

Female fertility preservation in Norway

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2024

Department of Reproductive Medicine



Ullevaal stadium



52 staff



22.000 consults



3900 sperm tests



3500 fertility treatments
(1760 IVF)

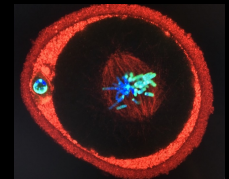
1150 pregnancies



> 35.000 biobank



Research
CRESCO:Center of Embryology

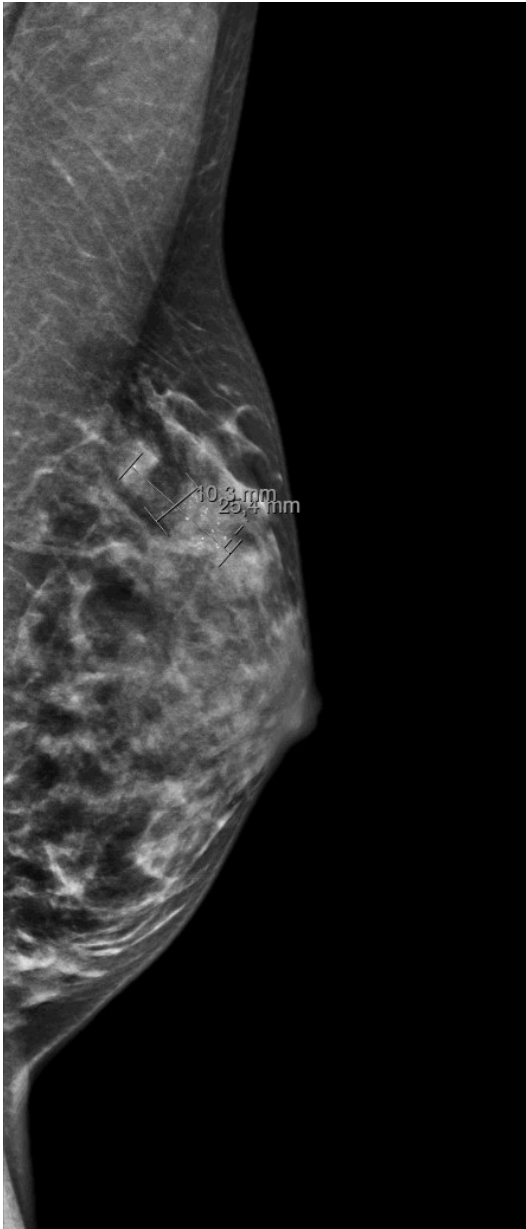


Teaching
~ 300 medical and college students



fertility preservation, sperm bank,
preimplantation genetic test





28 years

winter 2025

concern about breast nodule

.....

Mar 17

X-ray, biopsy, DCIS grade 3 ER+, PR+, HER3-

Apr 7

referral to reproductive medicine

Apr 9

appointment at reproductive medicine

Apr 23

primary surgery

...

oocyte cryopreservation

May 28

start adjuvant chemotherapy

april

	M	T	W	T	F	L	S
14	31	1	2	3	4	5	6
15	7	8	9	10	11	12	13
16	14	15	16	17	18	19	20
17	21	22	23	24	25	26	27
18	28	29	30	1	2	3	4
19	5	6	7	8	9	10	11



10

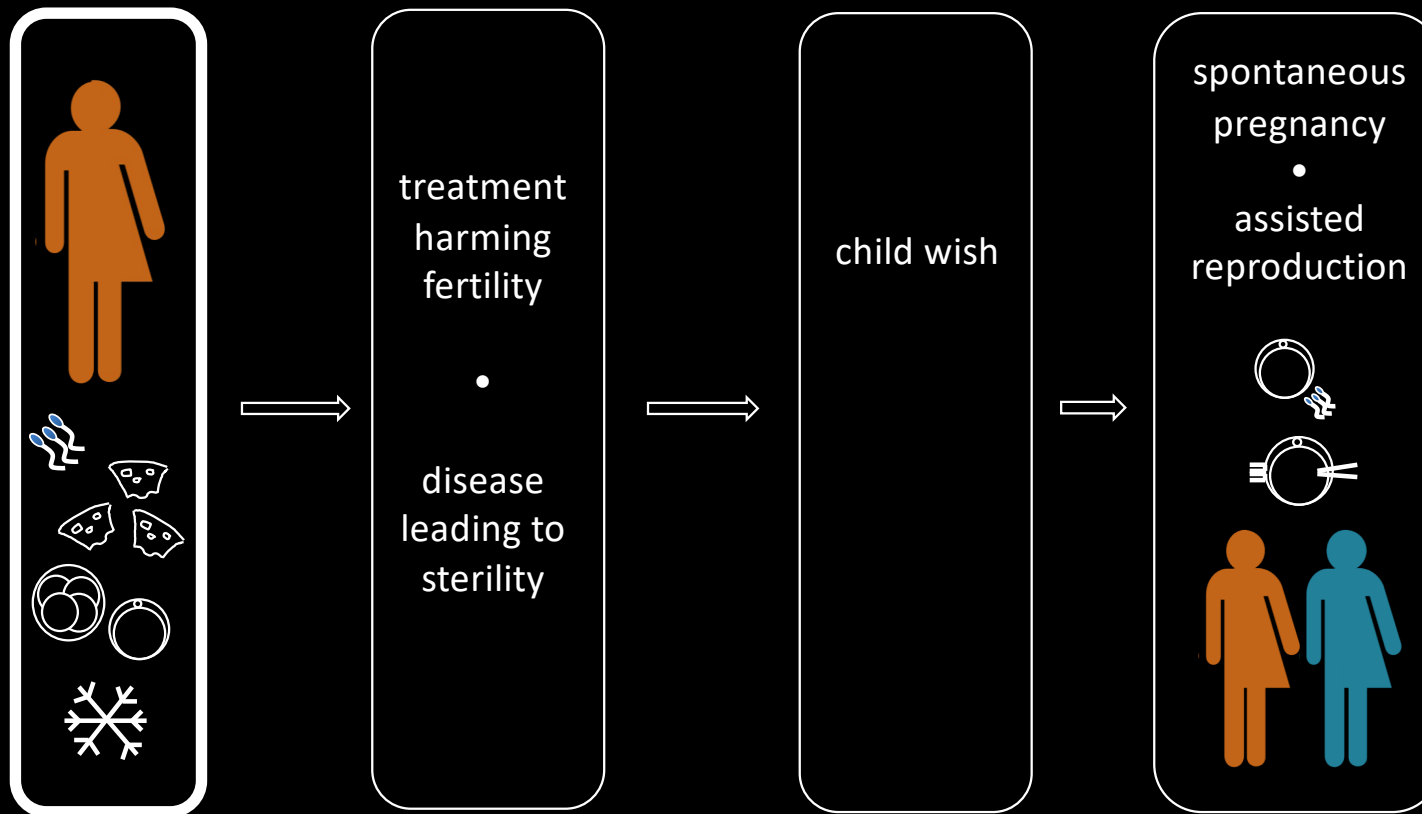
mai

	M	T	W	T	F	L	S
18	28	29	30	1	2	3	4
19	5	6	7	8	9	10	↑
20	12	13	14	15	16	17	18
21	19	20	21	22	23	24	↑
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8

