

REI Resident Curriculum

These topics are designed to guide your learning during your residency REI rotation. Reading sources that will help you to achieve these objectives are located within each section. They could be broken down into approximately weekly objectives and reading assignments.

Topic 1: Menstrual Cycle and Physiology of the Hypothalamic-Pituitary Axis, Puberty, Amenorrhea

Objectives:

- *Describe the inter-relationship of the hypothalamic-pituitary-ovarian axis using the “two cell, two gonadotropin” hypothesis*
- *When is pubertal development normal and what are the stages?*
- *What is the work-up for early puberty? Delayed puberty?*
- *What is the most common etiology of delayed puberty*
- *How are primary and secondary amenorrhea defined?*
- *Learn to quickly identify the most common causes of amenorrhea*

Sources:

- Speroff & Fritz, Clinical Gynecologic Endocrinology & Infertility, 8th ed, Chapter 6.
- ASRM Committee Guideline. Current evaluation of amenorrhea.
- Smith C, et al. *Pubertal* Development: What’s Normal/What’s Not. Clinical Obstetrics and Gynecology, 2020

Topic 2: Fertility Evaluation

Objectives:

- *Define infertility, including changes in the definition with age of the female partner*
- *Describe a complete work-up for infertility*
- *Be able to interpret all testing results from a fertility work-up with your patient, including the limitations of testing*
- *Describe the relationship between female age, aneuploidy, and fecundability*
- *Be able to interpret a semen analysis. What are normal parameters based upon?*
- *Understand aspects of fertility care that are popular in the lay public, but not usually helpful to patients (example: progesterone for luteal phase deficiency)*

Sources:

- ACOG Committee Opinion. Infertility Workup for the Women's Health Specialist
- ACOG/ASRM Joint Committee Opinion. Pre-pregnancy counseling
- ASRM Committee Guideline. Diagnostic evaluation of the infertile female: a committee opinion
- ASRM Committee Guideline. Diagnostic evaluation of the infertile male: a committee opinion
- ACOG/ASRM Joint Committee Opinion. Female age-related fertility decline
- ASRM Committee Guideline. The clinical relevance of luteal phase deficiency: a committee opinion

Topic 3: Infertility Treatment

Objectives:

- *Learn how to help patients optimize natural fertility*
- *Describe the evidence-based treatment approaches for unexplained infertility*
- *Understand the history of IVF and general process*
- *Describe why multiple gestations were more common with IVF in the past and understand the current guidelines on how many embryos to transfer*

Sources:

- ASRM Committee Guideline. Optimizing natural fertility: a committee opinion
- ASRM Committee Guideline. Evidence-based treatments for couples with unexplained infertility: a guideline.
- Queenhan J. An Appreciation of Modern ART. Clinical Obstetrics and Gynecology, 2000
- ASRM Committee Guideline. Guidance on the limits to the number of embryos to transfer: a committee opinion
- ASRM Committee Guideline. Multiple gestation associated with infertility therapy: an American Society for Reproductive Medicine Practice Committee opinion

Topic 4: Fertility Preservation / Ovarian Reserve

Objectives:

- *Describe the stages of ovarian follicle development and their relevance to clinical care.*
- *List the options for testing ovarian reserve*
- *Describe the limitations and uses of ovarian reserve testing*
- *Understand who may choose to undergo fertility preservation*
- *Understand there is no true, absolute way to preserve one's fertility*

Sources:

- Ulrich et al. Ovarian Reserve Testing: A Review of the Options, Their Applications, and Their Limitations, Clinical Obstetrics and Gynecology, 2019
- Steiner et al. Association Between Biomarkers of Ovarian Reserve and Infertility Among Older Women of Reproductive Age, JAMA, 2017
- ASRM Committee Guideline. Fertility preservation in patients undergoing gonadotoxic therapy or gonadectomy: a committee opinion
- ASRM Ethics Committee: Planned oocyte cryopreservation for women seeking to preserve future reproductive potential: an Ethics Committee opinion

Topic 5: Androgen Disorders/PCOS

Objectives:

- *Understand the pathophysiology of hirsutism*
- *Describe PCOS as a diagnosis of exclusion. How is PCOS diagnosed and what must be ruled out before diagnosing PCOS?*
- *Describe the long-term health issues associated with PCOS*
- *Describe options for management of abnormal uterine bleeding associated with anovulation*
- *Describe methods for ovulation induction for PCOS.*
- *What signs and symptoms are associated with virilization? What is the work-up?*
- *Describe benign and malignant conditions that can lead to hyperandrogenism.*
- *Describe treatment options for hyperandrogenism and why you might choose each option*

