

Module #	Module Title	Module Outline and Learning Objectives
5	Cryopreservation	<p>Cryopreservation plays a vital role in modern assisted reproductive technology (ART), allowing for the safe storage and future use of gametes and embryos. This process not only enhances flexibility in treatment plans but also increases the chances of successful outcomes in ART cycles. However, the implementation of a cryo program involves careful planning, ethical considerations, and adherence to legal standards to ensure both the survival of biological material and the well-being of patients. This module explores the key components of a cryopreservation program, including technical, ethical, and legal aspects, to provide a comprehensive understanding of its importance in the ART field.</p> <ol style="list-style-type: none">1. Principles of Cryopreservation and Cryobiology2. Cryosafety and Cryostorage3. ONCO-TESE Testicular Sperm Retrieval for Patients with Cancer4. Testicular Tissue Cryopreservation in Prepubertal Boys and Posthumous (Consent and Clinical Application)5. Male Fertility Preservation - Lab Aspects (e.g.: Sperm and Testicular Tissue Freezing, Pre-pubertal, Posthumous)6. Oocyte and Embryo Cryopreservation7. Ovarian Tissue Cryopreservation8. When to Perform a Frozen Embryo Transfer: Practical Timing Across Protocols9. Natural Versus Artificial Cycle



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6	Lab and Quality Management	<p>The success of assisted reproductive technologies (ART) hinges not only on scientific innovation and technical skill but also on robust laboratory operations and a comprehensive quality management system. This module offers intermediate-level learners an integrated overview of the key concepts, best practices, and regulatory frameworks essential to operating a high-functioning IVF laboratory. Participants will explore practical and theoretical approaches to documentation, safety, traceability, quality assurance, risk management, auditing, accreditation, and performance monitoring. This module aims to build a culture of continuous improvement and patient safety through evidence-based protocols and proactive quality oversight.</p> <ol style="list-style-type: none"> 1. Documents and Record Keeping 2. Laboratory Safety, Hygiene and Sterility, Equipment and Air Quality 3. Quality Assurance in Embryo Culture 4. Traceability: Gametes, Consumables, Operators, Equipment, and Timing, Including Electronic Witnessing Capabilities 5. Risk Management in IVF and Laboratory Communication 6. Troubleshooting Principles 7. Monitoring Performance and KPIs, Including SOPs and Staff Compliance 8. Auditing 9. Accreditation





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7	Genetics	<p>The field of reproductive genetics stands at the nexus of scientific innovation and clinical transformation. As genomic technology advances, our ability to interrogate and intervene in the genetic and epigenetic landscapes of human reproduction has reached unprecedented depth and precision. This module, organized by the Reproductive Genetics Special Interest Group (SIG), offers a cutting-edge exploration of the latest breakthroughs in genetics shaping the future of reproductive medicine.</p> <p>The module will feature internationally renowned experts who will present state-of-the-art insights into preimplantation genetic testing (PGT), including both conventional and non-invasive approaches, and critically examine the biological, clinical significance of embryo mosaicism and Case-Based Insights. In addition, we will explore the transformative potential of fetal and embryo gene editing as it progresses towards clinical application, alongside a dedicated lecture on epigenetics—unveiling how chromatin dynamics, DNA methylation, and histone modifications orchestrate gene expression and impact embryonic development and disease.</p> <p>By bridging basic genetics with translational and clinical relevance, this module aims to empower clinicians, embryologists and researchers to integrate emerging genomic and epigenomic tools into reproductive healthcare.</p> <ol style="list-style-type: none"> 1. DNA/Chromosome Structure and Gene Expression 2. Genetic Causes of Infertility - Male and Female 3. Pre-implantation Genetic Testing 4. Genetic Analysis and Diagnosis 5. Mosaicism in Humans 6. Epigenetics 7. Gene Editing 8. Clinical Report Interpretation for Lab-Case Scenarios 9. Karyomapping





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8	Procedures	<p>The field of embryology is evolving rapidly, driven by innovations in artificial intelligence, automation, and non-invasive diagnostics. These advancements are not only reshaping traditional workflows but also redefining how we select gametes and embryos, monitor development, and counsel patients.</p> <p>This module brings together cutting-edge topics such as ICSI add-ons (PICSI, IMSI, Piezo, etc.), advanced sperm selection techniques (MACS, microfluidics, ROSNI), laser applications, time-lapse monitoring, artificial intelligence, non-invasive embryo testing, and lab automation.</p> <p>Designed for embryologists, lab managers, and ART professionals, this training aims to bridge the gap between emerging science and real-world implementation. Through this module, participants will gain critical insight into the opportunities, limitations, and ethical considerations that come with integrating advanced technologies into clinical IVF practice.</p> <ol style="list-style-type: none"> 1. ICSI Add-ons (PICSI, IMSI, Piezo, Spindle View, Automated ICSI) 2. Advanced Andrology (MACs, Microfluidics, Electro Sorting) 3. Advanced Andrology: Surgically Retrieved Sperms, Micro-TESE, Sperm Maturation, ROSI 4. Laser Principles and Assisted Hatching 5. Timelapse Monitoring of Embryos 6. Artificial Intelligence in the IVF Lab 7. Non-invasive Testing of Embryos (Part 1) 8. Non-invasive Testing of Embryos (Part 2) 9. Automation in the IVF Lab

