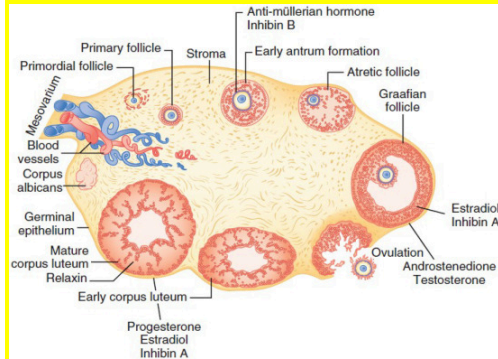


USMLE Step 2CK/3 Rapid Review

Written by: Owais Mohammad Ahmad MD

Gyne

1. What is the tx of Endometrial hyperplasia ?
 - Progestin therapy (progestin IUD)
2. What marker detects that ovarian reserves are aging quickly?
 - Low anti mullerian hormone
 - Please note, anti mullerian hormone produced by the granulosa cells inhibits the recruitment and premature growth of ovarian follicles. Thereby playing a significant role in the regulation of folliculogenesis (the development of ovarian follicles). By preventing the over-activation of follicles, AMH helps maintain a reserve of follicles for future ovulation.
3. What is the likely diagnosis in an African-American woman at 20 weeks gestation that presents with new-onset hirsutism and acne? Pelvic ultrasound reveals an intrauterine gestation consistent with dates and bilateral 8-cm solid ovarian masses.
 - **Luteoma**, Please note (A common wrong answer here is Theca lutein cyst) --> Theca lutein cyst is a wrong answer as that is associated w/ a Hydatiform mole
 - **Luteoma** is a tumor of the ovary. it is stimulated by bHCG to convert the stromal cells to undergo lutenization. Lutenization refers to the biological process during which the ovarian follicle transforms into a corpus luteum after ovulation. Luteomas are ovarian tumors that can produce and secrete androgens (male hormones such as testosterone and androstenedione).



4. 27F w/ Anemia and Leiden Factor 5 mutation What is the best contraceptive method for her ?
 - Progestin IUD, Please note, estrogen-containing contraceptives (e.g., COCP, patches, vaginal rings) are contraindicated in this patient as they increase the risk of VTE. Also, Copper IUDs are contra-indicated in this patient as they increase heavy menstrual bleeding. The copper component induces a mild inflammatory reaction within the uterine lining. This inflammatory response increases prostaglandin production, which can enhance uterine contractions and vasodilation, leading to increased blood flow and heavier bleeding.
5. What disease can candida cause in the female genitalia ?
 - Candida Vaginitis
6. What is the MOA Of Raloxifene?
 - Antagonist at breast, uterus; agonist at bone (they are considered partial agonist at the bone)
7. What is the MOA of Tamoxifen ?

- Antagonist at breast, partial agonist at uterus, bone (they are considered partial agonist at the bone and uterus)
8. When does tamoxifen worsen bone loss and when does it improve bone health ?
- ☒ It may help postmenopausal women maintain bone density, but better options (e.g., bisphosphonates, denosumab, raloxifene) exist for osteoporosis prevention and treatment.
 - ☐ Tamoxifen can worsen bone loss in premenopausal women, so it is not recommended in younger patients at risk for osteoporosis.
9. How many months of unprotected intercourse to diagnose infertility in a woman less than 35 years ?
- 12 months of unprotected intercourse
 - Women under 35 generally have:
 - Better ovarian reserve (more and healthier eggs),
 - Higher natural fertility rates per cycle,
 - More time to conceive naturally before age-related decline becomes significant.
 - Thus, waiting 12 months allows a reasonable chance for natural conception without premature interventions
- 10 . How many months of unprotected intercourse to diagnose infertility in a woman above 35 years ?
- 6 months of unprotected intercourse
 - Why 6 months for women 35 or older?
 - Starting around age 35, and especially after 37, fertility declines significantly due to: Decreased ovarian reserve and oocyte quality, Increased rates of anovulation, miscarriage, and chromosomal abnormalities.
- The shorter timeframe (6 months) ensures earlier intervention, since:
Delaying evaluation may reduce the chances of successful treatment,
11. What is the relationship between TRH and prolactin ?
- TRH stimulates prolactin
12. What effect does alcohol have on the reproductive system ?
- Alcohol causes sexual dysfunction as it decreases GnRH which decreases Testosterone
13. What does AUB PALM COEIN stand for ?
- Bleeding from the uterus that is irregular in volume, frequency, duration, or timing and occurs in reproductive-age women (i.e., before menopause).
 - Common causes (classified by PALM-COEIN system):
 - PALM (structural): Polyp, Adenomyosis, Leiomyoma (fibroids), Malignancy/hyperplasia
 - COEIN (non-structural): Coagulopathy, Ovulatory dysfunction, Endometrial disorder, Iatrogenic (anticoagulants) , Not yet classified (chronic endometritis)
 - PALM → structural, COEIN → non structural
 - Disorders affecting endometrial hemostasis: Hemostasis is the process your body uses to stop bleeding. In the uterus, this happens every month when the endometrium is shed (your period). Normally, bleeding is controlled by local factors like vasoconstriction, clot formation, and tissue repair. In some women, the endometrial lining doesn't stop bleeding properly, even though everything else (hormones, uterus structure) looks normal.

14. What are the indications of endometrial biopsy for women less than 45 ?

- AUB + Unopposed estrogen (obesity, anovulation), failed medical management, lynch syndrome (hereditary nonpolyposis colorectal cancer)

14. What are the indications of endometrial biopsy for women 35 or above ?

- Atypical glandular cells on Pap test
- Atypical Glandular Cells (AGC) on a Pap test are an abnormal finding that suggests changes in the glandular (columnar) cells of the cervix or endometrium. These cells are different from the more commonly found squamous cells and are associated with a higher risk of precancerous or cancerous lesions

Endometrial biopsy indications	
Age ≥ 45	• Abnormal uterine bleeding • Postmenopausal bleeding
Age < 45	Abnormal uterine bleeding PLUS: • Unopposed estrogen (obesity, anovulation) • Failed medical management • Lynch syndrome (hereditary nonpolyposis colorectal cancer)
Age ≥ 35	• Atypical glandular cells on Pap test

15. What is the clinical uses of Leuprolide ?

- Uterine fibroids, endometriosis, precocious puberty, prostate cancer, infertility. Pulsatile for pregnancy, continuous for cancer. And infertility
- Fibroids = Fibroids are benign tumors of the uterine smooth muscle that grow in response to estrogen and progesterone. Effect of leuprolide: By lowering estrogen levels.
- Endometriosis: Hormonal dependence: Endometrial tissue outside the uterus (endometriosis) responds to estrogen, leading to proliferation, inflammation, and pain. Effect of leuprolide: Suppressing estrogen:

16. Which SERM is used to prevent osteoporosis ?

- Raloxifene → Unlike tamoxifen, raloxifene does not stimulate the endometrium, reducing the risk of endometrial hyperplasia and cancer.

17. What happens to the LH:FSH ratio in PCOS? (increase/decrease/no change)>

- Increase LH to FSH ratio

- Increase insulin → INcrease GnRH release from the hypothalamus favors LH over FSH, Elevated LH stimulates theca cells in the ovary to produce more androgens. excess androgens produced by the theca cells decrease the production of sex hormone-binding globulin (SHBG), increasing free androgens, which can further disrupt normal feedback controls, perpetuating high LH levels.

18. They might tell you there's a 38-year-old woman who had a tubal ligation two years ago (i.e., there's no way she's pregnant), but on physical exam she has a uterus consistent with 8 weeks gestation. What is the dx ?

- Adenomyosis → A condition in which endometrial tissue exists within and grows into the uterine wall.

19. What is the tx of adenomyosis ?

- By suppressing ovulation and stabilizing hormonal levels, OCPs reduce the cyclical stimulation of ectopic endometrial tissue within the myometrium.
- Adenomyosis is characterized by ectopic endometrial tissue within the myometrium, which responds to hormonal stimuli and can produce increased prostaglandins. Elevated prostaglandin levels contribute to heavy menstrual bleeding (menorrhagia), dysmenorrhea (painful periods), and inflammation. NSAIDs decrease prostaglandin levels,

20. What is the NBS in a person presenting w/ testicular cancer ?

- {{c1::Ultrasonography of the scrotum }} If ultrasound reveals a solid lesion, further work-up with serum tumor markers (eg, alpha-fetoprotein, β -hCG) and screening CT scans is typically required Yours = Trans-scrotal biopsy of the right testis Patients with suspected testicular cancer who receive trans-scrotal biopsy are at increased risk for lymphatic spread and recurrence. As such, radical orchiectomy is preferred for both tissue diagnosis and treatment. However, scrotal ultrasound should be performed prior to either invasive procedure in order to determine if the mass is solid or cystic.

21. 10M w/ blue colored mass at the superior pole w/ normal cremasteric reflex dx?

- Torsion of the appendix of the testes.
- When it twists (torsion), its blood supply is compromised, leading to ischemia and necrosis. The infarcted, necrotic appendix becomes dark blue or black in color.
- Cremasteric reflex --> stimulation of the ilioinguinal nerve causing contraction of the cremaster muscle --> elevation of the testis

23. NBME 11 Block 3 13F (1) tanner stage 2 for breast and pubic hair (2) Never menstruated before. What is NBS ?

40. A 13-year-old girl is brought to the physician because her mother is concerned that her daughter has never had a menstrual period. She is at the 80th percentile for height and 75th percentile for weight. Breast and pubic hair development is Tanner stage 2. Examination shows no other abnormalities. Which of the following is the most appropriate next step in management?

- ☒ A) Reexamination in 1 year
- ☐ B) Pelvic examination
- ☐ C) Karyotype analysis
- ☐ D) Measurement of serum estradiol concentration
- ☐ E) Transvaginal ultrasonography



Correct = Reexamination in 1 year, Wrong answer = Pelvic exam

24. What is the definition of primary Amenorrhea ?

- (1) >15F + Sex feature + never menstruated
- (2) >13F + NO sex feature + never menstruated

24. How often to do a pap smear in women who have had total abdominal hysterectomy w/ bilateral salpingo-oophorectomy for symptomatic fibroid ?

- Never

38. A 48-year-old Hispanic American woman returns to the office for a routine gynecologic examination. She is generally healthy and says she has felt well. One year ago, she underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy for treatment of symptomatic leiomyomata uteri. She has been taking estradiol since the procedure. She takes no other medications. Results of Pap smears obtained in the past have all been normal. Vital signs are normal and physical examination shows no abnormalities. The patient asks, "Now that I've had a hysterectomy, how often should a Pap smear be done?" Which of the following is the most appropriate recommendation to the patient for having a Pap smear?

- ☐ A) Each year
- ☐ B) Every 2 years
- ☐ C) Every 3 years
- ☐ D) Every 5 years
- ☒ E) Never

NBME 7 B3

Correct Answer: E.

Pap smear testing employs a cervical swab to collect cells from the transformation zone of the cervix and is an important screening tool for the detection of cervical carcinoma. The United States Preventive Services Task Force guidelines recommend screening for cervical carcinoma with Pap smear testing every 3 years between ages 21 and 29, and Pap smear screening with co-testing for human papillomavirus (HPV) every 5 years or Pap smear testing alone every 3 years in women between the ages of 30 and 65. Total abdominal hysterectomy involves the surgical removal of the uterus and the cervix. Patients who have undergone this procedure no longer require cervical cancer screening with Pap smears if the hysterectomy was performed for a benign indication such as uterine fibroids, as they no longer have cervical tissue.

