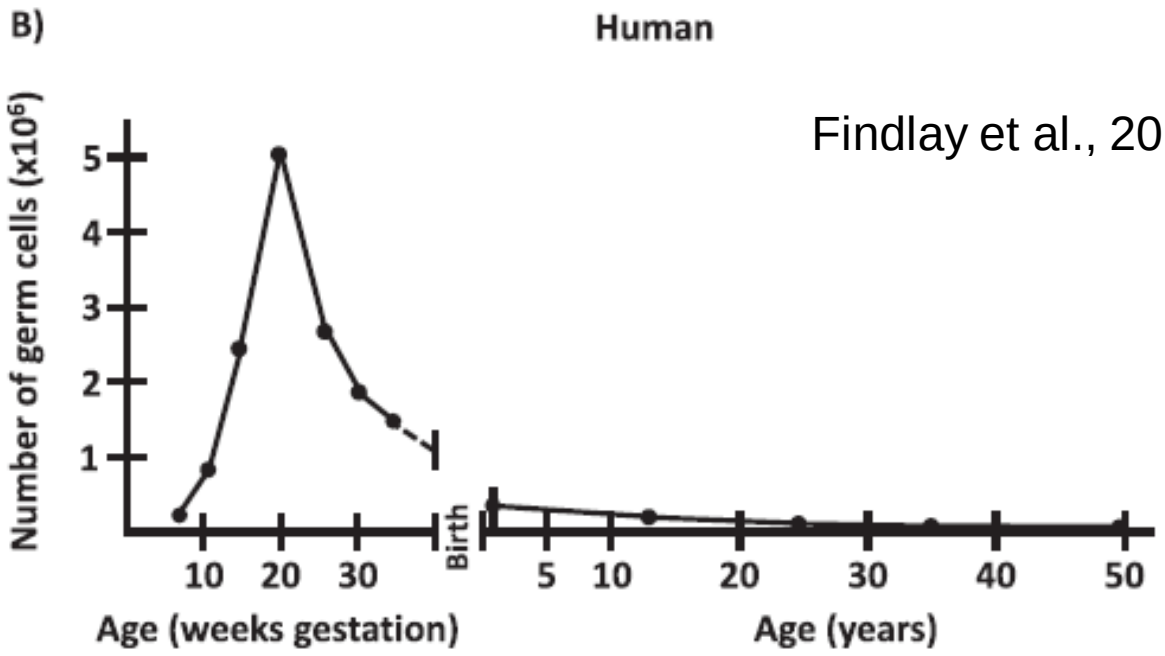
Fertility Preservation in 2021

Winifred Mak MD PhD
Associate Professor
Reproductive Endocrinology and Infertility

The University of Texas at Austin
Dell Medical School

Women are born with a finite number of eggs



Findlay et al., 2015

At birth 1-2 million, at puberty 300,000-500,000
37 yrs old 25, 000, 51 yrs old 1000 oocytes

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Pre-treatment fertility counseling and fertility preservation improve quality of life in reproductive age women with cancer

Joseph M Letourneau, MD[1], **Erin E Ebbel**[1], **Patricia P Katz, PhD**[2], **Audra Katz, RN**[1], **Wei Z Ai, MD**[2], **A Jo Chien, MD**[2], **Michelle E Melisko, MD**[2], **Marcelle I Cedars, MD**[1], and **Mitchell P Rosen, MD**[1]

[1]Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco School of Medicine, USA, 94143

[2]Department of Medicine, University of California San Francisco School of Medicine, USA, 94143

- Retrospective survey of 1041 women from cancer registry using standardized questionnaire for regret and quality of life.
- Pretreatment infertility counselling by fertility specialist and oncologist significantly lower regret than by oncologist alone (8.4 vs 11.0, $p<0.0001$).
- Going through with fertility preservation even lower regret scores than counselling with oncologist alone (6.6 vs 11, $p<0.0001$).

