

InterMedics Training Academy (ITA) Embryology Training and Lab Management



InterMedics is at the forefront of IVF service delivery in India and has recently opened its own training facility in Mumbai. Optimal IVF is an international consultation company providing specialist training in all IVF and related procedures, and services in optimization of IVF lab protocols. These two forces have now combined together and are pleased and excited to offer a series of short courses in embryology.

- Emphasis on hands-on training
- Advanced statistical analysis of data to improve outcomes
- Train on the latest equipment available in the field of ART
- Conveniently located 20 mins from the airport and major railway stations in Mumbai



Training Courses

Introduction to Embryology

Course Objective: Learn the principles of embryology and how to run a successful laboratory

ICSI - Getting the Basics Right

Course Objective: Learn the important things about ICSI and start on the road to competency

Vitrification and Laser Assisted Hatching

Course Objectives: Learn the practicalities of vitrification and laser hatching to be competent for clinical application

Quality Assurance and Quality Control

Course Objective: Control your IVF programme. Learn QC/QA methodology and applications

TESE and Advanced ICSI - Learn the tricks of the trade when dealing with difficult cases

Course Objective: Learn how to extract sperm from testicular tissue and use it properly in difficult ICSI cases

Introduction to Embryology – Duration: 1 day

Morning Session:

- **The basics**
 - Oogenesis and ovulation
 - Spermiogenesis

- **Prerequisites for fertilisation**
 - Oocyte maturation
 - Sperm capacitation and acrosome reaction

- **Normal / IVF fertilisation**

- **ICSI fertilisation**

- **Abnormal fertilisation**

- **Early cleavage**

- **Embryonic development**

Afternoon Session:

- **The important things**
 - Embryo culture - media, gas, dishes
 - Embryo handling - open, closed, devices
 - Cryopreservation - vital part of IVF
 - Expectations from an IVF clinic

- **Review, Q & A**



ICSI - getting the basics right – Duration: 3 Days

ICSI is a technique that has been in use for the past 18 years and has become a mainstay of human IVF. ICSI is relatively straightforward when conducted properly but can be difficult when the apparatus is not set optimally.

This 3 day course will take you through the principles of micromanipulation, outlining the differences between the micromanipulators and the optical systems used.

The importance of good quality pipettes will be emphasised along with the critical areas of micro tool set-up and control of pressures.

A series of exercises will be given to all participants to help them develop and maintain competency.

ICSI – Day 1

Morning Session:

- Short series of lectures introducing ICSI and the critical points of micromanipulation
Practical work will centre of setting up the relief contrast system (RCM) and the starting set up of Narishige manipulators (coarse motor drive and hydraulic fine manipulation).
The correct set-up and orientation of pipettes will be demonstrated along with protocols to ensure correct alignment and control.

Afternoon Session - ICSI deconstructed

- **Brief introduction to the methodology and exercises**
 - Injection pipette set-up and sperm immobilisation
 - Sperm aspiration and control
 - Oocyte alignment and movement
 - Sperm injection
- **Practice and sperm injection**
- **Review, Q and A**

ICSI - Day 2

Morning Session:

- **Introduction to oocyte and dish preparation. What is important?**
 - Practical denuding of oocytes with hyaluronidase.
 - Injection dish preparation. Control of conditions
- **Injection practice**

Afternoon Session:

- **Injection practice, under supervision**
- **Review, Q and A**

ICSI - Day 3

Morning Session:

- **Talk on outcome expectations. What to monitor?**
- **Injection practice**

Afternoon Session:

- **Practical troubleshooting.**
 - Defining the symptoms
 - Applying the corrections.
 - A series of the most common problems along with the fixes will be demonstrated.
- **Injection practice**
- **Review, summary Q and A**

Vitrification and laser assisted hatching - 1 day

Morning Session:

- **Introduction**
- **Principles of vitrification**
 - choice of media
 - carriers and storage
- **Practical vitrification of embryos**
- **Quality Assurance and Quality Control Overview(QAQC)**

Afternoon Session:

- **Introduction**
- **Principles and methodology of assisted hatching**
- **Practical assisted hatching using embryos**

Quality Assurance and Quality Control - 1 day

This is a part taught, worked example and practical demonstration course to lead you through the principles, logistics and practicalities of how a QA/QC programme should work to enable you to control, monitor and compare your programme

Morning Session:

- **Talk on principles of QA/QC**

- **Quality Control of IVF instrumentation and environment**

- Independent calibration of incubators, warm stages etc
- What is correct?
- Demonstration of monitoring equipment

- **Environment Control**

- Air purity - what are particles, VOC, CACS and what do we need to do about them?
- Temperature and pH
- Instrument quality records -design and use

Afternoon Session:

- **Quality control of the IVF process**

- How good are we?
- What are the best outcome measures?
- Concept and practicalities of KPI (key performance indicators) and LPM (laboratory performance measures)
- Control charting for continual measurement and the use of CUSUM charts
- Practical demonstration on how to plot and interpret them

- **Troubleshooting**

- Methodology and practical examples

- **Benchmarking**

- Intra and inter laboratory benchmarking.
- How good are we compared to others?

- **Review, Q and A**

TESE and advanced ICSI – 1 day

Morning Session:

- **Talk on principles and methodology**
- **Practical session**
- **Tubule recovery**
 - Open biopsy
 - Fine needle aspiration
- **Sperm recovery from tubules**
 - 'milking'
 - 'squashing'
 - 'maceration'
- **Sperm preparation**
 - red cell lysis
 - gradients
 - 'swim out'
 - 'fall out'

Afternoon Session:

- **Introduction to advanced ICSI**
 - 'Rescue' ICSI 4 hour and 14 hour
 - Practical session
- **Immotile sperm**
- **Hypo-osmotic swelling (HOS) test**
 - Pentoxifylline
- **Calcium activation**
- **Globospermia**
 - Previous failed to fertilise ICSI cycles
- **Immature oocytes**
- **Postmature oocytes**
- **Trouble shooting talk**
- **Discussion on spindle view, IMSI and PICSI**