Incorrect Answers: A, B, C, and D.

Each year (Choice A) or every 2 years (Choice B) are intensified screening regimens that may be appropriate for certain high-risk patients, such as those with a history of previously resected or ablated cervical intraepithelial neoplasia, HIV, or maternal exposure to diethylstilbestrol. These intensified screening regimens are not required in a patient who has undergone total abdominal hysterectomy for a benign indication.

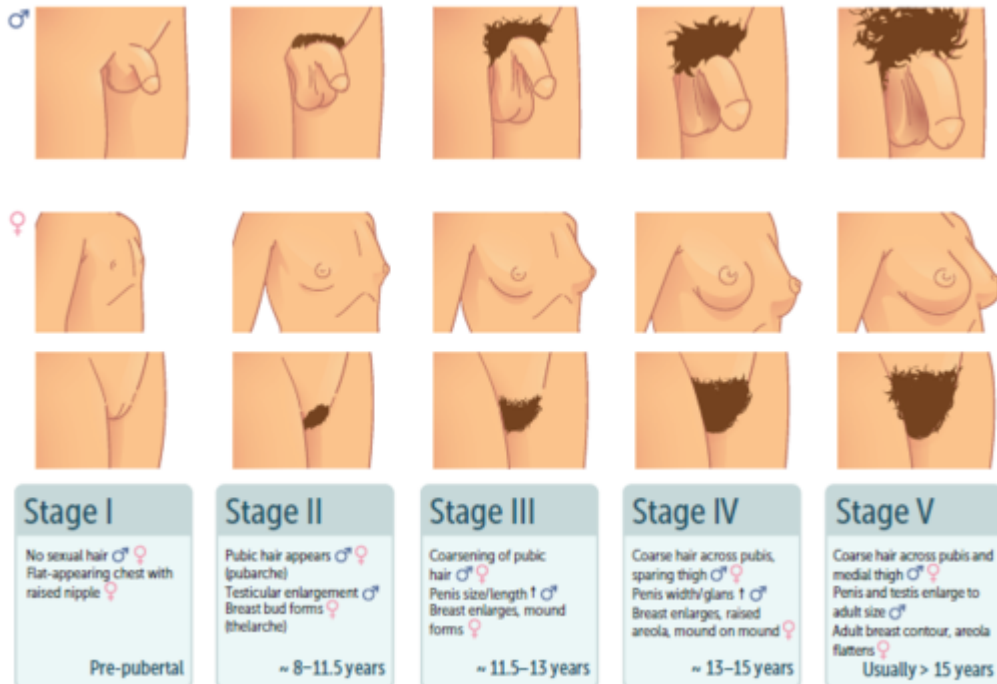
Every 3 years (Choice C) is the current recommended screening regimen for women between the ages of 21 and 29, as well as those between the ages of 30 and 65 if the latter group does not undergo co-testing for HPV. This screening regimen is appropriate if previous Pap smears have been normal and the patients do not have other symptoms or signs of cervical cancer, such as postcoital bleeding. However, this patient has no remaining cervical tissue and so does not warrant further Pap smear testing.

25. Which one has elevated PSA ?

- Prostate cancer not BPH

Comparison of benign prostatic hyperplasia & prostate cancer		
	BPH	Prostate cancer
Risk factors	• Age >50	• Age >40, African American & family history
Affected part	• Central portion (transitional zone)	• Usually peripheral zone of prostate but can be anywhere
Examination	• Symmetrically enlarged & smooth prostate • Can have elevated PSA	• Asymmetrically enlarged, nodules & firm prostate • Markedly elevated PSA

BPH = benign prostatic hyperplasia; **PSA** = prostate-specific antigen.



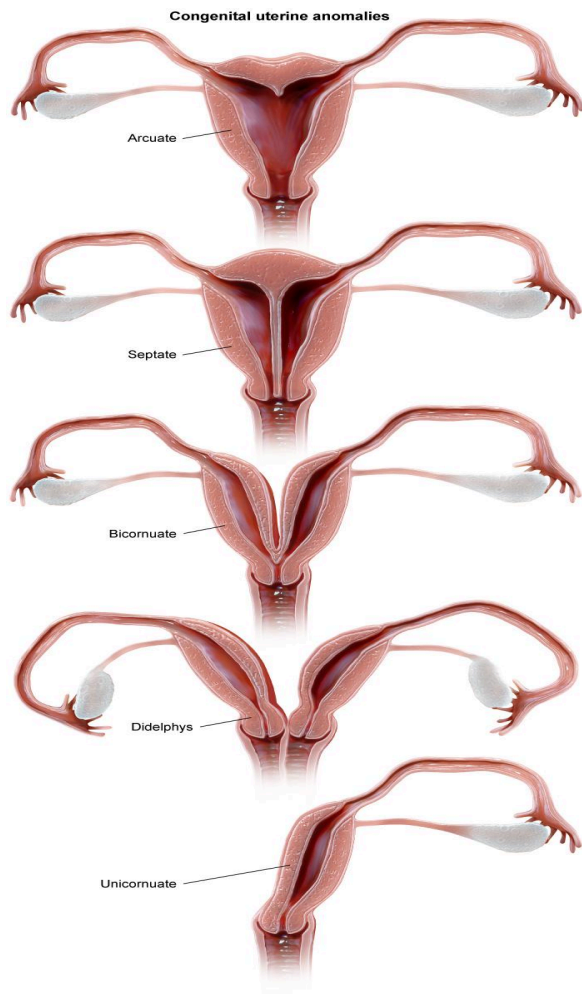
Obs :

Ultrasound assessment of gestational age		
Ultrasound parameter	Gestational age (weeks)	Accuracy (days)
Gestational sac diameter	4.5–6	+/- 5–7
Crown-rump length	7–10	+/- 3
	11–14	+/- 5
Biparietal diameter, head circumference, femur length	14–20	+/- 7
	21–30	+/- 14
	>30	+/- 21–28

Uterine abnormalities septate, bicornuate, didelphys

"Bi-": means "two" "Cornu": means "horn."

didelphys means double



© UWORLD

2. Uterine contraction Length ?

- 30 seconds long every 10 minutes

3. What is the management of HIV In a newborn ?

- *Less than 1000 Vaginal delivery*
- *More than 1000 C section*

4. What is the cause of endometritis ?

- C section: During a C-section, the uterine cavity is breached, providing an opportunity for bacteria from the lower genital tract, skin, or environment to enter the sterile uterine environment. This increases the risk of infection.

5. What is the underlying cause of chorioamnionitis ?

- Prolonged ROM: Rupture creates a pathway for bacteria from the lower genital tract (vagina and cervix) to ascend into the sterile intrauterine environment. The longer the membranes remain ruptured, the greater the opportunity for bacterial colonization and infection.

6. What are the indications for giving GBS Prophylaxis ?

- Prior infant w/ GBS SEPSIS
- Rectovaginal Culture positive for GBS in CURRENT pregnancy
- Unknown status
 - Fever more than 37 C
 - ROM > 18 hours

- Intrapartum fever
- GBS Bacteruria or GBS UTI in current pregnancy (regardless of tx)

Preventing neonatal group B <i>Streptococcus</i> infection	
Antenatal screening	• Rectovaginal culture at 36-38 weeks gestation
Indications for intrapartum prophylaxis	• GBS bacteriuria or GBS urinary tract infection in current pregnancy (regardless of treatment) • GBS-positive rectovaginal culture in current pregnancy • Unknown GBS status PLUS any of the following: ◦ <37 weeks gestation ◦ Intrapartum fever ◦ Rupture of membranes for ≥18 hours • Prior infant with early-onset neonatal GBS infection
Intrapartum prophylaxis	• Intravenous penicillin

If the GBS status is unknown and the person has any one of the following risk factors during labor, intrapartum antibiotic prophylaxis (IAP) (typically intravenous penicillin) is recommended to help prevent neonatal GBS infection:

1. Less than 37 weeks gestation – Preterm labor increases the risk of passing GBS to the baby. Preterm hence there will be less antibodies for protecting the baby
2. Intrapartum fever – A sign that there might be an infection, which raises concern for GBS transmission.
3. Rupture of membranes for ≥18 hours – The longer the water is broken, the higher the risk of GBS transmission

7. Which hormone or inflammatory mediator is elevated in Primary dysmenorrhea ?

- PGF2Alpha
- In females, PGF2α is critical for luteolysis, the process of breaking down the corpus luteum, which leads to a drop in progesterone and the start of a new estrous or menstrual cycle.
- It also induces uterine contractions, so it may be used medically to induce labor or terminate pregnancy.

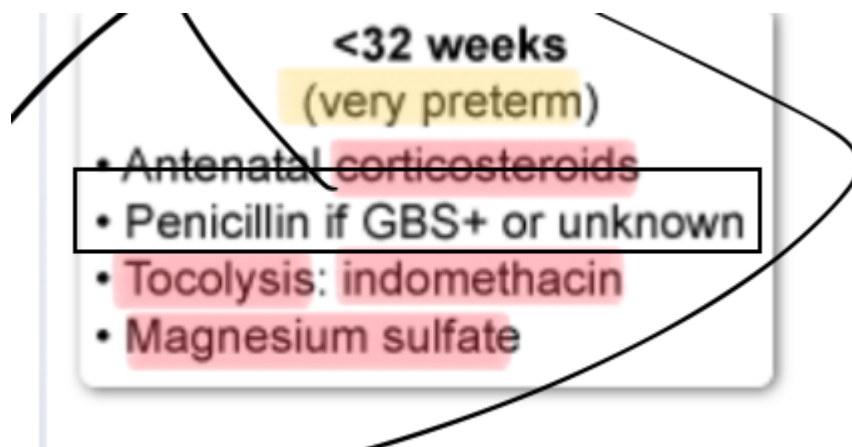
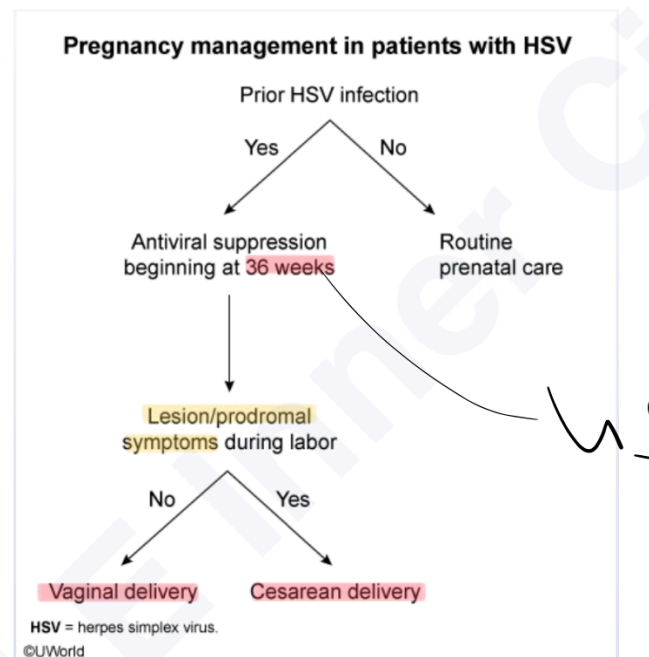
- 25F
- (1) 16 weeks gestation
 - (2) painful lesions on right labium majus for the last 3 days
 - (3) pustular but after 2 days eroded into a ulcer that has been draining clear fluid
 - (4) 2 cm shallow erosions on the right labium majus w/ a erythematous base
 - (5) Patient is prescribed antiviral therapy for 7 days.
 - (6) Symptoms resolve

What is the best strategy to decrease risk of perinatal transmission ?