Fertility preservation in women with cancer: a national study about French oncologists awareness, experience, and feelings

Amira Sallem [1,2] · Joanna Shore [3] · Isabelle Ray-Coquard [4] · Lucile Ferreux [1] · Mathilde Bourdon [5,6] · Chloé Maignien [5] · Catherine Patrat [1,2] · Jean-Philippe Wolf [1,2] · Khaled Pocate-Cheriet [1,6,7]

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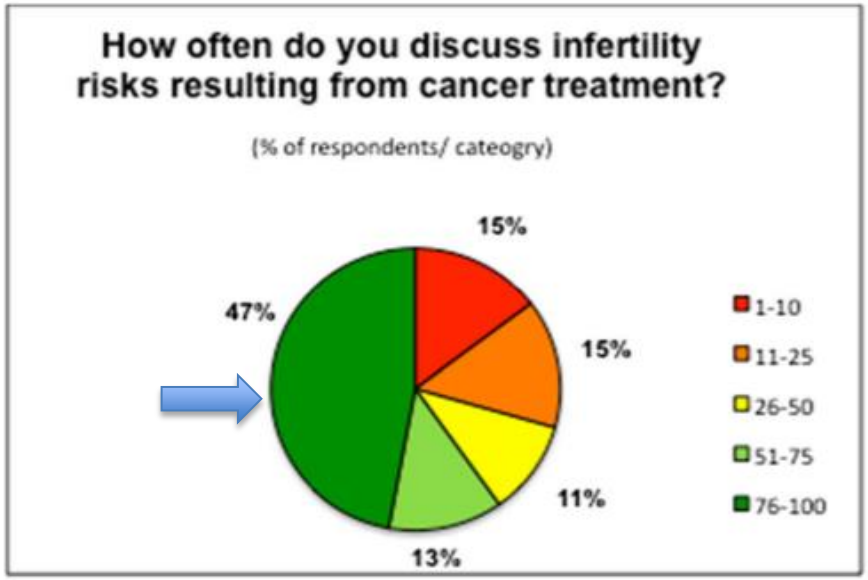
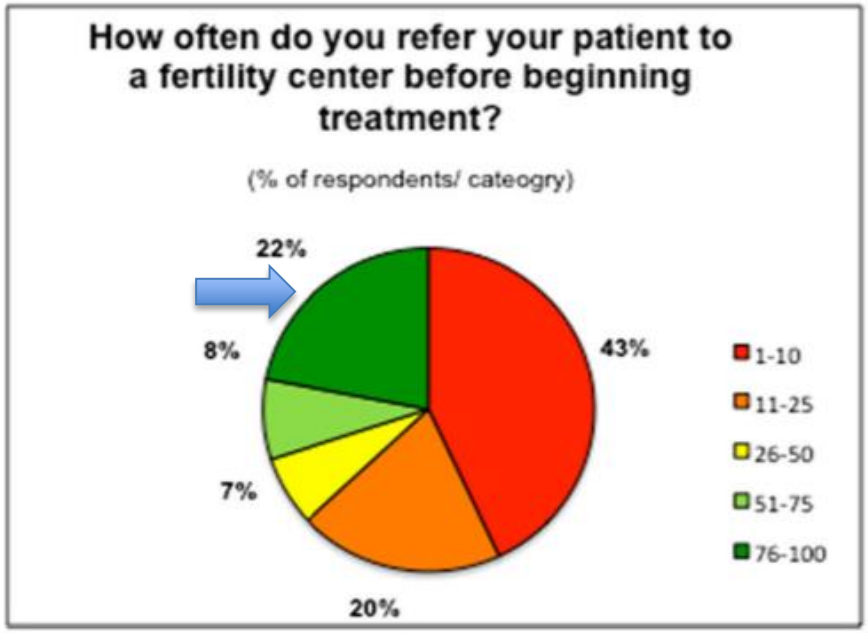
1161 oncologist sent survey
102 responses May 2012- Jan 2013