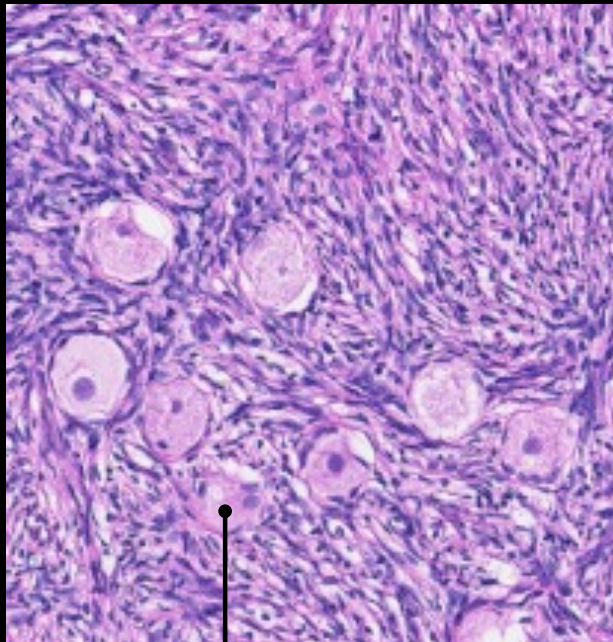


5

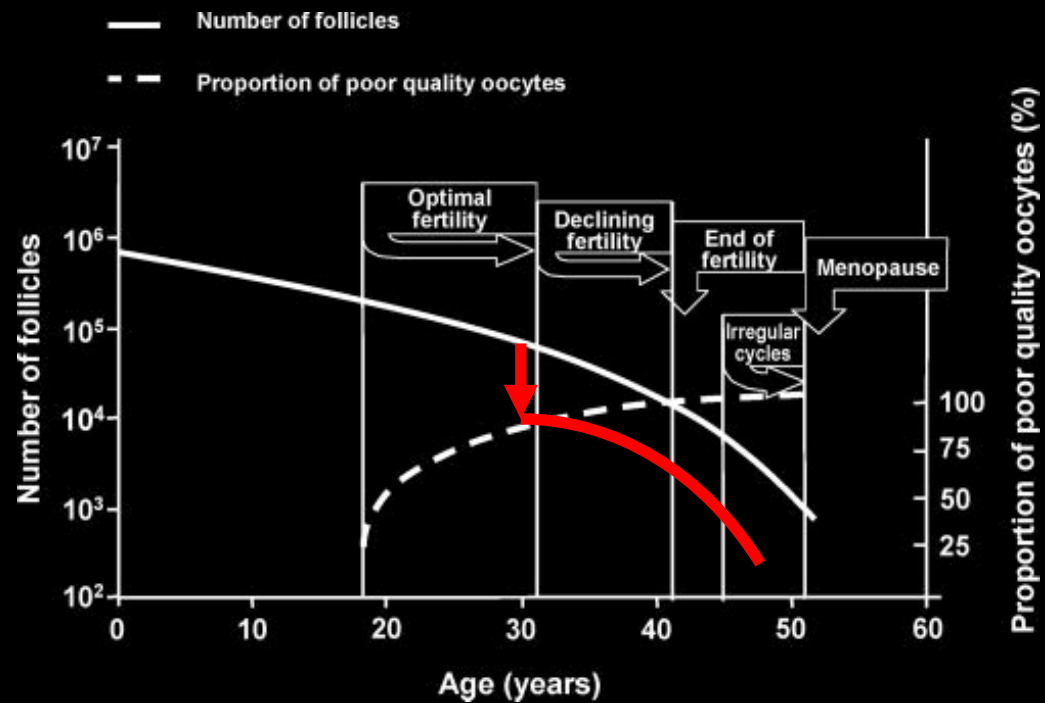
Fertility preservation treatment



Chemotherapy reduces ovarian reserve

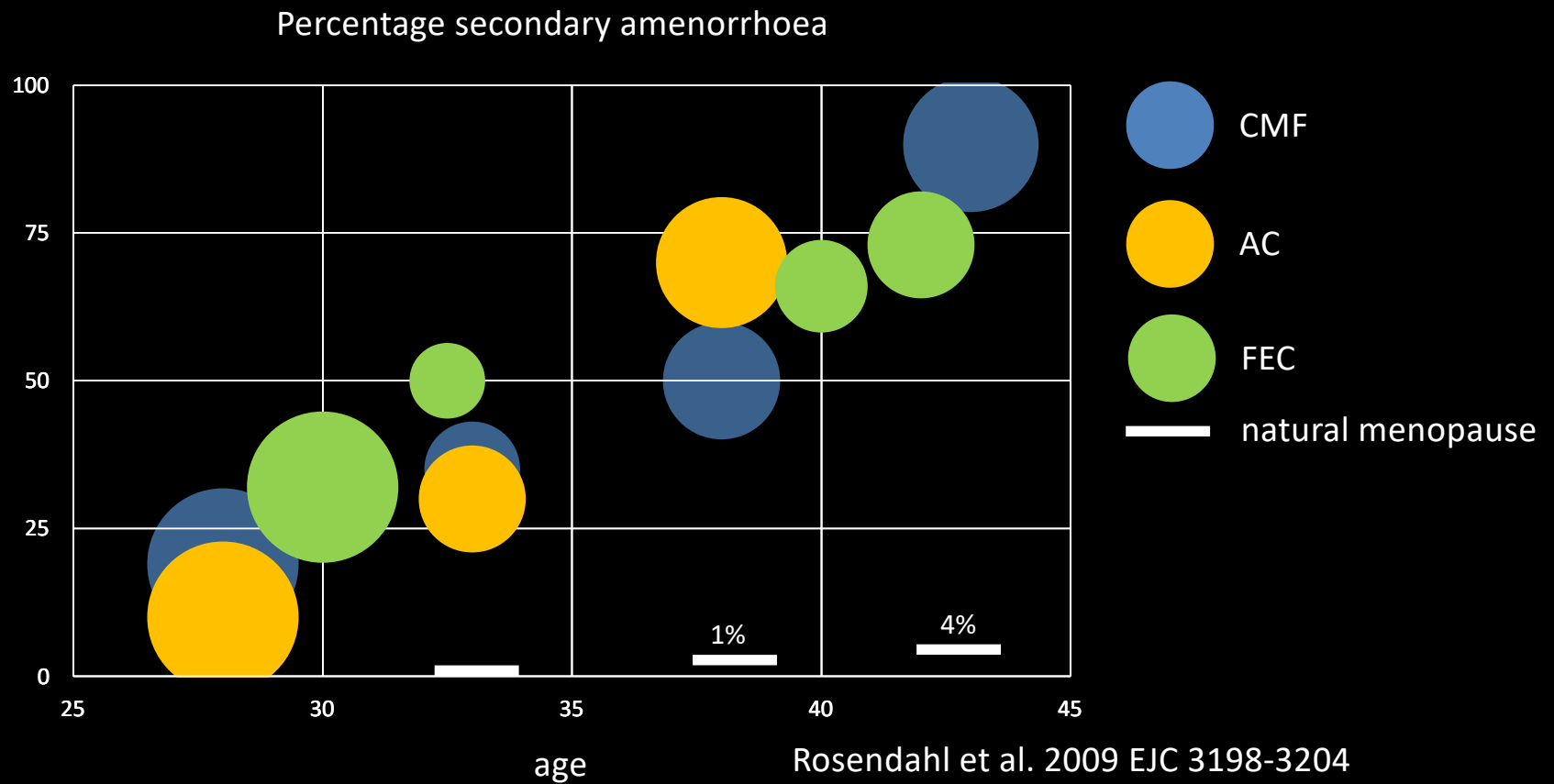


primordial follicle



Broekmans et al. 2009 Endocr 30:465-493

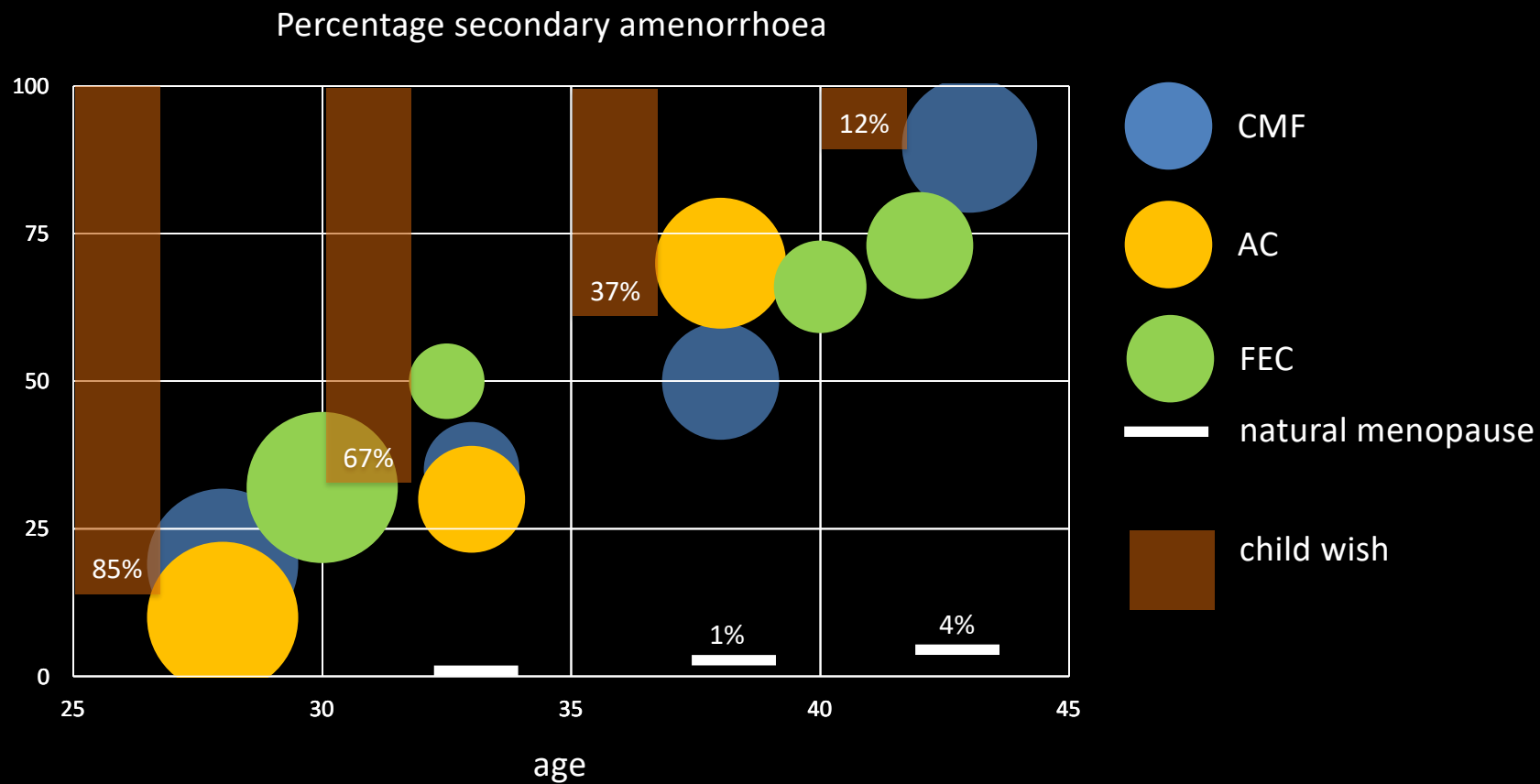
Breast cancer treatment & amenorrhoea