Correct = antiviral therapy from 36 weeks to delivery w/ C section if there are symptoms of herpes at term

Yours = no additional therapy

UWSA2 Step 3



Psych

Language 6 months → coos

12 months 1st word

2 year = 50 word vocab, 2 word sentence

3 years = 300 word

Oratory—says “mama” and

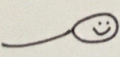
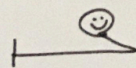
“dada” (by 10 mo)

Words—uses 50-200 words (by 2 yr), uses 300+ words (by 3 yr)

Language—understands 1000 (3 zeros) words (by 3 yr), uses complete sentences and prepositions (by 4 yr)

Legends—can tell detailed stories (by 4 yr)

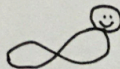
DEVELOPMENTAL MILESTONES

1 month  - Lifts head or 

2 month  - social smile

4 month - rooting gone
(4)
- moro gone (by 3 months tho')
(4)

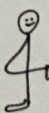
6 month -  - palmar gone
(6)
- rolls & sits (six)
- stranger anxiety (six)

8 month -  - crawl

9 month - separation anxiety
- object permanence

10 month -  - stands (stens)
- pincer grasp
- mama /dada

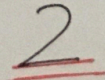
12 month -  - walks
- babinski gone
- points to objects (like )

4 years -  - hops
- cooperative play

5 - buttons (5 buttons)

FINE MOTOR

 Scribble

 parallel lines

 circle

 cross

 Triangle & Square

1. Oppositional defiant disorder vs conduct ?

- no violence vs violence
- No violence in ODD and alot of violence in Conduct disorder

2. Bupropion is contraindicated in which type of patients ?

- Bulimia and Anorexia as it can cause seizures in these patients --> Pixorize (Shivering = Seizures, Skinny loose pants)

3. What is the difference between Social Anxiety disorder (Social Phobia), agoraphobia and schizotypal and panic disorder ?

- Social Anxiety disorder = Fear or embarrassment or rejection (Like a business meeting or presentation .)
- Agoraphobia = Intense fear and panic over being in open spaces, crowds or outside homes
- Schizotypal = prefers to be a loner
- Panic disorder

4. Which ego defence is defined as separating feelings from ideas and events?

- Isolation of affect (immature defence e.g. describing murder in graphic detail with no emotional response)

5. What alcohol withdrawal complication occurs between 12 to 48 hours ?

- Withdrawal seizures or Alcohol hallucinations

Alcohol withdrawal syndrome		
Manifestation	Symptoms/signs	Onset since last drink (hours)
Mild withdrawal	Anxiety, insomnia, tremors, diaphoresis, palpitations, gastrointestinal upset, intact orientation	6-24
Seizures	Single or multiple generalized tonic-clonic	12-48
Alcoholic hallucinosis	Visual, auditory, or tactile; intact orientation; stable vital signs	12-48
Delirium tremens	Confusion, agitation, fever, tachycardia, hypertension, diaphoresis	48-96

6. How to differentiate between bipolar type 1 and type 2 ?

- Bipolar 1
- --> Manic episodes
- --> Depressive episodes common but NOT required for diagnosis
- Bipolar 2
- --> Hypomanic
- --> more than or equal to 1 MDD episodes

Bipolar & related disorders	
Manic episode • Symptoms more severe • 1 week unless hospitalized • Marked impairment in social or occupational functioning or hospitalization necessary • May have psychotic features; makes episode manic by definition	Hypomanic episode • Symptoms less severe • ≥4 consecutive days • Unequivocal, observable change in functioning from patient's baseline • Symptoms not severe enough to cause marked impairment or necessitate hospitalization • No psychotic features
Bipolar I • Manic episode(s) • Depressive episodes common, but not required for diagnosis	
Bipolar II • Hypomanic episode(s) • ≥1 major depressive episodes required	
Cyclothymic disorder • At least 2 years of fluctuating, mild hypomanic & depressive symptoms that do not meet criteria for hypomanic episodes or major depressive episodes	

7. What are examples of 4 Hallucinogens ?

- Marajuina, LSD, phencyclidine and MDMA
- MDMA--> Primarily increases serotonin release (also affects dopamine and norepinephrine).
- High serotonin levels can lead to altered perception, enhanced sensory input, and emotional openness — features that contribute to its mild hallucinogenic effects.
PCP--> NMDA receptor antagonist → blocks glutamate signaling in the brain. This causes disruption of normal sensory input, detachment from reality, and profound hallucinations.

8. What is the time duration of Brief psychotic disorder ?

- than equal 1 days to less than equal to 30 days More

9. What is the time duration of acute stress disorder

- than equal 3 days to less than equal to 30 days More

10. A patient w/ AFIB and delirium can we give me Haloperidol treatment ?

- No we can NOT give haloperidol as it will be detrimental

11. Tx of Adjustment disorder ?

- Psychotherapy
- Psychotherapy targets maladaptive responses to stress, including the dysfunctional thought patterns contributing to low mood and anxiety (eg, "nothing ever works out," "never going to find anyone") while avoiding unnecessary polypharmacy.
- **Yours = Reassurance**

12. What is the NBS in patient w/ insomnia in the elderly ?

- CBT → CBT typically combines several approaches, including addressing dysfunctional thoughts about sleep with cognitive therapy, and behavioral measures such as sleep hygiene, sleep restriction, stimulus control, and relaxation techniques.
- Wrong Answer = Zolpidem at bedtime → The nonbenzodiazepine zolpidem is effective for the short-term treatment of insomnia but is also associated with adverse effects, including cognitive impairment, somnolence, dizziness, and falls. It should not be used as an initial treatment for insomnia in the elderly. When prescribed for elderly patients, the lowest dose should be used.

13. What is the first line of acute mania ?

- Antipsychotics

Acute mania	
Clinical features	• Elevated, irritable, labile mood • Increased energy & activity, decreased need for sleep • Pressured speech, racing thoughts, distractibility • Grandiosity, risky behavior • Marked impairment, may have psychotic symptoms
Management	• Antipsychotics (first- & second-generation) • Lithium (avoid in renal disease) • Valproate (avoid in liver disease) • Combinations in severe mania (eg, antipsychotic plus lithium or valproate) • Adjunctive benzodiazepines for insomnia, agitation

14. 2M (1) AMS (2) playing in the garage (3) Multiple episode of emesis (4) tonic clonic seizures What is the cause ?

- {{c1::Ethylene glycol}} --> encephalopathy, emesis, tachypnea Seizures --> The oxalic acid metabolite binds to serum calcium and forms calcium oxalate; this predisposes to hypocalcemia, which can lead to seizures, tetany, and/or arrhythmias (typical onset ~4-12 hr following ingestion). yours = Organophosphates --> Defecation, Urination, Miosis, Bronchospasm/bradycardia, Emesis, Lacrimation, and Salivation (DUMBELS). Other than emesis, these findings are not present in this patient. Step 3 wrongs

15. What is the tx of Serotonin Syndrome ?

- Cyproheptadine blocks H1 receptors, preventing histamine from exerting its effects, which alleviates allergy symptoms such as sneezing, itching, and runny nose.
Serotonin Receptor Antagonism: It also acts as an antagonist at various serotonin (5-HT) receptor subtypes, particularly 5-HT_{2A} and 5-HT_{2C} receptors

16. NBME 7 Block 4

What is the tx of acute mania in a pregnant female ?

{{c1::Quetiapine}}

Wrong answer = Lithium --> crosses the BPB, lithium is associated w/ an increase rate of cardiac malformation

18. A 22-year-old female university student is brought to the clinic by her mother 1 day after the patient was dismissed from class because of disruptive behavior. Her professor said she stood up while he was teaching and announced that class was dismissed. The patient has pressured speech and speaks rapidly; she says she feels "wonderful" and has no idea why she is at the clinic. Her mother says the patient has been sleeping only 1 to 2 hours nightly during the past week. The patient says she has been staying up to work on papers and that her family is tracking her movements through her laptop. She says she feels like a puppet controlled by her family and makes accompanying marionette-like gestures with her arms. The mother also says her daughter has become increasingly hypersexual during the past week, and she spent an entire financial aid check purchasing clothing and a new computer. Medical history is significant for asthma treated with an albuterol metered-dose inhaler. The patient has not had any recent alcohol or drug use. She is unsure of the date of her last menstrual period. BMI is 32 kg/m². Vital signs are temperature 36.1°C (97.0°F), pulse 115/min, respirations 20/min, and blood pressure 144/79 mm Hg. Physical examination discloses no abnormalities. Urine pregnancy test is positive. Which of the following is the most appropriate pharmacotherapy?

- ☐ A) Clozapine
- ☐ B) Lamotrigine
- ☒ C) Lithium carbonate
- ☐ D) Quetiapine
- ☐ E) Valproic acid
- ☐ F) No pharmacotherapy; psychotherapy only

Correct Answer: D.

Bipolar disorder is a mood disorder that features acute episodes of mania. Acute mania typically manifests with an irritable or euphoric mood, increased energy, a decreased need for sleep, increased goal-directed activity, rapid speech and thinking, irresponsibility (as evidenced by this patient's attempt to dismiss her class), and grandiose thinking. Some patients demonstrate associated psychotic symptoms (eg, grandiose delusions, hallucinations). Management of acute mania requires mood stabilizing therapy (eg, mood stabilizers or mood stabilizing antipsychotics). Atypical antipsychotics (eg, quetiapine, olanzapine), which antagonize dopamine receptors and modulate serotonin activity, possess mood stabilizing properties and demonstrate effectiveness for acute mania over the course of days. Alternatively, for acute bipolar depression, the most effective medication choices are lurasidone, quetiapine, lamotrigine, and fluoxetine-olanzapine. In patients who are pregnant, careful regimen selection should be undertaken due to the potential teratogenic effects of many of the common therapies of bipolar disorder. For this reason, quetiapine is regarded as the treatment of choice because of low patient and fetus.

Incorrect Answers: A, B, C, E, and F.

Clozapine (Choice A) is not correct. Clozapine is an antipsychotic used to treat refractory schizophrenia. Its major toxicities include agranulocytosis, which can be severe and life threatening in the setting of infection.

NBME 7 Block 4 11F (1) 1 week of insomnia (2) symptoms began after a bite from a snake (3) snake removed from the house but she still has these symptoms What is the NBS ?

Correct = {{c1::Reassurance Only}} Yours = Gradual reexposure to snakes while she is in her bedroom --> she has NO fear to snakes, she only has insomnia

- ✖ 34. An 11-year-old girl is brought to the office by her parents because of a 1-week history of sleeping problems. The symptoms began when her brother's snake got out of its cage and crawled into her bedroom and over her foot. She was not bitten or injured and the snake has since been removed from the house, but she continues to have difficulty falling asleep and awakens frequently during the night. Her school performance continues to be good. Medical history is otherwise unremarkable. She lives with her mother, stepfather, and 8-year-old brother. The patient is 145 cm (4 ft 9 in; 50th percentile) tall and weighs 28 kg (62 lb; 10th percentile); BMI is 16 kg/m² (25th percentile). Vital signs are temperature 36.4°C (97.5°F), pulse 76/min, respirations 18/min, and blood pressure 108/68 mm Hg. Physical examination shows no abnormalities. Which of the following is the most appropriate management?
- ☐ A) Clonazepam therapy
 - ☐ B) Cognitive behavioral therapy
 - ☐ C) Fluoxetine therapy
 - ☒ D) Gradual reexposure to snakes while she is in her bedroom
 - ☐ E) Reassurance only

N7B4

Correct Answer: E.