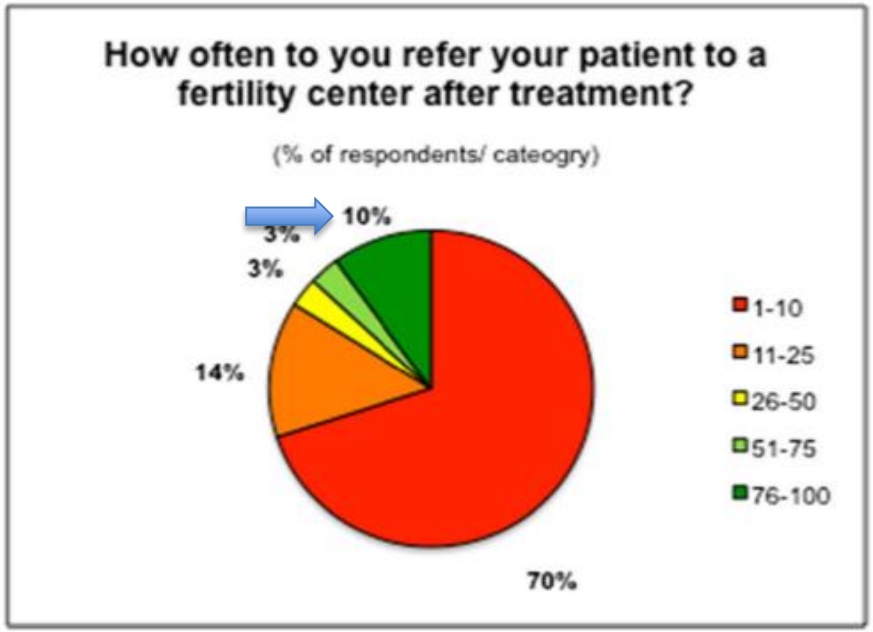


Fig. 1 Percentage of physicians who discuss infertility and refer their patients to fertility centers (from the group discussing rarely if at all (dark red, 1–10% of cases seen) to the group regularly discussing infertility (dark green, 75–100% cases)

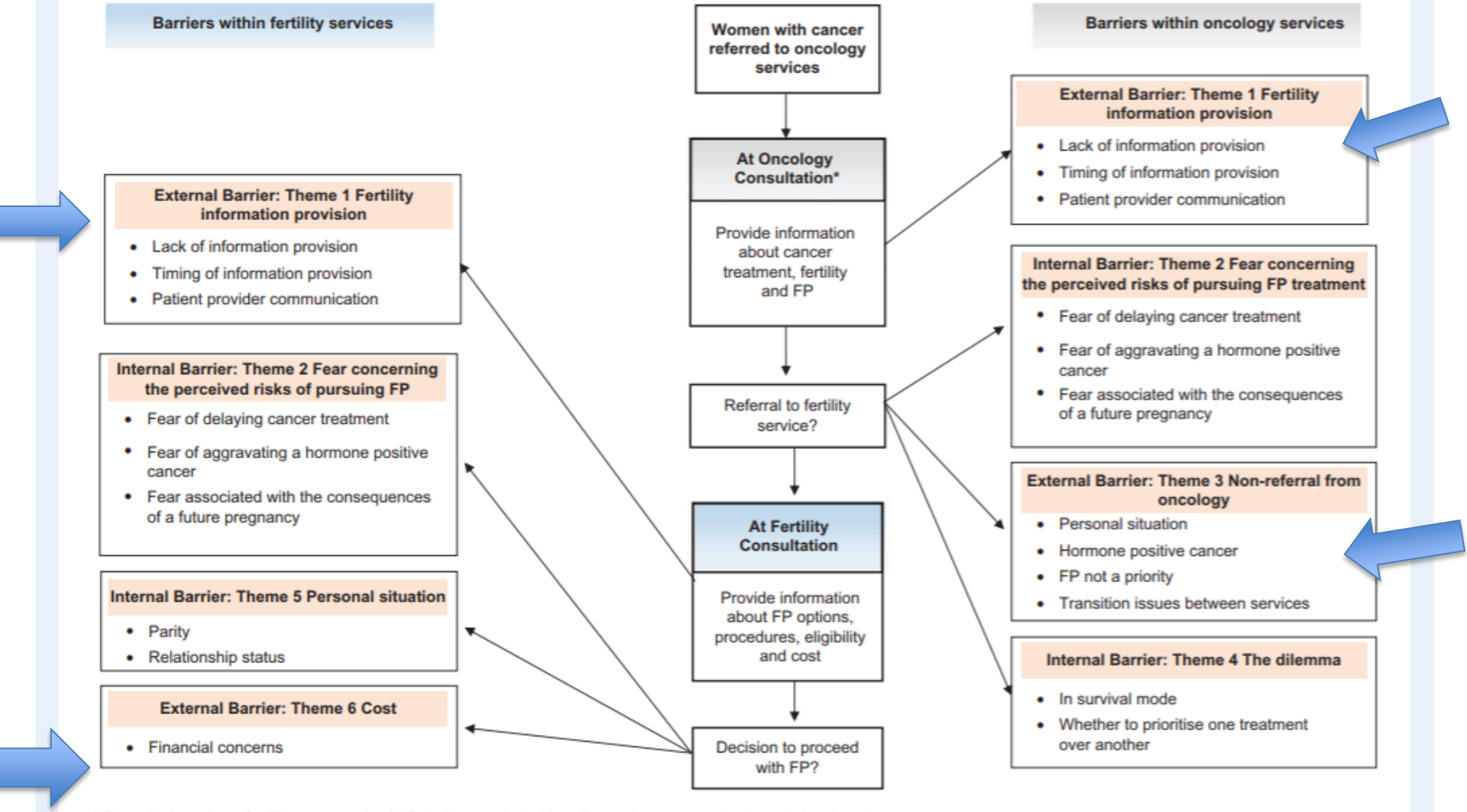
Human Reproduction Update, Vol.23, No.4 pp. 433–457, 2017
Advanced Access publication on May 16, 2017 doi:10.1093/humupd/dmx009