Rosendahl et al. 2009 EJC 3198-3204

Waks et al 2016 JNCCN 14:355-363

Breast cancer treatment & amenorrhoea



Dommermuth et al (2015) SSB

Options for fertility preservation



oocyte
cryopreservation



embryo
cryopreservation



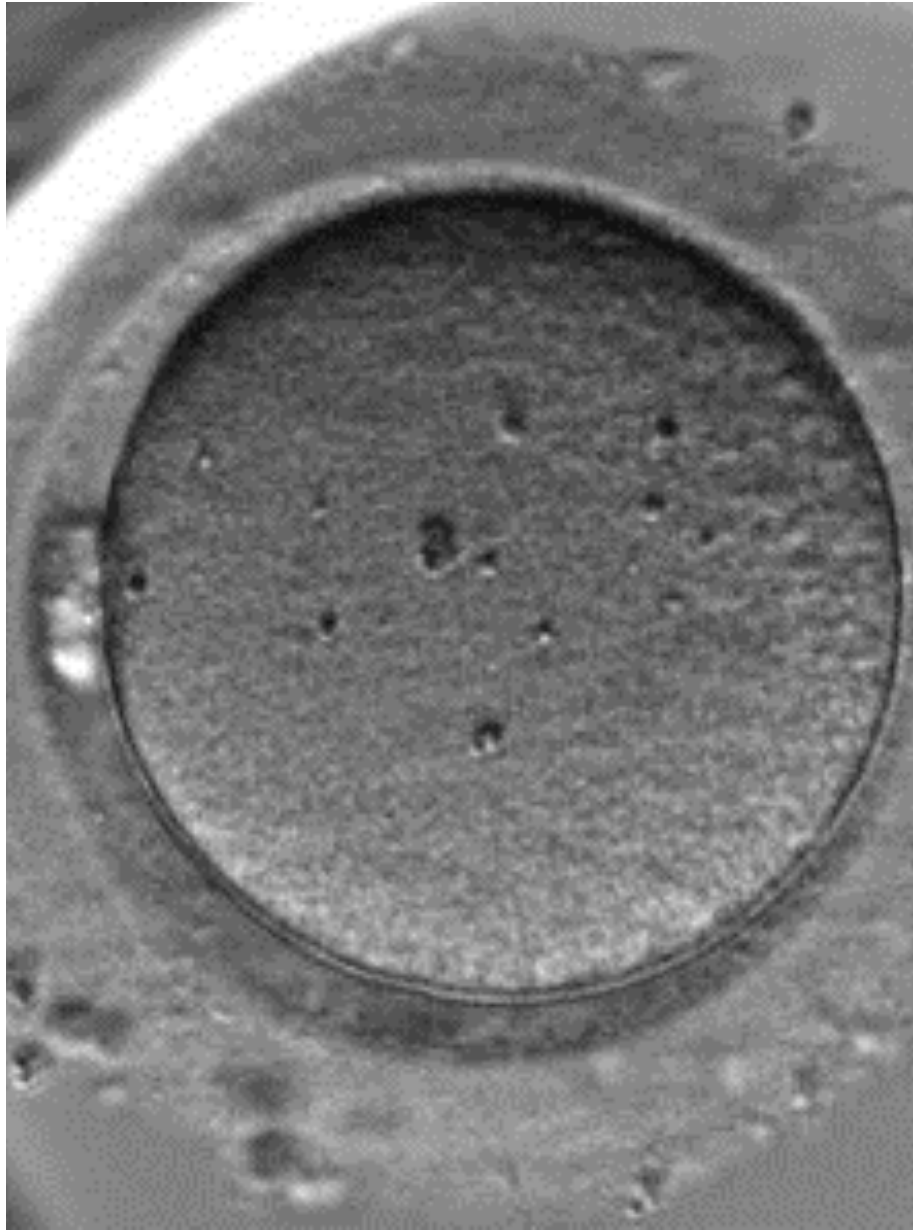
ovarian tissue
cryopreservation



GnRH agonist
chemoprotection



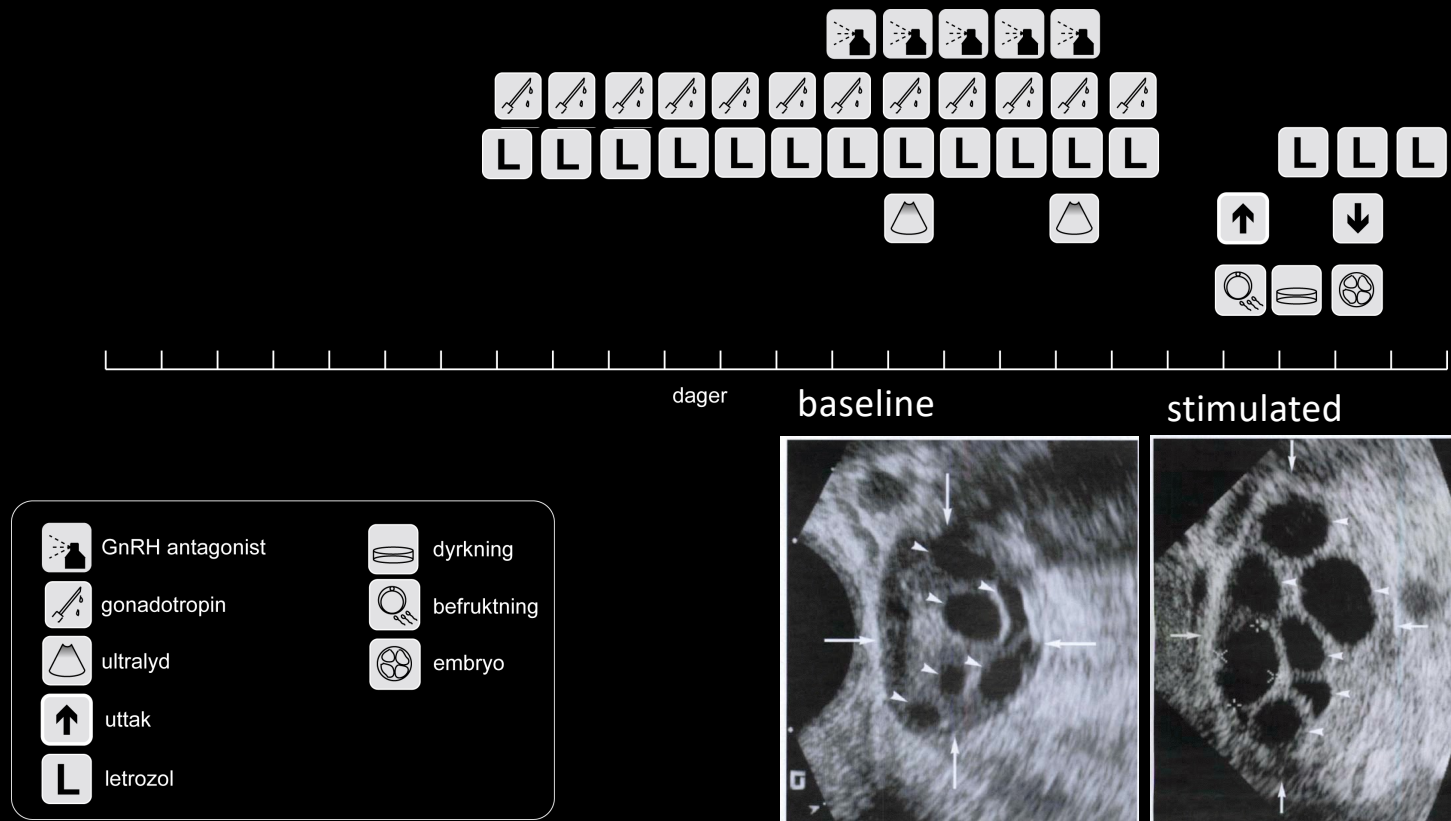
