

Rol van de huisarts bij kinderwens

Overview

- Preconceptioneel
- Advies vruchtbaarheid
- Life style
- definitie subfertiliteit
- Onderzoeken?
- Behandelingen

Preconceptioneel

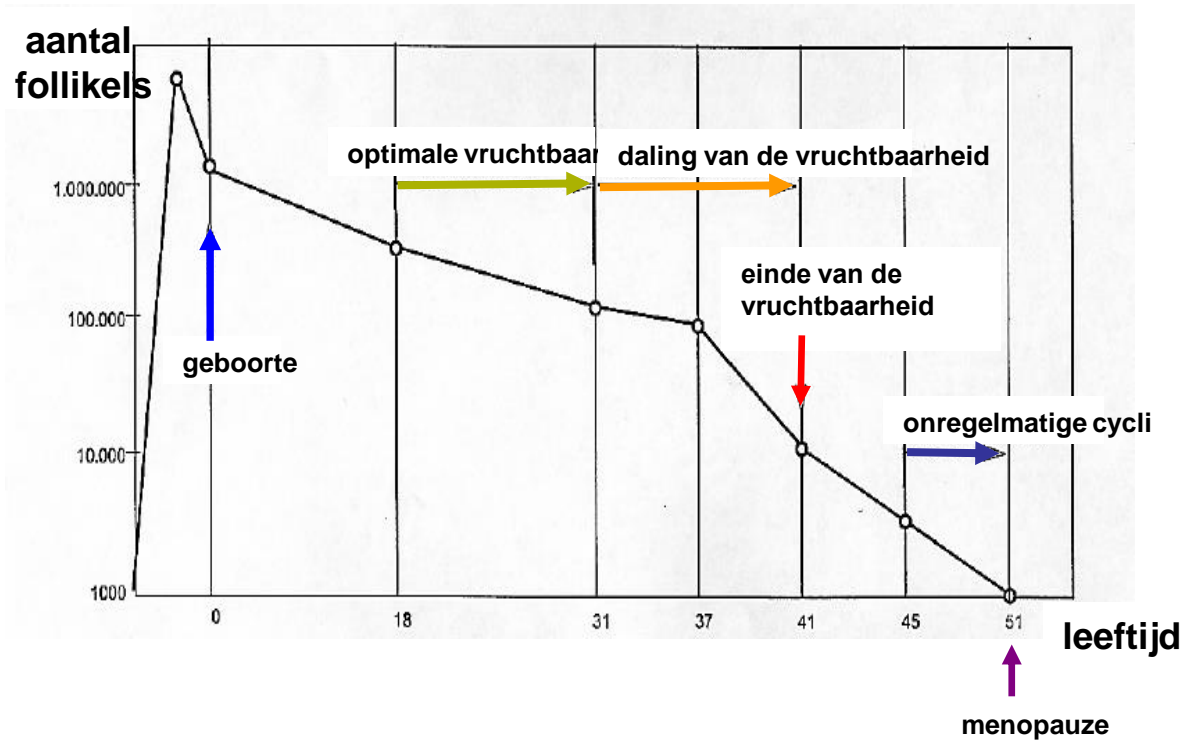
- Start foliumzuur
- Serologie, bloedgroep, schildklier
- Hb elektroforese zo zuiderse origine



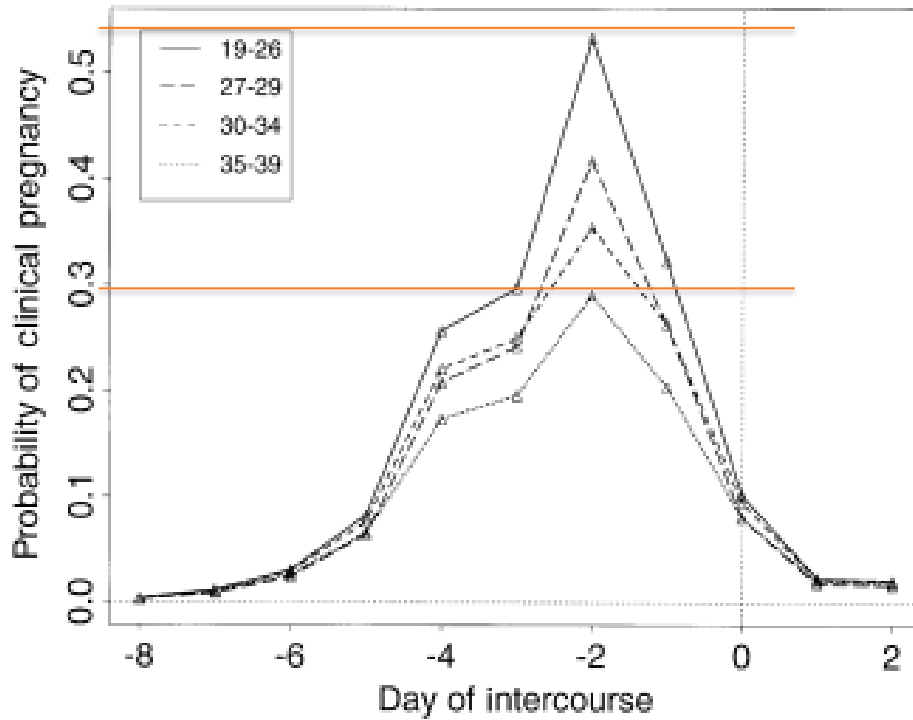
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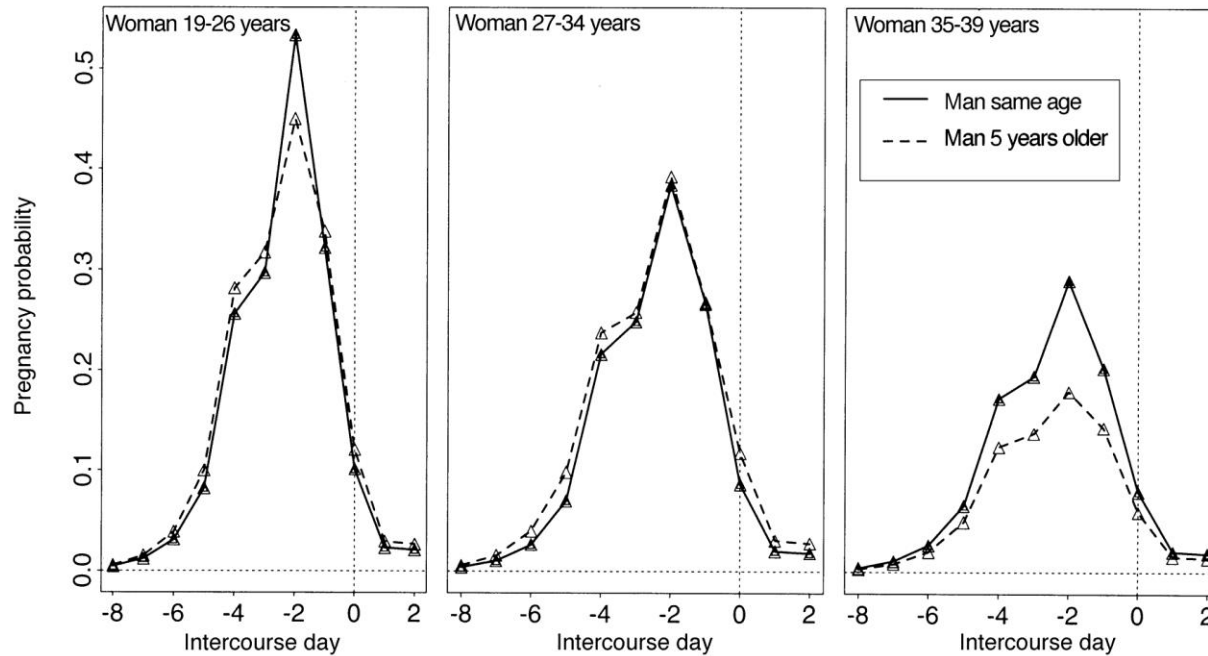
Vruchtbaarheid



Vruchtbaarheid



Vruchtbaarheid



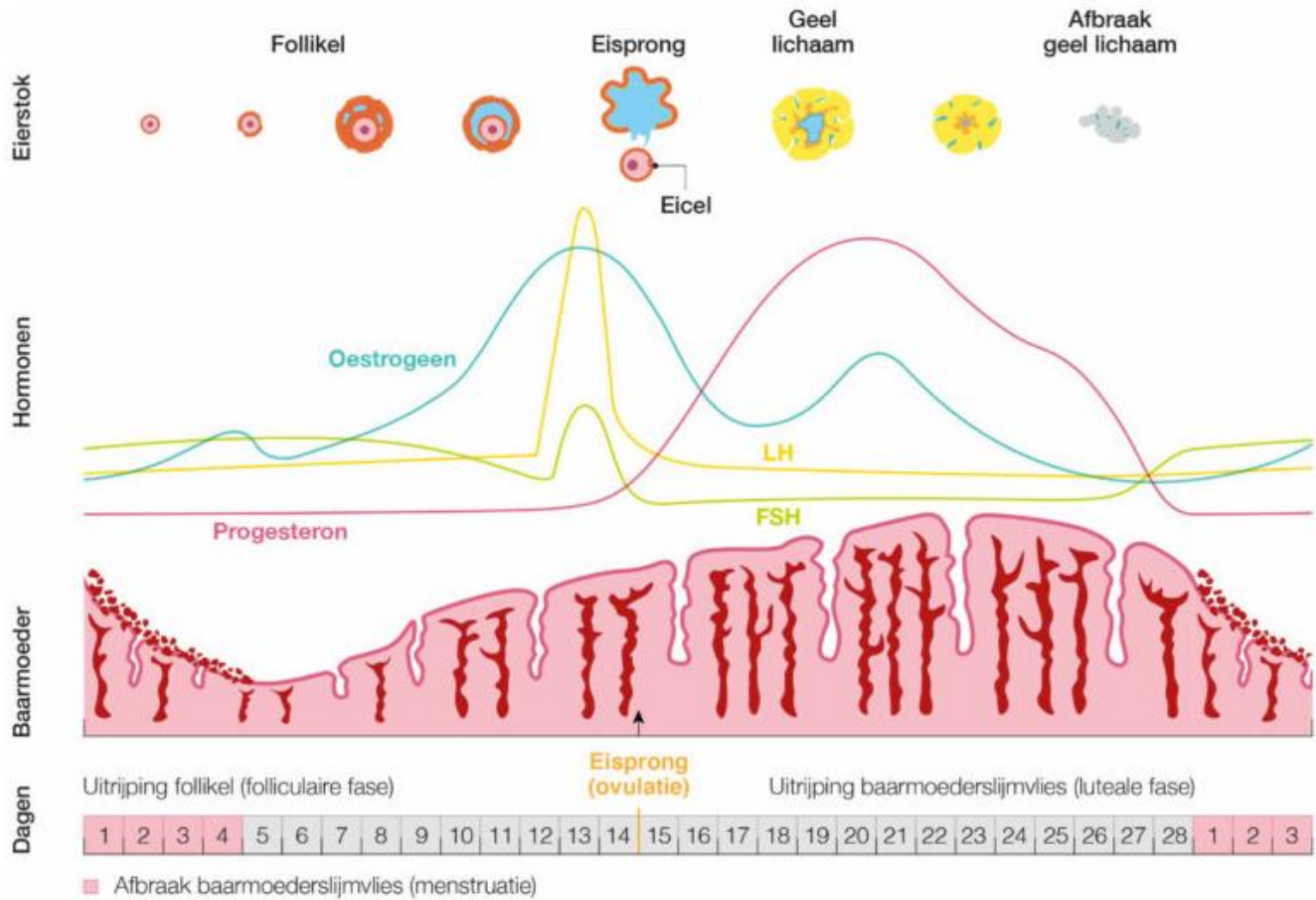


ORIGINAL RESEARCH

Fertility-awareness knowledge, attitudes, and practices of women seeking fertility assistance

Kerry D. Hampton, Danielle Mazza & Jennifer M. Newton

- 86,6% probeerde vruchtbaarheidsbewustzijn actief te verhogen, voortgaande op één of meer informatiebronnen
- 68,2% was ervan overtuigd het seksueel contact correct gepland te hebben binnen het vruchtbaar venster van de cyclus,
- slechts 12,7% was in staat dit venster correct te identificeren
- 94 % van de ondervraagde patiënten vindt dat er gedegen opleiding zou moeten voorhanden zijn in dit vruchtbaarheidsbewustzijn



De menstruatiecyclus op basis van een gemiddelde duur van 28 dagen. De cyclusduur en de bloedwaarden van de hormonen verschillen tussen opeenvolgende cycli en vrouwen onderling.