human reproduction update

What factors hinder the decision-making process for women with cancer and contemplating fertility preservation treatment?

Georgina Jones[1,*], Jane Hughes[1], Neda Mahmoodi[1], Emily Smith[2], Jonathan Skull[3], and William Ledger[4]

[1]Department of Psychology, School of Social Sciences, Leeds Beckett University, Leeds LS1 3HE, UK [2]Medical School, University of Sheffield, Beech Hill Road, Sheffield S10 2RX, UK [3]Jessop Wing, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield S10 2JF, UK [4]University of New South Wales, Sydney NSW 2052, Australia



* Consultation where fertility preservation is first discussed at either diagnosis or cancer treatment planning stage

ARTICLE

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Marcia C. …
Joseph D… al[c],
Martha D…

[a] Department … of Haifa, Haifa, Israel; [c] Stanfo… ; [d] Shady Grove Fertility, Rock… of Obstetrics and Gynecology, IV… ndocrinology-IVF, Department of … on, Haifa, Israel; [h] Yale Fertility

Table 4 Medical egg freezing (MEF): women's funding strategies.

Country	Funding strategy	No. of women utilizing (%)[a]
USA	IVF clinic compassionate care discount	15 (45)
	Pharmacy medication discount/ donation	14 (42)
	Personal salary or savings	11 (33)
	Parents paid	8 (24)
	Partial insurance coverage	8 (24)
	Family/community fundraiser	5 (15)
	Full insurance coverage	4 (12)
	Cancer charity contribution	4 (12)
	Monthly payment plan	4 (12)
	Medications donated by other patients	3 (9)
	Bank loan	2 (6)
	Family loan	2 (6)
	Friend loan	1 (3)
	Family donation	1 (3)
	Medicaid coverage	1 (3)
	Military coverage for impaired veteran	1 (3)
	Professional courtesy for medical student	1 (3)
	Credit card payment	1 (3)
	Clinical trial participation	1 (3)
Israel	Free	10 (83)
	Paid for specialist visit, but MEF free	2 (17)

IVF, in-vitro fertilization.
[a] Many American women used multiple strategies, so percentage total > 100.

