

Reproductive Endocrinology and Infertility Certifying Exam Blueprint and Topics

The content of the Certifying Examination will be based on the blueprint for Reproductive Endocrinology and Infertility. The major categories and subcategories are shown below, including the percentages of the categories.

Basic Science, Physiology, and Pathophysiology (7%)

- Hormone structure, mechanisms of action, and signaling pathways
- Clinical pharmacology
- Laboratory assays
- Pathology of normal and abnormal reproductive organs and tissues
- Immunology of the reproductive endocrine system, implantation biology, and early pregnancy
- Embryogenesis of male and female reproductive systems
- Gamete biology
- Pre-implantation embryo development

Diagnostic Techniques and Interpretation for the Management of Reproductive Disorders (10%)

- Molecular biology (e.g. immunohistochemistry, PCR, endocrine assays)
- Imaging (e.g. HSG, ultrasound, MRI, SIS)
- Provocative testing (e.g. ACTH stimulation, dexamethasone suppression, clomiphene challenge)
- Andrology including methods of evaluating semen quality and fertilizing capabilities (e.g. semen analysis, post coital test, DNA fragmentation)

Evaluation, Diagnosis, and Management of Reproductive Endocrine Function and Disease (15%)

- Normal and abnormal puberty (e.g. delayed puberty, precocious puberty)
- Menopause
- Neuroendocrine disorders (e.g. panhypopituitarism, Sheehan Syndrome, Kallmann Syndrome)
- Gonad (ovary, testes, ovotestes) disorders (e.g. disorders of sexual development)
- Thyroid disorders
- Adrenal disorders
- Metabolic dysfunction (e.g. obesity)
- Endocrinology of pregnancy
- Abnormal uterine bleeding
- Amenorrhea
- Androgen disorders (e.g. polycystic ovary syndrome, idiopathic hirsutism)
- Gender-affirming hormone therapy

Female Fertility, Female Infertility, and PCOS (7%)

- Contraception, Preconception Counseling, and Infertility
 - Perform comprehensive medical history and physical examination
 - Counsel patient about contraception options
 - Provide preconception counseling

- Obtain and interpret the results of diagnostic testing (e.g. ovarian reserve testing, ovulatory function, hysterosalpingography, pelvic ultrasound, hysterosonography, laparoscopy)
- Counsel women on fertility treatment options, side effects, and complications (e.g. ovulation induction, controlled ovarian hyperstimulation, intrauterine insemination, ART)
- Evaluation, Diagnosis, and Management of Fertility Treatment Complications, Special Populations, and Early Pregnancy Loss
 - Complications of fertility treatment (e.g. pregnancy of unknown location/ectopic/heterotopic/ovarian hyperstimulation, multifetal gestation)
 - Third-party reproduction
 - LGBTQ family building considerations and care
 - Early pregnancy loss
- Specific Considerations for Polycystic Ovarian Syndrome (PCOS)
 - Evaluate, diagnose, manage, and counsel patients regarding health consequences of PCOS (e.g. anovulation and infertility, hirsutism, abnormal uterine bleeding, metabolic disturbances, endometrial hyperplasia/cancer)
 - Counsel and manage ovulation induction and fertility treatment for PCOS
 - Counsel women on treatment options for hirsutism in PCOS

Male Infertility (5%)

- Evaluation and Counseling for Male Infertility
 - Perform comprehensive medical history (e.g. sexual development history including testicular descent, chronic disease, surgical history, medication use, infections, exposure to radiation, environmental exposures, family history, steroid use, drug and alcohol use, sexual history including libido, frequency of intercourse, and prior fertility)
 - Obtain and interpret results of diagnostic testing for male infertility (e.g. semen analysis, post-void semen analysis, hormonal testing, genetic testing including karyotype, genetic carrier testing, and y-microdeletion testing, transrectal and scrotal ultrasound) and counsel patients on the results
 - Diagnose and differentiate types of male infertility (e.g. endocrine and systemic disorders, primary testicular defects in spermatogenesis, sperm transport disorders, idiopathic male infertility)
 - Counsel patients regarding application, efficacy, risks, and benefits of non-surgical treatments for oligospermia (e.g. clomiphene citrate, human chorionic gonadotropin, letrozole)
 - Counsel patients on the use of donor sperm including discussion of regulatory issues involving donor sperm
- Counseling Patients Regarding Surgical Management of Male Infertility and Intracytoplasmic Sperm Injection (ICSI)
 - Testicular sperm extraction, including microsurgical epididymal sperm aspiration
 - Vasectomy reversal
 - Varicocele repair
 - Intracytoplasmic sperm injection

Recurrent Pregnancy Loss (3%)

- Evaluate, diagnose, and manage recurrent pregnancy loss (RPL) including causes of euploid and aneuploid pregnancy loss (e.g. contribution of endocrine factors, immunologic factors, anatomic factors, and genetic factors, and relative incidence of each) and counsel patients regarding prognosis and causes of RPL
- Counsel patients on advantages and limitations of preimplantation genetic diagnosis for abnormal parental karyotypes and unexplained RPL
- Counsel patients on the indications for supplemental progesterone, thyroid hormone supplementation, aspirin, heparin, and other available medical therapies
- Provide and counsel patients (including advantages and limitations) on genetic analysis of aborted fetal tissue