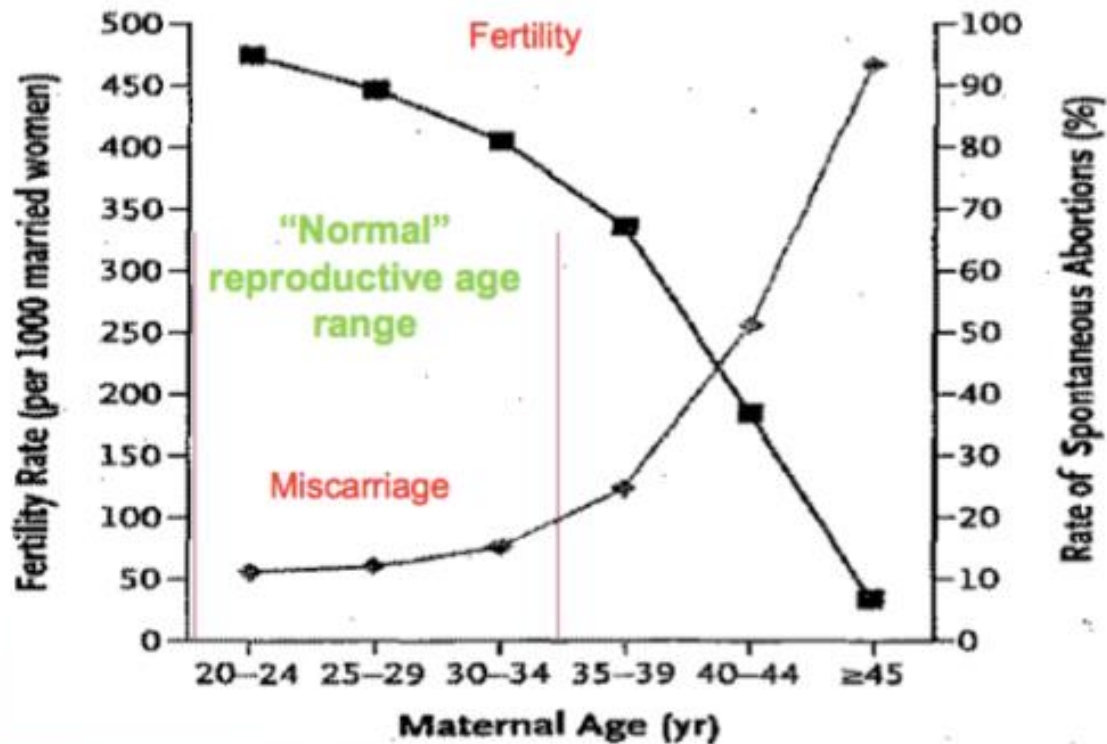


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Vruchtbaarheid

Effect of age on fertility & miscarriage



Menken 1986 & Andersen 2000 reproduced in Hefner,
How old is too old? NEJM 2004;351:1927

KING'S HEALTH PARTNERS



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Een slimme meid krijgt haar kinderen op tijd !

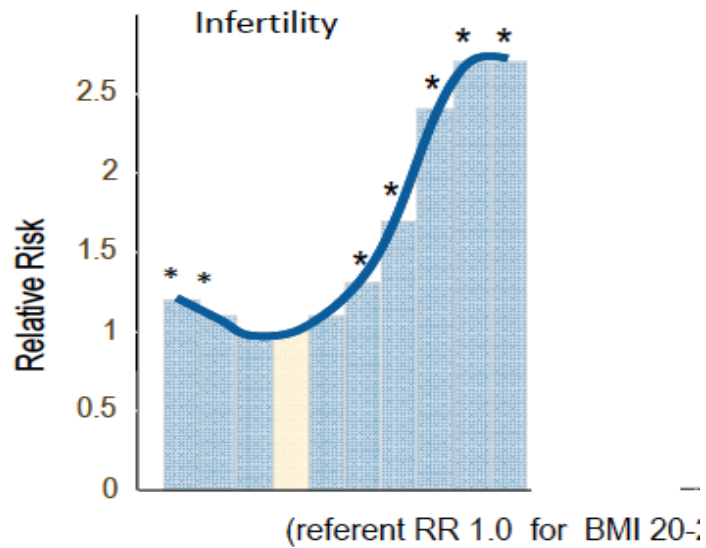


Lifestyle

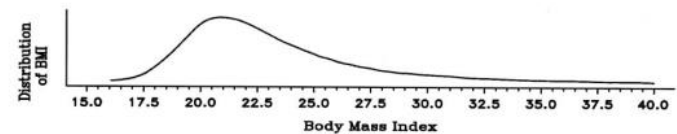
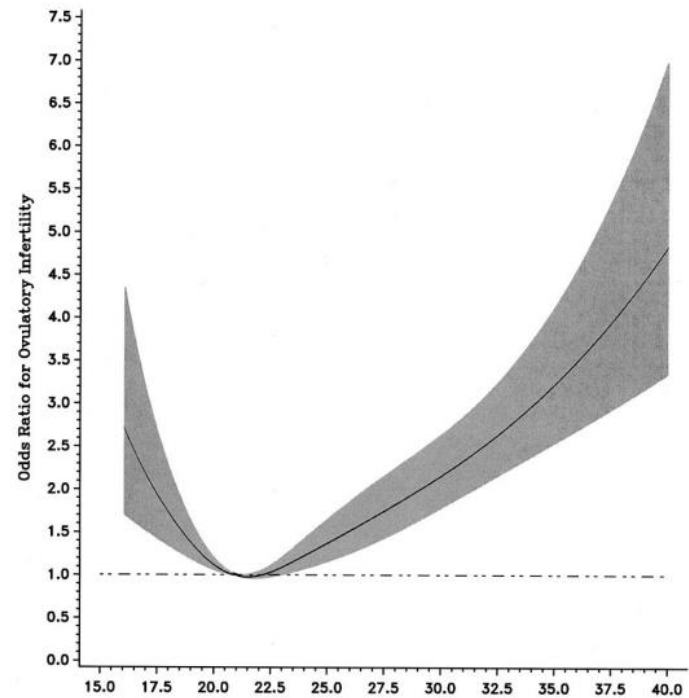


Effect obesity

* Significantly different from BMI 22-24



Rich-Edwards et al, Am J Obstet Gynecol 171: 171, 19



Effect obesitas

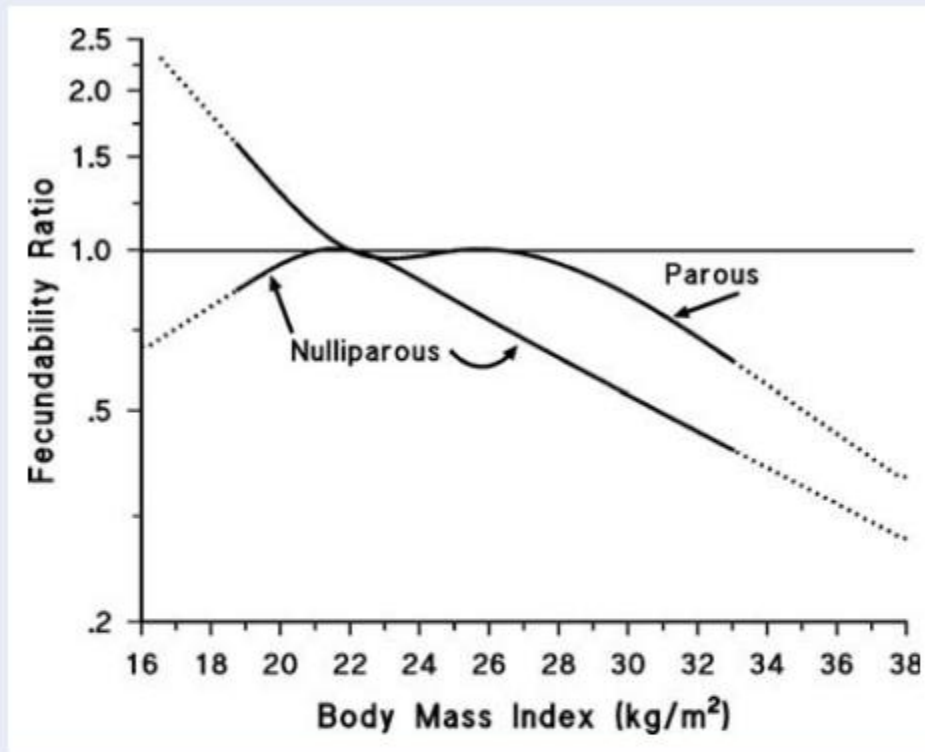


Figure 1 Relation between female BMI and fecundability, by parity status at baseline, fitted by restricted cubic splines.

Reference level for fecundability ratio is a BMI of 22 kg/m². The dotted line segments represent ranges beyond the last knot used in the spline fitting, denoting tail ranges that have less information. The curves are adjusted for age, partner's age, cycle regularity, cycle length, partner's BMI, physical activity, smoking, alcohol intake, intercourse frequency and waist circumference.

Overweight & obese:

- Reduced fertility

Underweight fecundability:

- Reduced in nulli
- Increased in multi



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Effect obesitas



TABLE 2

Birth defects associated with maternal obesity (BMI ≥ 30 kg/m²) (21).

	OR	95% CI
Ventral wall defects	3.3	1.0–10.3
Neural tube defects	2.7	1.2–6.1
Cardiac defects	2.0	1.2–3.4
Multiple congenital anomalies	2.0	1.0–3.8

Note: Abbreviations as in Table 1.

ASRM Practice Committee. Obesity and reproduction. Fertil Steril 2008.

TABLE 1

Risk of pregnancy-related complications for women with a BMI ≥ 40 kg/m² (19, 20).

	OR	95% CI
Preeclampsia	4.8	4.04–5.74
Gestational diabetes	4.0	3.1–5.2
Large-for-gestational-age infant	3.8	3.5–4.16
Early neonatal death	3.4	2.07–5.63
Hypertension	3.2	2.6–4.0
Shoulder dystocia	3.1	1.86–5.31
Meconium aspiration	2.9	1.6–5.07
Antenatal stillbirth	2.8	1.94–4.02
Cesarean delivery	2.7	2.49–2.90
Fetal distress	2.5	2.12–2.99

Note: BMI = body mass index; CI = confidence interval; OR = odds ratio.

