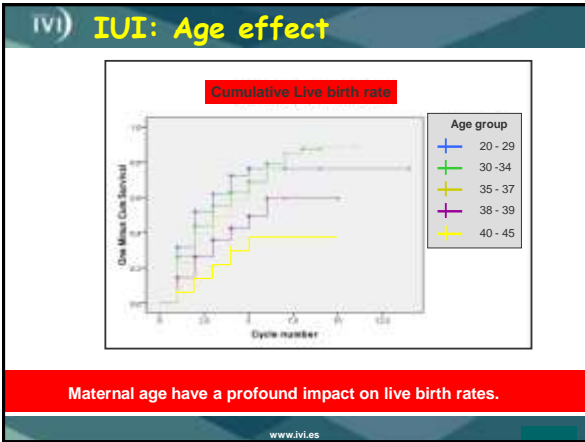
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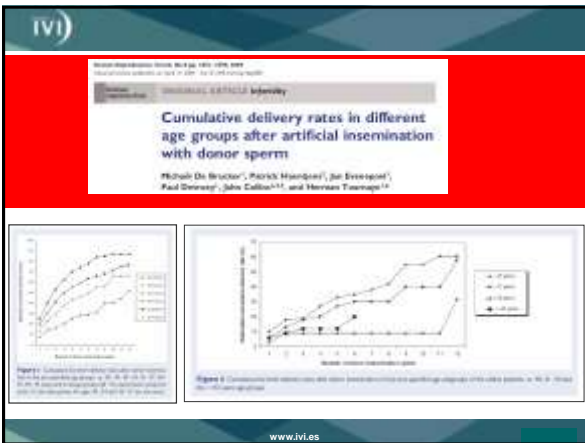




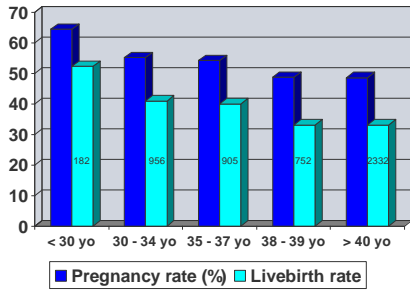






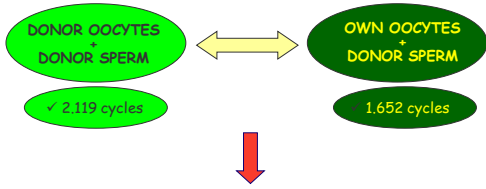


IVF) IVF: Effect of age



IVF)

DONOR IVF CYCLES



The analysis of these different treatments could give information about the real semen and oocyte effects

IVF)