This patient's experience with her brother's pet snake likely resulted in anxiety that is causing sleep difficulty. Stressful events commonly cause temporary emotional problems such as sadness, anxiety, or difficulty sleeping. These problems typically resolve within days to weeks (or in the case of bereavement, months). Adjustment disorder refers to the onset of an emotional disturbance within 3 months of an identifiable stressor. This disorder manifests as marked distress out of proportion to the stressor or a significant impairment in school, work, or social functioning. This patient does not experience dysfunction currently, though her difficulty sleeping even in the snake's absence can be considered out of proportion to the stressor. In any case, adjustment disorder is typically self-limited, so reassurance is appropriate. In severe cases, brief supportive psychotherapy or symptom-focused pharmacotherapy can be beneficial.

Incorrect Answers: A, B, C, and D.

Clonazepam (Choice A) is a benzodiazepine medication commonly used to treat anxiety and rapid-eye movement sleep behavior disorder. Benzodiazepines, though sometimes used, are not first-line agents for acute insomnia. Additionally, the patient does not experience daytime symptoms, and clonazepam is a long-acting medication that would affect the patient during daytime as well.

Cognitive behavioral therapy (Choice B), which commonly includes graded exposure therapy, or gradual reexposure to snakes while she is in her bedroom (Choice D) is used for full-fledged anxiety disorders (eg, specific phobia of snakes). However, this patient does not directly express a fear of snakes or meet duration criteria for specific phobia. Her insomnia is likely to be self-limited and improve without intensive treatment.

7. A 54-year-old man comes to emergency 90 minutes after attending a party in his friend's cellar. He complains of severe stomach cramping and worsening visual disturbance. He appears acutely intoxicated. Serum laboratory studies show:

HCO₃⁻: 12 mEq/L

Na⁺: 142 mEq/L

Cl⁻: 100 mEq/L

pH: 7.14

pCO₂: 23 mm Hg

PO₂: 110 mm Hg

Which of the following is the most appropriate first-line treatment for this patient?

- A) Ethylene glycol
- B) Ethanol
- C) Fenoldopam
- D) Fomepizole
- E) Pralidoxime

45. A 29-year-old man with schizophrenia comes to the office for a routine examination. His only medication is risperidone. He does not drink alcohol or use illicit drugs. Vital signs are normal. Physical examination shows no abnormalities. On mental status examination, he has an expansive mood. He pulls out pages of intricately drawn and colored diagrams of triangular shapes and describes the connections among the seven colors of the rainbow, the seven notes on the piano, the seven "special organs of the body," and the epiphanies he has while meditating on the seventh day of the week. He explains that the special organs will resonate when he plays corresponding keys on the piano. He eats foods whose color corresponds to a specific day of the week. As the interview concludes, the patient asks what the physician thinks of his diagrams and theories. Which of the following is the most appropriate physician response?

- ☐ A) "I find them a bit confusing."
- ☒ B) "Tell me more about them."
- ☐ C) "They seem a bit improbable, but I do understand your logic."
- ☐ D) "They seem to represent something important to you."
- ☐ E) "Your ideas are wonderful."

Correct Answer: D.

Validation helps build therapeutic alliance. Validation refers to acknowledging a patient's experience as legitimate. In a patient expressing delusional beliefs, as in this case, the physician may not agree with the content of the beliefs. However, expressing disagreement with the content of the beliefs is likely to damage the therapeutic alliance. Conversely, validating the content is disingenuous and may strengthen the delusion. Instead, the physician should strive to identify and validate the patient's experience of the beliefs. Aspects of the patient's experience the physician can validate include the meaning of the experience to the patient or underlying emotions (which the patient may verbally express or indirectly express through body language). In this case, "They seem to represent something important to you" is the most appropriate response from the physician. Building therapeutic alliance is important in promoting treatment adherence and response to treatment.

Incorrect Answers: A, B, C, and E.

"I find them a bit confusing." (Choice A) and "They seem a bit improbable, but I do understand your logic." (Choice C) are overly intellectualized responses that stray from the patient's experience of the belief and are therefore less validating than the correct response. They also challenge the logic of the patient's beliefs, which is likely to damage the therapeutic alliance. Moreover, Choice C moves toward validating the content of the patient's beliefs, which could strengthen his delusions.

"Tell me more about them." (Choice B) avoids answering the patient's question, which could damage the therapeutic alliance. As well, it is clear the patient is experiencing delusional beliefs. Gathering more open-ended information is unlikely to be clinically informative and may decrease time available for treatment planning.

"Your ideas are wonderful." (Choice E) validates the content of the beliefs, which could strengthen his delusions. In addition, this statement strays from the patient's experience of the beliefs and is therefore less validating than the correct response.

Educational Objective: If a patient expresses delusional beliefs, the physician should validate the patient's experience of the beliefs rather than the

32F

- (1) 6 weeks ago she had a sepsis
- (2) today she has fever, chills and weakness
- (3) she is a nurse ?

What is the cause of the bacteremia ?

- Factitious disorder
- Self-injection of exogenous material
- Yours = Unrecognized IA abscess

UWSA 1 Step 3 Block 1

41F

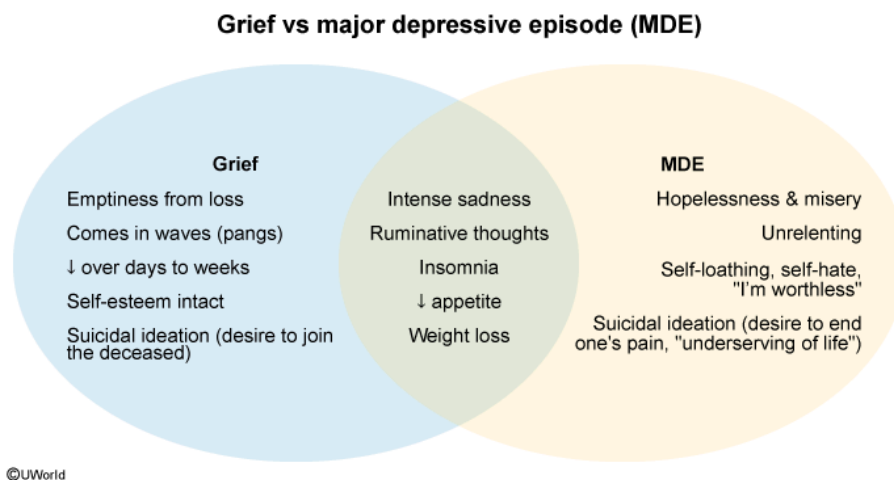
(1) insomnia

(2) Weight loss

(3) excessive thoughts about death of husband who died 3 weeks ago

dx ?

Grief reaction --> Grief is a common trigger for a MDD. If symptoms intensify into MDD, then SSRI can be given



10 painful bowel movement daily for 2 weeks

labs are normal

What is the dx ?

Factitious disorder

Yours = Somatization disorder patient is excessively

preoccupied by 1 or more somatic symptoms which is

disrupts daily life

Key features of somatic symptom & related disorders	
Somatic symptom disorder	≥1 unexplained symptoms; excessive thoughts, anxiety & behaviors in response to symptoms
Illness anxiety disorder	Minimal to no symptoms; preoccupation with idea of having a serious illness
Conversion disorder (functional neurologic symptom disorder)	Neurologic symptom(s) incompatible with anatomy or pathophysiology
Factitious disorder	Falsification of symptoms/inducing injury in the absence of obvious external rewards
Malingering	Falsification of illness for obvious external rewards

Inner Circle notes Step 2 and 3 RAPID REVIEW

Renal: (1) acid base (2) 5 electrolytes (3) GN (4) Stones (5) Tumors (6) Peds recurrent UTI

10. What syndrome is Wilms tumor (nephroblastoma) associated with ?

- WAGR

11. What does WAGR stand for ?

- Wilms, Aniridia, Genitourinary abnormalities and Retardation of the mind
- Aniridia means lack of an iris.

12. For every 1 g decrease of albumin how much does calcium decrease ?

- For every 1 g decrease of albumin calcium decreased by 0.8

13. What is the formula for corrected calcium ?

- Corrected calcium = (measured calcium + 0.8(4 - albumin))
- For each 1 g/dL decrease in albumin, total calcium decreases by ~0.8 mg/dL, even though ionized calcium may remain normal.

14. NBEM 6 Block 1 What are the eye abnormalities seen Wilms tumor (nephroblastoma) ?

- Abnormal pupils and nystagmus

We can get abnormal pupils typically large, irregular or poorly reactive due to the lack of iris musculature. Light sensitivity and poor visual acuity are common. Nystagmus can occur in WAGR syndrome but usually secondary to poor vision from aniridia.

1. What is the underlying cause of Pigment Cast ?

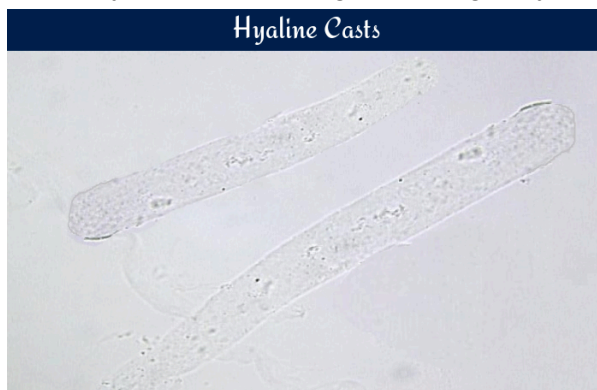
- Rhabdomyolysis → myoglobin and other proteins, which can appear pigmented due to the heme component of myoglobin. Each myoglobin molecule contains one heme group, which allows it to bind one molecule of oxygen.

2. When do we give **Ca Carbonate** in patients w/ hyperkalemia ?

- ECG changes and potassium above 6.5 meq/l
3. Tx of the acute PSGN ?
- Loop Diuretics → Acute kidney injury (AKI) with decreased glomerular filtration (eg, ↑ serum creatinine) and impaired sodium excretion is also characteristic. The aggregate consequence of both sodium and water retention is volume overload with hypertension and edema. Hence we use loop diuretics for PSGN due to volume overload

4. What type of renal cast are present in a dehydrated person ?

- **Hyaline glassy** and translucent in appearance → They're made up of a protein called uromodulin and are often the result of conditions such as dehydration and strenuous exercise, as well as chronic kidney failure. Hyaline casts are the most common type of urinary casts, appearing as pale, glassy, and structureless material in urine.



6. What does the second A in SAAD of renal papillary necrosis stand for ?

- Acute Pyelonephritis → **Infection-Induced Ischemia**: In pyelonephritis, there is an acute inflammatory response. This inflammation can lead to edema and vascular congestion, reducing blood flow to the renal medulla, specifically the renal papillae

7. What does the second H in HARDASS mnemonic stand for ?

- **Hyperchloremia** → hyperchloremic metabolic acidosis results from the loss of bicarbonate (HCO_3^-), whether through gastrointestinal losses (diarrhea) or renal losses.