ASRM Practice Committee. Obesity and reproduction. Fertil Steril 2008.



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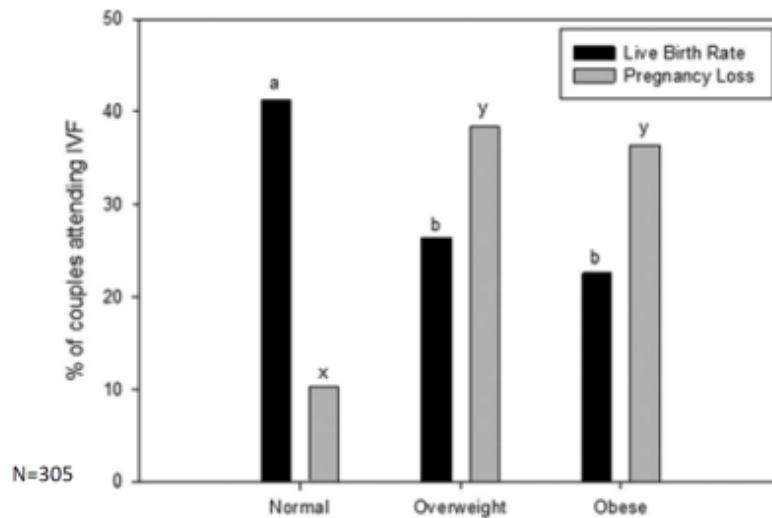
Obesitas man

Verminderde spermakwaliteit

Toename DNA schade

Daling zwangerschapskans

IVF outcomes in obese men



Effect obesitas

Table 1. Odds ratios (ORs) for subfecundity (time to pregnancy of > 12 months) according to categories of men's and women's BMI

Women's BMI (kg/m ²)	Men's BMI (kg/m ²)				Women ^a OR (95% CI)
	<18.50 OR (95% CI)	18.50–24.99 OR (95% CI)	25.00–29.99 OR (95% CI)	≥30 OR (95% CI)	
<18.50	N/A	1.00 (0.82–1.22)	1.20 (0.94–1.53)	1.95 (1.06–3.58)	1.02 (0.88 to 1.18)
18.50–24.99	0.69 (0.34–1.38)	1.00 (Reference group)	1.18 (1.10–1.27)	1.53 (1.32–1.77)	1.00
25.00–29.99	1.63 (0.67–4.01)	1.36 (1.23–1.50)	1.41 (1.28–1.56)	1.79 (1.49–2.14)	1.27 (1.18–1.36)
≥30	3.79 (1.48–9.74)	1.74 (1.51–2.02)	2.07 (1.82–2.36)	2.74 (2.27–3.30)	1.78 (1.63–1.95)
Men ^b	0.97 (0.61–1.54)	1.00	1.15 (1.09–1.22)	1.49 (1.34–1.64)	—

N/A, too few observations.

All OR's are adjusted for men's and women's age, number of previous pregnancies, and socio-economic group. For the marginal values, we also adjusted for partners BMI.

^aOR for trend_(normal weight, overweight, obese) = 1.32 (1.26–1.37), *P* < 0.001.

^bOR for trend_(normal weight, overweight, obese) = 1.19 (1.14–1.24), *P* < 0.001.

Roken

Fertiliteit:

Vroegtijdige menopauze

Implantatie

Miskraam

Obstetrisch:

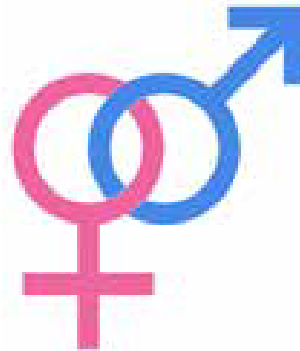
pre-eclampsie, prematuriteit,
perinatale mortaliteit

Effect kind:

Verminderde spermakwaliteit

Cognitieve dysfunctie

Respiratoir en cardiaal



Fertiliteit:

Impotentie

Sperma kwaliteit

Effect kind:

leukemie



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Alcohol

Effect op vruchtbaarheid

$$\text{♀} > 2\text{E}/\text{d} \quad \text{♂} > 3\text{E}/\text{d}$$

Tijdens de zwangerschap

Hersenschade – waaruit andere cognitieve en gedragsmatige problemen kunnen voortkomen omdat alcohol bij de foetus nét wordt afgebroken door de hersenen

Groeiachterstand

Miskramen

Cardiovasculaire afwijkingen

Tijdens borstvoeding



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Caffeine

1-2E/d

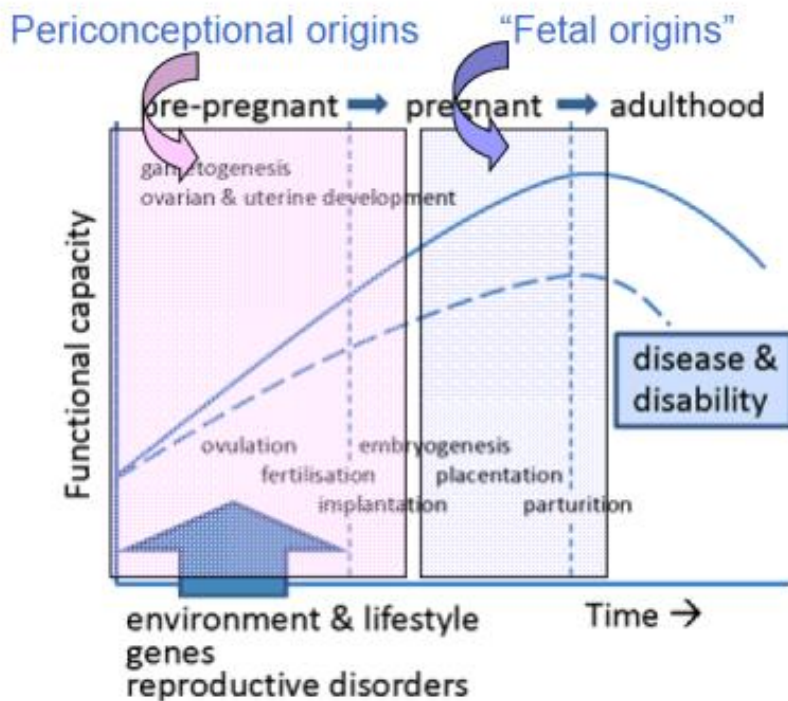
2-3E/d => MK

5E/d => subfertiliteit OR 1.45

Drugs

~roken

Periconception period is critical to health



Nutrition



Toxins



Genetics



Vitamins

Infections

Chemicals

Obesity

Radiation

Drugs

Hormones

R Norman

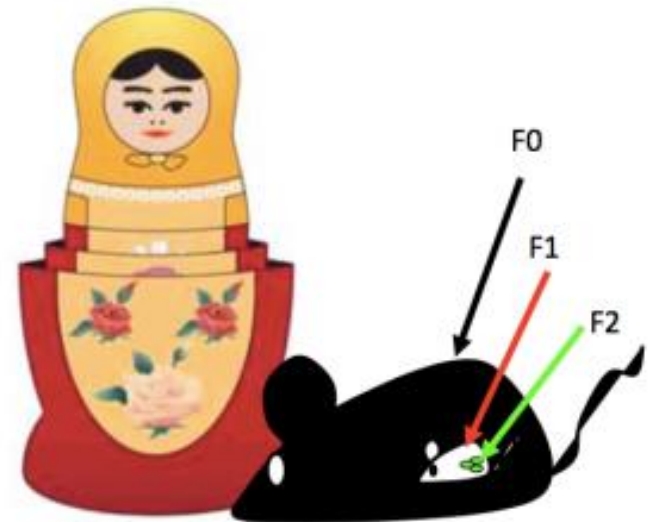


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Epigenetica

- Overdracht van genetische info via DNA
- Blootstelling aan toxines heeft invloed op gen expressie op niveau van:
 - Individueel epigenoom
 - Foetaal epigenoom
 - Foetale voortplantingscellen
dus invloed op 3^o generatie!



We are what our parents and grandparents ate....



Lifestyle

TABLE 1

Lifestyle factors that may impact fertility.



Factor	Impact on fertility	Study
Obesity (BMI >35)	Time to conception increased two-fold	Hassan and Killick, 2004 (72)
Underweight (BMI <19)	Time to conception increased four-fold	Hassan and Killick, 2004 (72)
Smoking	RR of infertility increased 60%	Clark et al., 1998 (37)
Alcohol (>2 drinks/day)	RR of infertility increased 60%	Eggert et al., 2004 (48)
Caffeine (>250 mg/day)	Fecundability decreased 45%	Wilcox et al., 1988 (53)
Illicit drugs	RR of infertility increased 70%	Mueller et al., 1990 (59)
Toxins, solvents	RR of infertility increased 40%	Hruska et al., 2000 (62)

Note: BMI = body mass index; RR = relative risk.

ASRM Practice Committee. Optimizing natural fertility. Fertil Steril 2008.



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Lifestyle

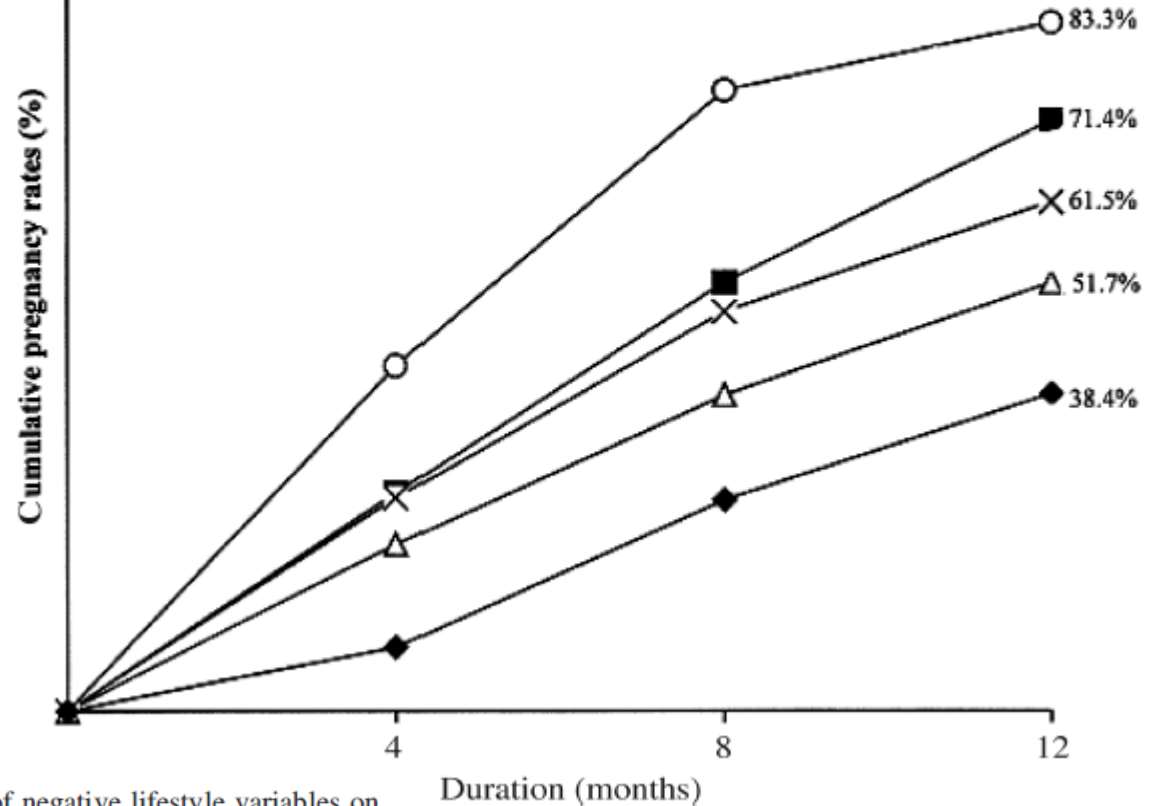


Figure 4. The effect of increasing numbers of negative lifestyle variables on the cumulative conception rates within 1 year for a pregnant population. These variables include women's smoking >15 cigarettes/day, men's smoking >15 cigarettes/day, men's alcohol >20 U/week, women's coffee or tea intake >7 cups/day, women's weight >70 kg, social deprivation score >60, women's age >35 years and/or partner's age >45 years at the time of discontinuing contraception. The lines represent the cumulative conception rates for subgroups with different numbers of negative lifestyle variables as follows: ○, no negative variables; ■, one negative variables; ×, two negative variables; △, three negative variables; ◆, four or more negative variables. Republished from Hassan *et al.* (2004) with permission.



