

ART FERTILITY CLINICS | PATIENT GUIDE



If you are considering getting fertility treatment with ART Fertility Clinics...

Book an appointment via phone/website/ social media platform

On the day of your first consultation, we will register you
We will need:

- EID (Emirates ID) / Passport
- Marriage Certificate
- Consent to be signed by both husband and wife



First Consultation Information



One of our doctors will see you



We believe in individualized treatment. Our doctors discuss your case together to ensure the best treatment course is chosen for you and when you return any doctor can continue to manage your case in the best way



Nurse or Phlebotomist will take some blood



Ultrasonographer will do a scan



We will book a counselling session with one of our IVF trained counsellors, to explain your individualized plan that our team of doctors have chosen for you to ensure the best outcome, determined by research and innovation practices at ART Fertility Clinics

You would need support and we are here to be your cheerleader, but your partner will be most important on this journey and together you can do this.

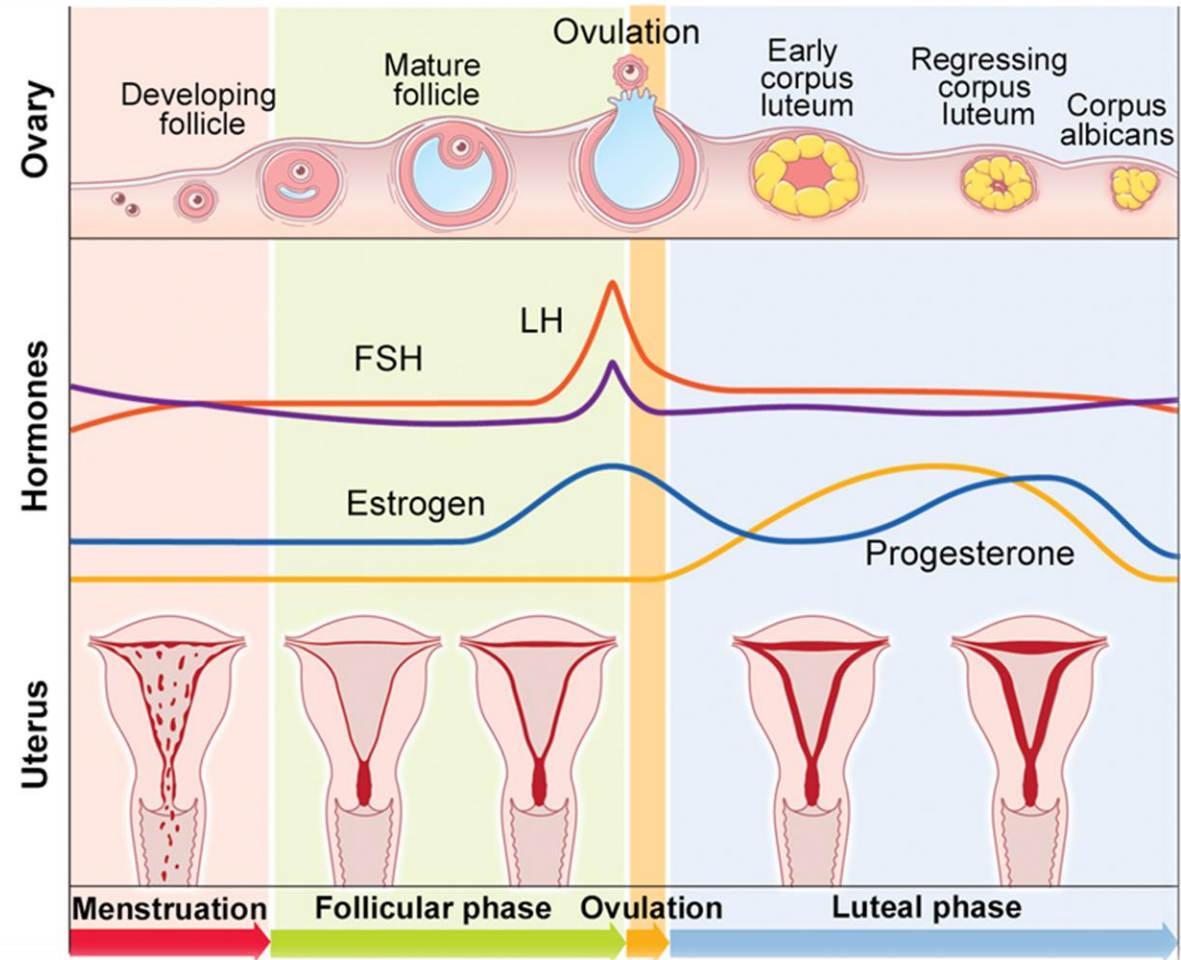
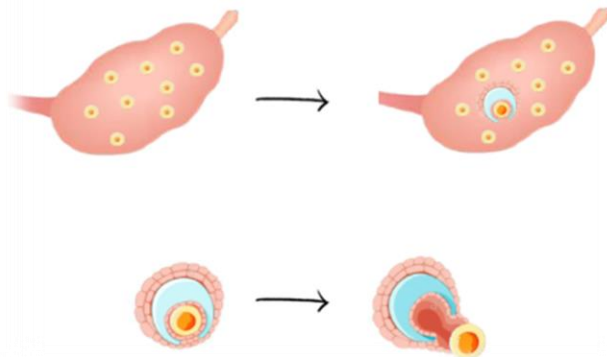


Menstrual cycle

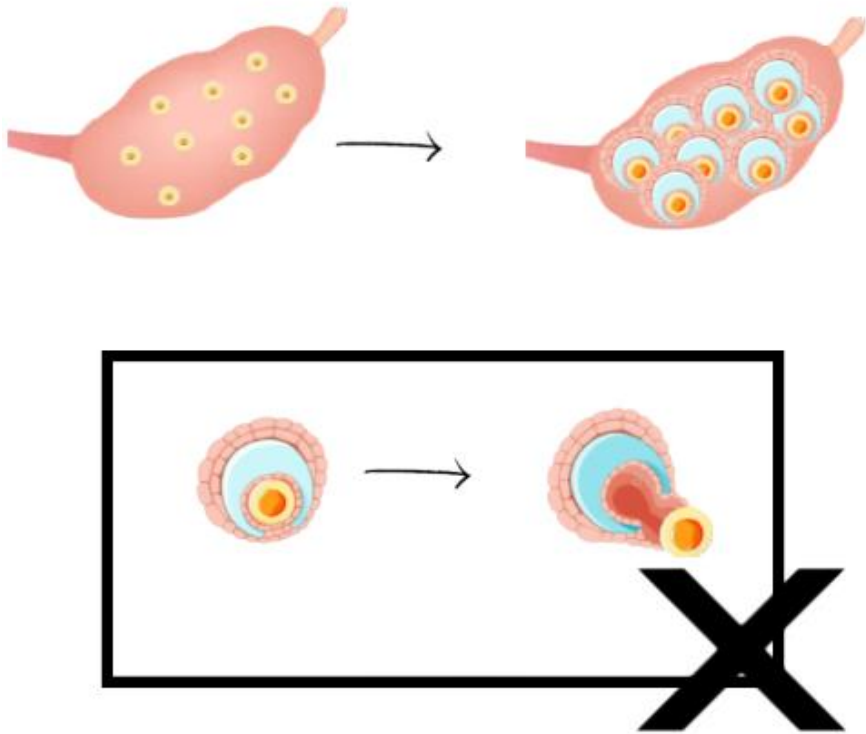
- starts when there is real bleeding (uterus sheds its lining)

But why does this happen?

In a regular cycle, follicles are stimulated to grow each month, by FSH (follicle stimulating hormone) – called the follicular phase and when ONE follicle has grown (dominant follicle), a hormone LH (luteinizing hormone) causes a release of the egg from the follicle – this is called OVULATION and the luteal phase starts and lasts for around 2 weeks before menstruation starts.



What is the difference during IVF treatment from my normal menstrual cycle?



- Instead of just one follicle growing big, we want ALL the follicles to grow big
- We give you FSH to make the follicles grow and we give you pituitary suppression medication to stop ovulation
- Once all the follicles are grown enough for harvesting, you receive a trigger shot to help the egg mature the last bit and release them from the follicle wall

FAQ

Will more growing follicles mean lower ovarian reserve?