Sources:

- Zimmerman L, et al. Contemporary Management of Polycystic Ovarian Syndrome. Clinical Obstetrics and Gynecology, 2019
- ACOG Practice Bulletin 128. Management of abnormal uterine bleeding associated with ovulatory dysfunction
- Legro et al. NICHD Reproductive Medicine Network. Letrozole versus clomiphene for infertility in the polycystic ovary syndrome. New England Journal of Medicine, 2014
- Rosenfield. Hirsutism. New England Journal of Medicine, 2005

Topic 6: Recurrent Pregnancy Loss

Objectives:

- *Define recurrent pregnancy loss*
- *Understand the various components of a work-up for recurrent pregnancy loss and how frequently each etiology is detected*
- *Understand how often we find a clear etiology for recurrent pregnancy loss*
- *Describe the treatment of a uterine septum and the potential benefits of treatment*
- *Describe the diagnosis and treatment of anti-phospholipid syndrome*
- *Discuss the role of aneuploidy in pregnancy loss*
- *Understand the role of chromosomal translocation in recurrent pregnancy loss*
- *Understand the treatments, or relative lack thereof, for idiopathic recurrent pregnancy loss. Be able to explain to your patients their chances of having a live birth if they keep trying to conceive.*

Sources:

- ASRM Committee Guideline. Recurrent Pregnancy Loss
- Lund et al. Prognosis for Live Birth in Women With Recurrent Miscarriage. *Obstet Gynecol*, 2012

Topic 7: Fibroids, Endometriosis, Abnormal Uterine Bleeding, and Surgical Techniques

Objectives:

- *List the etiologies of AUB described in PALM-COIEN*
- *Understand which fibroids may affect reproductive outcomes and whether surgery is helpful*
- *Describe the set-up for hysteroscopy and how to manage hysteroscopic fluid*
- *List the various lines of treatment for medical management of endometriosis and how to decide which route to choose*
- *Describe the benefits and limitations of surgery for endometriosis*
- *Understand the association between stage of endometriosis and symptoms*

Sources:

- ACOG Practice Bulletin 128: Diagnosis of abnormal uterine bleeding in reproductive-age women.
- ASRM Committee Guideline. The Removal of myomas in asymptomatic patients to improve fertility and/or reduce miscarriage rate: a guideline
- AAGL Practice Report: Practice Guidelines for the Management of Hysteroscopic Distending Media. JMIG, 2013
- ASRM Committee Guideline. Endometriosis and infertility: a committee opinion
- Giudice. Endometriosis. New England Journal of Medicine, 2010
- ASRM Committee Guideline. Treatment of pelvic pain associated with endometriosis: a committee opinion

Topic 8: Menopause / Osteoporosis

Objectives:

- *Define premature ovarian insufficiency*
- *Describe how to diagnose premature ovarian insufficiency and the work-up to determine etiology*
- *Become comfortable discussing relative risks and benefits of hormone replacement therapy, as well as its effect on overall survival*
- *List risk factors for osteoporosis*
- *List secondary causes of osteoporosis and describe when to initiate a work-up for secondary osteoporosis*
- *Describe various mechanisms of treating osteoporosis and the relative risks and benefits of each approach*

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Sources:

- Ravigue et al. A new approach to primary ovarian insufficiency. *Obstet Gynecol Clin North Am*, 2012
- Endocrine Society Clinical Practice Guideline. Treatment of Symptoms of the Menopause. *JCEM*, 2015
- ACOG Practice Bulletin 129. Osteoporosis.

Topic 9: Clinical Reproductive Genetics

Objectives:

- *Be able to discuss carrier screening options with your patients and options for how to utilize the information they may gain from carrier screening*
- *Understand reproductive and hormonal considerations in women at increased risk for hereditary gynecologic cancers*

Sources:

- ACOG Committee Opinion: Carrier Screening for Genetic Conditions
- Reproductive and hormonal considerations in women at increased risk for hereditary gynecologic cancers: Society of Gynecologic Oncology and American Society for Reproductive Medicine Evidence-Based Review

Topic 10: Reproductive Ethics

Objectives:

- *Appreciate the challenges in providing fertility care to patients with complex medical histories*
- *Discuss the benefits of planned oocyte cryopreservation and its inherent risks. To what extent could we give patients false hope and how do we best mitigate that?*

Sources:

- ASRM Ethics Committee Opinion: Fertility treatment when the prognosis is very poor or futile: an Ethics Committee opinion
- ASRM Ethics Committee Opinion: Planned oocyte cryopreservation for women seeking to preserve future reproductive potential: an Ethics Committee opinion