Is effect omkeerbaar?



- Dieet en/of sporten: verbeterde spermakwaliteit (Palmer, 2012)
- Gewichtsvermindering: betere zw kans (Sim, 2014)



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Lifestyle veranderingen

Gewichtsvermindering

preconceptie met 10%

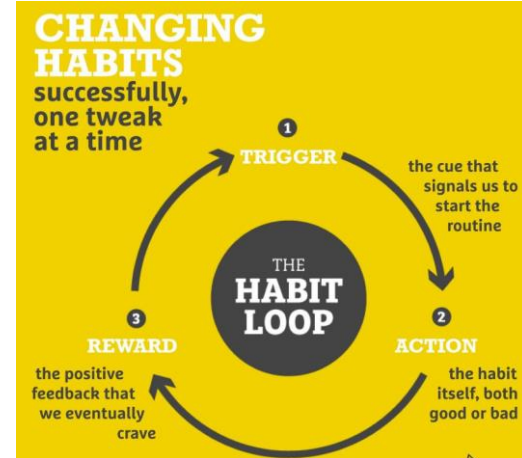
Effect op subfertiliteit, en zwangerschapscomplicaties

tijdens zwangerschap: effect op zwangerschapsdiabetes

Sport: verbeterde fertiliteit

Regular physical activity: Total pregnancies 39.0% vs 16.0%

Improved reproductive performance in obese infertile patients, irrespective of bodyweight loss (Palomba, 2014)



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Lifestyle modification programs

FAST study

Fertility Assessment & advice Targeting lifestyle choices

Verbetering bij meerderheid van de koppels

Key:

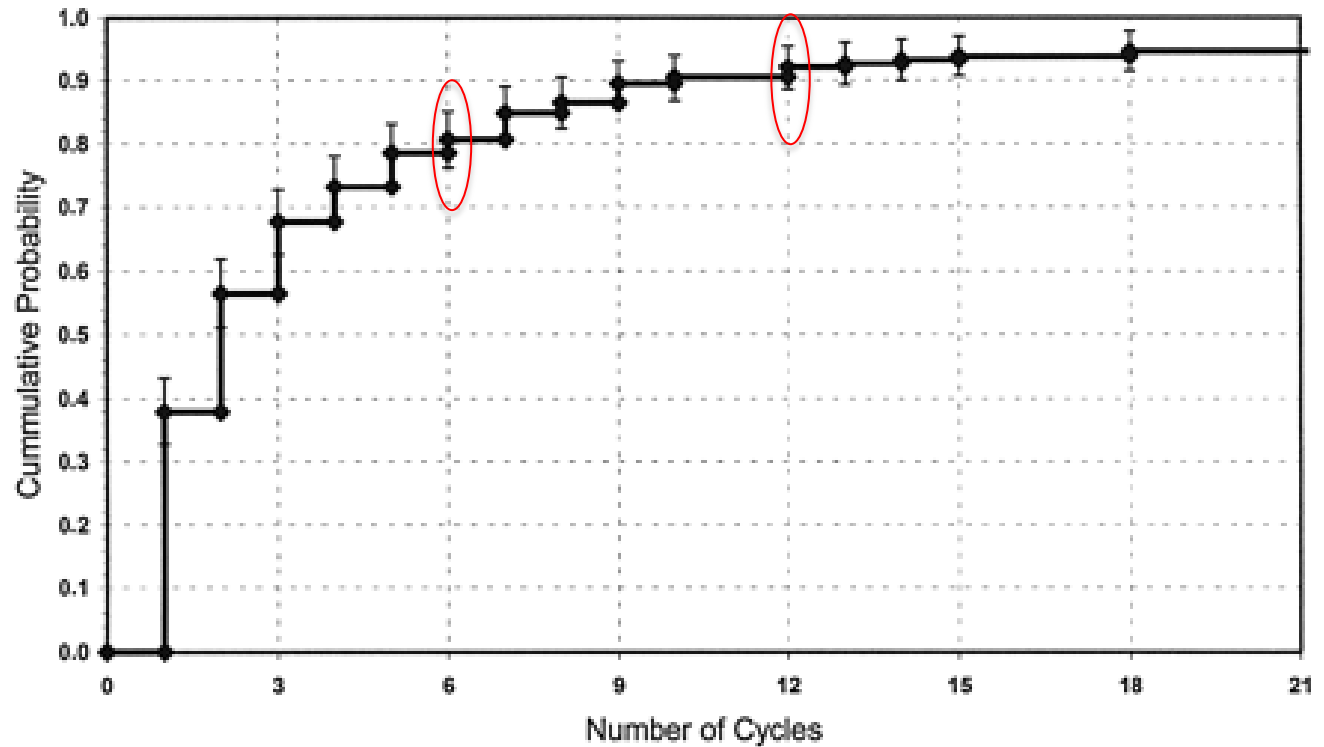
- informatie - motivatie
- realistisch doel
- middelen
- ondersteuning



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subfertiliteit



12mdn < 36j

6mdn > 36j

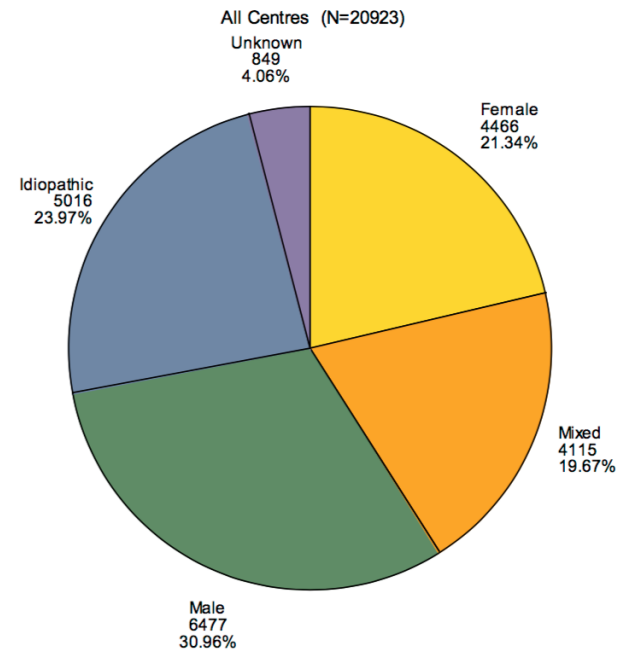
Oorzaak van subfertiliteit

Belrap:

Indicaties voor medisch geassisteerde conceptie

- 21% vrouw: cyclusstoornissen, tubopathologie, endometriose
- 30% man: spermakwaliteit
- 20% gecombineerd
- 25% unexplained

Figure 2.4 Own fresh cycles: Indications of ART



Subfertiliteit

VROUW:

proefcyclus: hormonaal bilan: +SK, AMH

midcyclus + luteaal

Gynaecologisch onderzoek

Echografie

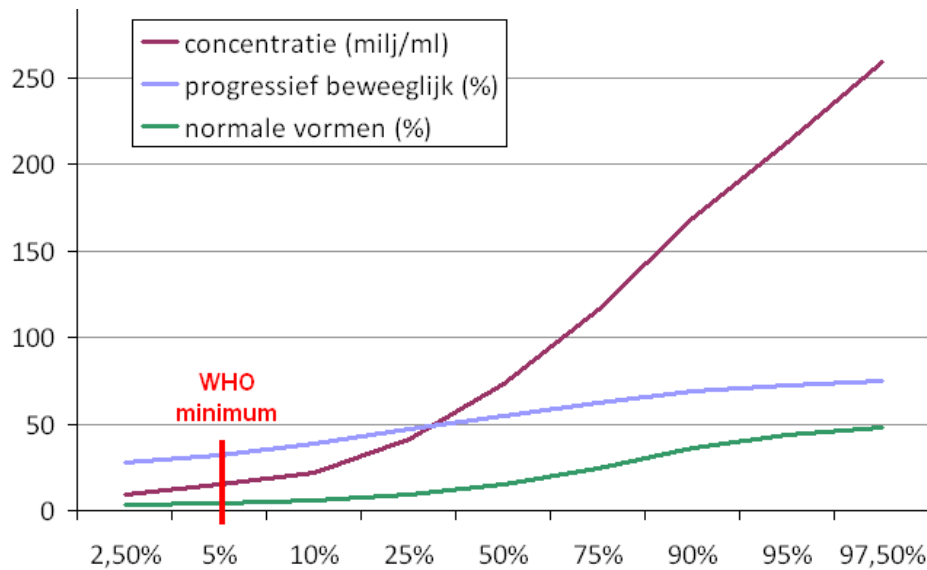
Tubatesten

Subfertiliteit



MAN:

concentratie, motil, morfo, MAR test
bij afwijkend resultaat: 2° staal
+ Proefcapacitatie



WHO-minimumwaarden:

- 16 milj. sp/ml
- 30% progressief beweeglijk
- 4% normale vormen



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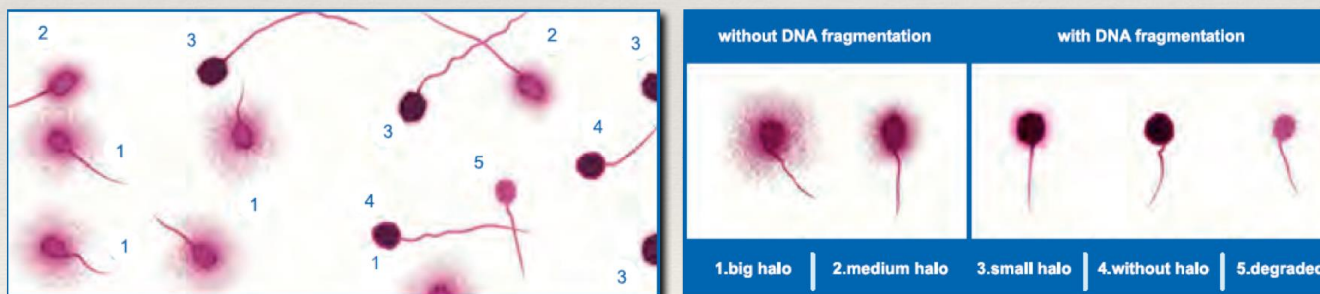
Nieuw: Functionele Spermatesten

