

HIGH-YIELD REPRODUCTIVE SYSTEM NOTES

FOR USMLE STEP 1 AND STEP 2

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High-Yield Notes for USMLE Step 1 & Step 2 CK

STEP 1 - PATHOPHYSIOLOGY & BASIC SCIENCE

FEMALE REPRODUCTIVE - ANATOMY & PHYSIOLOGY

- Follicular phase → FSH stimulates follicle growth → Estrogen rises → LH surge (day 14) → Ovulation
- Luteal phase → Corpus luteum secretes Progesterone → Stabilizes endometrium → If no fertilization → Corpus luteum degenerates → Menstruation
- hCG (from syncytiotrophoblast) → Maintains corpus luteum in early pregnancy

AMENORRHEA - PRIMARY

- Primary amenorrhea = No menses by age 13 (with no secondary sexual characteristics)
OR age 15 (with secondary sexual characteristics)
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- Tall male + Small testes + Gynecomastia +
↓ Testosterone + ↑ FSH/LH → Klinefelter syndrome (47,XXY)
- ↓ Seminiferous tubules → ↓ Inhibin B → ↑ FSH
- Azoospermia (infertile), Tall with long limbs, Gynecomastia

Dear IMG

- Short stature + Primary amenorrhea + Shield chest + Webbed neck + Coarctation → Turner syndrome (45,XO)
- Streak ovaries → ↓ Estrogen, ↑↑ FSH, ↑↑ LH
- Associated: Bicuspid aortic valve, Coarctation of aorta, Horseshoe kidney, Cystic hygroma, Lymphedema
- Treatment: Growth hormone (for stature) + Estrogen replacement (for secondary sex characteristics)
- Phenotypic female + Primary amenorrhea + Absent uterus + Normal breast development

Dear IMG

+ XY karyotype + Blind vaginal pouch →

Androgen insensitivity syndrome

- Defect in androgen receptor → Can't respond to testosterone
- Testes present (produce testosterone but no response) → No Müllerian structures (AMH works) → No uterus/upper vagina
- Breast development normal (testosterone → estrogen conversion)
- Scant pubic/axillary hair
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- Phenotypic female + Primary amenorrhea + Normal uterus + No breast development + 46,XX → Müllerian agenesis (Mayer-Rokitansky-Küster-Hauser)

- or 5 α -reductase deficiency

AMENORRHEA - SECONDARY

- Secondary amenorrhea = Absence of menses for ≥ 3 months in woman with previously normal cycles
- Amenorrhea + Galactorrhea + Headache + \uparrow Prolactin \rightarrow Prolactinoma
- \uparrow Prolactin \rightarrow Inhibits GnRH \rightarrow \downarrow FSH/LH \rightarrow Amenorrhea
- Also caused by: Hypothyroidism (\uparrow TRH \rightarrow \uparrow Prolactin), Antipsychotics (dopamine antagonists)

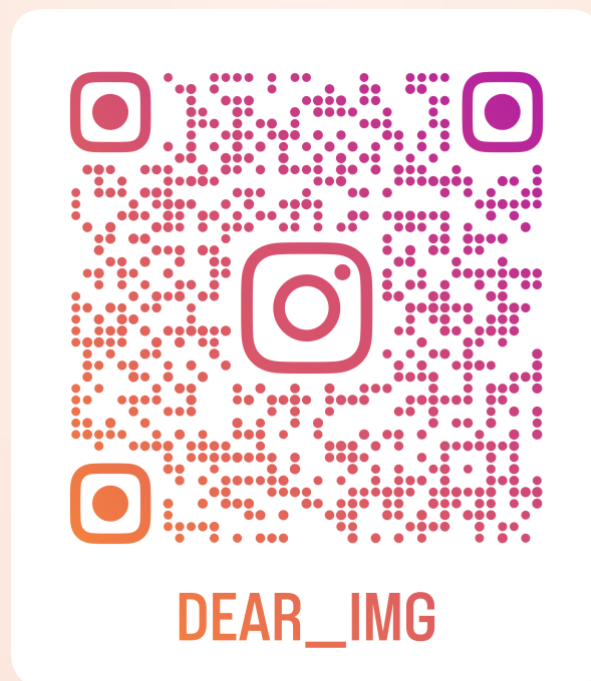
- Low BMI (<18.5) + Amenorrhea + Athlete/eating disorder + ↓ FSH + ↓ LH + ↓ Estrogen → Functional hypothalamic amenorrhea
- Stress, excessive exercise, low weight → ↓ GnRH → ↓ FSH/LH
- Pregnancy is most common cause of secondary amenorrhea → Always check β-hCG first!
- Irregular periods + Hirsutism + Acne + Obesity + ↑ LH:FSH ratio (>2:1) + Multiple ovarian cysts on ultrasound → PCOS

Dear IMA



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