

A Peek Into the Embryology Laboratory

1. Follicular Recruitment and Monitoring (Pre-Retrieval)

Eggs develop within a small sac of fluid in the ovary, known as a follicle. Not all follicles will produce eggs that could be harvested during retrieval or that are of adequate maturity to be used for fertilization.

2. Egg Retrieval (Day 0)

All visible follicles are aspirated by the physician, and the collected fluid is handed to the embryologist who will check for the presence of eggs. Typically, the larger follicles (>16mm) will produce mature eggs, but there's no guarantee that they will release from the follicle. In addition, some follicles may simply be empty.



3. Fertilization Check (Day 1)

On the day following your egg retrieval, the embryologist will check for normal fertilization by looking for two clear nuclei that form inside the egg (one maternal and one paternal). Each of these nuclei contains half of the embryo's chromosomes.

Approximately 75% of injected eggs will fertilize normally. This number may be lower in patients >35yrs of age or in male factor cases.

 You will receive a phone call or e-mail from the embryologist on day 1 (between 11am-2pm) to let you know how many of your eggs fertilized. The embryologist will inform you when to expect the next call/e-mail.



ICSI (Day 0 - afternoon)

Five hours after the egg retrieval, the embryologist will inject each mature egg with sperm from your partner or donor.



4. Cleavage Check (Day 3)

By day 3, healthy embryos should have reached the 6-8-celled stage and should have little or no fragmentation. Embryos that have not reached the 6-celled stage by day 3 or that are highly fragmented will most likely not continue to develop. It's still too early to know how many total viable embryos you will have for transfer, biopsy, and/or freezing as they need a few more days of undisturbed growth.

Approximately only 30-40% of normally fertilized eggs have the potential to continue developing until the final stage. This number may be lower in patients >35yrs of age or in severe male factor cases.



If you're undergoing a fresh transfer and have a limited number of embryos, it may occur on this day. The office will schedule you accordingly.

If you are undergoing a biopsy/PGS or freeze-all protocol, your embryos will need 2-3 more days of undisturbed growth before the next step. In these cases, the embryologist will only call you on day 6, unless there is something urgent to report.

5. Blastocyst Check (Day 5)

Five days following your egg retrieval, the embryologist will check your embryos to see if they advanced into the final stage of in vitro development, known as the blastocyst stage.

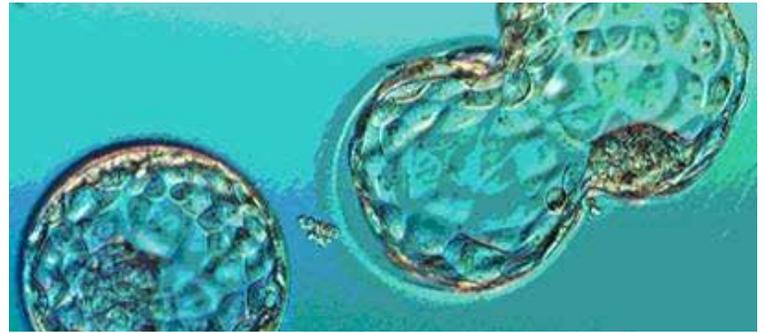
You should expect that only a few of your embryos will develop to this stage. This is a normal process, known as natural selection.

The strongest embryos will continue developing and the weakest embryos will arrest. Reaching the blastocyst stage does not guarantee that an embryo is genetically normal or that it has the ability to implant.



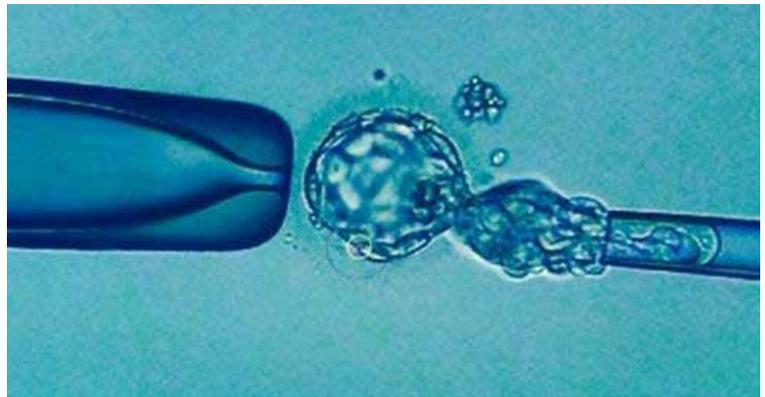
If you're undergoing a fresh transfer, it will likely occur on this day. The office will schedule you accordingly.

On day 5, most embryos are not yet ready for biopsy or freezing. They usually require one more day of growth. In these cases, the embryologist will only call you on day 6 with a final update.



6. Final Blastocyst Check (Day 6)

By day 6, all viable embryos should have reached the blastocyst stage and all others will have arrested. These viable embryos will undergo genetic testing and/or freezing, as per your particular treatment plan.



Biopsy/PGS

When the blastocyst has reached an expanded stage (containing >100 cells), the embryologist will carefully remove 4-5 cells from the embryo and will send these samples to the genetics laboratory for analysis. The embryos will then be frozen and safely stored in our laboratory while we await results.

After 4-5 days, your physician will receive a genetic report showing which of the tested embryos demonstrate an adequate chromosomal complement. Only these embryos will be deemed safe for transfer

The chance of having a "genetically normal" embryo decreases drastically with age.



On day 6, the embryologist will call/e-mail you with a final update from the laboratory, telling you how many embryos you had for biopsy and/or freezing. By now, you should have scheduled a consult with your physician to review your PGS results.

Remember, you are always welcomed to call the office at (305) 596-4013 or e-mail the laboratory at lab@fertility-miami.com should you have any questions or concerns in between the scheduled communications.