HBA slide: **binding van sperma aan Hyaluronan**,
hoofdbestanddeel van de cumulus-oophorus-matrix

% Binding	Interpretatie
≥ 80% binding	Normale rijpheid en fysiologische functie
< 80% binding	Verminderde rijpheid en fysiologische functie, hoge waarschijnlijkheid slechte morfologie

Halosperm G 2: **Sperm DNA fragmentatie (SDF)**

* $SDF\% = 100 \times (\text{Fragmented} + \text{Degraded}) / \text{total cells counted}$

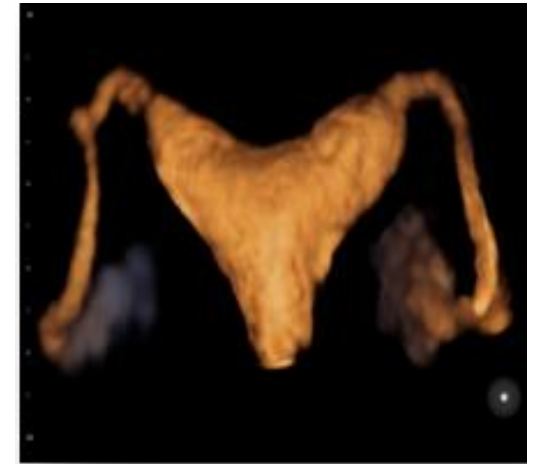
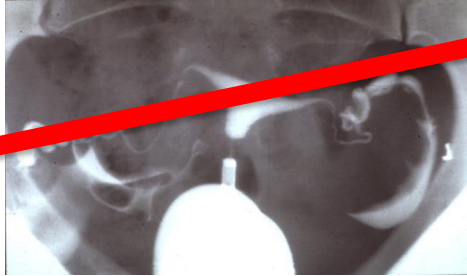


% SDF	Interpretatie
< 30%	Patients have a good prognosis of becoming pregnant
> 30%	Poor sperm DNA integrity. Lifestyle changes or IVF/ICSI applicable

Evaluatie van de tubae

Indirecte onderzoek:

- ~~HSG~~

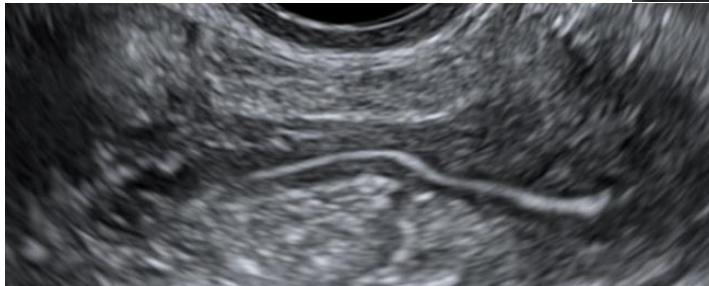


- HYsterFOamSonographY

- Echogeleiding
- Minder pijnlijk

nadeel:

- indirect
- onvolledige info

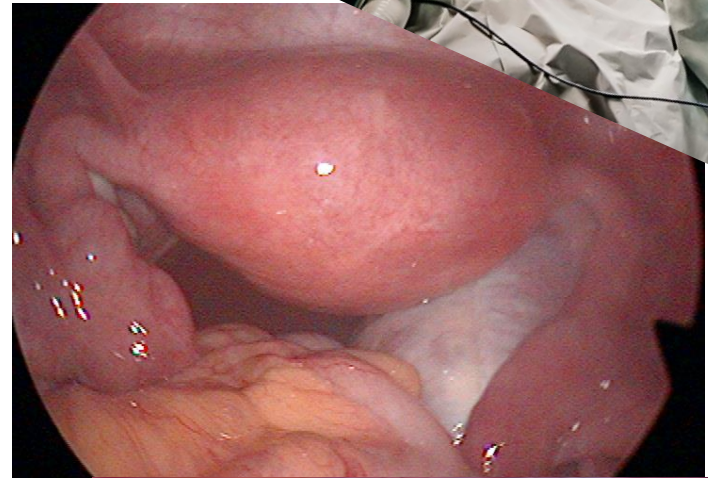


Evaluatie tubae

Direct onderzoek:
Laparoscopie

Nadeel:

- Invasief
- Algemene narcose
- Werkonbekwaamheid



Evaluatie van de tubae

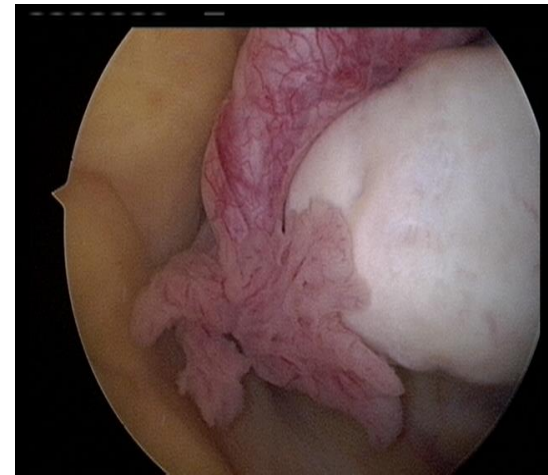
Directe onderzoek:

✓ ~~Laparoscopie~~



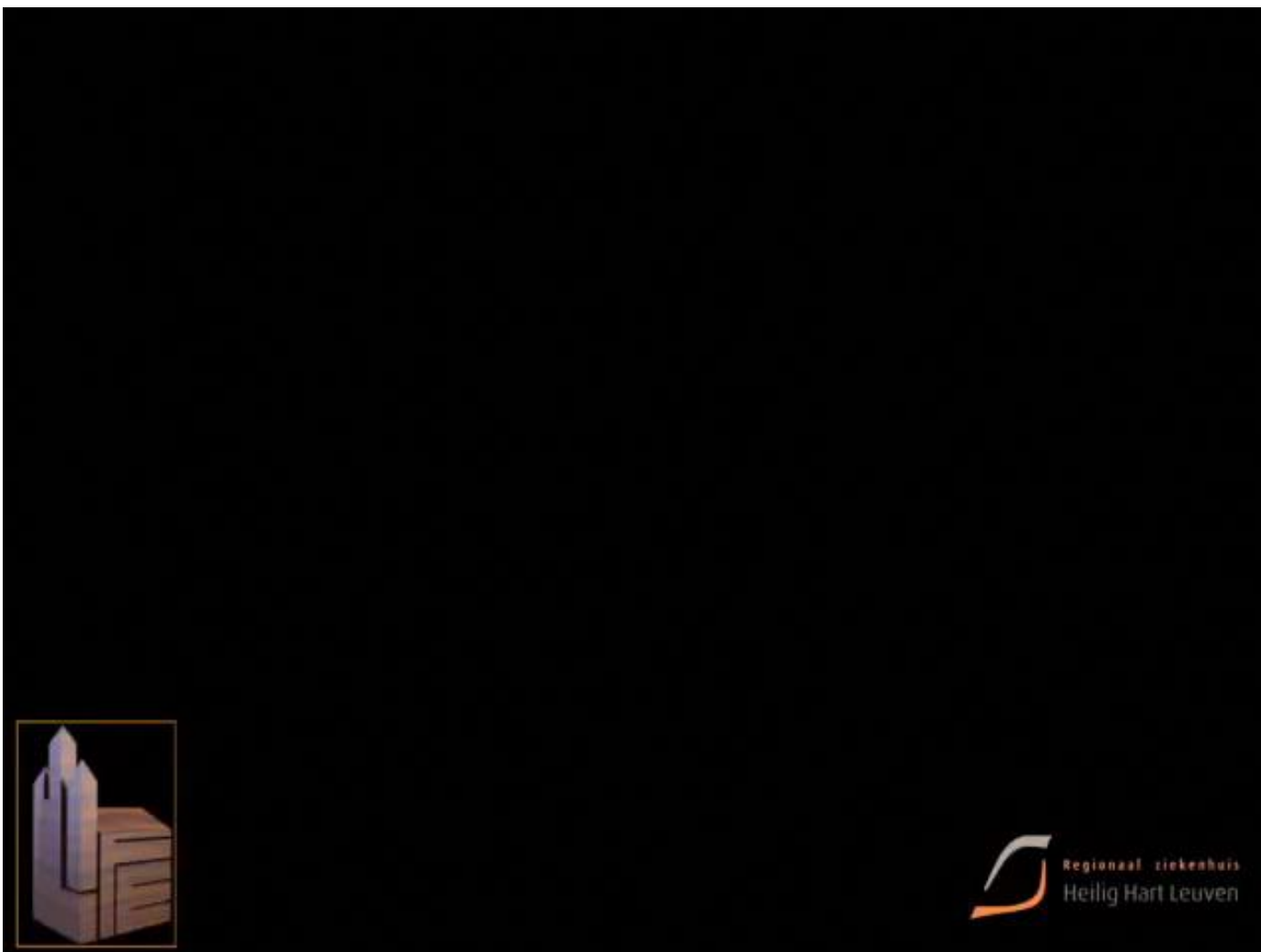
✓ Transvaginale laparoscopie

- Onder sedatie
- Slechts 1 dag werkonbekwaam



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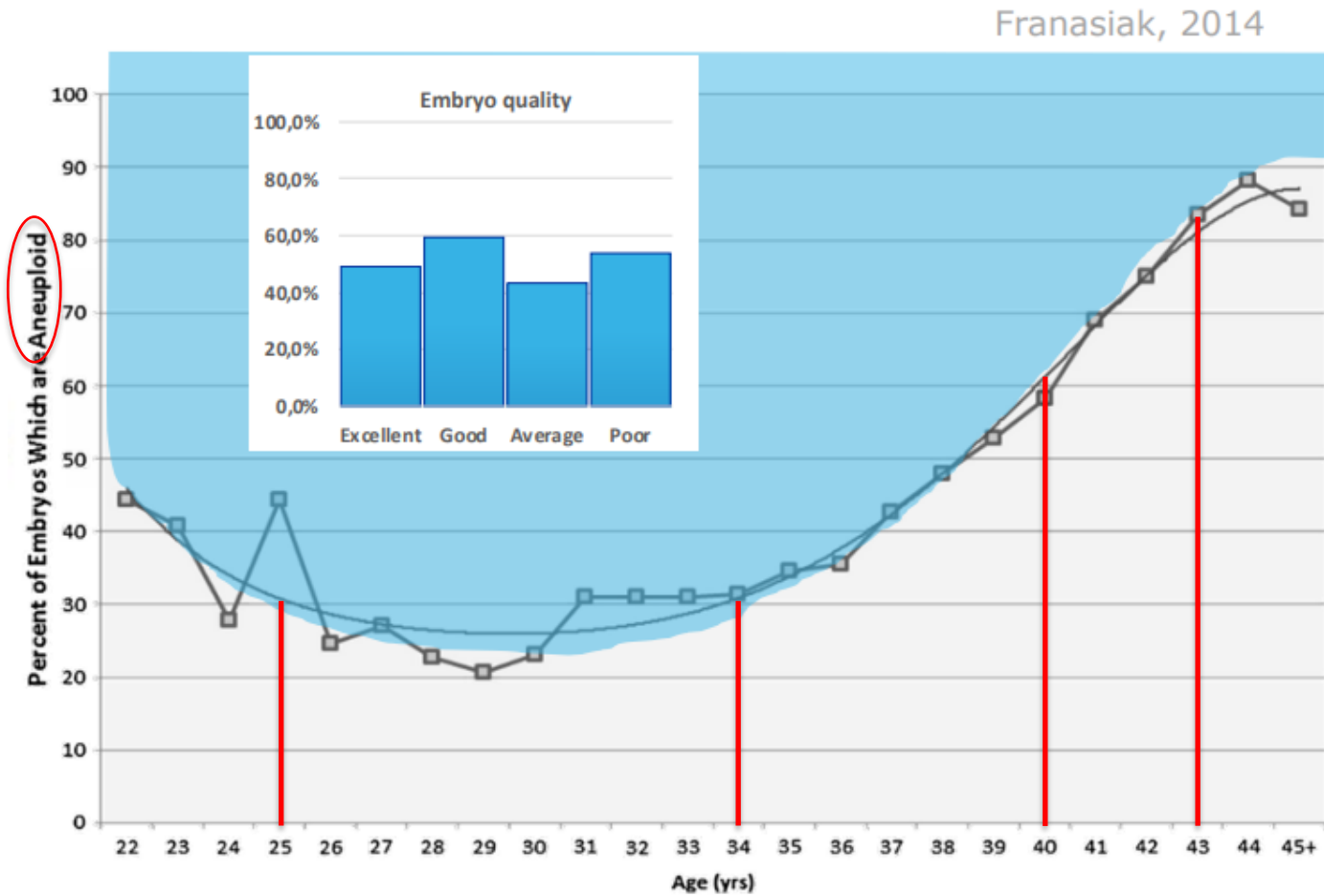