defer treatment



Oocyte cryopreservation • criteria

- low-mid risk of sterility
- age < 40 years
- (childless)
- sufficient ovarian reserve
- possibility of future pregnancy

Individualised ovarian stimulation protocols

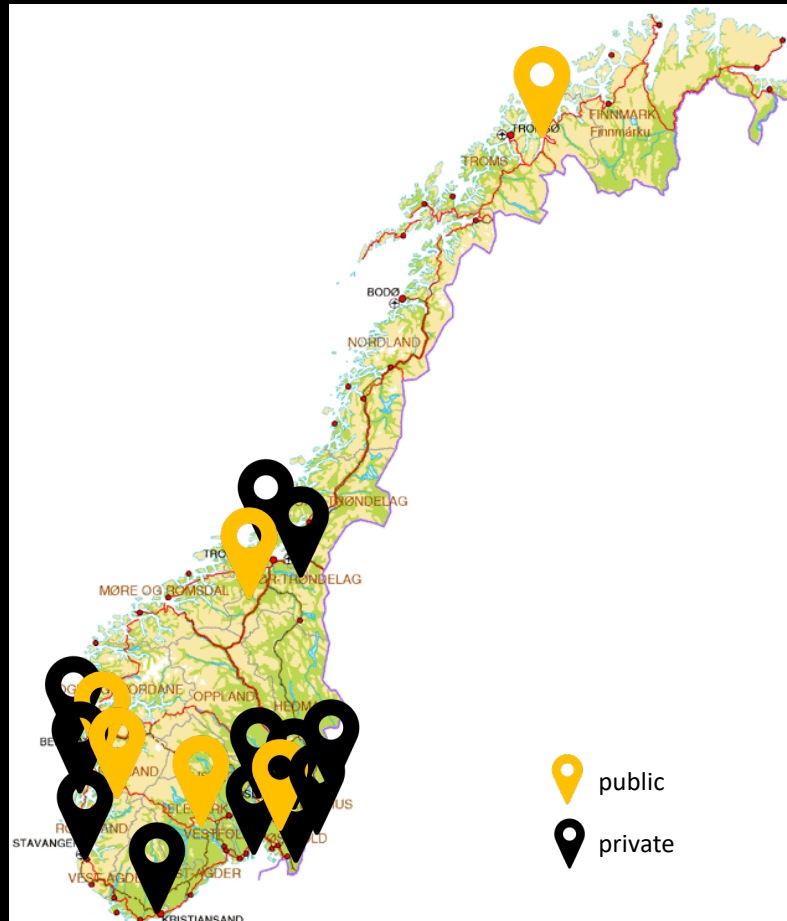


Storage

Oocytes, embryos and ovarian tissue can be cryopreserved until 46 years of age.