NO, we are only using follicles already released from the ovarian reserve

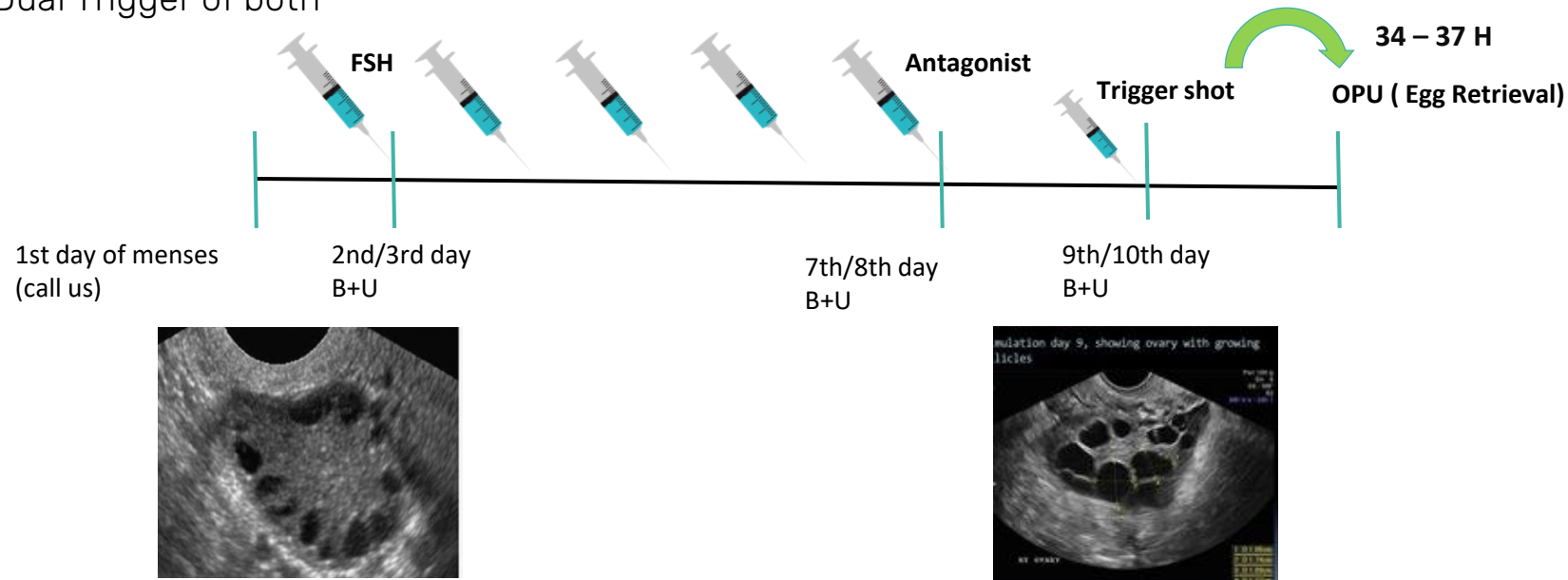
Treatment Pathways

Antagonist

Agonist

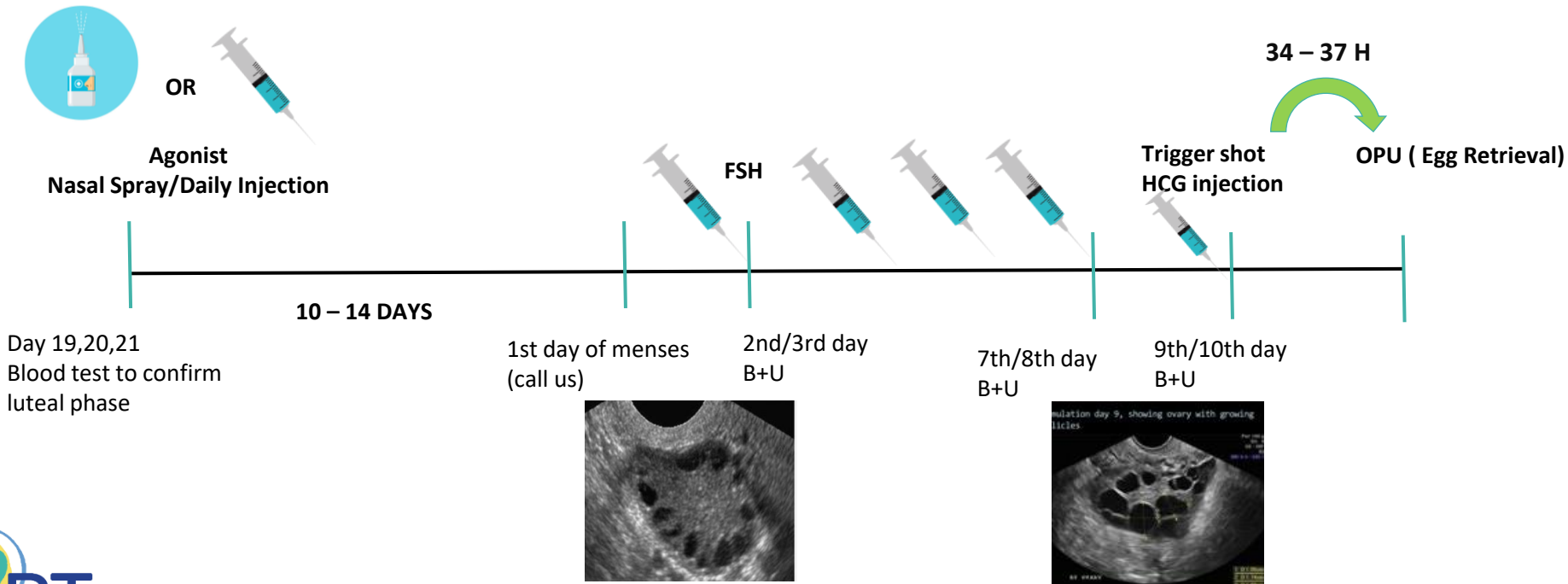
Antagonist:

- On 2nd or 3rd day of menses, you will do blood tests and US to check if you have low hormonal values and small synchronized follicles, then you will start with stimulating injections (FSH) for around 10-12 days.
 - Starting from day 5 of FSH injections, you will start with an antagonist injection to prevent the ovulation.
 - You need to be monitored. Repeated blood analysis and ultrasounds will be done (3-4 visits during the stimulation days) then when the size of the follicles are adequate (based on physician's order), you will be instructed to take the trigger-shot injection (at a certain time) for final oocyte maturation and loosening it from the follicular wall.
-
- In this protocol, trigger shot will be decided based on the response:
 1. Agonist trigger only (in case of risk of OHSS)
 2. HCG
 3. Dual Trigger of both



2. Long down regulation (Agonist): (Pituitary suppression before starting stimulation)

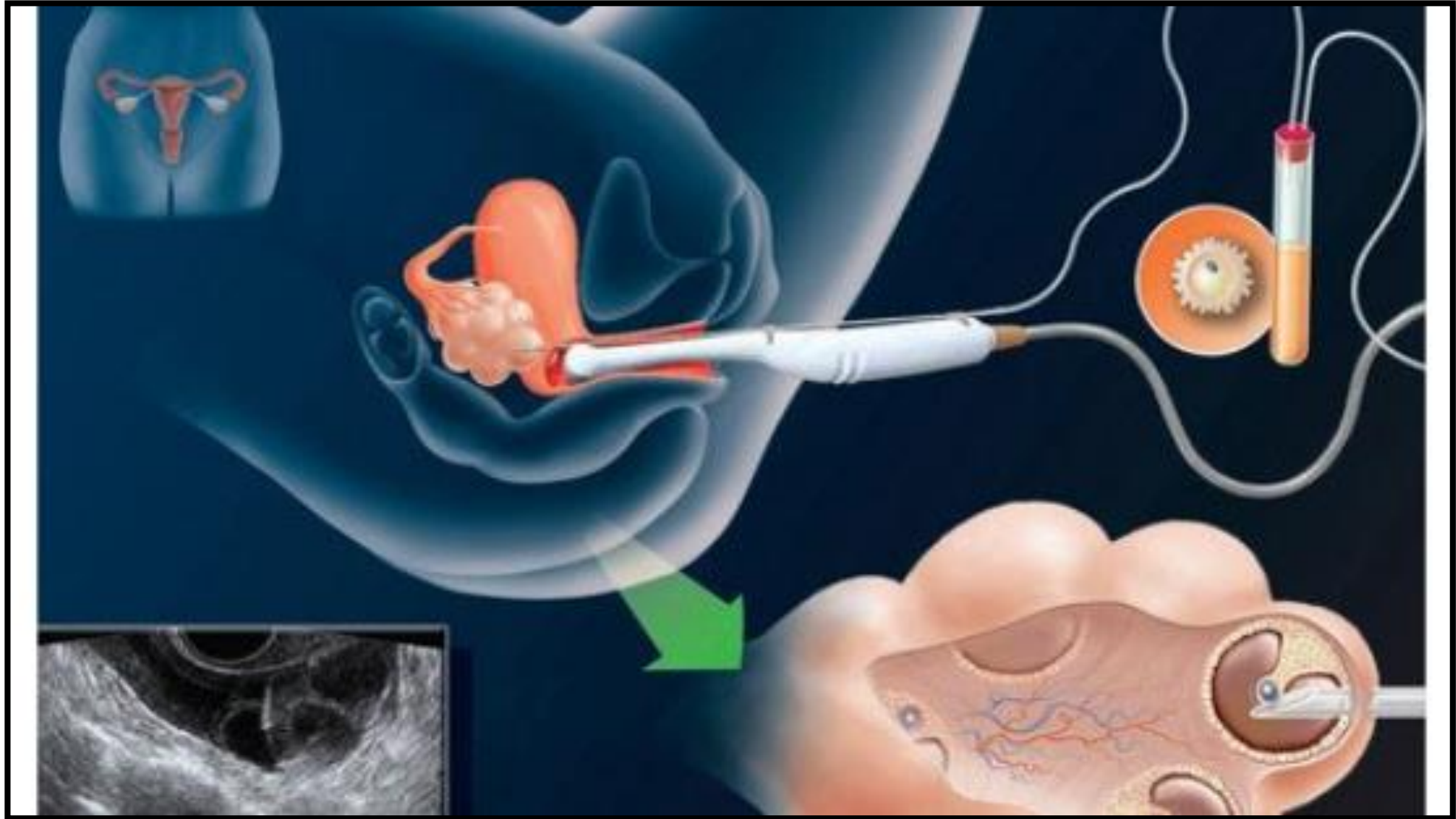
- On day 19, 20 or 21 of menses, you will do blood tests to confirm the luteal phase (post ovulation), if luteal phase is confirmed, you will be instructed to start with either nasal spray or daily injections for suppression, for a period of 10 days and then with menses, you need to call the clinic. You will need to do blood tests and ultrasound evaluation on day 2 or 3 of menses in order to confirm that you are suppressed (low hormonal values and small synchronized follicles) then you will start the ovarian stimulation with daily FSH injections for a period of 10-12 days.
- You will continue using the nasal spray or the daily suppressant injection during stimulation.
- You need to be monitored with repeated blood analysis and ultrasounds, which will be done (3-4 visits during the stimulation days) then when the size of the follicles are adequate (based on physician's order), you will be instructed to take the trigger-shot injection (at a certain time) for final oocyte maturation and loosening it from the follicle wall.
- In this protocol, trigger shot will only be HCG.



Egg retrieval

- **Time:** Will be done 34-37 hours post trigger-shot (you will be instructed about the time to be at the clinic).
- **Instructions before egg retrieval**
 - You need to be fasting for 6-8 hours before your appointment.
 - Don't wear scents, make-up, nail polish, jewelry or contacts lenses.
 - Arrange for a ride home: You won't be allowed to drive for 24H after the egg retrieval.
 - Not to have intercourse from the day of trigger until 5-7 days after egg retrieval.
- **Procedure**
 - Your physician will then perform the egg retrieval while you are sedated. This involves passing an ultrasound-guided probe, with a fine needle attached, through the vaginal canal and into each follicle in the ovary. The fluid in the follicle is then extracted into a test tube and studied under a microscope to look for eggs.
 - This procedure takes 15-20 minutes, depending on the number of follicles that have developed. After the egg retrieval, you will rest for 1 – 1.5 hours before discharge from the clinic.
 - Before you leave, you will be informed about the number of eggs which were retrieved.
- **Instruction post egg retrieval**
 - Normal lifestyle, however, no heavy exercise, heavy lifting, swimming, bath-tub (shower only), sauna.
 - No driving for 24 hours post procedure.
 - No intercourse for 5-7 days post procedure.
- **What to Expect?** lower abdominal pain, bloating, heaviness, constipation, Vaginal spotting and uterine cramps due to enlarged ovaries.
- **What to do?** you can take pain killer if needed, follow high protein diet, increase fluid intake and walk for 30 min each day to speed up the recovery process. To contact the emergency no. In case of severe non-tolerable pain.

Egg retrieval



Sperm sample

- On the day of egg retrieval procedure, the husband will be asked to produce his semen sample. A men's room is available at our clinic. If you have any concerns about collecting the sample, please discuss this with staff before starting your cycle. It may be possible to produce the sample at home and drop it off at the clinic (under certain instructions), or freeze one of the husband's semen samples as a back-up.

In some cases of male infertility, the husband might need to undergo surgical sperm extraction to retrieve semen sample:

1. Testicular sperm Aspiration (TESA or FNA):

- In the TESA procedure, a very fine needle is passed into the testicles with or without anesthesia, and a sample is removed from the seminiferous tubules (where sperm are produced).

2. Testicular sperm Extraction (TESE / MICRO-TESE):

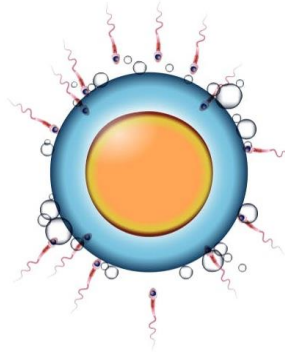
- By opening the scrotum and surgically removing some seminiferous tubules from the testicle with or without microscopic guidance.
- The procedure, performed under general anesthesia.

In both surgeries, samples are processed in the laboratory and checked for the presence of sperm, which can be either used to fertilize eggs or frozen.

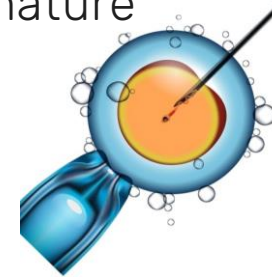
Insemination, fertilization and embryo development:

➤ Insemination technique:

IVF: where the sperm sample is washed and concentrated, then added to the eggs about four hours after egg retrieval. The sperm and eggs are placed in an incubator overnight.



ICSI: where a single sperm cell is directly injected into a single mature oocyte.



The insemination technique will be decided by the embryologists based on sperm and oocyte's quality.

- **Fertilization:**

On the next day of insemination (Day 1), the eggs are examined for signs of fertilization.