ASCO guidelines 2018

- Address infertility as early as possible BEFORE treatment starts
- Should refer who express an interest in fertility preservation or ambivalent to reproductive specialists
- Discussion early reduces distress and improves quality of life

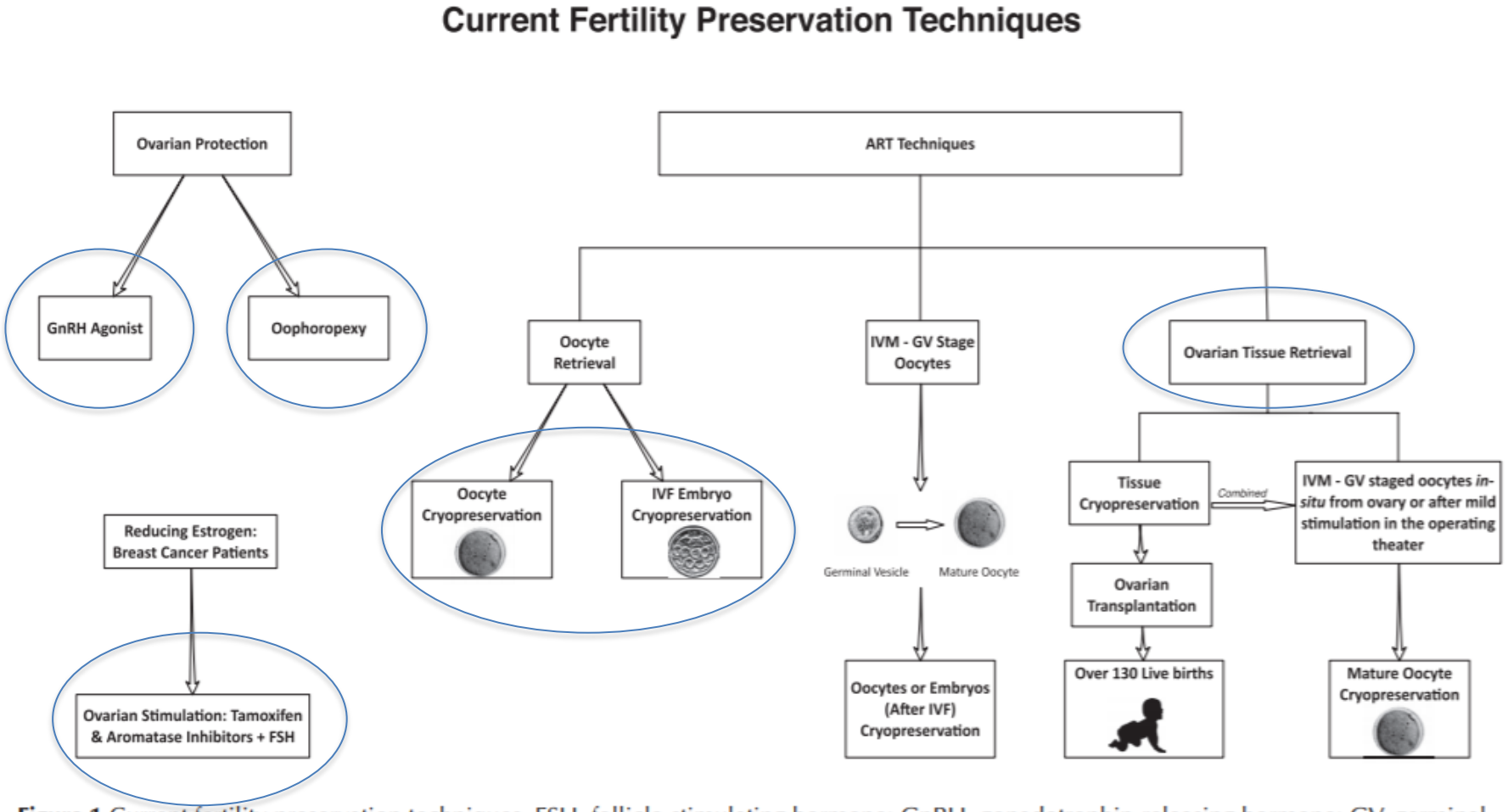


Figure 1 Current fertility preservation techniques. FSH, follicle-stimulating hormone; GnRH, gonadotrophin-releasing hormone; GV, germinal vesicle; IVF, *in vitro* fertilization; IVM, *in vitro* maturation.