Fertility clinics in Norway



UNN

St Olav

Medicus

Spiren

Haugesund sh

KlinikkHausken

Haukeland sh

HauskenBergen

HauskenStavanger

ShT Porsgrunn

OUS

Fertilitetssenteret

Livio

MedicusOslo

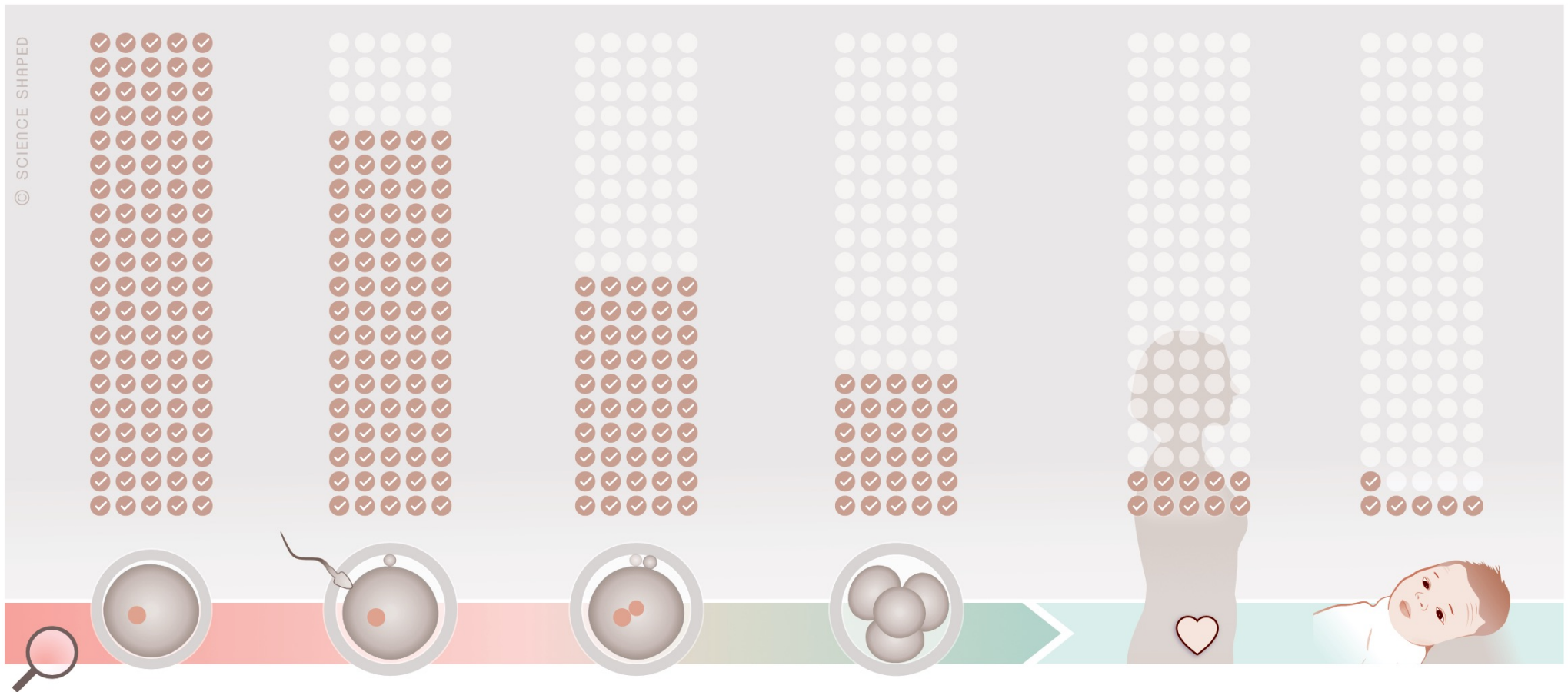
HauskenOslo

C-Medical

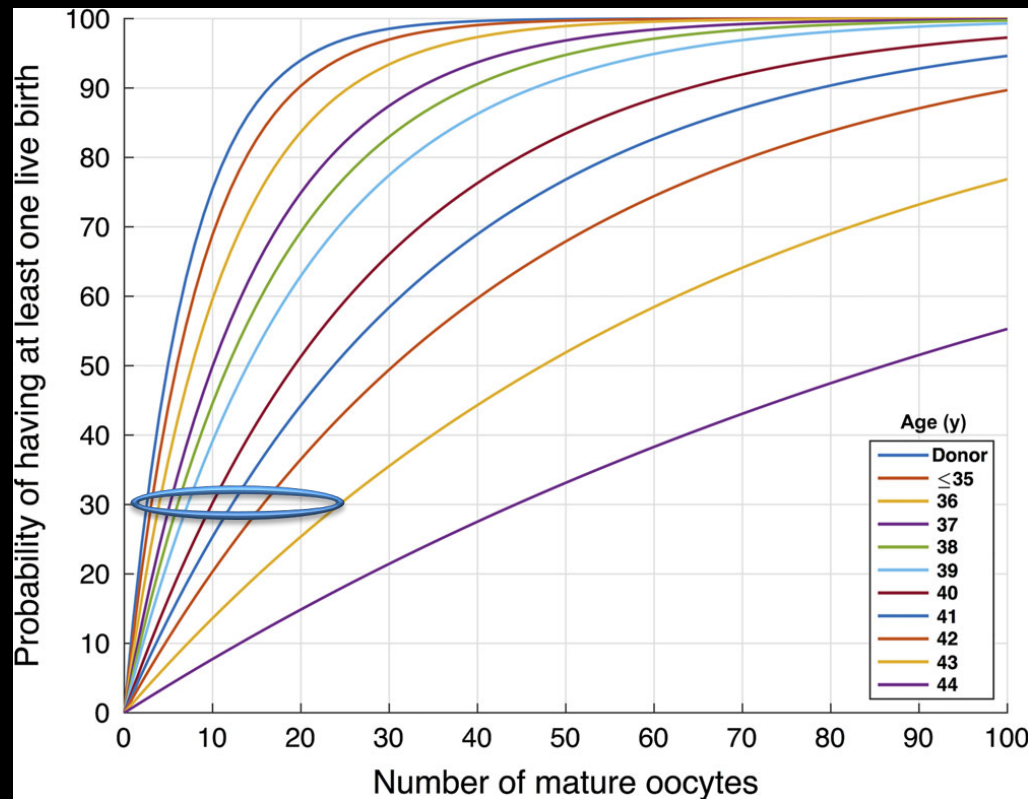
Aleris

Nordisk fertilitet

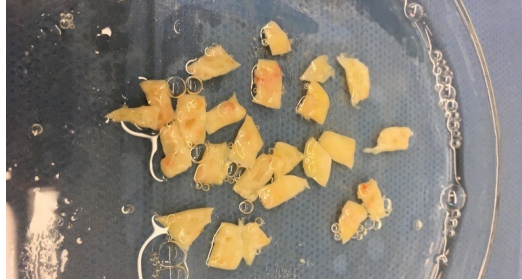
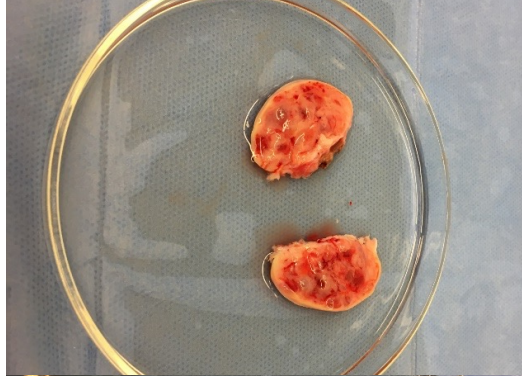
Pregnancy chances are related to oocyte count



Pregnancy chances after egg banking



Goldman et al. (2017) Hum Reprod 32:853

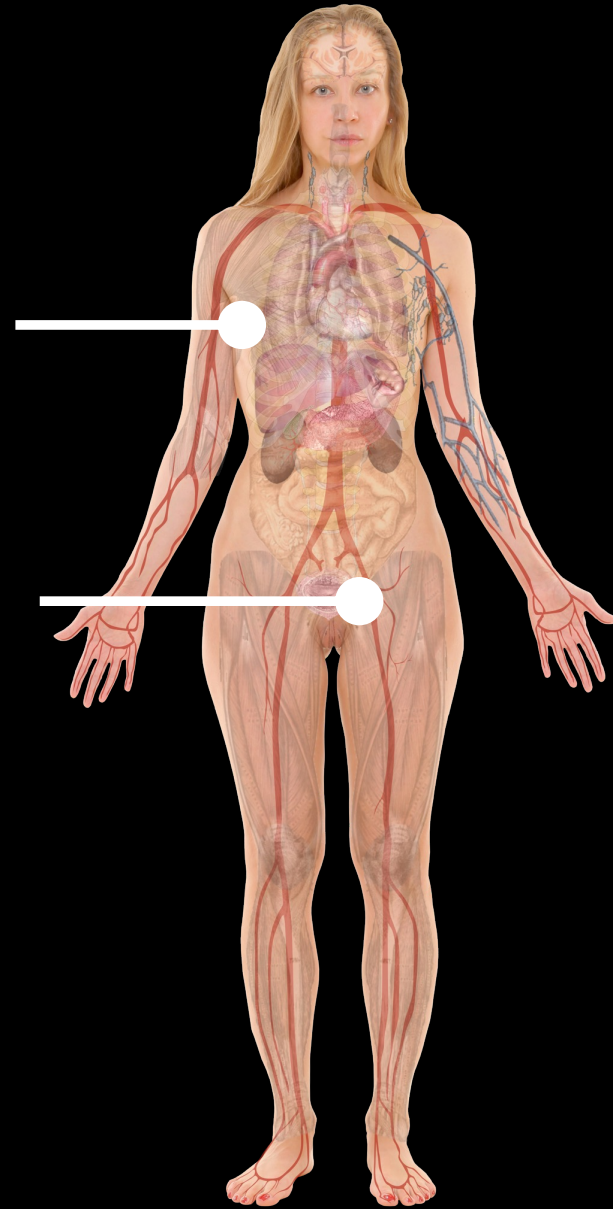


Ovarian tissue cryopreservation • criteria

- high > 50% risk of sterility
- age < 35 years
- childless
- good ovarian reserve
- possibility of future pregnancy
- no time for egg banking

heterotopic

orthotopic



Ovarian tissue cryopreservation program

20

Years
(2004-2024)