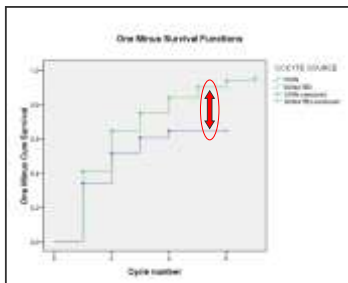
Cumulative Livebirth rate

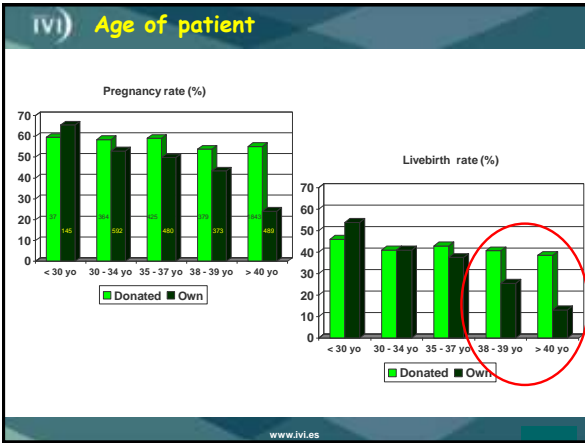
Own oocytes

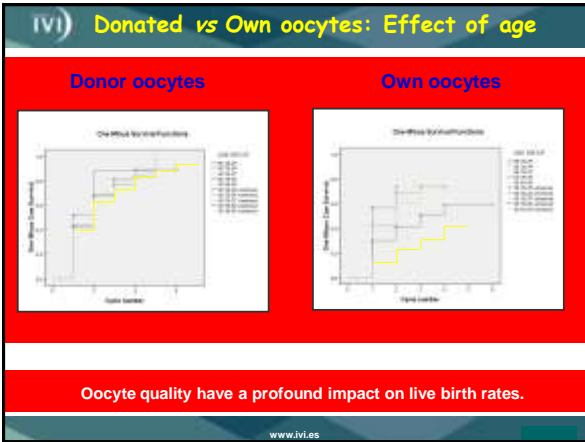
- ✓ 1652 cycles
- ✓ 50,4 % PR
- ✓ 40,0 % LbR

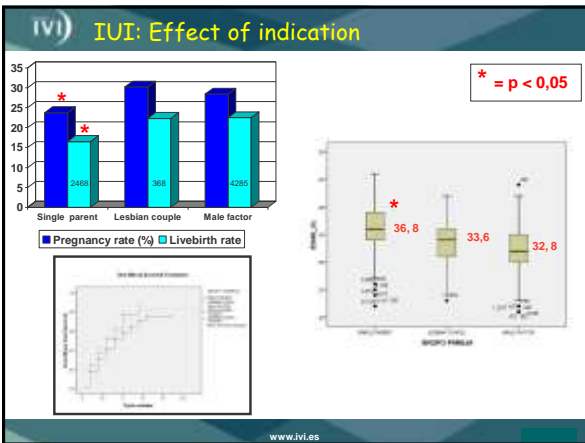
Donor oocytes

- ✓ 2119 cycles
- ✓ 71,3 % PR
- ✓ 57,1 % LbR

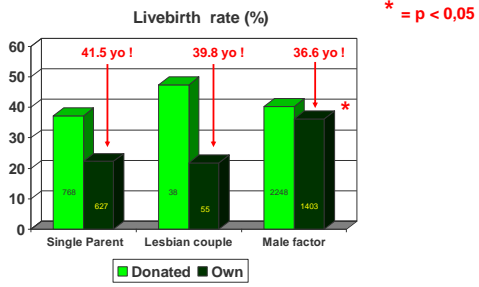








IVI) IVF: Effect of indication



Indication, by itself, is not an influence factor for pregnancy rates

IVI) IUI: Effect of age and indication

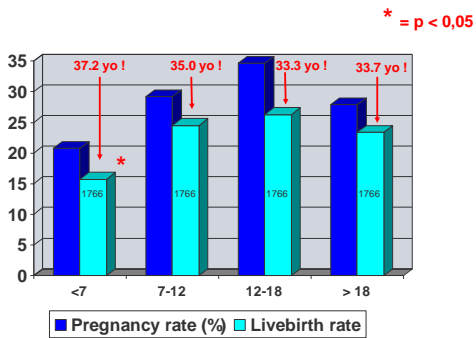
Extracorporeal donor insemination in single women and lesbian couples: a comparative study of pregnancy rates
 Editorial: B. Bal et al. and J. J. Rodriguez et al.

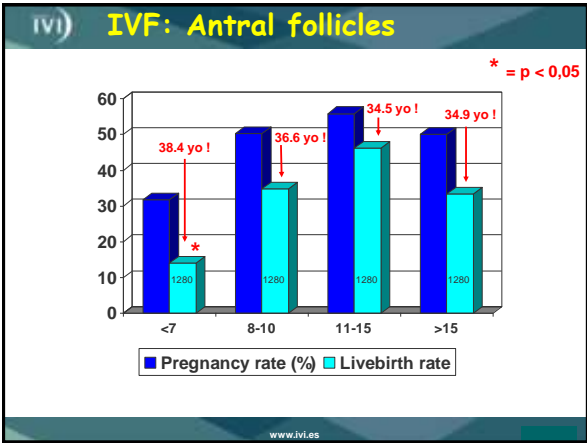
Table III. Pregnancy rate with respect to age in single and lesbian women