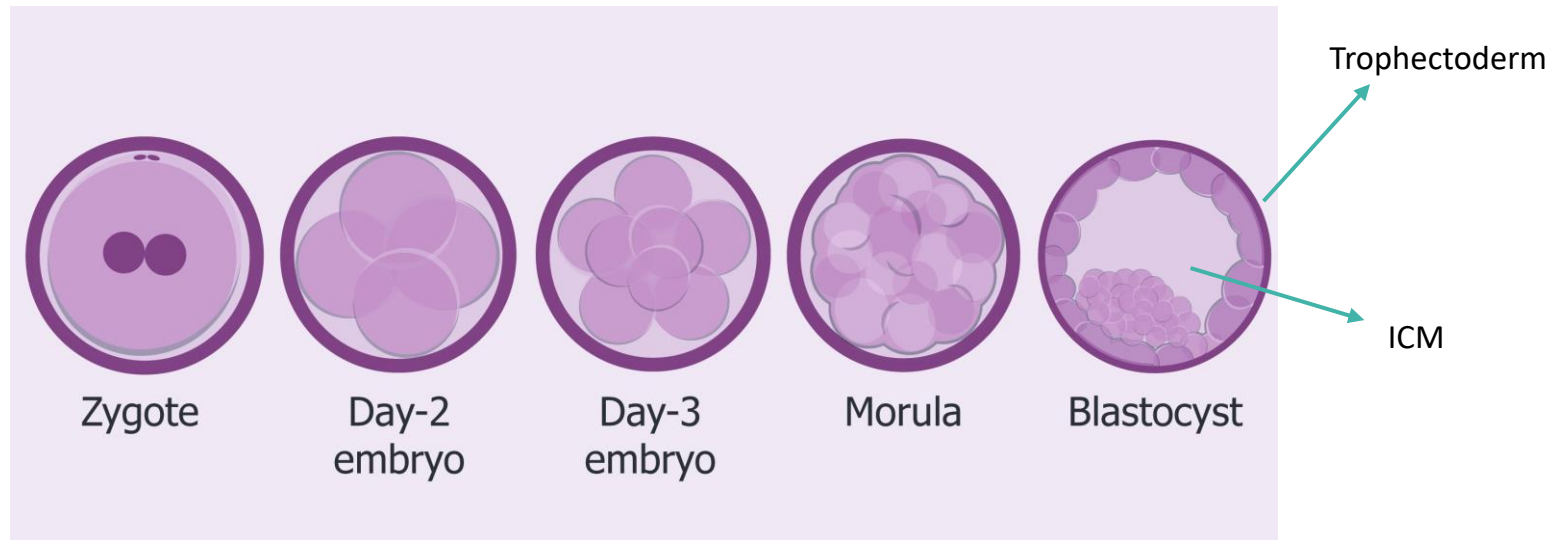
An embryologist will contact you to discuss fertilization outcomes and any questions you may have. The fertilized eggs are then kept in culture for embryo development monitoring.

- **Embryo development:**

After fertilization, zygote develops by mitosis (cell divisions), into cells then morula stage till it reaches a Blastocyst stage on day 5, where it has inner cell mass (ICM) which subsequently form the embryo and outer layer cells (Trophectoderm), which give rise to the placenta.

The embryo might reach the blastocyst stage on day 6 or 7 of culture in case of slow developmental pattern.

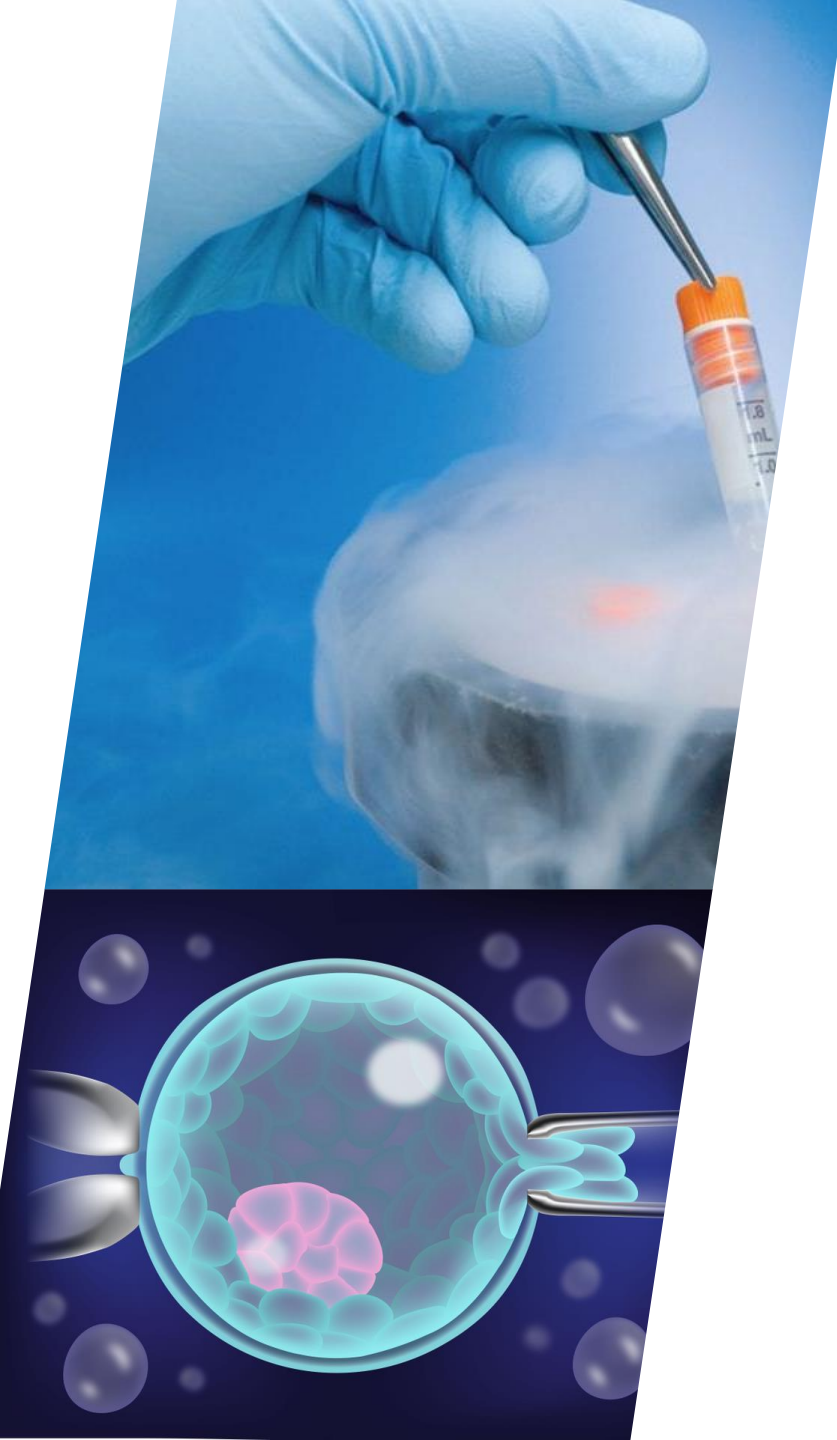
An embryologist will contact you to discuss embryo development outcomes and any questions you may have.



Embryo biopsy and Genetic testing:

Embryo biopsy:

- It is removing few cells from trophectoderm (outer-layer cells) by our skilled embryologists and sending them to the genetic lab in order to evaluate the embryos' genetic information.
- At the same time, all the tested embryos are vitrified(frozen) until it's time to plan for embryo transfer in a future month (in case of having euploid embryo(s)).



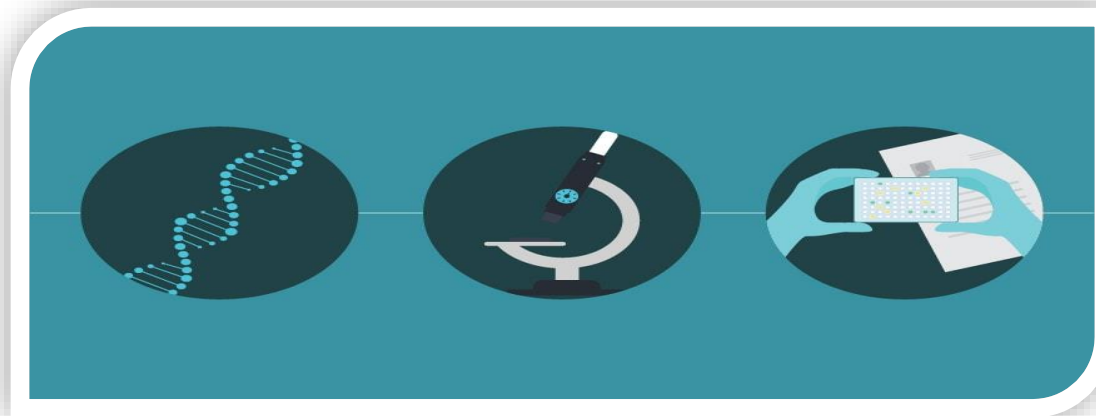
FAQ

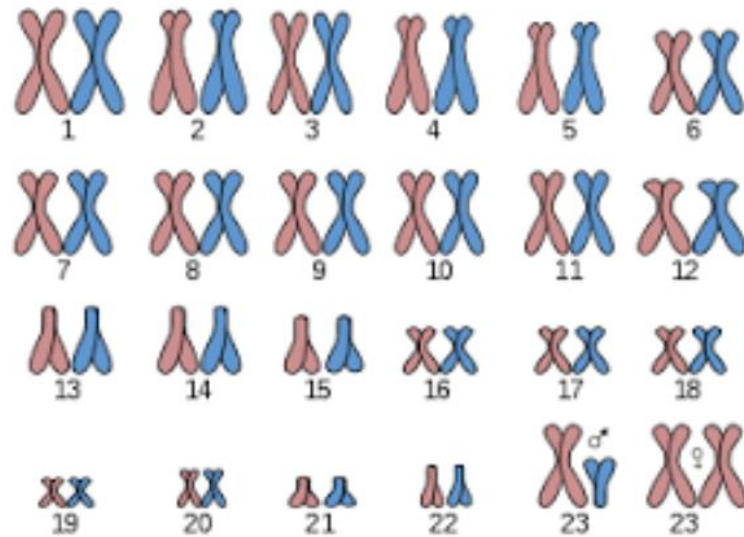
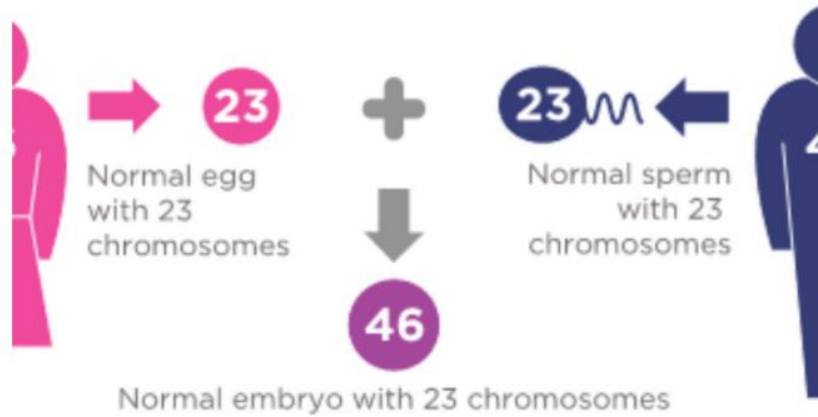
Will a trophectoderm biopsy harm the embryo?

NO, the cells that are removed from the embryo make up the placenta, not the baby and their removal will not affect the development.