272

Cryopreservations

29

**Patients
transplanted**

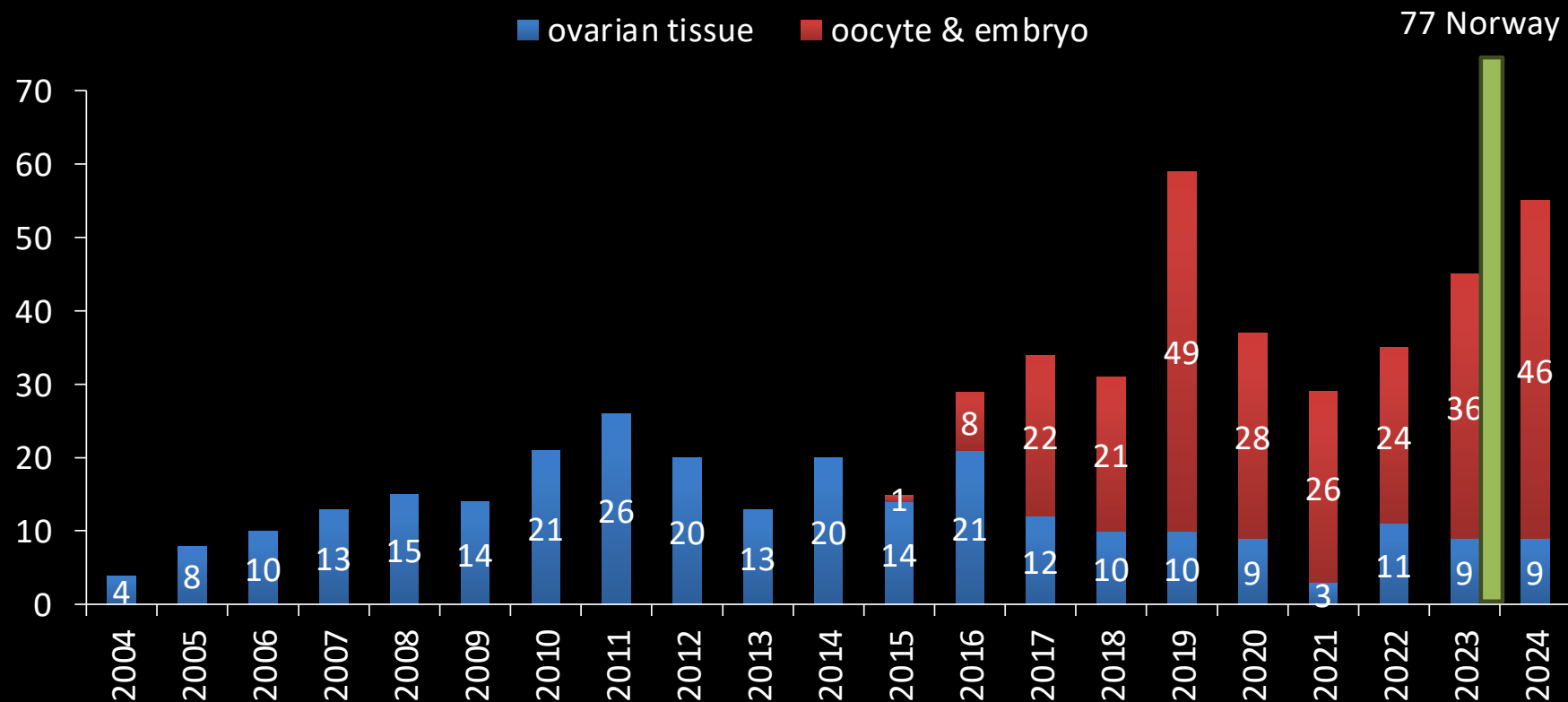
10

Children born

48

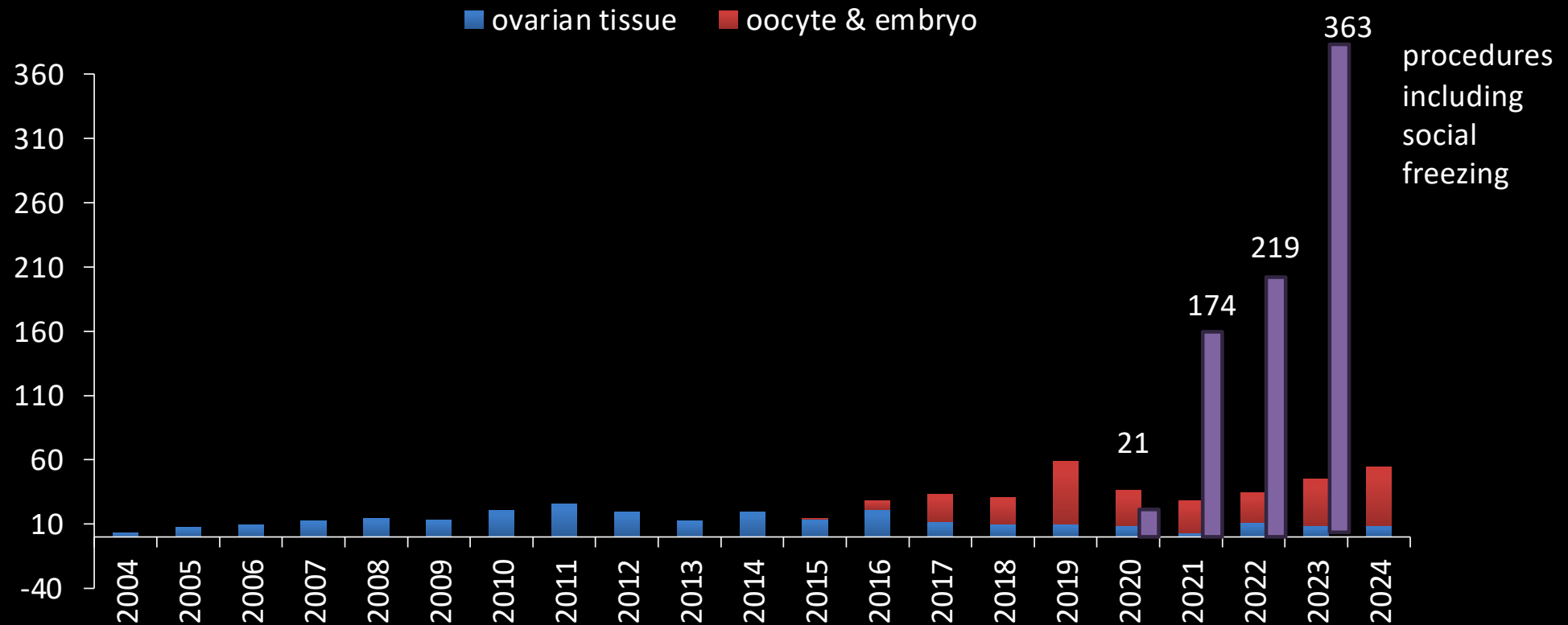
Autotransplantations

Fertility preservation in Oslo



Årsrapport, Nasjonal behandlingstjeneste for fertilitetsbevarende behandling

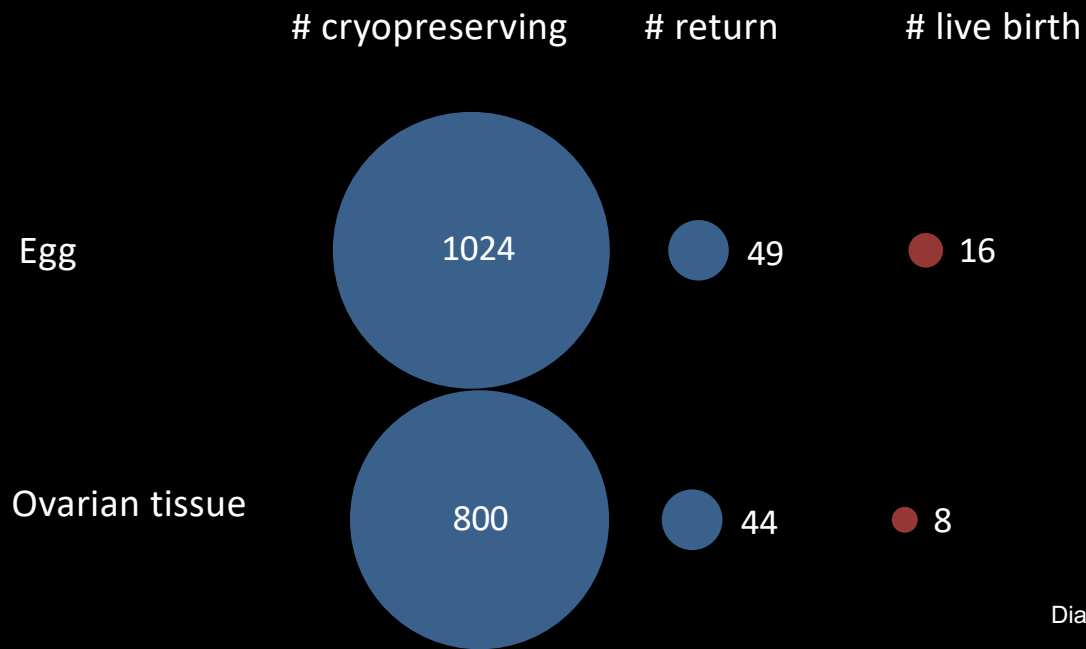
Fertility preservation in Norway



Årsrapport, Nasjonal behandlingstjeneste for fertilitetsbevarende behandling