Fisch et al., 2018

ASCO Updated recommendation

- Ovarian suppression should not be used in place of proven fertility preservation methods
- Ovarian tissue cryopreservation and transplantation:
  - only method available for children.
  - Need more data on safety for patients with leukemia
  - Non-experimental outside USA. Experimental in USA.

American Society of Reproductive Medicine (2019)

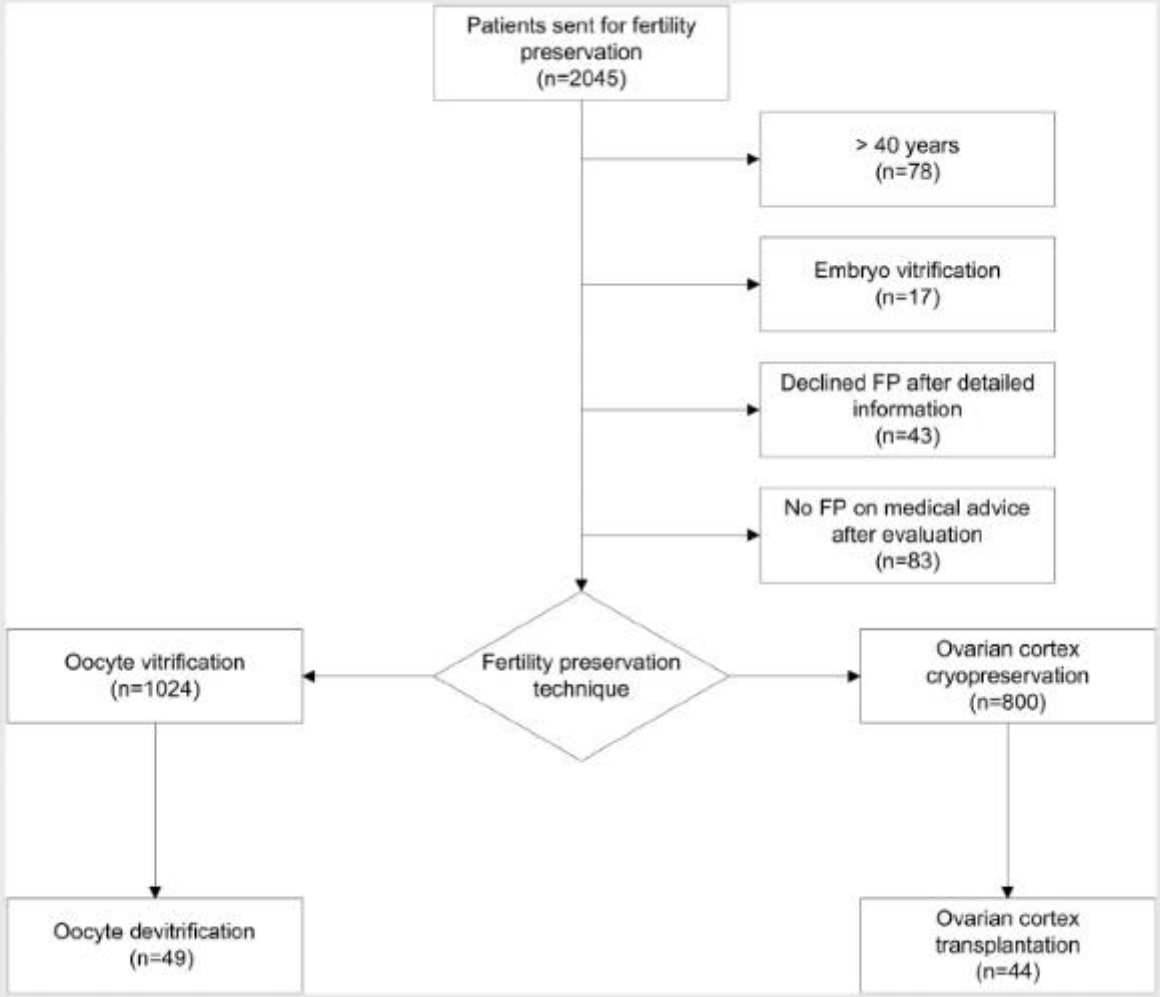
- ‘Ovarian tissue banking is an acceptable fertility-preservation technique and is no longer considered experimental.’