8. What is the formula for Anion gap Metabolic acidosis ?

- $\text{Na} - (\text{Cl}^- + \text{HCO}_3^-)$
- You thought = $\text{Na} - \text{K}^+ - \text{HCO}_3^-$
- Minimal Contribution: Potassium levels are relatively low compared to sodium and are not considered a major contributor to the overall electroneutrality

9. What is the difference between WILMS tumor (nephroblastoma) and neuroblastoma ?

- Does NOT cross the midline Wilms tumor (nephroblastoma) whereas neuroblastoma crosses the midline

10. In patients w/ recurrent calcium stones and hypercalciuria what drug helps ?

- **Thiazide**
- Wrong answer = decrease intestinal Ca absorption

11. What is a poor long term prognosis in a 40 M w/ PSGN and gross hematuria ?

- **Age** Correct = Age of diagnosis Wrong answer = Gross hematuria → None of these findings significantly affects the prognosis, whereas the difference in prognosis between adults and children has been noted in multiple studies Children: Typically

experience a more benign and self-limited immune response to streptococcal infection. Adults: Often exhibit a more intense and prolonged immune response, which can cause more severe glomerular injury, leading to persistent or progressive renal damage.

15. What are the indications for hemodialysis ?

Indications for urgent dialysis (AEIOU)	
<u>A</u>cidosis	- Metabolic acidosis - pH <7.1 refractory to medical therapy
<u>E</u>lectrolyte abnormalities	- Symptomatic hyperkalemia - ECG changes or ventricular arrhythmias - Severe hyperkalemia - K >6.5 mEq/L refractory to medical therapy
<u>I</u>ngestion	- Toxic alcohols (methanol, ethylene glycol) - Salicylate - Lithium - Sodium valproate, carbamazepine
<u>O</u>verload	Volume overload refractory to diuretics
<u>U</u>remia	- Symptomatic: - Encephalopathy - Pericarditis - Bleeding

Genitourinary trauma

Renal injury

Bladder injury

Urethral injury

A straddle injury
happens when your child hurts the area between the legs. This can happen after a fall onto an object such as a bicycle bar or the top of a fence.

Most commonly due to blunt trauma (eg, motor vehicle collision).

Presents with bruises, flank pain, hematuria. Caused by direct blows or lower rib fractures.

Presents with hematuria, suprapubic pain, difficulty voiding.

- Superior bladder wall (dome) injury—direct trauma to full bladder (eg, seatbelt) → abrupt ↑ intravesical pressure → dome rupture (weakest part) → intraperitoneal urine accumulation. Peritoneal absorption of urine → ↑ BUN, ↑ creatinine.
- Anterior bladder wall or neck injury—pelvic fracture → perforation by bony spicules → extraperitoneal urine accumulation (retropubic space).

Occurs almost exclusively in males. Presents with blood at urethral meatus, hematuria, difficulty voiding. Urethral catheterization is relatively contraindicated.

- Anterior urethral injury—perineal straddle injury → disruption of bulbar (spongy) urethra → scrotal hematoma. If Buck fascia is torn, urine escapes into perineal space.
- Posterior urethral injury—pelvic fracture → disruption at bulbomembranous junction (weakest part) → urine leakage into retropubic space and high-riding prostate.

3 parts of the Urethra

Prostate Urethra = Membranous Urethra = Posterior Urethral injury
Spongy Urethra = Anterior urethral injury

Anterior urethral injury

Deep penile (Buck) fascia

Perforation of spongy urethra (rupture of Buck fascia)

Posterior urethral injury

Retropubic space

Bloody extravasation

Torn bulbomembranous junction

Pulm:

What disease presents the first HAPE or Multifocal pneumonia ?

- HAPE due to the acute physiological stress of hypoxia and increased vascular permeability leads to edema formation relatively quickly.

- Why does Multifocal pneumonia occur later ? Respiratory infections take time to develop as the immune system weakens due to prolonged hypoxia, dehydration, and cold exposure. Some cases may be due to aspiration or superimposed bacterial infections in people with altitude-related respiratory distress.
2. Tx of laryngotracheitis and associated symptoms of SEVERE Croup ?
 - nebulized racemic epi (racemic epinephrine will less likely lead to side effects) stridor at rest Mild to moderate resp distress
 3. How to dx Vascular Rings in children ? rigid bronchoscopy or CT angiogram of the chest ?
 - CT Angiogram of the chest → Although bronchoscopy would also reveal tracheal indentation in a patient with a vascular ring, - it would not identify abnormal vasculature, making this invasive procedure unnecessary. Diagnostic imaging is the priority when a vascular ring is suspected.
 4. What are the Ventilator O2 (target) requirements?
 - 88%-95% f-> Preventing hypoxemia and avoid hyperoxia hence o2 toxicity to the organs
 5. Carcinoid tumors secrete
 - Histamine, serotonin, bradykinin, prostaglandin, substance P and chromogranin
 6. Cholesterol is high or low in exudates
 - is above 60 mg/dl in exudates due to increase permeability
 7. Chylothorax: what will be high ?
 - Triglycerides --> lymphatic fluid, which normally carries dietary fats, particularly triglycerides, bypasses the normal absorption and drainage pathways and accumulates in the pleural space.
 - Chylos: juice, Chyle --> Chyle is a milky fluid consisting of lymph and emulsified fats, formed in the small intestine during digestion.
 8. What is another name for Idiopathic Pulmonary Fibrosis (IPF)?
 - Usual interstitial pneumonia
 - Definition: A specific type of chronic, progressive interstitial lung disease of unknown cause.
 9. What is the 4 parts of the Centor Criteria ?
 - CENT = **C**ervical LAD, **E**xudates **F**ever above 38 C **N**o cough
 10. How long does Chemical Pneumonitis take ?
 - Immediately (vs Aspiration Pneumonia which takes longer to develop)
 11. How to diagnose a patient with suspected Chronic Bronchitis ?
 - PFT, Wrong Answer CT scan is a wrong answer for diagnosing chronic bronchitis
 - Purpose of PFT: Assess lung function and airflow obstruction. Reduced FEV₁/FVC ratio
 - Airflow limitation not fully reversible (hallmark of COPD, which includes chronic bronchitis) Clinical Criteria (very important): Cough with sputum production for at least 3 months in 2 consecutive years, without another identifiable cause.
 - CT Scan of the Chest – Supplemental, not first-line
 - Purpose: Evaluate for other lung pathologies (e.g., bronchiectasis, emphysema, lung cancer).
 12. What is the extubation criteria ?
 - pH 7.25

- Adequate oxygenation (eg, **PaO 60 mm Hg**) on minimal support (ie, fraction of inspired oxygen **FiO 40%** and positive end-expiratory pressure PEEP 5 cm HO
- Intact inspiratory effort and sufficient mental alertness to protect the airway

What is the intubation criteria ?

- Decreased level of consciousness (e.g., GCS ≤ 8), leading to loss of airway protective reflexes

2. Inadequate Oxygenation or Ventilation

- Severe hypoxemia (e.g., SpO₂ < 90% on maximal oxygen)
- Hypercapnia with respiratory acidosis (e.g., pH < 7.25 with high PaCO₂)
- Signs of respiratory fatigue or failure (e.g., accessory muscle use, tachypnea, low tidal volume)

- The initial **criteria for extubation readiness** include:

- **pH >7.25**
- Adequate oxygenation (eg, **PaO ≥ 60 mm Hg**) on minimal support (ie, fraction of inspired oxygen **[FiO] $\leq 40\%$** and positive end-expiratory pressure **[PEEP] ≤ 5 cm HO**)
- **Intact inspiratory effort** and **sufficient mental alertness** to protect the airway

UWSA 2 Step 3

Ph 7.35

PaO2 94 mmHg

PaCO2 45 mmHg

FiO2 of 60%

PEEP 5 cm H2O

13. Noninvasive Positive pressure mechanical ventilation What is the physiological change on the Right and Left heart preload ?

- RV preload $\rightarrow$ decrease (increase ITP $\rightarrow$ decrease CVP return $\rightarrow$ right heart preload)
- RV afterload $\rightarrow$ increase (pulmonary compression) $\rightarrow$ Elevated intrathoracic pressure $\rightarrow$ compresses alveolar capillaries $\rightarrow$ raising the pulmonary vascular resistance
- LV preload $\rightarrow$ PPV **decreases MAP** through baroreceptor effects and by lowering adrenergic tone through decreasing neurohormonal activation. This is particularly helpful with a superimposed hypertensive emergency, as in this patient.
- LV afterload $\rightarrow$ PPV decreases LV transmural pressure because, as **the positive pressure is transmitted to the pleura, the LV contracts against a smaller transmural pressure gradient**. This is especially beneficial in pulmonary edema, where massive inspiratory efforts generate deep negative pleural pressures to impede LV contraction.

14. What is the pathophysiology of BPD ?

- Reduced septation of the alveoli
BPD leads to oxygen toxicity $\rightarrow$ fibrotic scarring $\rightarrow$ reduced alveoli and disrupted vasculogenesis
Yours = Refeeding induced metabolic disturbance

Step 2 Supplemental

15. What do we give for the treatment of exercise induced asthma multiple times a week ?

- Multiple times a week ICS + Formoterol or Antileukotrienes

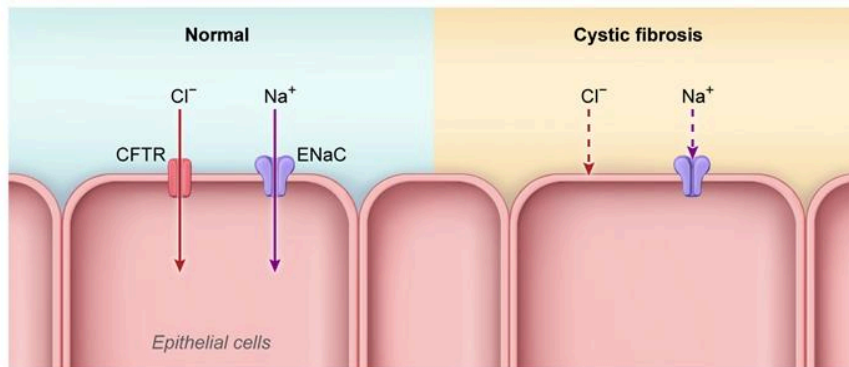
16. What is the tx of exercise induced asthma a few times a week ?

- SABA + antileukotrienes

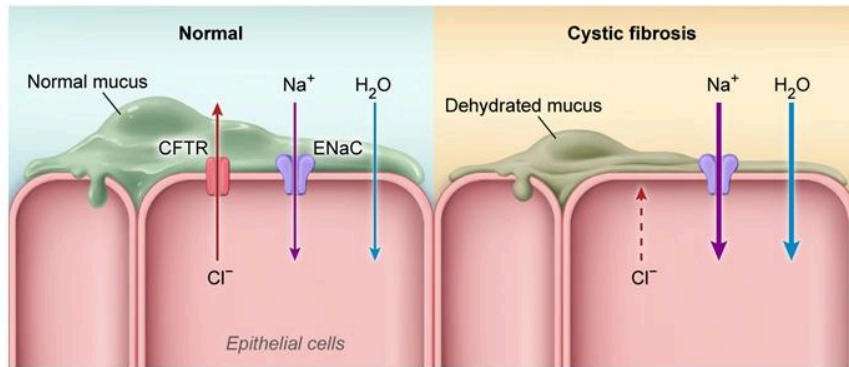
17. How do the cystic fibrosis channel work in the sweat glands versus the lungs ?