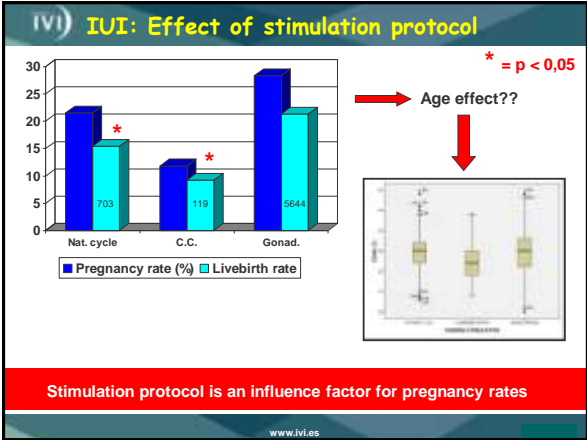
Age (years)	Single women		Lesbian women	
	No. pregnancies	No. cycles	No. pregnancies	No. cycles
<35	7	44	12*	36
35-40	27	236	14	76
≥40	9	239	4	17

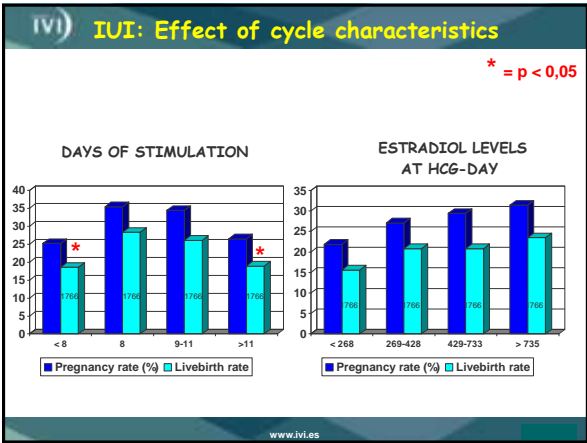
* = 0.05 (not significant)

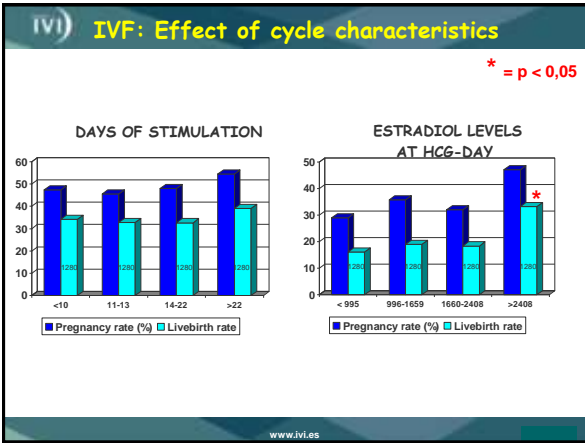
IVI) IUI: Antral follicles











IVI) Conclusions

To obtain good results in treatments with semen bank, your "perfect team" is:

- ✓ Total number of motile sperm inseminated > 2 mill
- ✓ Maternal age < 37
- ✓ Adequate ovarian response
- ✓ Stimulation protocol with FSH

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IVI) IVI collaborations

IVI Madrid

IVI Valencia
Dr. Nicolás Garrido

IVI Bilbao
Dra. Carmen Anarte

IVI Sevilla
Dra. Cristina González

IVI Lisboa
Dr. Susana Alves

IVI Murcia
Dr. Juan Carlos Martínez

IVI Vigo
Dra. Dina Pabón

IVI Barcelona
Dr. David Amorós

IVI Almería
Dra. Inmaculada Campos

IVI Alicante
Dra. Elena Sellés

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Thank you !!

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