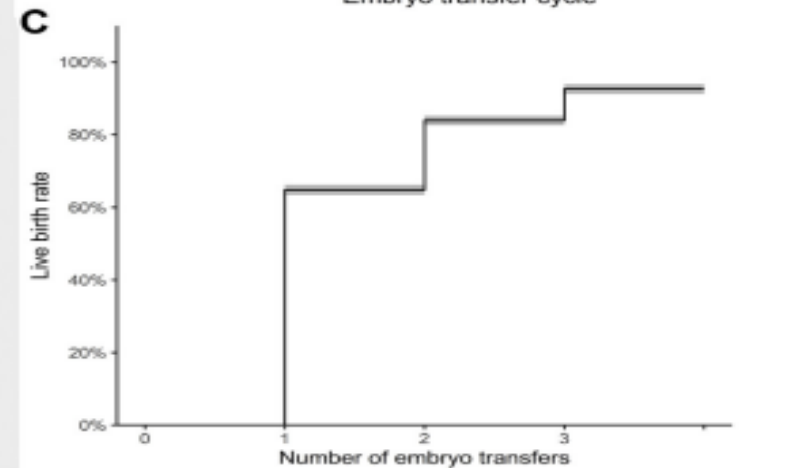
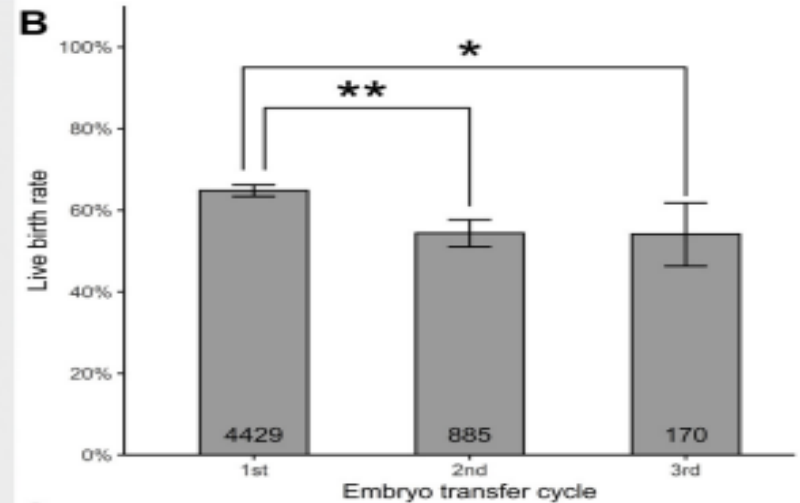
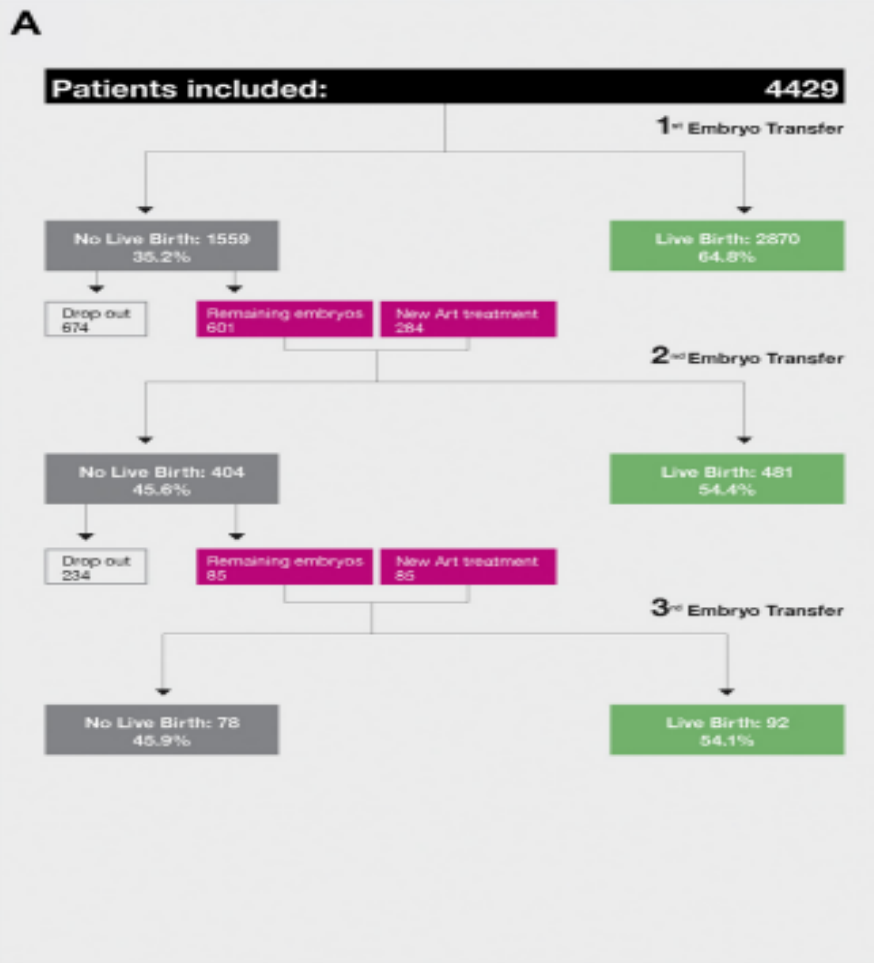
Behandelingsmogelijkheden

1. Herstel spontane conceptie kans
2. Hormonale behandelingen
3. Inseminatie (IUI)
4. In Vitro Fertilisatie (IVF)
5. Preïmplantatie genetische diagnose/screening
6. Eicellen/ovarium invriezen
7. PRP behandeling



IVF

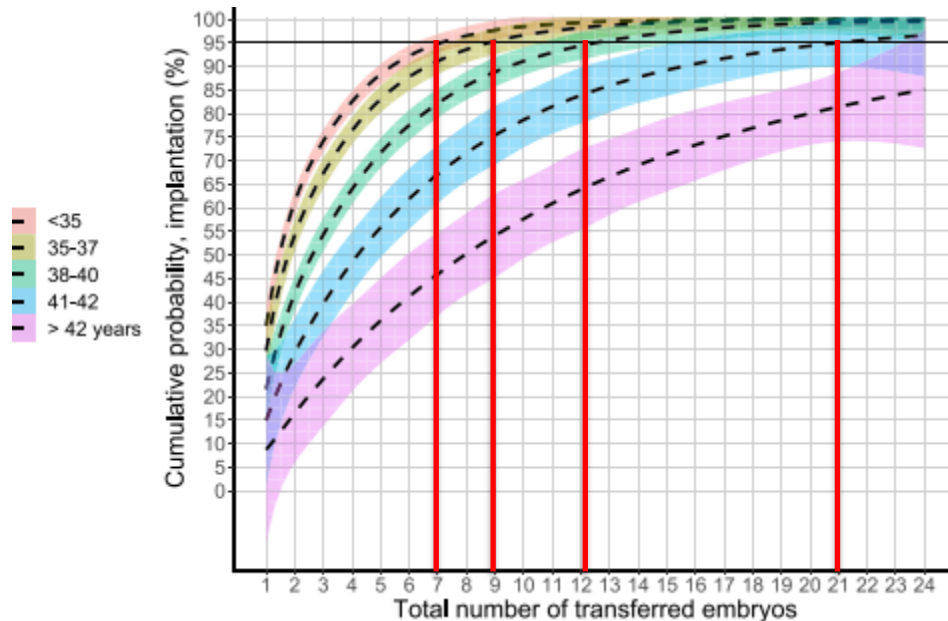




(A) The live birth rate (LBR) was analyzed in women (n = 4,429) with up to three consecutive frozen euploid single embryo transfers (FE-SETs). Of those women who failed to achieve a live birth after the first FE-SET (n = 1,335), 885 (56.8%) underwent a second FE-SET. Of those women who failed to achieve a live birth after the second FE-SET (n = 404), 170 (42.7%) patients underwent a third FE-SET. (B) The LBRs after the first, second, and third cycles. The transfer cycle is shown on the horizontal axis (Tukey's range test, *P = .01, **P < .001). (C) The cumulative LBR after up to three consecutive FE-SET was **92.6%** (95% confidence interval [CI] 91.2%–93.9%) as illustrated by Kaplan-Meier estimates. The cumulative LBR after the first (64.8%; 95% CI 63.4%–66.2%) and after the second (83.9%; 95% CI 82.6%–89.0%) FE-SET were also Kaplan-Meier estimates. The number of embryo transfers is shown on the horizontal axis.