Types of genetic tests

1. Preimplantation Genetic Testing for Aneuploidy (PGT-A)
2. Preimplantation Genetic Testing for Structural Rearrangement (PGT-SR)
3. Preimplantation Genetic Testing for Monogenic/Single Gene Disorder (PGT-M)



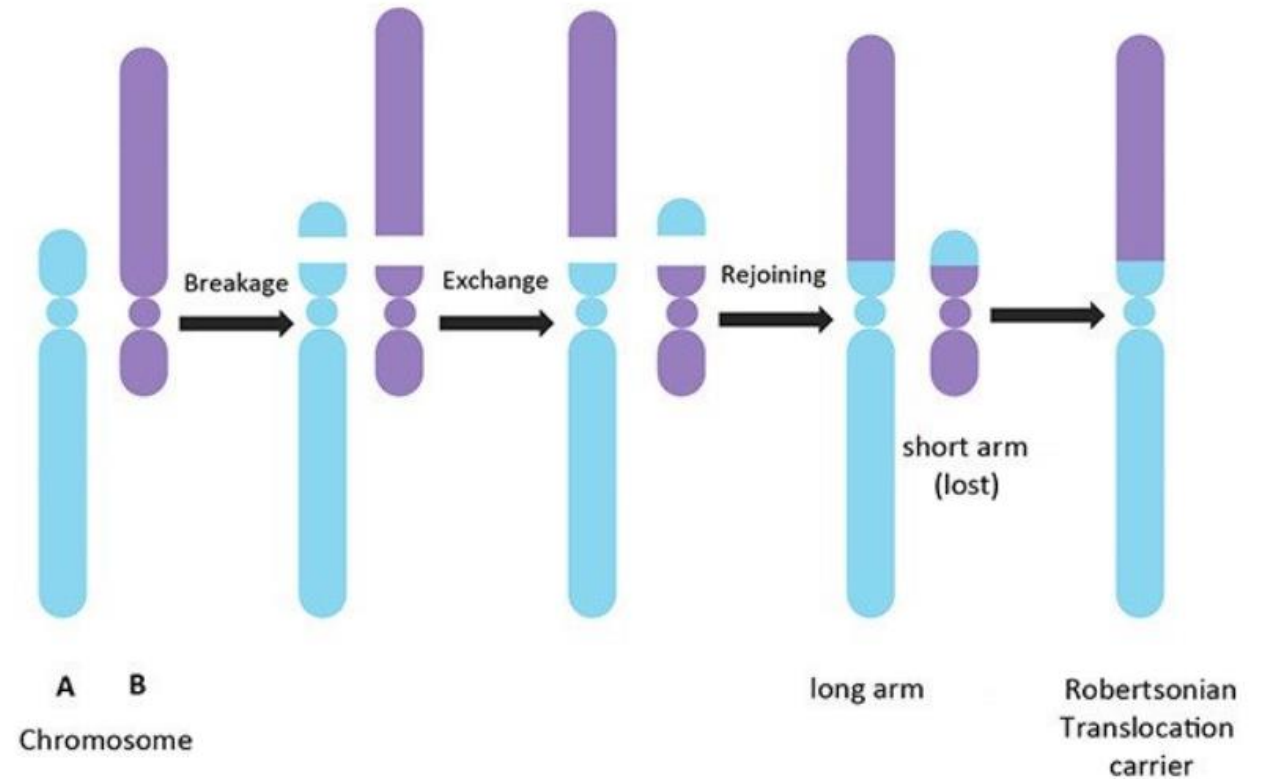


1. Preimplantation Genetic Testing for Aneuploidy (PGT-A)

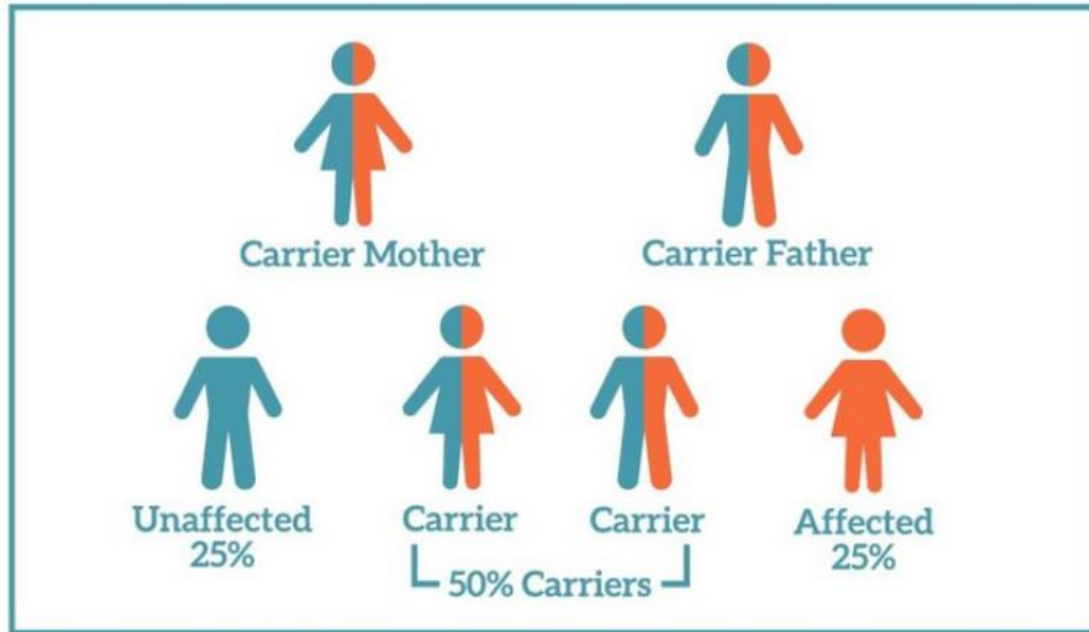
- ▶ Human cells typically have 23 pairs of chromosomes (46 in total): one set provided by the egg and the other by the sperm.
- ▶ PGT-A identifies any gain or losses of entire chromosomes or large regions of specific chromosome.
- ▶ PGT-A does not diagnose any specific diseases but looks more generally at the chromosomal make-up of the embryo.
- ▶ Example of chromosomal disorder: Down syndrome +21.

2. Preimplantation Genetic Testing for Structural Rearrangement (PGT-SR)

- ▶ PGT-SR identifies embryos that may contain unbalanced structural rearrangements associated with known parental chromosomal rearrangement.
- ▶ Example of chromosomal rearrangement: Translocation.



Autosomal Recessive Genetic Conditions



If both parents are carriers of the same recessive condition, together, they have a 25% chance of having an affected child.

3. Preimplantation Genetic Testing for Monogenic/Single Gene Disorder (PGT-M)

- ▶ PGT-M is advanced single-gene testing suitable for people who have a family history of a single-gene disorder and are at risk of producing embryos affected by that condition.
- ▶ A unique probe needs to be customized (pre PGT-M) Prior performing PGT-M.

Benefits of genetic tests:

1

Supporting elective single-embryo transfer to reduce multiple pregnancies.

2

Reducing the incidence of miscarriage.

3

Reducing the risk of a live-born child with a chromosomal or genetic abnormality.

4

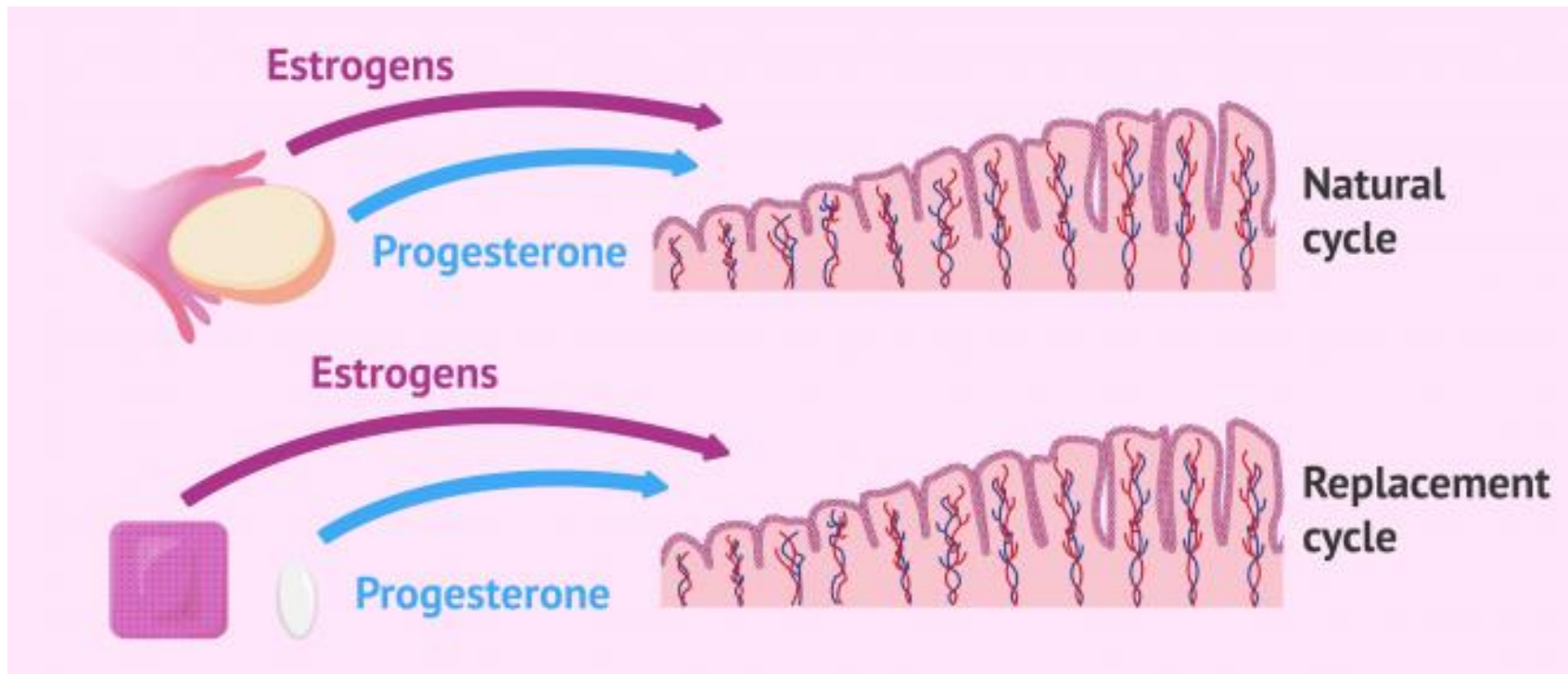
Reducing the number of IVF cycles necessary to achieve a successful outcome.

- You will be informed about the results after 14 days from the day of biopsy.
- Normally all embryos which are not suitable for transfer will be discarded unless requested otherwise.

Preparation of Embryo transfer:

➤ Protocols:

1. Natural cycle
2. Hormonal Replacement Therapy

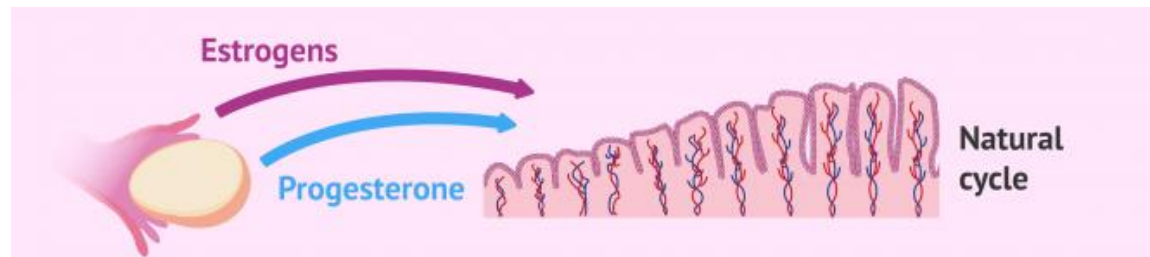
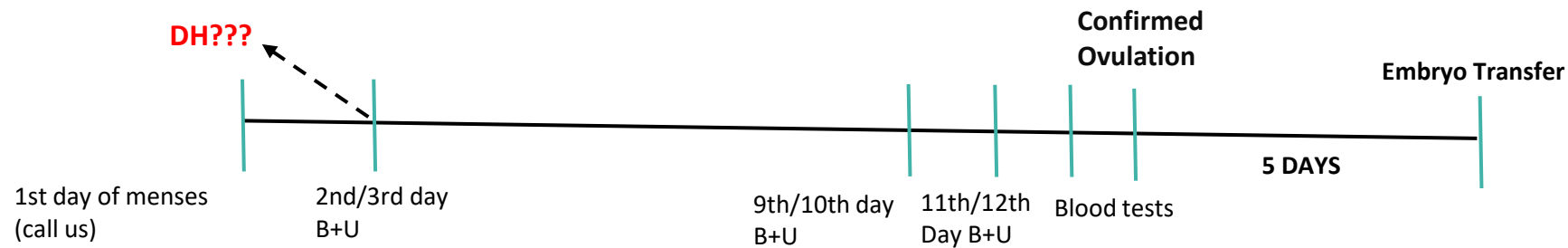


Natural cycle (NC)

- It means warming and transferring the embryos after a spontaneous ovulation during a natural menstrual cycle, which may require frequent visits with serial blood and ultrasound testing for follicular development and endocrine profile until the detection of ovulation.
- The doctor might ask you to administer hormonal injections (Managed Natural Cycle) to induce ovulation.