- Sweats gland = decrease chloride reabsorption
- Lungs = decrease secretions of chloride

Sweat ducts



Respiratory mucosa



- CFTR = cystic fibrosis transmembrane conductance regulator; ENaC = epithelial sodium channel. ©UWorld

18. Decrease BS, decrease fremitus and increase resonance on percussion of the apex of left lung. What is the likely diagnosis ?

- Pneumothorax Or Emphysema

Version 2

The hilum (or hilar region) of the lung is the central area on the medial surface of each lung where structures such as: the main bronchus (airway), pulmonary arteries and veins, hilar region, air flows through larger bronchi, which are closer to the chest wall centrally. These sounds are a mix of bronchial and vesicular characteristics → hence the name bronchovesicular. Moderate pitch/ intensity, heard equally in inspiration and expiration. The periphery of the lung refers to the outermost regions of lung tissue, closest to the rib cage. Vesicular →

Resonance → percussion over a structure containing air within a tissue like the lungs produces a resonant, high amplitude and low pitched note
Tympany → Percussion over a hollow air containing structure
 High pitched and hollow quality voice
 High Pitched = birds chirping
 High Amp = Bomb

Egophony is an increased resonance of voice when auscultating the lungs, often caused by lung consolidation and fibrosis.

Emphysema → less air sac → impairs function of the lungs → decreased airflow
 Air trapping occurs in emphysema → difficult to fully exhale

55M is seen post surg. w/ pleural

Pulmonary auscultation examination findings				
Condition	Breath sounds	Tactile fremitus	Percussion	Mediastinal shift
Normal lung	Bronchovesicular (hilar), vesicular (peripheral)	Normal	Resonance	None
Consolidation (eg. lobar pneumonia)	Increased (crackles & egophony present)	Increased	Dullness	None
Pleural effusion	Decreased or absent	Decreased	Dullness	Away from effusion (if large)
Pneumothorax	Decreased or absent	Decreased	Hyperresonant	Away from tension pneumothorax
Emphysema	Decreased	Decreased	Hyperresonant	None
Atelectasis (eg. mucus plugging)	Decreased or absent	Decreased	Dullness	Toward atelectasis (if large)

The fluid will push the lung lobes

1 day after an c section for arrest of dilation patient has

Correct = pneumothorax
 Yours = Pulm Embolism

What is the cause ?
 (c1:PTX)
 Yours = Pulmonary embolism → Pulmonary embolism does NOT have decrease BS, decrease fremitus or increase resonance making this NOT the most likely explanation
 Correct = pneumothorax
 Yours = Pulm Embolism

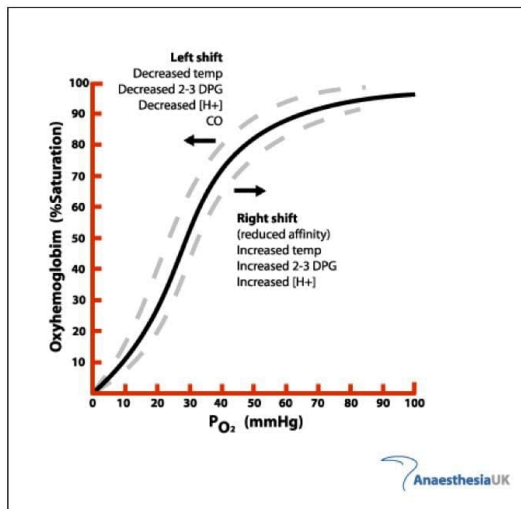
NBME 6 Block 3
 26F
 3 days of SOB
 (2) chest pain w/ deep inspiration
 (3) occasional dry cough
 (4) Decrease BS, decrease fremitus and increase resonance on percussion of the apex of left lung

19. Polymyositis can develop ILD confirmed on HRCT. What is the NBS in diagnosis ?

- PFT → Pulmonary function tests (PFTs) should be performed to distinguish ILD from respiratory muscle weakness and will show decreased forced vital capacity, total lung capacity, and diffusing capacity.
- your = Bronchoscopy → Bronchoscopy with transbronchial biopsy or bronchoalveolar lavage may be needed to diagnose ILD in patients who do not have characteristic findings on CT imaging and PFTs. However, CT and PFTs are usually performed first.

20. What are the causes of rightward shift ?

- Increase H^+ Increase Temp and increase 2,3 BPG



1. Increase temperature = Elevated temperature causes hemoglobin's molecular structure to change slightly, reducing its affinity for oxygen.

2. Increase 2,3 DPG = 2,3 DPG binds to haemoglobin and stabilizes the deoxygenated form, making it harder for O_2 to bind

3. Increase H^+ Decreased (pH) = H^+ ions bind to hemoglobin and alter its structure, decreasing its oxygen affinity. This facilitates oxygen release where CO_2 and acid are accumulating (active tissues).

1. Decreasing temperature = left shift Cold temperatures stabilize the oxygenated form of hemoglobin. Hemoglobin holds onto oxygen more tightly (higher affinity).

2.. Decrease 2,3 DPG --> Leftward shift --> Less 2,3-DPG = less competition with oxygen → hemoglobin binds oxygen more tightly.

3. Decrease H^+ --> fewer H^+ less acidic environment = higher pH hemoglobin structure favour the oxygenated state.

21. What is the NBS in epiglottitis w/ impending airway compromise ?

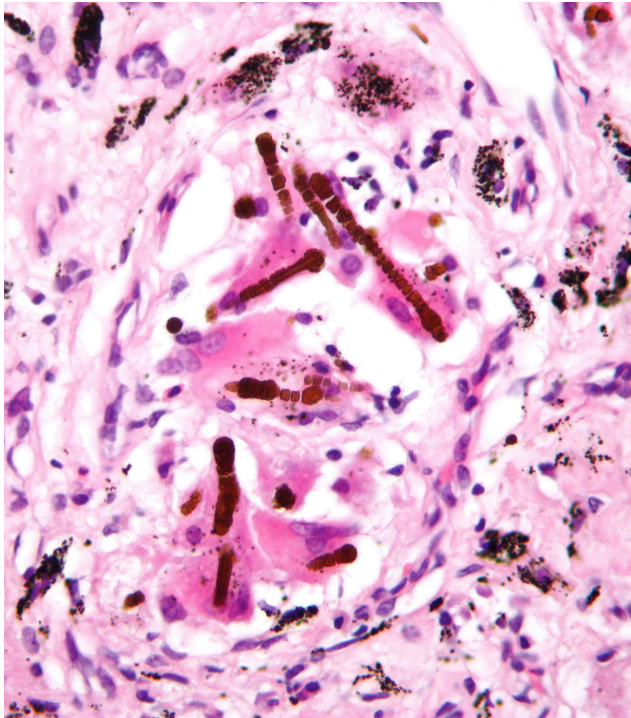
- Correct = Intubate the patient, Wrong answer = Epi --> we use neb epi for croup

22. How long does it take for fat embolism to occur ?

- Fat Embolism after 24 to 72 hours → Over time, the fat globules are broken down, releasing free fatty acids that cause inflammation and damage to the capillary beds in the lungs (acute respiratory distress syndrome, ARDS) and other organs.
- The inflammatory response typically peaks around 24–72 hours, leading to the clinical features of fat embolism syndrome.

23. What are the histological findings of Asbestosis ?

- Ferruginous bodies are composed of a core fiber (usually asbestos) coated with a golden-brown, iron-containing proteinaceous material.



CVS

What are other causes of wide pulse pressure ?

{{c2::AV malformation }}

{{c1::PDA}}

Wide pulse pressure means blood is *quickly leaving the arterial circulation*

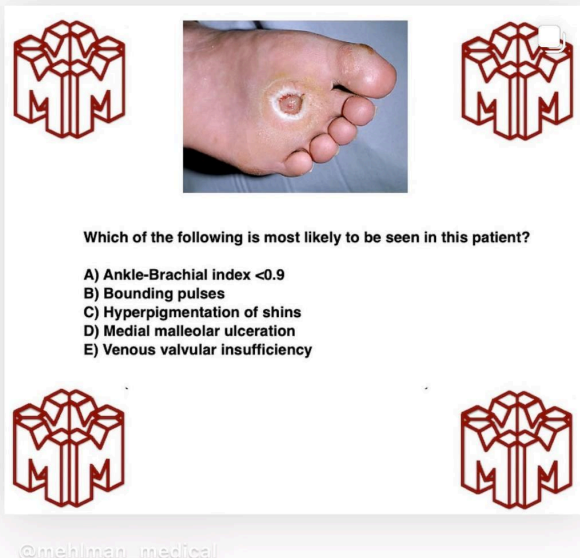


Why B is wrong - Bounding pulses

- These means the arterial pulses are *strong*, which is literally the opposite of what we'd expect with an arterial ulcer.
- Bounding pulses mean blood is quickly leaving the arterial circulation.
- 8/10 Qs on USMLE this is aortic regurg.
- 1/10 is PDA. 1/10 is an AV fistula/malformation.



New Q Post



Yours = Medial malleolar ulceration

--> Venous Insufficiency: Chronic venous hypertension can lead to venous stasis ulcers, often located around the medial malleolus due to impaired blood return from the lower limb. Venous Hypertension: In venous insufficiency, faulty or damaged valves in the superficial or deep venous system lead to impaired venous return. This causes blood to pool and increases venous pressure, especially in the lower limbs.

Punch out lesion is arterial ulceration

1. A patient presents w/ suspected Myocarditis, What is the NBS ?
 - Echo
2. Cardiac tamponade effect on VR ?
 - decrease VR due to increased intrathoracic pressure, Decreased VR > decreased CO > increases SVR
3. LV MI effect on LV and RV preload -->
 - LV and RV preload increase due to decrease CO more RAAS
4. RV MI effect on preload -->
 - RV preload increase due to decrease CO more RAAS
5. CVP is related to which heart's preload is right heart or left heart ?
 - Right heart
6. PCWP is related to which heart's preload is right heart or left heart ?
 - Left heart
7. What happens to A2 in VSD ?
 - Early A2 → L to R Shunting --> increase pulmonary blood flow --> leading to volume overload in the left atrium and ventricles --> increase LV stroke volume --> increase preload leads to accelerated ventricular contractions and emptying. --> early A2
8. What happens to CO in Septic Shock ? (increase/decrease/ normal)
 - Increase

- **Cardiac output is usually elevated.**

This is due to: (1) **Peripheral vasodilation** → decreased systemic vascular resistance (SVR), (2) **Compensatory tachycardia** and **increased stroke volume**, (3) Activation of **catecholamines** and **inflammatory mediators**.