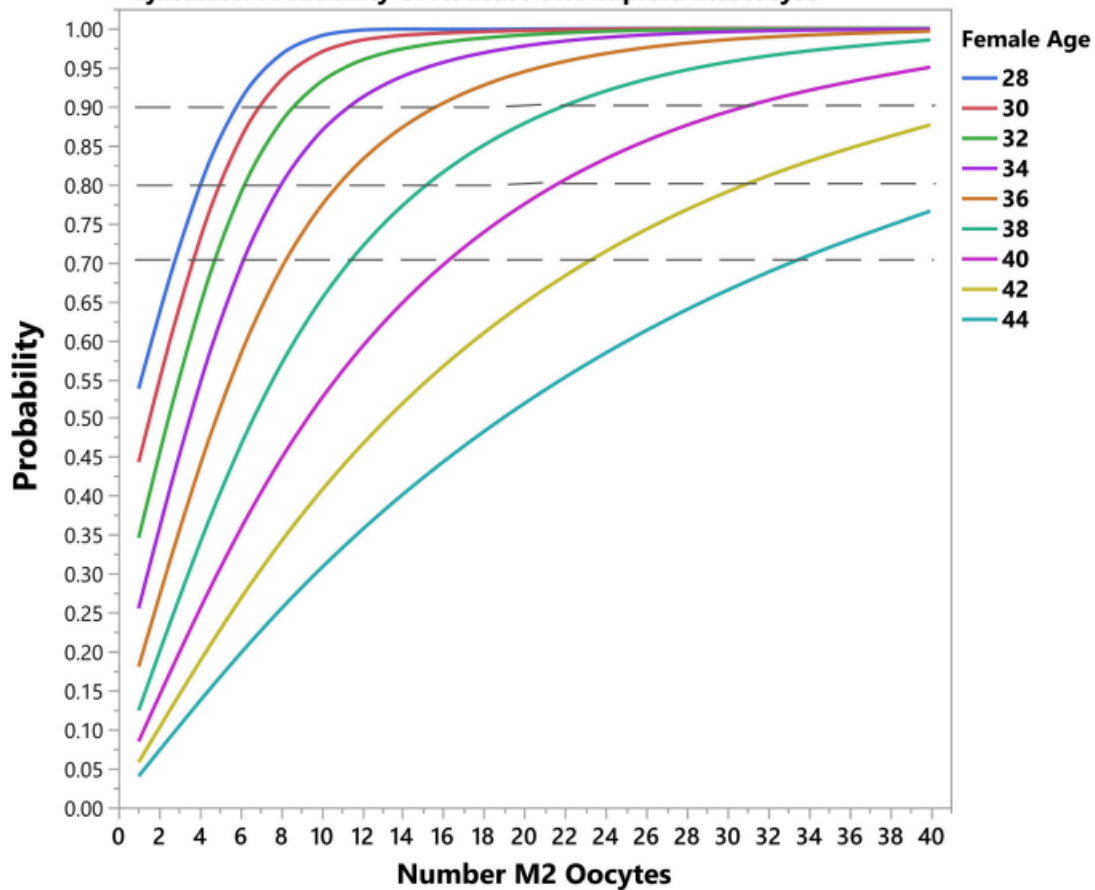
Pirtea. True rate of recurrent implantation failure. Fertil Steril 2020.

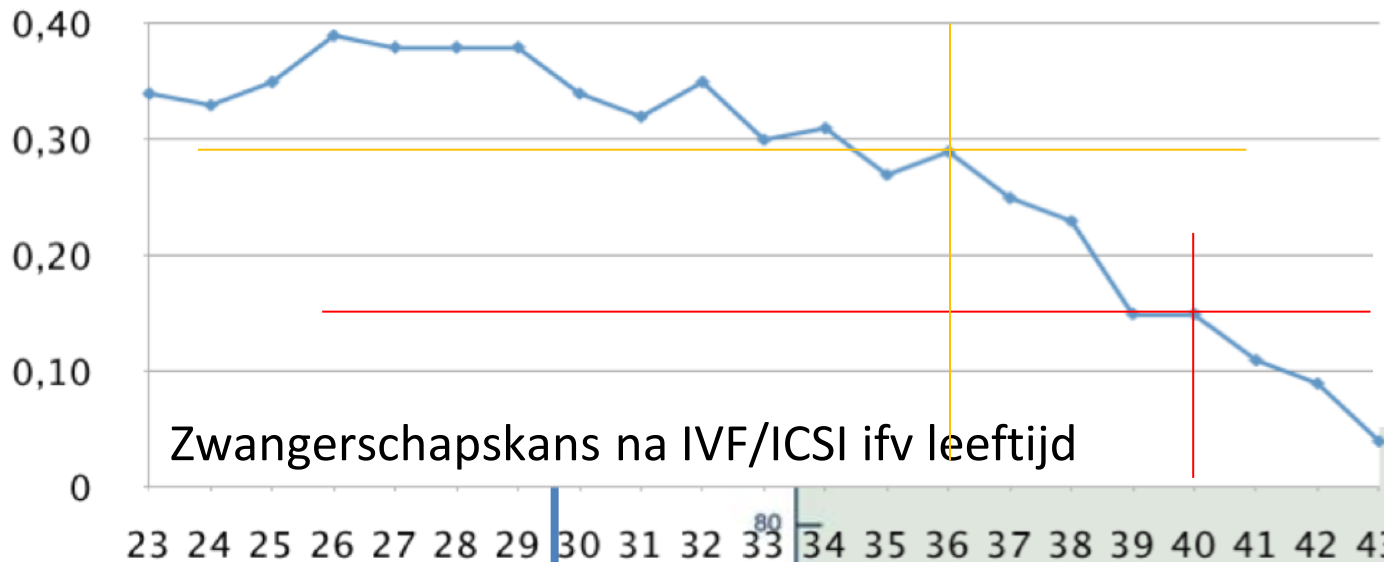
Repeated Implantation Failure



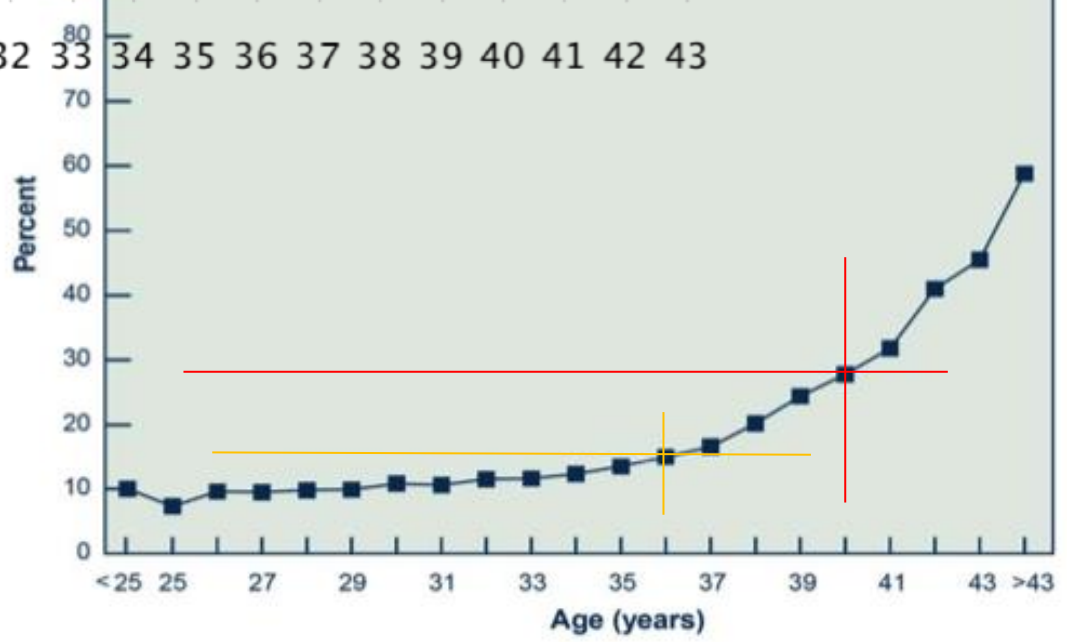
- Maternal age
- Chance of euploidy
- Chance of euploid blast implanting (fig 55%)

Ejaculate: Probability of At Least One Euploid Blastocyst





Miskraamratio
ifv leeftijd eicel

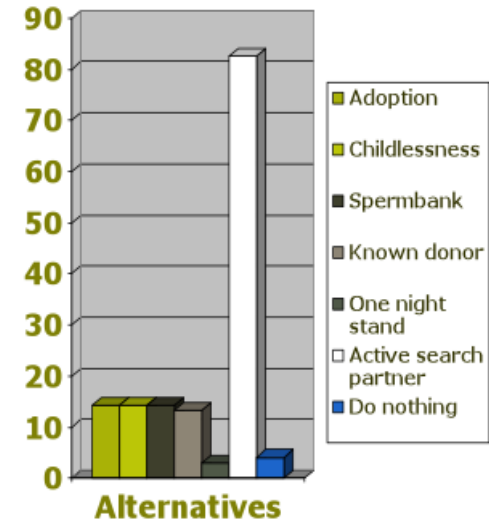


Eicelvitricificatie



Gezinswens > Kinderwens

- Search for a suitable partner = only valuable alternative
- 63% actively searches for a partner by visiting dating sites, addressing the social network, ..



‘Verzekering’
Niet terugbetaald



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Eicelvitricificatie



- oncologie < > sociaal
- Best voor 35 jaar !
- ± 21 eicellen nodig

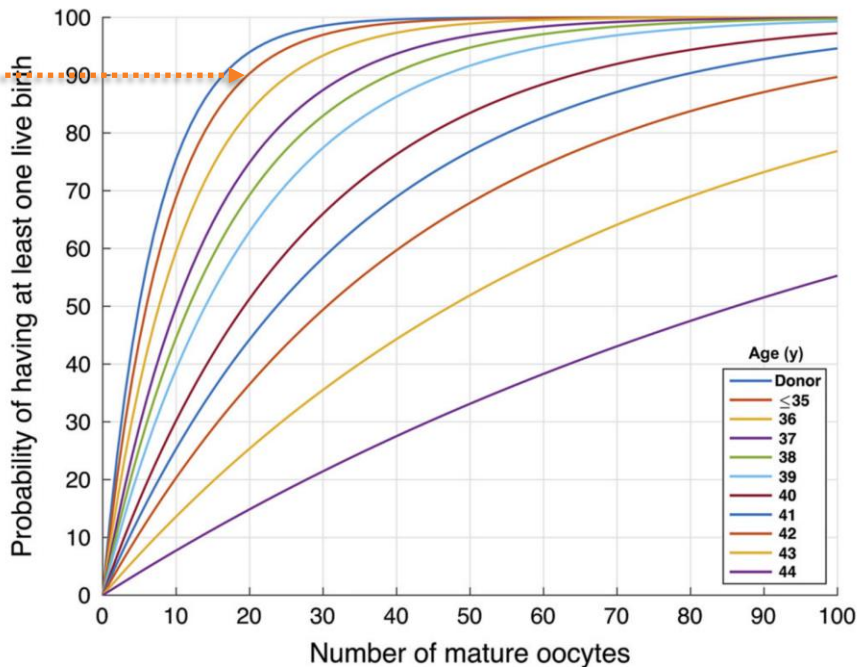


Figure 1 Live birth predictions by age and number of mature oocytes retrieved. Each curve shows the percent likelihood that a patient of a given age will have at least one live birth according to Equation 2, based on the number of mature oocytes retrieved and frozen.