Process:

- Call with menses, blood test and ultrasound (BU) on Day 2 or 3 of cycle, then repeat BU after 1 week, when you are about to ovulate, you might be required to come 2 or 3 days consecutively for blood tests in order to detect the exact time of ovulation.
 - You might be advised to have a luteal phase support with hormones based on your hormonal profile.
 - Embryo transfer will be done 5 days post ovulation.
- This cycle might be cancelled in case of improper ovulation or anovulation.

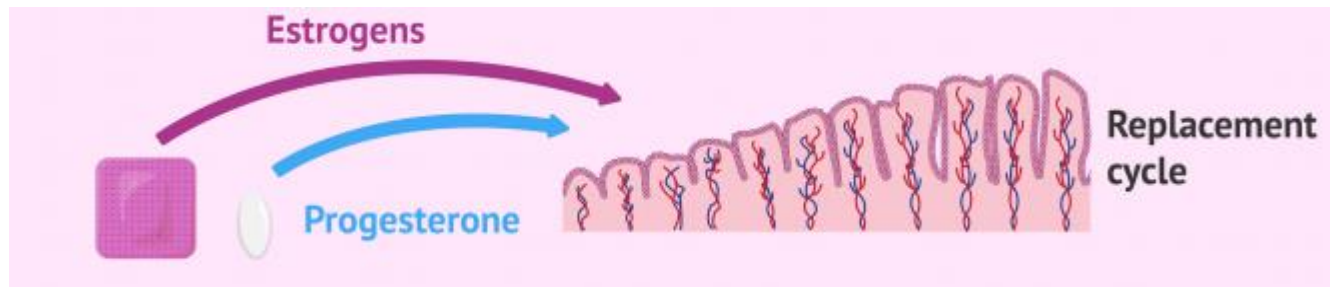
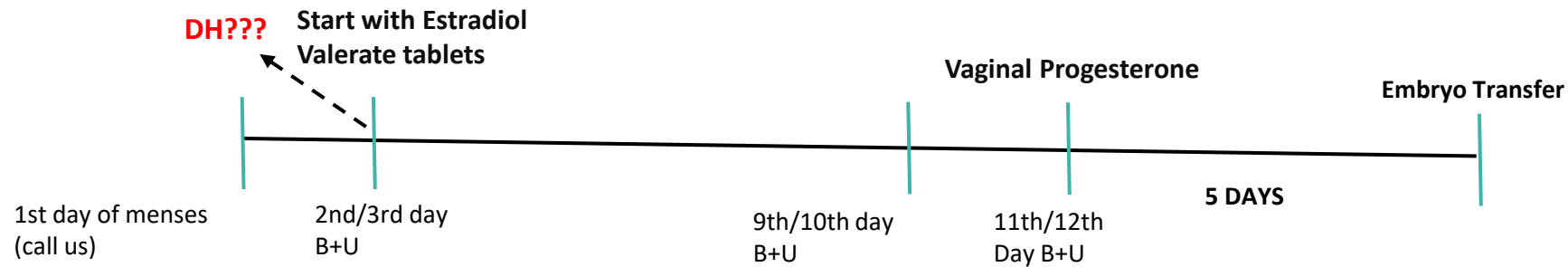


Hormonal Replacement Therapy (HRT)

It means warming and transferring the embryos after hormonal administration to prepare the endometrial lining for the embryo transfer.

Process:

- Call with menses, BU on day 2 or 3 of cycle, start with Estradiol Valerate tablets for 7-10 days then again BU to evaluate endometrial thickness and pattern, if triple line endometrium with adequate thickness, you will start Progesterone vaginally 5 days prior to embryo transfer.
- Embryo transfer will be done around day 16-17 of your cycle.

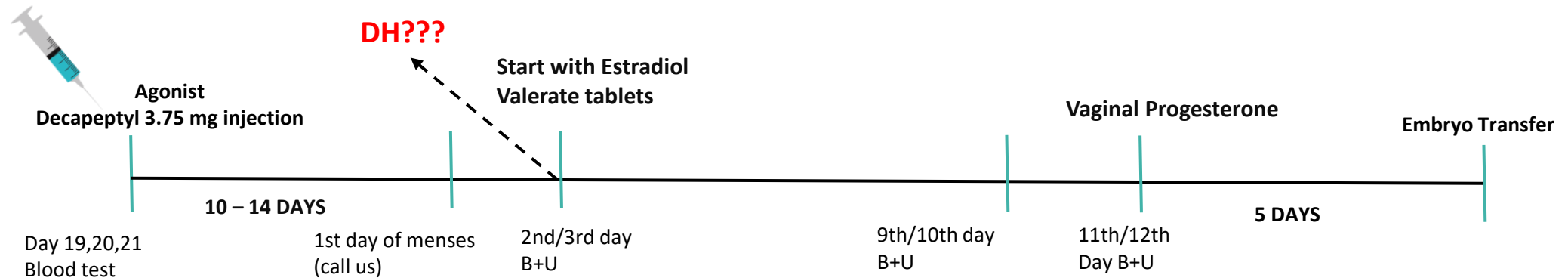


Hormonal Replacement Therapy (HRT) after down regulation

It means warming and transferring the embryos after hormonal administration to prepare the endometrial lining for the embryo transfer.

Process:

- On day 19,20 or 21, you need to do a blood test to confirm luteal phase, then you will be administered a GnRH Agonist injection (Decapeptyl 3.75 mg) for suppression and down regulation (it can be done for two or three consecutive cycles, based on your case) for synchronization between endometrium and embryos.
- Call with menses, BU on day 2 or 3 of cycle, start with Estradiol Valerate tablets for 7-10 days then again BU to evaluate endometrial thickness and pattern, if triple line endometrium with adequate thickness, you will start Progesterone vaginally 5 days prior to embryo transfer.
- Embryo transfer will be done around day 16-17 of your cycle.



Preparation of Embryo transfer

- In both protocols, you might be prescribed additional medications based on your condition.
- You might also be requested to do a hysteroscopy (washing for uterine cavity) at an early stage of the cycle when you are monitored for embryo transfer.

Embryo transfer

- You will be counselled about the embryo(s) which will be transferred in terms of number and quality, during the preparation for embryo transfer.
 - You will be instructed about the time to be at the clinic for embryo transfer procedure.
-
1. Instruction before embryo transfer
 2. Procedure
 3. Instruction post embryo transfer

Instructions before embryo transfer

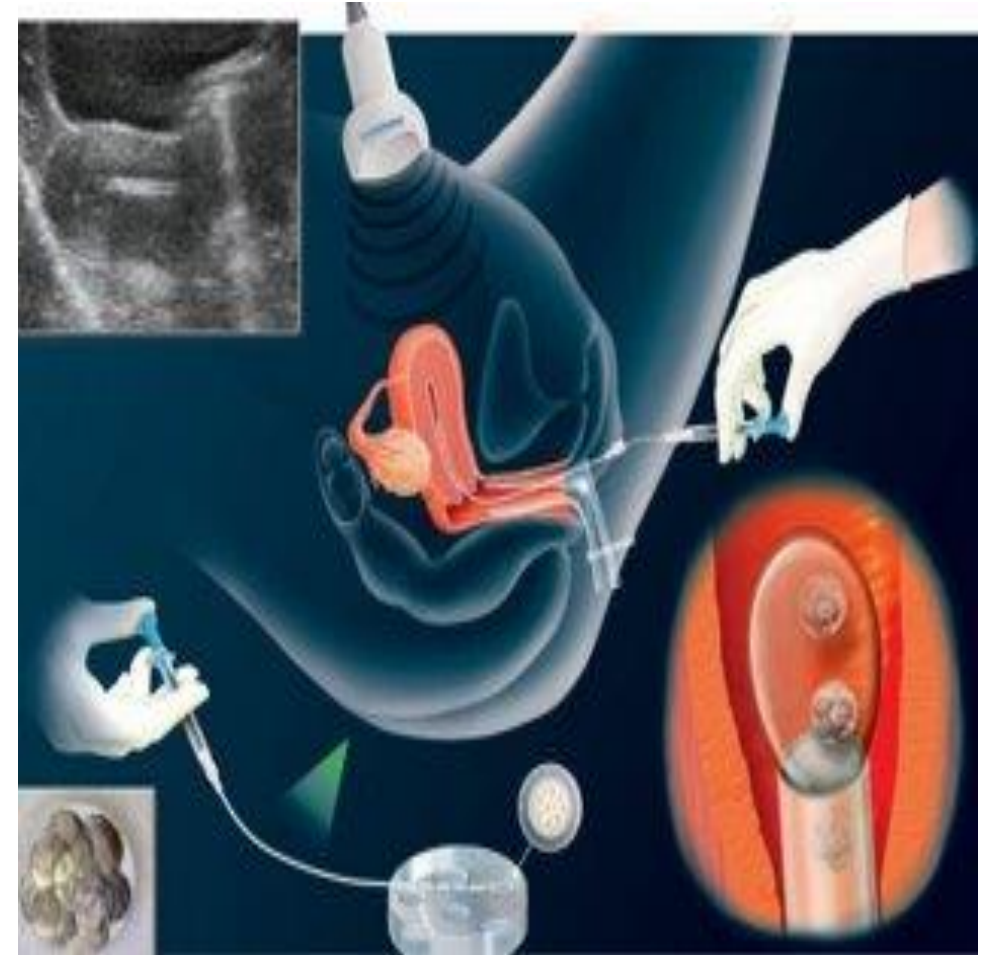
- You need to be with full bladder unless otherwise requested.
- Don't wear scents, make-up, nail polish, jewelry or contacts lens.

Procedure

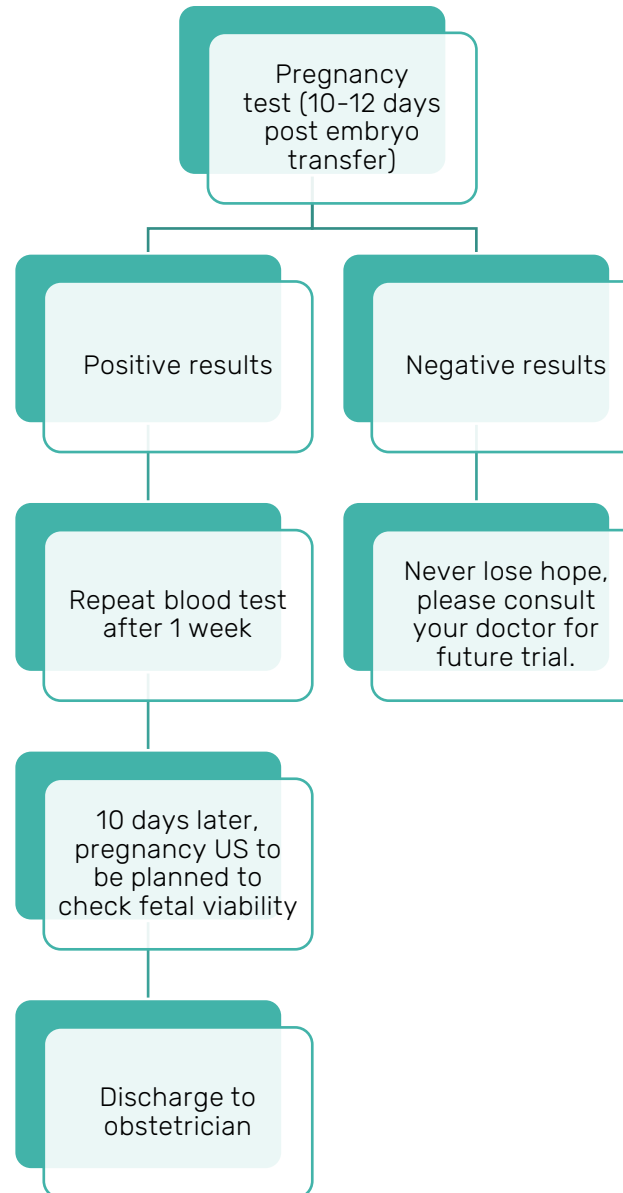
1. The procedure is usually painless, although you might experience mild cramping.
2. Embryo(s) will be warmed the morning of your transfer day and will be evaluated for viability; you will be counselled about the quality of the embryo(s) after warming.
3. The doctor will insert a long, thin, flexible catheter into your vagina, through your cervix and into your uterus, under ultrasound guidance.
4. A syringe containing the embryo(s) suspended in a small amount of fluid is attached to the end of the catheter.
5. Using the syringe, the doctor places the embryo(s) into your uterus.
6. After the embryo(s) is/are transferred, the catheter is slowly withdrawn and checked under a microscope for any retained embryos. If an embryo is retained in the catheter the transfer procedure is repeated immediately and the catheter is checked again.