9. What happens to CO in Neurogenic Shock ? (increase/decrease/ normal)

- decrease SVR decrease preload

10. What happens to SvO₂ in Septic shock?

- Increase because less extraction from tissues

11. What is the criteria for a pacing device ?

- 1. LV EF < 35%

- **2. NYHA Class 2,3,4 HF**

- **3. LBBB w/ QRS duration > 150 msec**

- Normal QRS is 0.06 to 0.10 seconds (60 to 100 milliseconds). A duration longer than 0.10 seconds suggests a delay in ventricular conduction, which can be due to various conditions like bundle branch block or ventricular hypertrophy. In patients with heart failure and LBBB with wide QRS, the heart's ventricles don't contract in a coordinated way. This is called dyssynchrony, and it leads to: Less efficient pumping of blood
Worse heart failure symptoms
Progressive remodeling and deterioration of heart function

12. What are the 2 types of Hypertensive Emergencies ?

- Hypertensive encephalopathy and Malignant Hypertension
- Malignant Hypertension = Severe HTN w/ retinal hemorrhages, **exudates or papilledema**
- Hypertensive Encephalopathy = Severe HTN w/ cerebral edema and non-localizing neurological symptoms and signs

13. 52F with a history of shortness of breath, peripheral edema, Jugular venous pressure 9 cm, and crackles both lungs. She had breast cancer 8 years ago for which she takes Doxorubicin and has had radiation therapy. ECHO shows normal EJ fraction. What is the underlying heart defect ? NBME 6 BLock 1

- A. Endocardial infection w/ spirochete transmitted by an arthropod vector**
- B. Fibrosis of the myocardium causing impaired ventricular filling**
- C. Increased resistance in the pulmonary arteries caused by multiple microthrombi**
- D. Direct cytotoxic effect of chemotherapy drug by on the CMC**
- **Correct = Fibrosis of the myocardium causing impaired ventricular filling**
- Yours = Increased resistance in the pulmonary arteries caused by multiple microthrombi

14. What type of cardiomyopathy does Doxorubicin cause in the heart ?

- Dilated Cardiomyopathy

15. What type of cardiomyopathy does Lyme disease cause ?

- Dilated Cardiomyopathy

16. What are the 2 sensitive markers for heart failure ?

- **Dyspnea** and Serum BNP >100 pg/ml

17. Where is the murmur heard in coarctation of the aorta ?

- Upper **left sternal** border

18. Grade 2/6 vibratory systolic murmur best left at the lower left sternal border w/ no radiation Dx?

- VSD

19. Grade 2/6 harsh systolic murmur best at the left sternal border that radiates to the patient back

- Coarctation of the aorta

Diagnostic criteria for anaphylaxis	
Anaphylaxis is likely if there is rapid symptom onset & any 1 of the following criteria:	
1	Skin/mucosa involvement (eg, hives, lip/tongue swelling) & either hypotension or respiratory distress
2	Involvement of ≥ 2 organ systems after exposure to a likely allergen • Skin/mucosa (eg, hives, lip/tongue swelling) • Respiratory (eg, wheezing, stridor, dyspnea) • Cardiovascular (eg, hypotension, tachycardia, syncope) • Gastrointestinal (eg, abdominal pain, vomiting, diarrhea)
3	Hypotension after exposure to a known allergen

20.

21. Infective endocarditis ATB prophylaxis

- Respiratory - AMox prophylaxis
- Apical gingiva - Amox prophylaxis
- Infected skin and muscle - Vanco Prophylaxis
- GI and GU procedure in an active infection - Prophylaxis w/ AMp

GIT

1. Tx of functional constipation in children ?

- Prune juice (prune dried plump w/ high dietary fiber)
- Extra information: Prune juice is a Soluble Fiber: This type of fiber dissolves in water and forms a gel-like substance in the digestive tract. This gel helps to soften the stool, making it easier to pass.

2. Tx of Testicular torsion ?

- Orchiopexy → Torsion is the rotation of the testes around the spermatic cord leading to a transversely oriented horizontal testis and high riding testes. Orchiopexy helps restore blood flow to the affected testicle and helps to fix the testis.

3. What is the tx of IBS ?

- Loperamide, hyoscyamine sulfate, Dicyclomine

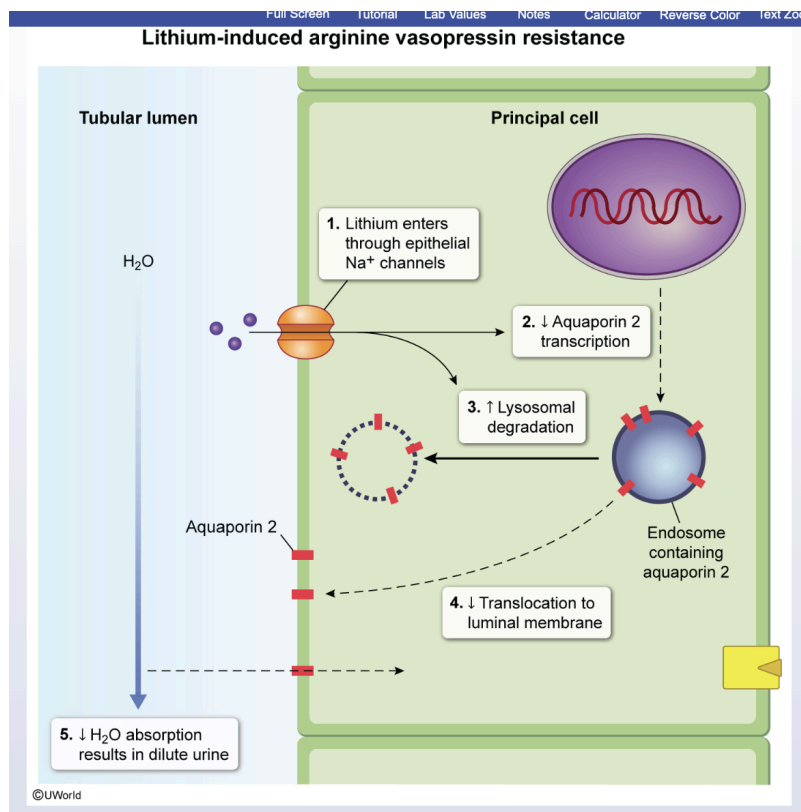
- Loperamide is an opioid receptor agonist that primarily acts on the μ -opioid receptors in the myenteric plexus of the large intestine. It tx diarrhea
Hyoscyamine is an anticholinergic (antimuscarinic) agent that blocks the action of acetylcholine at parasympathetic sites in smooth muscle, secretory glands, and the CNS. It reduces gastric secretions, relaxes smooth muscle, and alleviates spasms
- Dicyclomine is an anticholinergic/antispasmodic agent that antagonizes muscarinic receptors in the gastrointestinal tract. It reduces smooth muscle spasms by inhibiting parasympathetic activity, thus relieving abdominal cramping.

Endo

1. What are the 3 key features of Constitutional delay syndrome?
 - (1) delay bone age, **(2) family history (3) sexual characteristics delay**
2. In what trimester is PTU advised to be given ? and In which trimester is MTU advised to be given ?
 - PTU is safe in the first trimester and Methimazole is safe in the 2nd and 3rd trimester
3. What is the effect of Dopamine on TSH ?
 - Dopamine acts on D2 receptors in the hypothalamus and pituitary. It inhibits the release of thyrotropin-releasing hormone (TRH) from the hypothalamus and directly inhibits TSH release from the pituitary.
4. What is the tx of diabetic neuropathy ? NBME 6 Block 4
 - Correct = Duloxetine, Wrong answer Amitriptyline --> too many side effects
 - Duloxetine leads to more serotonin and NE in the synaptic cleft which modulates nerve pain signals
5. What is the underlying *mechanism* of lithium induced nephrogenic diabetes insipidus?

Acq {{c1::aquaporin}} channel dysfunction

Yours = Vasopressin 2 receptor mutation --> Vasopressin V2 receptor mutations cause inherited AVP-R. However, this condition shows X-linked inheritance; affected male patients can have AVP-R, but female patients are typically asymptomatic.



hypoglycemic episodes due to insulin administration prior to meals followed by impaired gastric emptying and delayed absorption

- The indications for **insulin therapy** in diabetes is a newly diagnosed patient with an **A1C >8.5%** or symptomatic diabetes, **pregestational and gestational diabetes**, and **end-stage renal failure**.

Insulin is a hormone naturally produced by the body and does not cross the placenta. Many oral hypoglycemic agents, such as metformin or glyburide, have less extensive safety data during pregnancy.

*Also, if patient has insufficient glycemic control (target A1c not reached) over a 3-month period with **metform + other antidiabetic drug** → initial **basal insulin***

Hematology

1. What is the treatment of TACO?

- is Oxygen as well because to much fluid at the alveolar interspace

2. Apart from MM and MGUS what other disease is there ?

- Waldenstrom MAcroglobulinemia You forgot the name

3. What is the normal Mean Corpuscular volume of a RBC ?

- {{c1::80 to 100 Femtoliters }} You always think that 80 to 100 is low MCV
- "Old people retire at 80–100"
- Imagine RBCs aging like people.
- Normal RBC size is between 80 and 100 fL, just like how people commonly retire between 80 and 100 years old

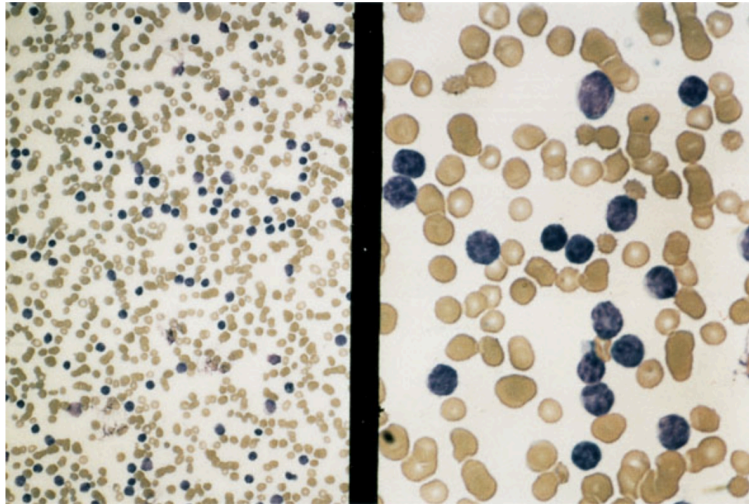
4. tx of HUS ?

- Blood transfusion and **Hemodialysis**

5. What drug are given for prophylaxis in Sick cell disease patients ?

- Hydroxyurea encourages the production of fetal hemoglobin, which is less likely to aggregate and form sickle-shaped red blood cells.
- Vaccination Penicillin and folic acid

6. 85F w/ paleness + 2 months of intermittent dizziness + WBC above 24K, Below is the peripheral smear What is the dx ? NBME 6 Block 3 Q



- Correct = CLL → Numerous lymphocytes w/ large blue nuclei and scant cytoplasm
Scant means barely
- Myelodysplastic → BM will show hypercellular marrow w/ abnormal marrow appearing cells of multiple lineage. Peripheral blood smear will show anemia, neutropenia, TCP

7. INR monitoring and when to withhold warfarin

Management of supratherapeutic INR			
INR	Bleeding	Treatment	
<4.5	None or minimal	Hold warfarin for 1 or 2 days or decrease dose	Hold Warfarin
4.5-10	None or minimal	Hold warfarin & resume when INR is therapeutic; administer low-dose (1-2.5 mg) oral vitamin K if there is increased risk of bleeding	Hold Warfarin Oral Vitamin K
>10	None or minimal	Hold warfarin & administer high-dose (2.5-5 mg) oral vitamin K	Hold Warfarin ORAL High Dose Vitamin K
Any	Serious or life threatening	Hold warfarin & administer intravenous vitamin K 10 mg as well as PCC	Hold Warfarin IV High Dose Vitamin K
PCC = prothrombin complex concentrate.			