Fertility Preservation (5%)

- Evaluation, Diagnosis, and Management of Fertility Preservation
 - Recognize indications and counsel patients for fertility preservation (e.g. elective cryopreservation, gonadotoxic therapies, genetic conditions)
 - Obtain and interpret results of diagnostic testing (e.g. ultrasound, ovarian reserve markers), and counsel patients regarding fertility preservation
 - Counsel patients on the options and expectation for fertility preservation
 - Perform ART procedures for oocyte and embryo cryopreservation
- Specific Considerations for Patients Receiving Gonadotoxic Therapies
 - Understand and implement modifications to conventional ART protocols for cancer patients (e.g. use of aromatase inhibitors to suppress estrogen levels, random start protocols to minimize delay)
 - Counsel patients on ovarian transposition if pelvic irradiation is anticipated
 - Counsel patients on fertility-sparing gynecologic surgery
 - Counsel patients on the use of ovarian suppression with GnRH agonists for fertility preservation
 - Counsel patients on experimental options for fertility preservation (e.g. ovarian tissue cryopreservation and transplantation)

Assisted Reproductive Technology (ART) Techniques (10%)

- Transvaginal ultrasound-guided oocyte retrieval
- Transabdominal ultrasound-guided oocyte retrieval
- Ultrasound-guided embryo transfer
- Gamete and zygote intrafallopian transfer
- Ultrasound-guided ovarian cyst aspiration
- Paracentesis/culdocentesis

Evaluation, Diagnosis, and Management of Complex Reproductive Disorders (10%)

- Pelvic pain (e.g. adhesive disease)
- Endometriosis
- Ambiguous genitalia

- Müllerian anomalies
- Asherman syndrome
- Leiomyomata

Complex Reproductive Surgical Procedures (10%)

- Diagnostic and operative hysteroscopic procedures
- Diagnostic and operative laparoscopic procedures
- Tubal surgeries for fertility restoration add tubal reversal and tuboplasty
- Abdominal myomectomy
- Laparotomy procedures
- Surgical management of müllerian anomalies
- Abdominal salpingo-oophorectomy
- Abdominal salpingostomy
- Vaginal septum excision

Genetics (10%)

- Understanding of Genetic Testing and Screening
 - Basic science of genetics, epigenetics, and genetic testing
 - Inheritance patterns of genetic disorders
 - Pre-implantation genetic screening and testing
 - Antenatal genetic testing
- Application of Genetic Testing and Screening to Patient Care
 - Obtain and interpret preconception female and male screening as it relates to female and male infertility diagnosis
 - Obtain and interpret genetic testing as it relates to female and male infertility diagnosis
 - Counsel patients on prognosis and treatment based on genetic testing results

Core Competencies and Cross Content (10%)

- Ethics and Professionalism
 - Systematically engage in practice review to identify health disparities
 - When engaged in shared clinical decision making, incorporate patient, family, and cultural considerations in making treatment recommendations
 - When providing care for patients, consider psychological, sexual, and social implications of various treatment options
- Patient Safety
 - Systematically analyze that practice for safety improvements (e.g. root cause analysis)
 - Systematically engage in practice reviews for safety improvements (e.g. root cause analysis)
 - Incorporate the standard use of procedural briefings, “time outs”, and debriefings in clinical practice
 - Participate in the review of sentinel events, reportable events, and near misses
 - Implement universal protocols (e.g. bundles, checklists) to help ensure patient safety
- Interpersonal and Communication Skills

- Communicate to patient and family regarding adverse outcomes and medical errors
- Demonstrate sensitivity and responsiveness when communicating with a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation
- Provide comprehensive information when referring patients to other professionals
- Systems-Based Practice
 - Incorporate considerations of cost awareness and risk-benefit analysis in patient care
 - Provide care with multidisciplinary teams to promote patient safety and optimize patient outcomes
- Practice-Based Learning and Improvement
 - Design or participate in practice or hospital quality improvement activities
- Evidence-Based Medicine
 - Incorporate evidence-based practices and national guidelines to improve practice patterns and outcomes
 - Implement evidence-based protocols to enhance recovery after surgery (ERAS)

In the Certifying Examination, evaluation of the candidate will include critical review and discussion of the thesis, questions related to principles of biostatistics, clinical trial and/or basic science study design, and hypothetical cases. It will also include review of the submitted case lists, discussion of structured cases, and surgical techniques. It may include interpretation of operative, radiologic and computer-generated images and videos, and simulations (radiologic studies, intraoperative photographs, etc.). The candidate should demonstrate the capability of managing complex problems related to Reproductive Endocrinology and Infertility. The candidate should have the scientific methodologic training to advance knowledge in this subspecialty and to be able to interpret and evaluate new concepts and their supporting data.