Instructions post embryo transfer

1. Continue your folic acid daily.
2. Continue all your medications as prescribed.
3. After an embryo transfer, a normal lifestyle including walking and moving around is advised and recommended. However, it is not recommended to do activity like swimming, taking a bath (Take normal shower only), gymnastics, sauna and lifting heavy objects.
4. No sexual intercourse for 7 days.
5. You will be instructed about the day of the pregnancy test.



Treatment Cycle Outcome



Don't Despair and never lose **HOPE**



Reasons for IVF failure

The ovarian stimulation might be cancelled at any stage for any reason.

There might be a chance that no oocytes or immature oocytes are retrieved on the day of oocyte retrieval.

After insemination, there might be a chance of fertilization failure.

After fertilization, there is a chance that all embryos are arrested in development and none of them reaches a blastocyst stage.

After performing the genetic testing of the embryos, there might be a chance that all embryos are not suitable for an embryo transfer.

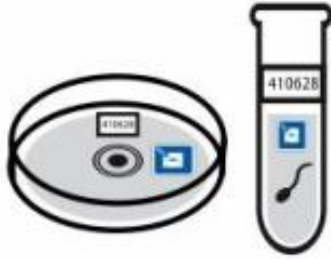
The embryo might not survive the warming process.

After embryo transfer, there is a chance of implantation failure.

RI Witness System

Reducing human error in IVF with electronic witnessing

TRACKING SAMPLES



RI Witness™ RFID tags allow us to identify, track and record patient samples at each step of the ART process

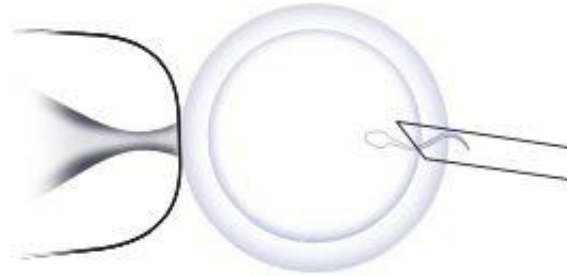
Every work area in the lab detects wireless signals from these RFID tags, ensuring a secure cycle record



Wireless signal detected from RFID tag on dish

INSEMINATION

RI Witness™ validates the identity of the samples and allows the embryologists to proceed to insemination



In the unlikely event that samples are misidentified, the system interrupts the process preventing any potential errors



Those samples frozen and not transferred remain identifiable at all times

TRANSFER

The female recipients ID card is automatically checked against the embryos prior to transfer

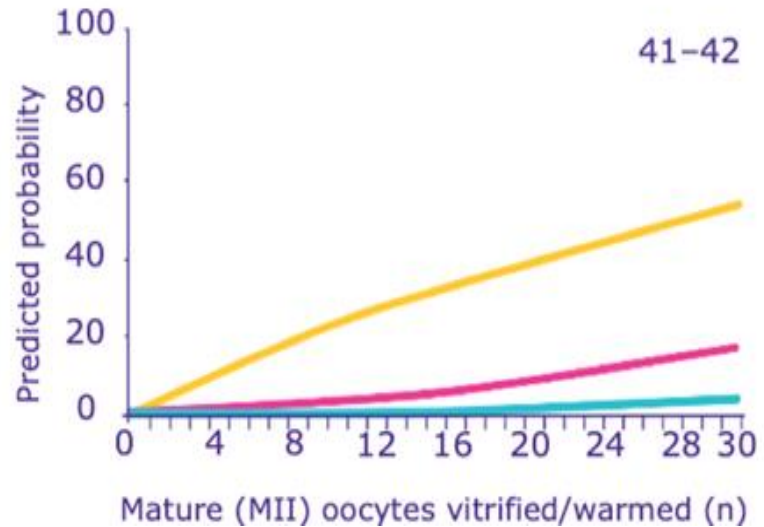
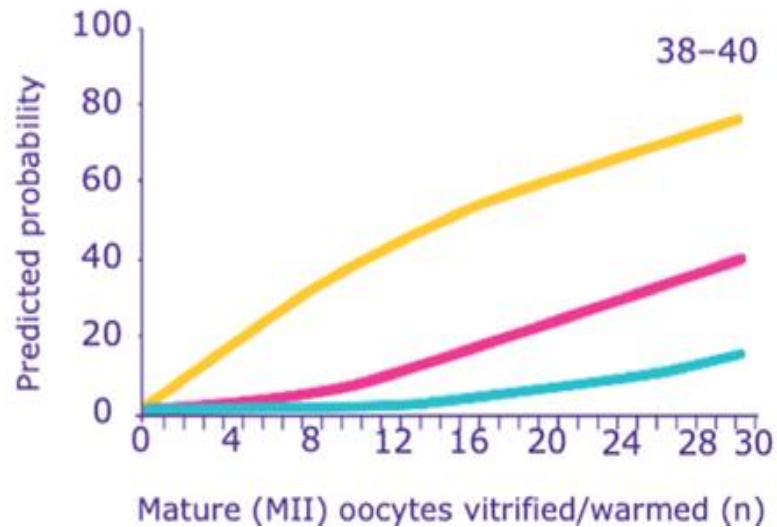
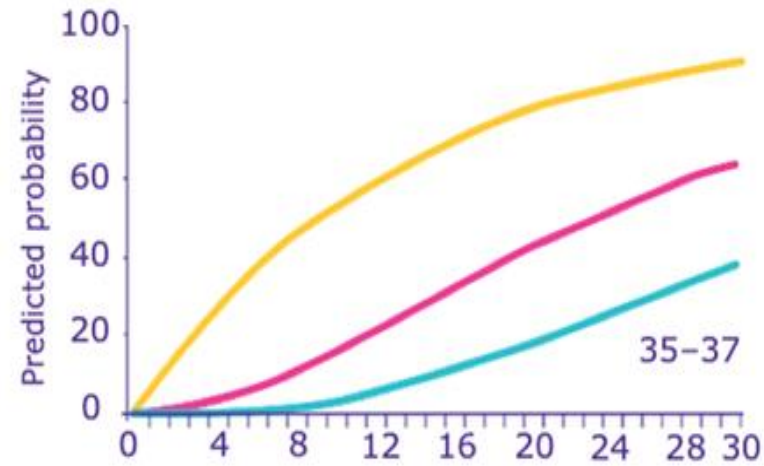
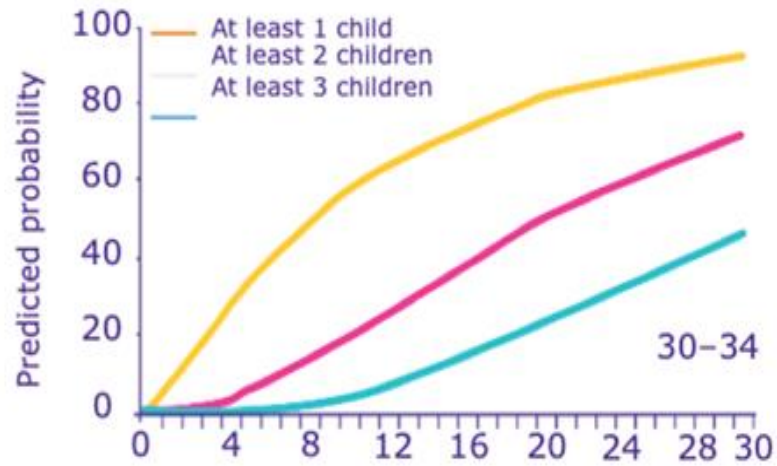


RI Witness™ is an indispensable ART management and security system which enables the IVF clinic to offer an advanced service to patients.

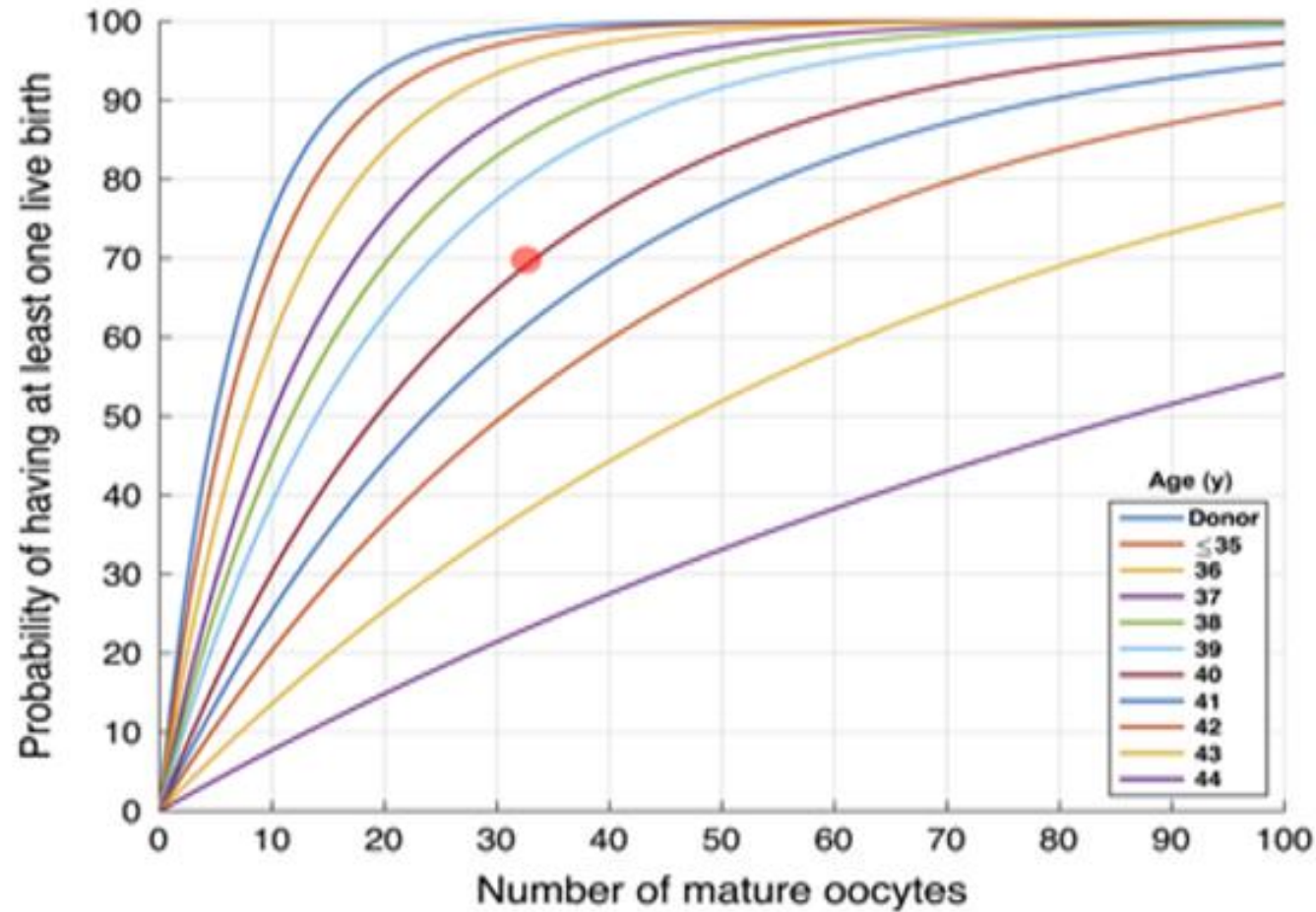
A composite image featuring a close-up of a person wearing safety goggles and a lab coat, looking through a microscope. The background is a blurred city skyline at sunset. Overlaid on the image are various scientific and technological icons, including a laptop, a smartphone, a DNA helix, and chemical structures like OH and CH_3 .