CHALLENGES

Use of cryopreserved oocytes and ovarian tissue

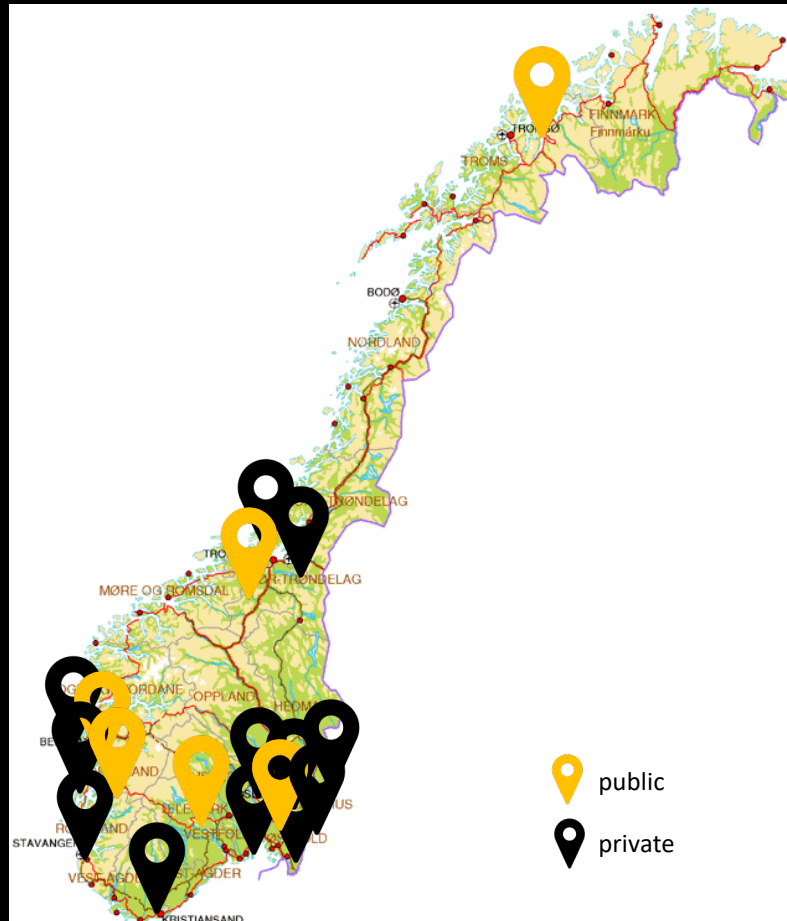


* 2005 – 2015, IVI Group, Spain
Diaz-Garcia et al. 2018 Fertil Steril 109:478-485



Oslo universitetssykehus

Fertility clinics in Norway



UNN

St Olav

Medicus

Spiren

Haugesund sh

KlinikkHausken

Haukeland sh

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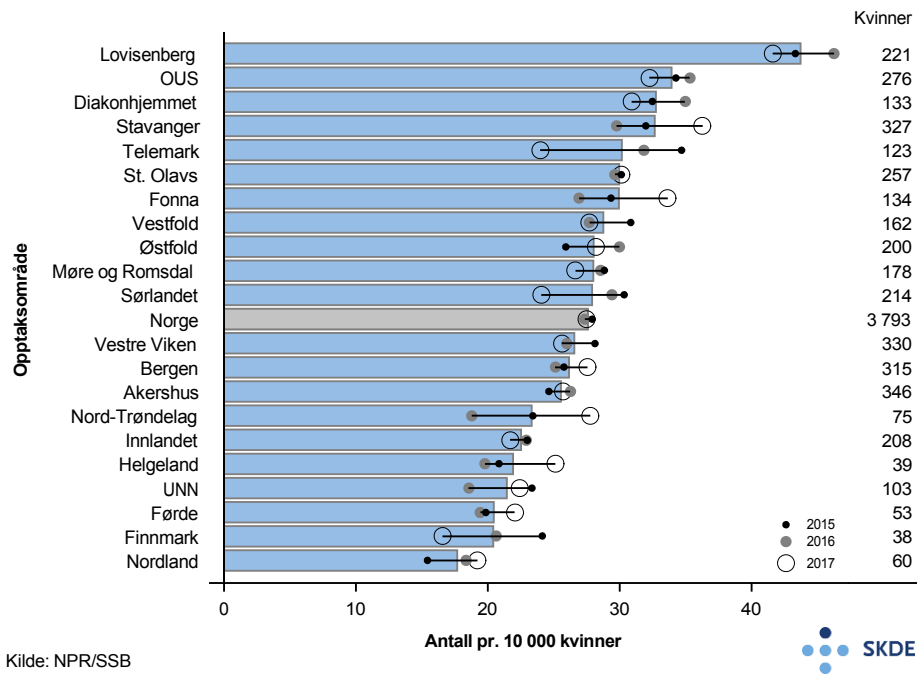
C-Medical