Goldman et al, HR, 2017



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cryo preservatie van ovarieel weefsel

- oncologie
- voordeel:
 - geen hormonale stimulatie meer
 - sneller
 - kans op spontane cyclus en hormonaal herstel
 - ook mogelijk voor puberteit

Resultaten eicelvitricificatie

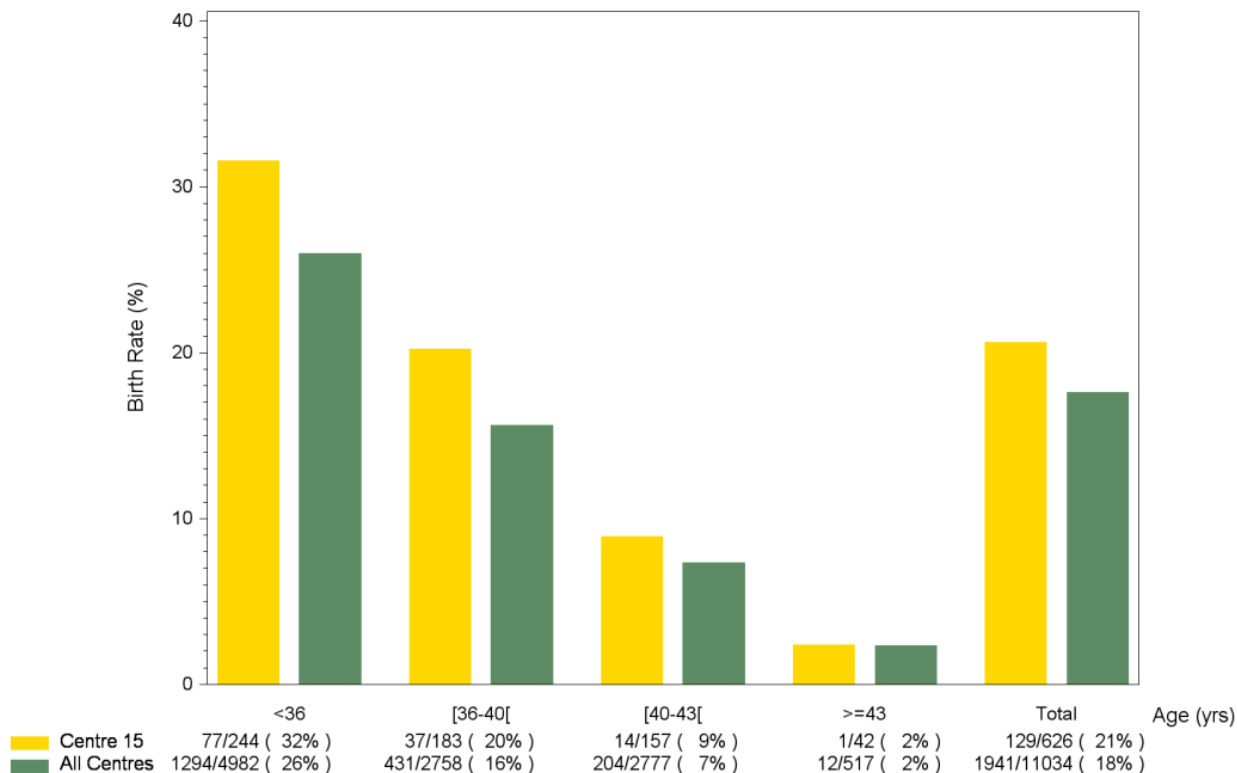
Ontdooi cycli	18	
ontdooid	192	Gemiddeld 10,6
overleefd	122	64%
2PN	72	59%
ET	26	
zw	10	38%
geboorte	6	33%

Resultaten eicelvitricificatie

Ontdooi cycli	18	
ontdooid	192	Gemiddeld 10,6
overleefd	122	64%
2PN	72	59%
ET	26	
zw	10	38%
geboorte	6	33%

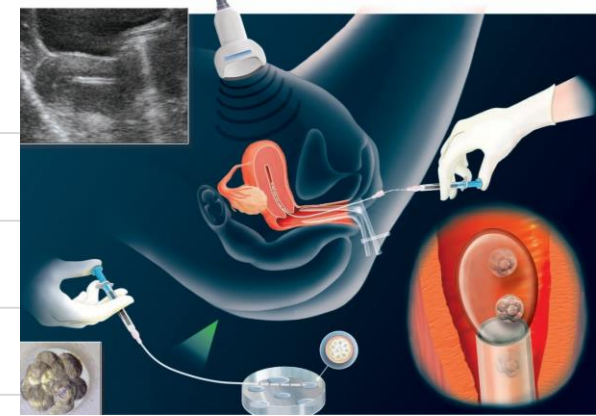
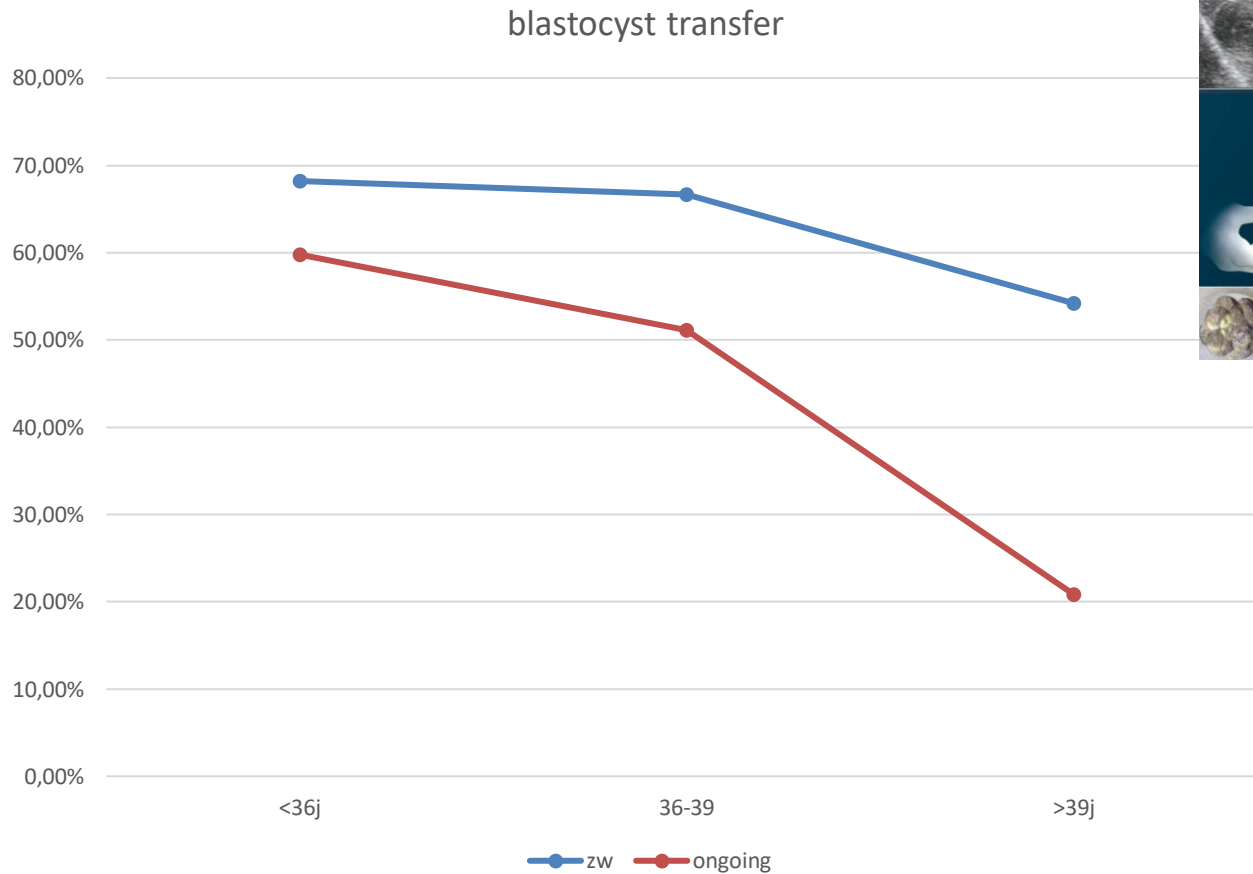
Belrap 2020

Figure 2.34 Own fresh cycles: Birth rate per transferred embryo according to age



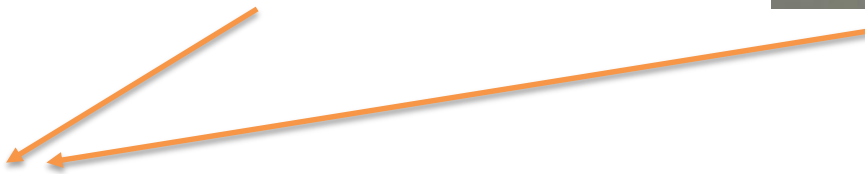
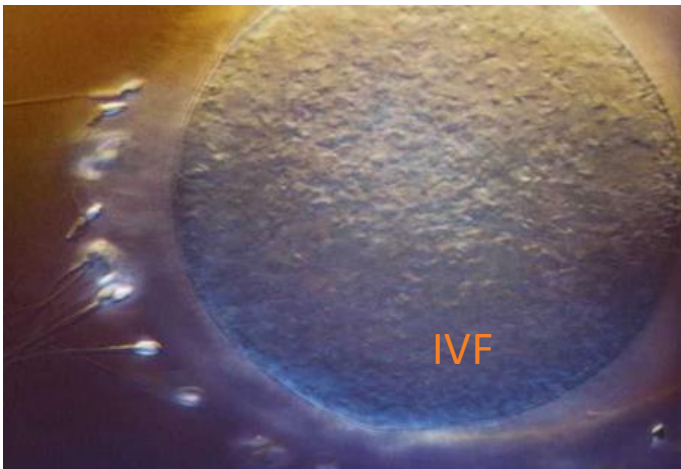
n/N (%) where n = Total number of babies; N = Total number of embryos transferred; %= n*100/N; NA = No cycles with data available.
Results do not include surrogate cycles.

Jaarrapport 2023



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Take 2 work

SEXUALLY TRANSMITTED INFECTIONS
Sexually transmitted infections are the leading cause of infertility and often have no symptoms.

ADVANCING AGE
While women and their partners must be the ones to decide when (and if) to have children, women in their 20s and 30s are most likely to conceive.

SMOKING
Women and men who smoke have decreased fertility. In fact, studies show that up to 13 percent of female infertility is caused by smoking.

UNHEALTHY BODY WEIGHT
Twelve percent of all infertility cases result from weighing too little or too much.

YOUR DECISIONS NOW CAN IMPACT YOUR ABILITY TO CONCEIVE IN THE FUTURE.

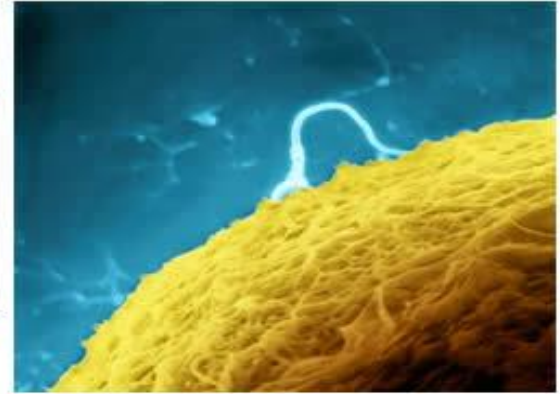
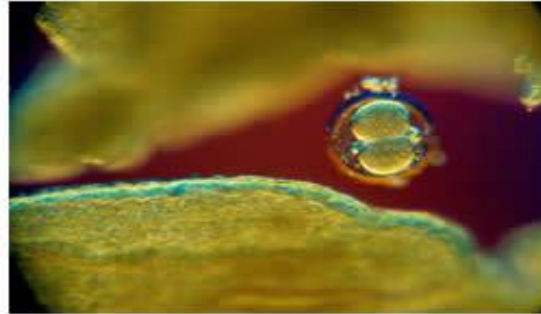
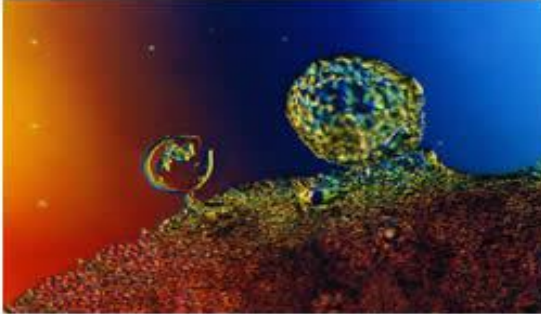
INFERTILITY IS A DISEASE AFFECTING 6.1 MILLION PEOPLE IN THE UNITED STATES.



Regionaal ziekenhuis
Heilig Hart Leuven



THANK YOU



lifeleuven@hhleuven.be



Regionaal ziekenhuis
Heilig Hart Leuven