Scientific Research

How many oocytes needed?



Live birth prediction by age and oocyte number



Goldman et al, 2017

AMH and aneuploidy

Female age, serum antimüllerian hormone level, and number of oocytes affect the rate and number of euploid blastocysts in in vitro fertilization/intracytoplasmic sperm injection cycles

Antonio La Marca, M.D., Ph.D.,^{a,b} Maria Giulia Minasi, M.Sc.,^c Giovanna Sighinolfi, M.D.,^{a,b} Pierfrancesco Greco, M.D.,^c Cindy Argento, M.D.,^a Valentina Grisendi, M.D.,^a Francesco Fiorentino, Ph.D.,^d and Ermanno Greco, M.D.^c

ORIGINAL ARTICLE: EARLY PREGNANCY



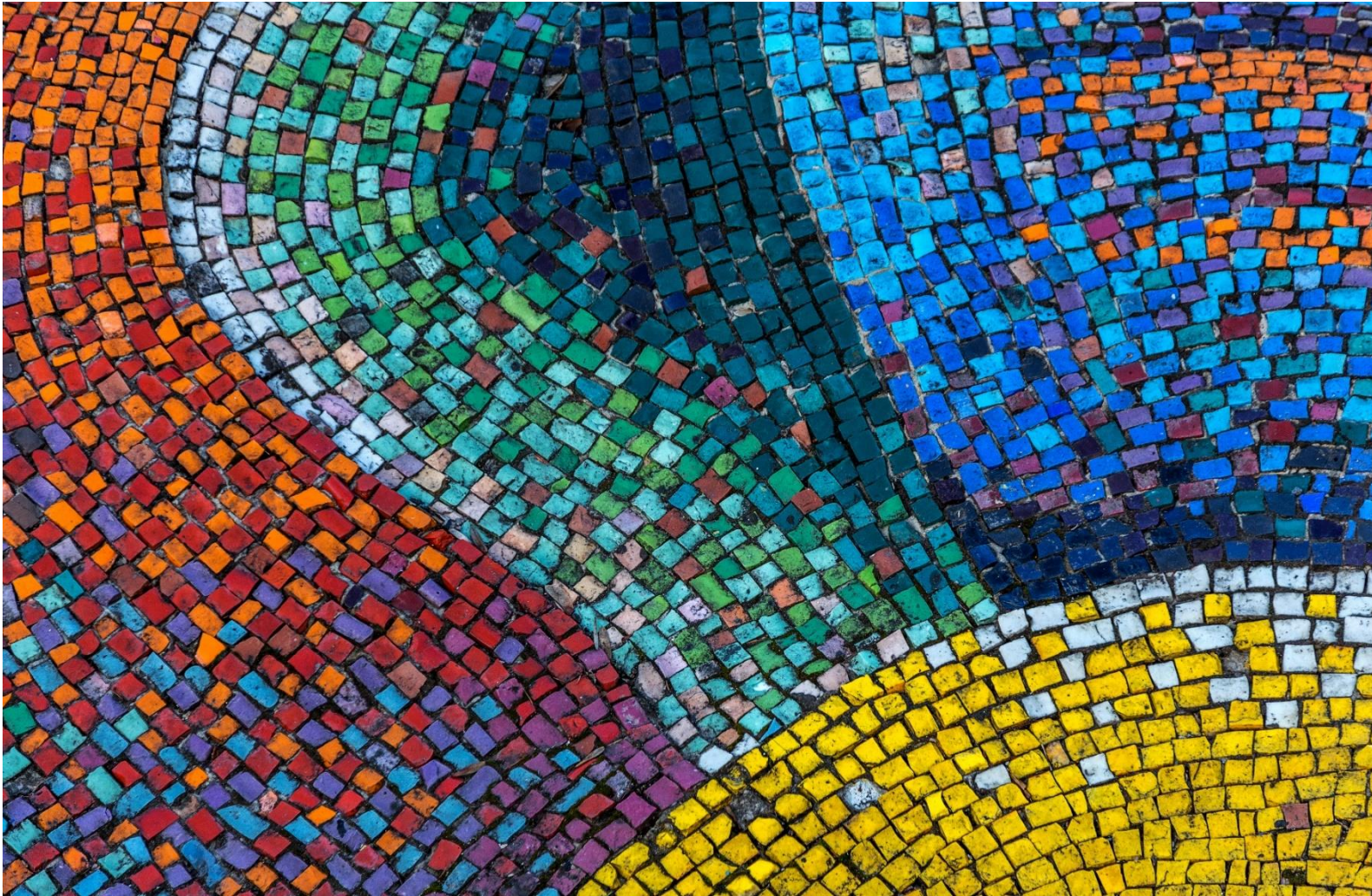
Serum antimüllerian hormone levels are independently related to miscarriage rates after in vitro fertilization–embryo transfer

Bruno Tarasconi, M.D.,^{a,b} Teddy Tadros, M.D.,^a Jean-Marc Ayoubi, M.D., Ph.D.,^a Stephanie Belloc, Pharm.D.,^a Dominique de Ziegler, M.D.,^a and Renato Fanchin, M.D., Ph.D.^a

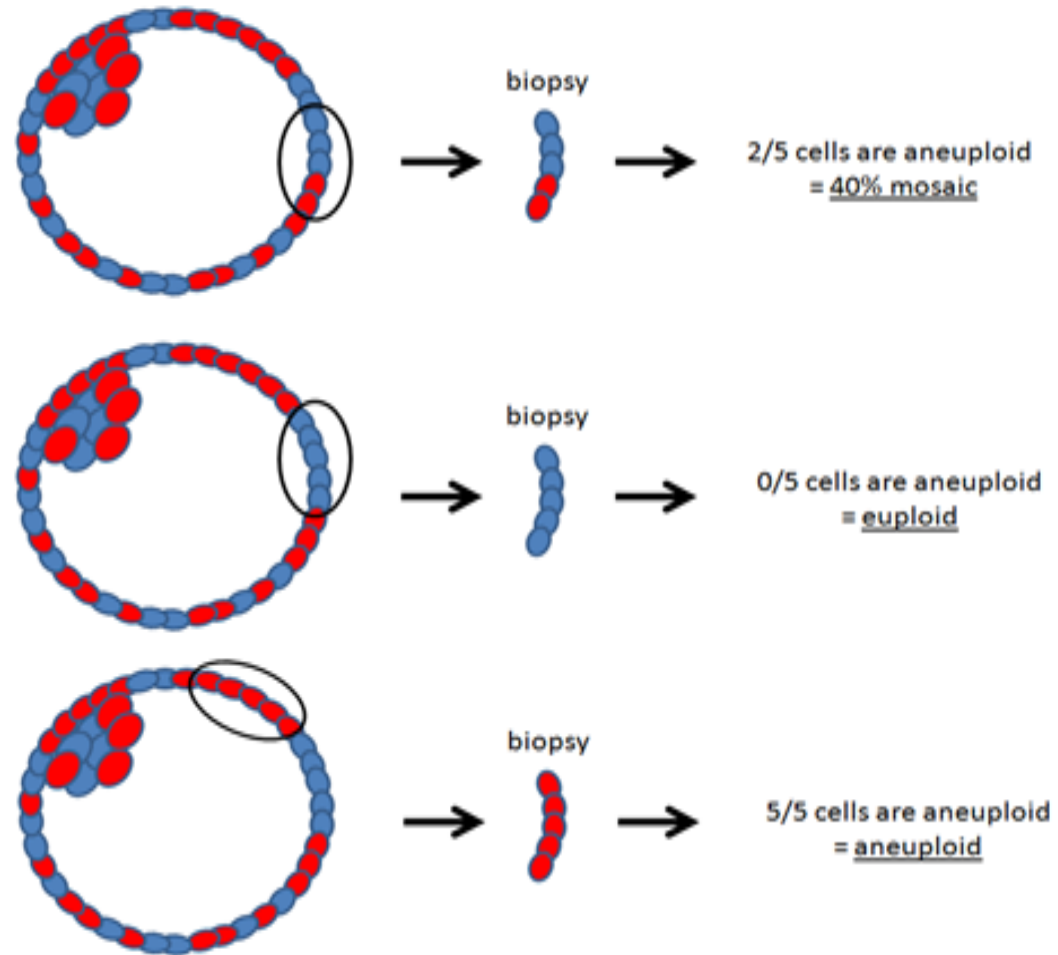
^a Center of Reproductive Medicine, Hospital Foch, Suresnes, France; and ^b CAPES Foundation, Brasilia, Brazil

1. La Marca A, et al. Fertil Steril 2017;108:777–783; 2. Tarasconi B, et al. Fertil Steril 2017;108:518–524.

Mosaicism



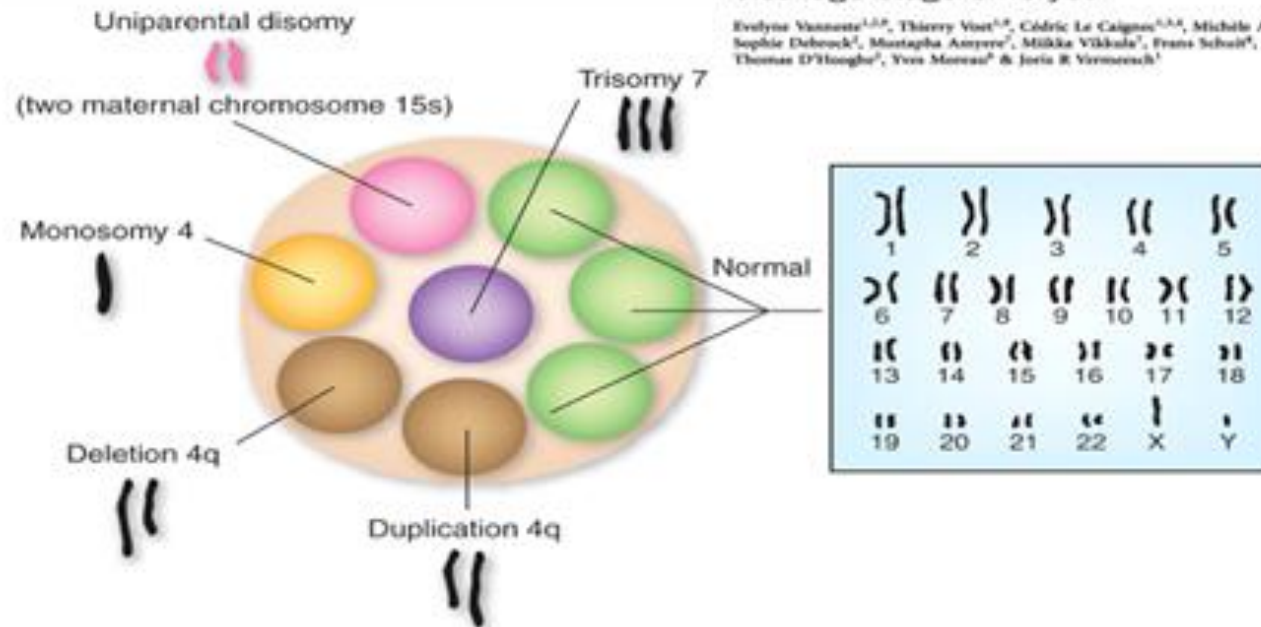
Embryo Mosaicism



Cleavage stage mosaicism

Chromosome instability is common in human cleavage-stage embryos

Evelyn Vanneste^{1,2,3}, Thierry Vaut^{1,2}, Cédric Le Caignes^{1,2,3}, Michèle Ampe³, Peter Konings⁴, Cindy Melotte¹, Sophie Debruyck¹, Mustapha Ameyre¹, Mikka Vakkala¹, Frans Schuit⁴, Jean-Pierre Fryns¹, Gerrit Verbeke¹, Thomas D'Hooghe¹, Yves Moreau² & Joris R. Vermeesch¹



