

Advance Certificate Course in Embryology (6 Months)

Andrology Laboratory Techniques:

- How to set up Andrology Laboratory and what are the equipment required?
- Handling, cleaning, maintenance and calibration of different equipment-Laminar Flow workstation, Microscopes, Centrifuges, etc.
- Comprehensive semen analysis-Macroscopic and Microscopic-density, motility, viability, round cell differentiation etc.
- Sperm morphology assessment according to WHO and Strict (Kruger) criteria.
- Sperm survival test.
- Semen cryopreservation-both neat and processed sample.
- Semen preparation for IUI-Classical method, Standard method and Density gradient method.

Embryology Laboratory Techniques:

- How to set up Embryology laboratory-Lab space and layout, equipment, design flooring, HEPA filter etc.
- Monitoring, calibration and maintenance of equipment-measuring and adjustment of carbon dioxide (CO₂) & temperature of incubators and cleaning of incubators.
- Embryology lab maintenance-daily, weekly and monthly.
- List and selection of disposables and culture media.
- Preparation of Embryology Lab for oocyte retrieval the day before-checklist.
- Preparation of lab on the day of oocyte retrieval.
- Identification of granulosa cells, cumulus and corona cells and oocytes.
- Separation of oocytes and further culture.
- Preparation of semen for insemination of oocytes-processing of ejaculated semen.
- Method of oocyte insemination-short co-incubation, etc
- Dissection of oocytes and fertilization check.
- Criteria for fertilization check

Day 1- Fertilization check, classification of zygotes and further culture

Day 2- Assessment of embryo cleavage and identification of good embryos

Day 3- Assessment of cleavage and selection of best quality embryos for transfer

Day 5/6- Blastocyst culture –technique

Embryo Transfer:

- Preparation for embryo transfer.
- Selection of embryos for transfer- day 2, day3 or day5.
- Technique of embryo loading into the catheter (mock transfer)

Intracytoplasmic sperm injection (ICSI):

- Familiarization and operation of equipment (Training in the use of various brands of microscopes, Micromanipulators, micromanipulation tools, media etc).
- Setting up and alignment of micromanipulators and tools at different angles – Technique and tips.
- Preparation of oocytes for micro-injection-use of appropriate pipettes for dissection of oocytes in hyaluronidase and use of appropriate media.
- Preparation of sperm and egg dishes for micromanipulation.
- Selection and method of picking sperm-Technique and tips.
- Technique of microinjection-Tips.

Ultra-rapid Freezing Method-Vitrification:

- Selection of Carriers for vitrification.
- Selection of vitrification solutions.
- Technique and precautions.
- Warming of vitrified embryos.
- Post-thaw assessment