ORIGINAL ARTICLE: FERTILITY PRESERVATION

Oocyte vitrification versus ovarian cortex transplantation in fertility preservation for adult women undergoing gonadotoxic treatments: a prospective cohort study

Cesar Diaz-Garcia, M.D.,[a,b,c] Javier Domingo, M.D.,[d] Juan Antonio Garcia-Velasco, M.D.,[e,f] Sonia Herraiz, Ph.D.,[b,g] Vicente Mirabet, Ph.D.,[h] Ignacio Iniesta, B.Sc.,[b] Ana Cobo, Ph.D.,[i] José Remohí, M.D.,[c,i] and Antonio Pellicer, M.D.[b,c,j]

FIGURE 1



Patients flowchart.

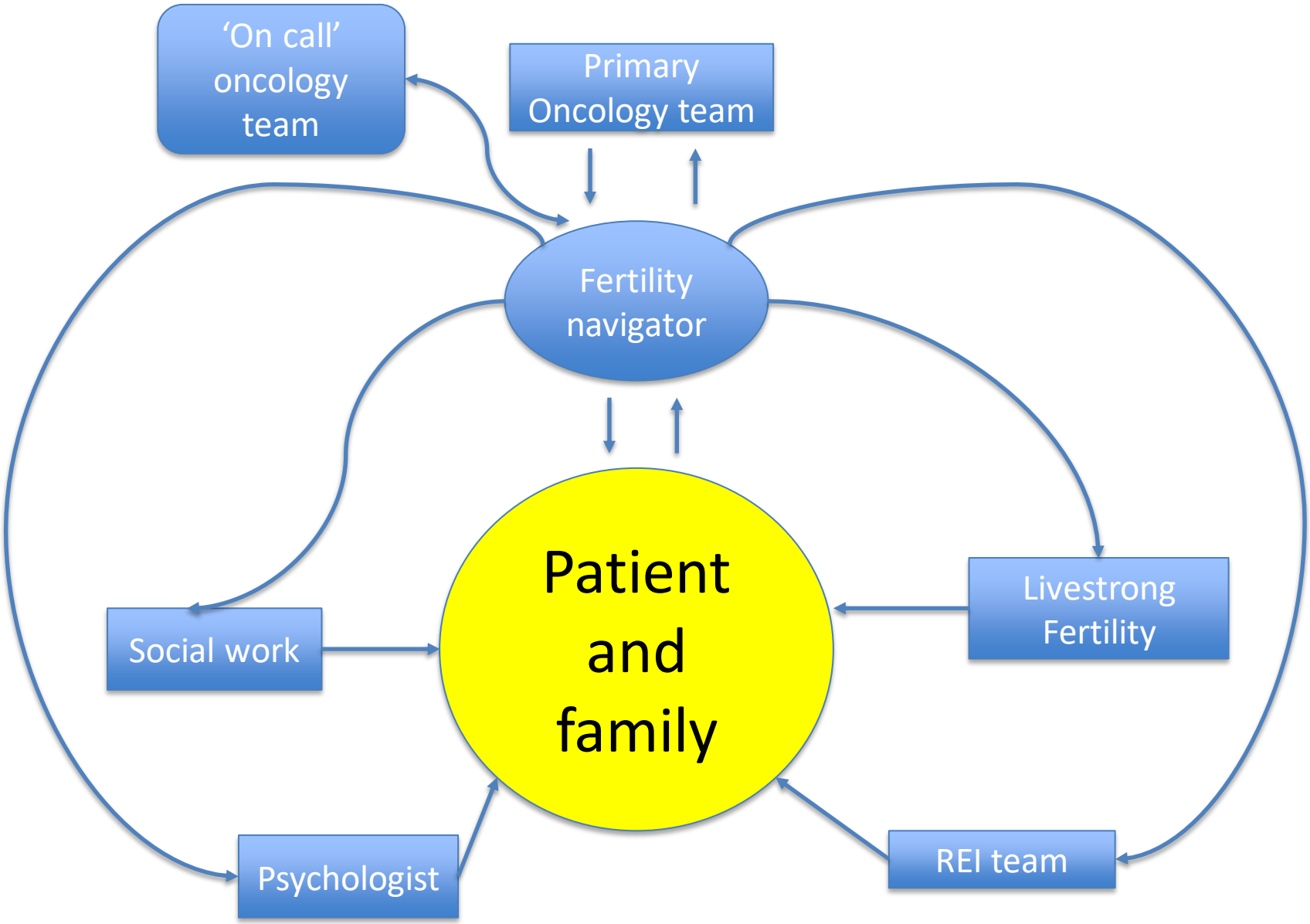
Diaz-Garcia. Fertility after oocyte vitrification and ovarian transplantation. Fertil Steril 2017.