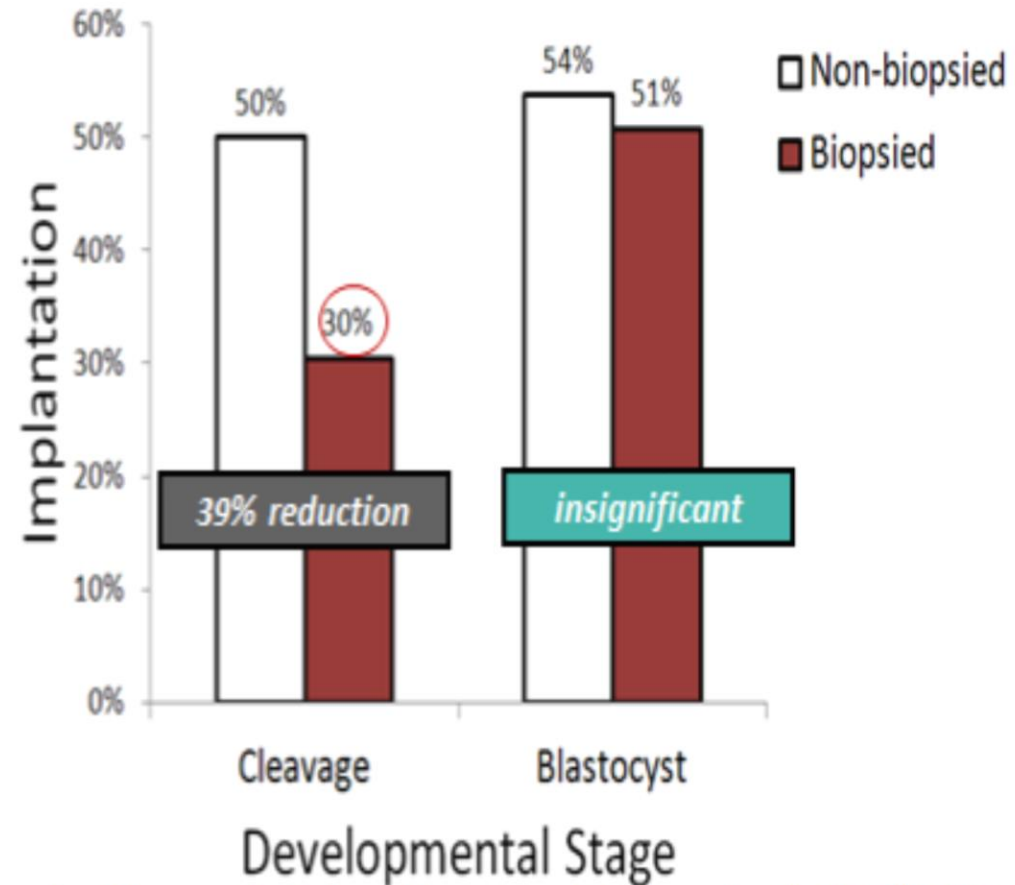
Chaos in the embryo

David H Ledbetter

The chromosomes of human embryos seem to be more unstable than previously thought. An analysis of embryos derived from  via fertilization reveals high rates of structural abnormalities (pages 577–583).

nature
medicine
15, 490–491 (2009)

Overall implantation rates



27% (mean maternal age 32) reported by Gutierrez-Mateo, C., et al. *Fertility and sterility* 92, 1544-1556 (2009)

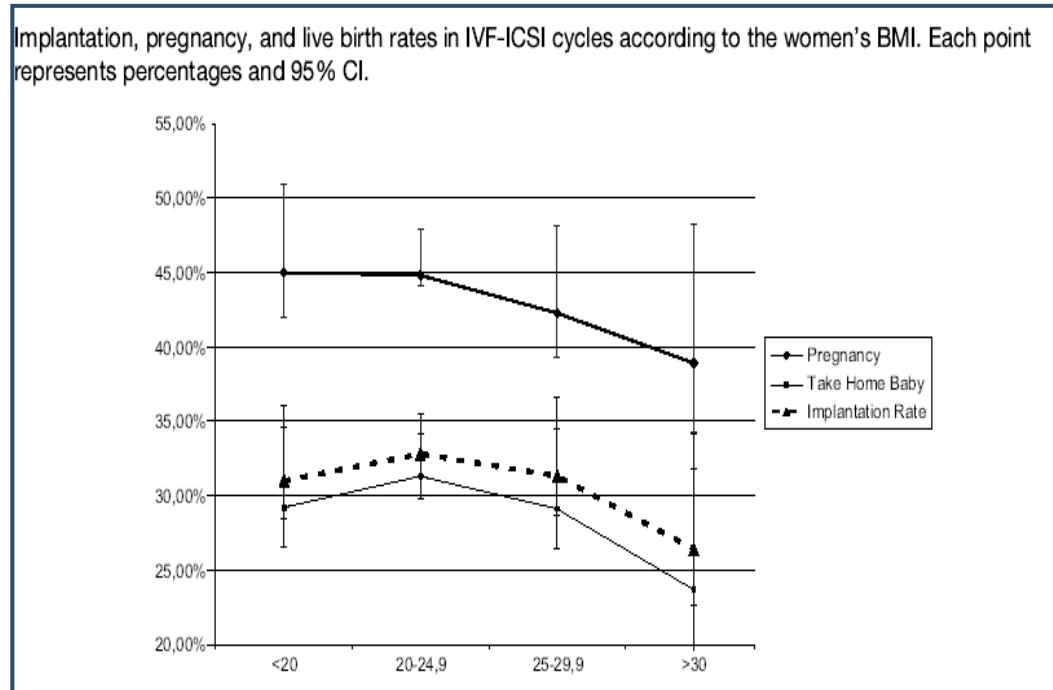
Obesity and pregnancy rates

In obese: **lower** implantation, pregnancy, live birth rates

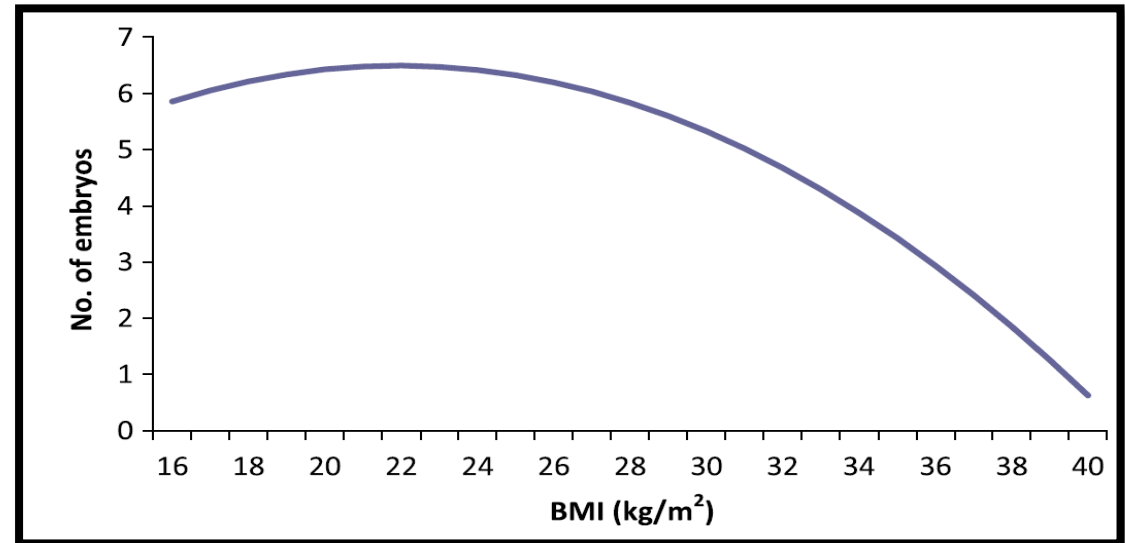
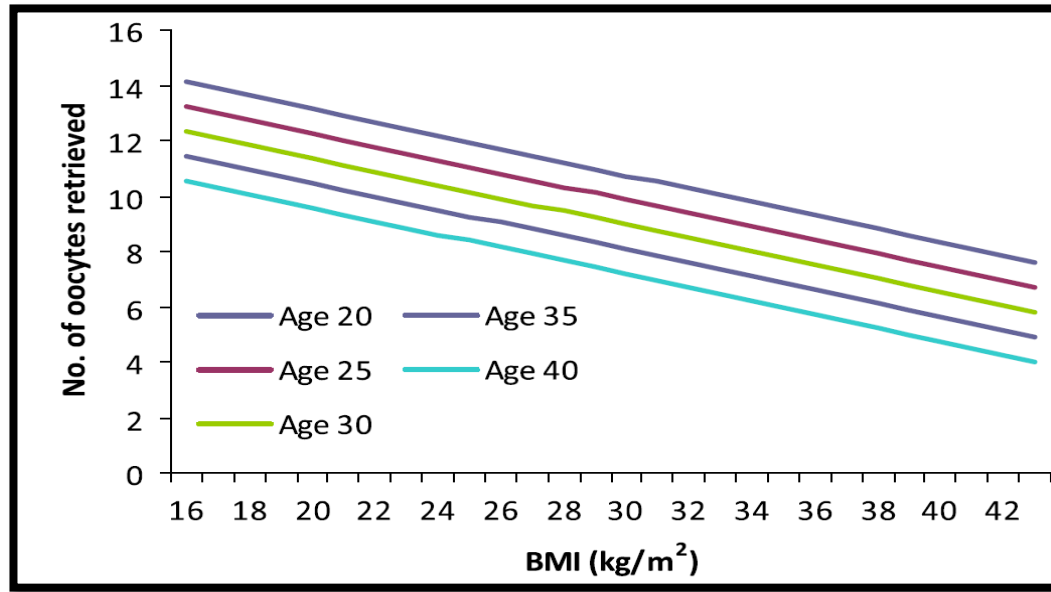
In overweight: **lower** implantation, pregnancy, live birth rates

Raising BMI by 1 unit: odds for pregnancy decrease by 0.98

Reducing BMI by 1 unit: odds for pregnancy increase by 1.19



Bellver et al, 2009



Obesity and Miscarriage after PGT-A

Fertility and Sterility 

ORIGINAL ARTICLE | [ARTICLES IN PRESS](#)

Female obesity increases the risk of miscarriage of euploid embryos

[Mauro Cozzolino, M.D.](#)   • [Juan Antonio García-Velasco, M.D., Ph.D.](#) • [Marcos Meseguer, Ph.D.](#) • [Antonio Pellicer, M.D., Ph.D.](#) • [Jose Bellver, M.D., Ph.D.](#)

Published: November 30, 2020 • DOI: <https://doi.org/10.1016/j.fertnstert.2020.09.139>