Aleris

Nordisk fertilitet

Geographic and socio-economic inequity

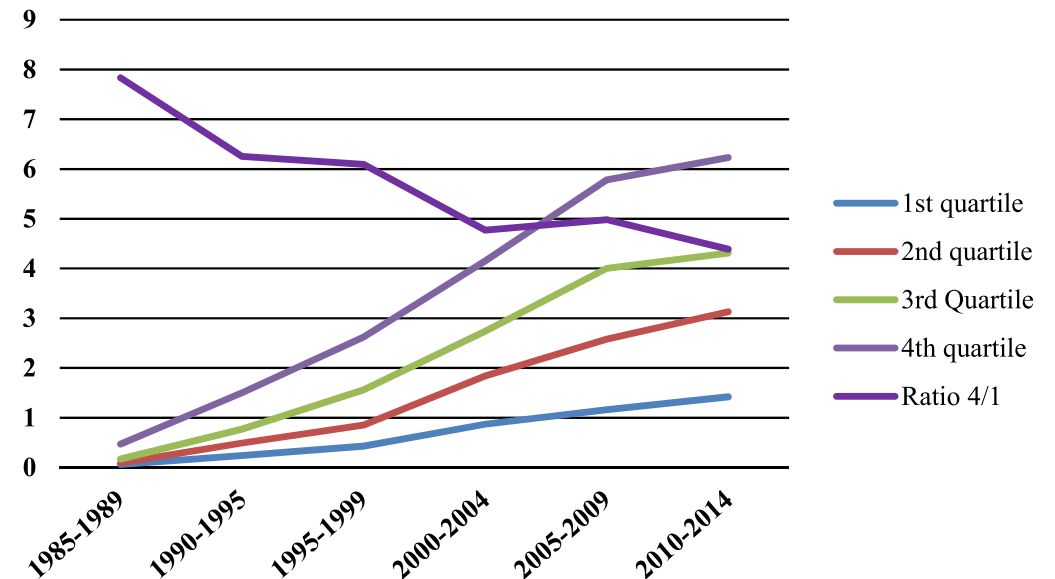
IVF use



Kilde: NPR/SSB

*Helseatlas for gynekologi, 2019

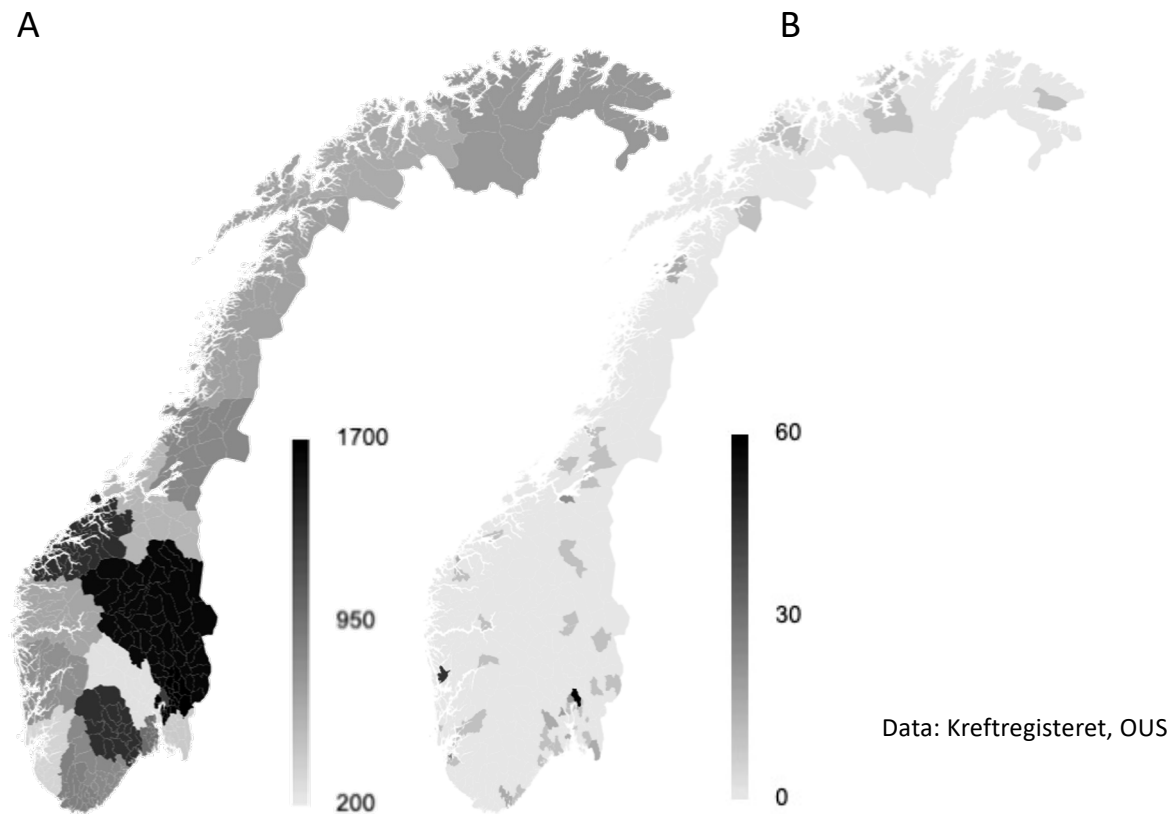
IVF births vs income quartile



Goisis et al 2020 Hum Reprod 6:1441-50

Inequity in fertility preservation?

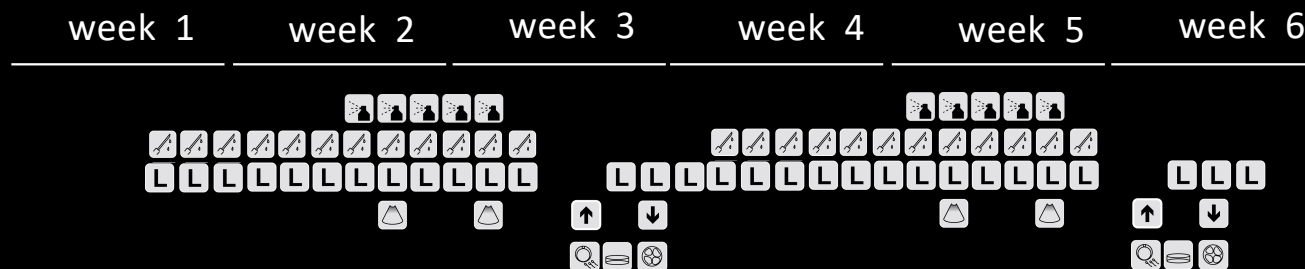
Cancer incidence (A) vs ovarian tissue freezing (B)



Guidelines 2025

- All patients should be informed about risks and options.
- Individual counselling.
- Early referral to fertility centre.
- Fertility preservation must not delay cancer treatment.

	cryopreservation of			
	oocytes	embryos	ovarian tissue	GnRH agonist
< 40 years	recommended	not recommended	conditional	uncertain effect



OncoFertBot



tinyurl.com/OncoFertBot

OncoFertBot

OncoFertBot is GPT assistant that will answer your questions based on selected international guidelines for fertility preservation.

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Min pasient er kvinne, 35 år, hun fikk nylig oppdaget brystkreft som er ER-, PR-, HER2+. Hun har ikke barn, ingen partner, bekymret for fertilitet. Hvilke alternativer finnes?



For your patient, who is a 35-year-old woman with HER2+ breast cancer and concerns about fertility, several fertility preservation options are available:

1. **Ovarian Tissue Cryopreservation and Transplantation:** This method is no longer considered experimental and can be an option in cases where there is insufficient time for ovarian stimulation or when abdominal surgery is required [\[4:11Roberts-2024-Fertility preservation in patient\]](#) .
2. **Embryo Cryopreservation:** This is an established method of fertility preservation and involves the freezing of embryos after in vitro fertilization. It is suitable for patients who have a male partner or are willing to use donor sperm [\[4:61su-et-al-2025-fertility-preservation-in-people-with-cancer-asco-guideline-update\]](#) .
3. **Mature Oocyte Cryopreservation:** This involves the freezing of unfertilized oocytes and is particularly suitable for females who do not have a male partner and do not wish to use donor sperm. This method is also recommended for its flexibility and high success rates [\[4:61su-et-al-2025-fertility-preservation-in-people-with-cancer-asco-guideline-update\]](#) .
4. **GnRH Agonist Therapy During Chemotherapy:** Although there is some controversy, some guidelines suggest that GnRH agonist therapy during chemotherapy might help preserve ovarian function, particularly in premenopausal women with ER-negative tumors [\[4:21JCO.2018.78.1914\]](#) .

It is crucial to discuss these options with your patient, considering her personal, medical, and future reproductive goals. The choice of fertility preservation method should be made in consultation with both oncology and reproductive specialists to ensure the best possible outcome.



Hva vil du anbefale mest?



Based on the information provided and the specific characteristics of your patient's cancer (ER-, PR-, HER2+), the most recommended fertility preservation options would be:

1. **Mature Oocyte Cryopreservation:** This method is particularly suitable for your patient as it does not require a male partner and avoids the use of donor sperm. It offers flexibility and has been associated with high success rates. This option allows her to preserve her eggs