TABLE 2

Fertility results after use of vitrified oocytes or cryopreserved ovarian tissue.

Variable	Breast			Hodgkin lymphoma			Non-Hodgkin lymphoma			Other conditions			All		
	OV (n = 38)	OCT (n = 31)	*P*	OV (n = 2)	OCT (n = 9)	*P*	OV (n = 3)	OCT (n = 0)	*P*	OV (n = 6)[a]	OCT (n = 4)[b]	*P*	OV (n = 49)	OCT (n = 44)	*P*
Status of patient at reimplantation			NS			NS		–	–			NS			.04
Amenorrhea >1 y	5 (13.2)	11 (35.5)		1 (50.0)	7 (77.8)		1 (33.3)			2 (33.3)	2 (50.0)		9 (18.4)	20 (45.4)	
POI without amenorrhea	30 (78.9)	19 (61.3)		0 (0)	2 (22.2)		2 (66.7)			2 (33.3)	0 (0)		34 (69.4)	21 (47.8)	
Regular menstruations	3 (7.9)	1 (3.2)		1 (50.0)	0 (0)		0 (0)			2 (33.3)	2 (50.0)		6 (12.3)	3 (6.8)	
Age at retrieval, y	35.5 (3.1)	35.8 (3.3)	NS	32.5 (4.9)	27.1 (3.7)	NS	34.5 (2.1)	–	–	34.2 (3.7)	29.5 (0.2)	NS	35.2 (3.1)	34.3 (7.2)	NS
Age at reimplantation, y	40.0 (3.3)	41.0 (2.4)	NS	33.5 (3.5)	33.8 (3.1)	NS	39.0 (1.0)	–	–	37.0 (4.2)	32.9 (1.7)	NS	39.0 (3.8)	38.9 (4.1)	NS
AMH before reimplantation, pM	0 [0–1.33]	0 [0–0]	NS	2.1 [0–4.2]	0 [0–1.00]	NS	0 [0-0]	–	–	0 [0–1.26]	0.37 [0–1.47]	NS	0 [0–1.29]	0 [0–0.30]	NS
No. of pregnant patients	13 (34.2)	5 (16.1)	NS	1 (50.0)	5 (55.5)	NS	2 (66.7)	0	NS	4 (66.7)	2 (50.0)	NS	20 (40.8)	12 (27.3)	NS
No. of patients with live births	11 (28.9)	2 (6.4)	NS	1 (50.0)	4 (44.4)	NS	2 (66.7)	0	NS	2 (33.3)	2 (50.0)	NS	16 (32.6)	8 (18.2)	NS

Only option for prepubertal girls.
Ovarian tissue freezing – restoration of menstrual cycles and spontaneous conception


'On call' oncology team
Primary Oncology team
Fertility navigator
Patient and family
Social work
Livestrong Fertility
Psychologist
REI team

Thankyou

- Questions?