8. What should be the INR for Warfarin w/ prosthetic valve ?

{{c1::2.5 to 3.5 }}

The typical therapeutic INR range for patients on warfarin for most conditions is between 2.0 and 3.0. However, for certain conditions, particularly mechanical heart valves or recurrent thromboembolism, the target INR may be slightly higher, typically around 2.5 to 3.5. This range is decided based on a balance between effectively preventing clot formation and minimizing the risk of bleeding.

9. 2 times Uworld wrong step 3

What is the first change expected to occur in response to tx to IDA?

Correct = increase in {{c1::reticulocyte}} count

Yours = increase in ferritin levels --> Ferritin reflects iron stores and does not begin to rise until after hemoglobin normalizes.

within 1 to 2 weeks of initiating supplementation the reticulocyte count increases and within a few month the HCT and HG return to normal

- Aplastic crisis reticulocytes ?

Less than 1 percent

- Splenic sequestration reticulocytes

More than 1 percent

23-y/o female

Hemoglobin 10.5 g/dL
MCV: 74 fL
Iron: 40 ug/dL (NR 60-140)
Ferritin: 100 ng/mL (NR 30-300)

What's the most likely diagnosis?

A) Anemia of chronic disease
B) Beta-thalassemia minor
C) Iron deficiency anemia
D) Menkes disease
E) Sideroblastic anemia

@mehlman_medical

Cant be C decrease IDA we have LOW ferritin

What happens to Ferritin and IRON in Anemia of Chronic Disease ?

High to normal ferritin cause the body is trying to hide Fe from the pathogen

Low Fe due to increase Hepcidine

- What is the likely *underlying cause* of microcytic anemia in a patient with chronic kidney disease that recently began **erythropoietin therapy**?

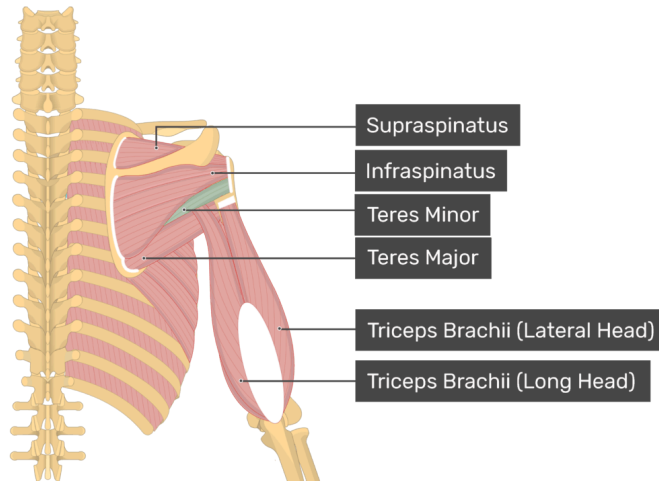
Iron deficiency

the erythropoietin-induced surge in RBC production can precipitate iron deficiency

MSK

1. What is the tx of Phantom limb syndrome ?

- Multimodal pain regimen like analgesics or opioids or pregabalin (more long term)
2. What is the McMurray test used for ?
- Meniscal tear
4. What innervates the teres minor ?
- axillary nerve



-
5. Tx of Sjogren syndrome ?
- Pilocarpine
6. What disease has the positive ulnar deviation or Finkelstein's test?
- quervain tenosynovitis
- 7 45F 6 month history of mild pain and swelling of her right hand
Pain radiates to the shoulder Numbness and tingling in her right thumb and index and ring fingers. Phalen is pos She types alot What is the NBS?

- Correct = Keyboard w/ a wrist pad (splint decrease ROM of the wrist and limits pressure on the CT)
 - Physical therapy Not decrease compression
8. What is the difference between rotator cuff tear and rotator tendinopathy ?
- rotator cuff tear (weakness above 40) vs rotator tendinopathy (pain)
9. What are the features of complex regional pain syndrome ?

- Recent trauma
- Vasomotor changes
- Severe Pain and burning/stinging
- Trophic skin changes

10. How is the dx spinal cord compression ?
- MRI
 - Yours = 99m Technetium bone --> helps in osteomyelitis.

11. When do we use 99 m technetrium bone scan ?
- Osteomyelitis

^{99m}Tc-labeled diphosphonates (e.g., methylene diphosphonate, or MDP) are injected intravenously.

These compounds have a high affinity for **hydroxyapatite** in bone—especially in areas with **active bone turnover**.

In osteomyelitis, the infected area has:

- **Increased blood flow**
- **Increased osteoblastic activity**
- **Bone remodeling**

13. What is the initial tx of spinal cord compression ?

- Correct = {{c1::High dose dexamethasone}}--> helpful as a bridge to definitive therapy can help control pain and may transiently improve neurologic function in patients secondary to decreasing edema at the site of spinal cord compression.
- Yours = Radiation therapy --> this is definitive tx of neoplastic epidural spinal cord compression
- NBME6 Block 3

14. What is the NBS in a patient w/ CTS ?

- **Serum TSH, Yours RF → rheumatoid factor causes my joint problems but hypothyroidism causes weight gain and accumulation of mucopolysaccharides which leads to CTS on the**
- NBME 6**

15. What are the nbs in a patient w/ Spondylolysis ?

- **Activity modification**
- **Patients with confirmed spondylolysis should limit activity (ie, abstain from sports) and continue conservative management (eg, analgesics, ice/heat) for 90 days to allow the fracture to heal. After 90 days, patients who improve can gradually go back to their activity.**
- Yours = Suggest those who do NOT improve then MRI and spine surgery are advised.

Spondylolisthesis	
Pathophysiology	• Bilateral pars interarticularis defects (eg, fractures) → anterior slippage of vertebral body • Most common: L5 slips over S1
Risk factors	• Repetitive back extension & rotation (eg, gymnasts, divers) • Adolescent growth spurt
Clinical features	• Low back pain that is worsened by extension • Radiculopathy as slippage progresses • Palpable step-off may be present
Diagnosis	• Lumbar x-rays (typically visible on lateral views)
Management	• Activity modification (avoid inciting sports), pain control • Neurologic deficits or symptoms >90 days: obtain MRI of spine & surgical consultation

Apart from McMurray test what other test can be used to diagnose meniscus tear ?

Thessaly test for meniscal injury



Patient rotates body side to side with knee in 20° flexion & foot planted

- ©UWorld

- The Thessaly test is a clinical examination used to help diagnose meniscal tears in the knee. It involves rotating the knee while the leg is slightly bent, and a positive test is indicated by pain or a feeling of locking or catching in the joint line.

16. What is main risk factor osteoporosis in a patient a 73 M who drinks 1 glass alcohol per day

- {{c1::Age}} Age: Risk increases with age, especially after menopause in women.
- Yours = Alcohol intake --> g, ≥ 3 drinks/day), likely due to decreased osteoblast activity. This patient's light alcohol consumption is not likely a significant contributor to osteoporosis riskStep 3 wrong
- As men age, their bone mineral density gradually decreases, especially after the age of 70. This decline is due to reduced osteoblastic activity (bone formation) and increased osteoclastic activity (bone resorption).

17. What is the NBS in a patient w/ a dirty wound + who is immunized ?

- {{c1::Nothing}} Yours = He does not require tetanus prophylaxis because his wounds have been cleaned thoroughly

18. What is the tx of scleroderma ?

- {{c2::captopril}} and IV {{c1::nitro}} Scleroderma involves widespread microvascular damage and endothelial cell dysfunction. This injury leads to impaired regulation of blood flow and vascular tone. ACE inhibitors are the agents of choice in the treatment of scleroderma renal crisis because they reverse angiotensin-induced vasoconstriction.

19. What is the tx of Polymyalgia Rheumatica w/o no symptoms of GCA ?

- {{c2::Low}} dose {{c1::Oral glucocorticoids }}

20. What age is genu varum ?

- 0 to 2 years

21. What age is genu valgum ?

- 2 to 6 years

22. What is a red flag for sciosis ?

- {{c1::Back pain }} causing nocturnal awakening --> back pain that causes nocturnal awakening is concerning for an underlying spinal cord tumor. A spinal cord tumor can extend and disturb surrounding nerves, causing constant pain that is described as "dull" or "gnawing." In addition, impingement of spinal cord pathways can cause dysesthesias, weakness, and neurogenic bladder/bowel.
 - Back pain
 - Neurologic symptoms
 - Rapidly progressing curvature
 - >10 degrees each year) • Vertebral anomalies on x-ray
 - Night pain unrelieved by rest can be a sign of bone lesions, metastasis, infection (osteomyelitis, discitis), or malignancy.

23. What are the 5 features of Compartment syndrome ?

- 1. Paresthesias
- 2. Pain out of proportion/on passive stretch
 - 3. Pulse deficit
 - 4. Pallor
 - 5. Paralysis

Why Pulse Deficit is Late

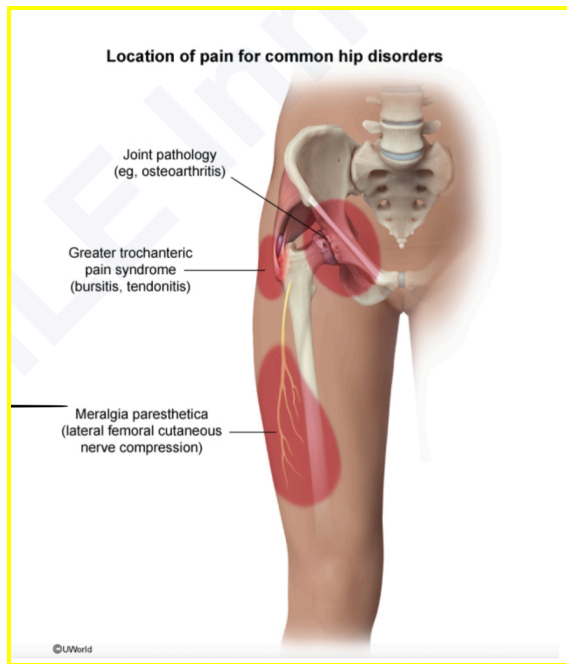
- The pressure has to become very high (exceeding arterial pressure) to compress larger arteries and result in a pulse deficit.
- By this stage, muscle and nerve tissues are already suffering irreversible damage (usually after ~6 hours of ischemia).
- Therefore, waiting for a pulse deficit before diagnosing or treating compartment syndrome results in delayed intervention and poor outcomes, including possible limb loss.
- Paresthesia → The increased pressure compresses the neurovascular structures, particularly the nerves running through the affected compartment.

24. How to measure compartment pressure ?

- Delta Pressure = Diastolic Blood Pressure - Intra-Compartmental Pressure
- Why diastolic BP?
- Perfusion pressure in tissues depends on the pressure gradient between arterial inflow and venous outflow, which primarily occurs during diastole when the arteries are less compressed and blood flow is maintained. Systolic BP is the peak pressure during ventricular contraction and is less relevant for tissue perfusion during the diastolic phase.

25. What does the compression to the LFC nerve lead to ?

Meros pain thigh, algia = pain



Derm

1. What is Nevus Flammeus?

- Respect midline (formal) Does NOT cross

2. Nevus Simplex

- Goes away

3. What type of Erythema in Acute Rheumatic fever?

- Marginatum → Marginatum It describes the characteristic appearance of the skin lesion, which has a distinct, well-defined border or margin.

4. Which of the following factors in a patient's history or PE is most indicative for further evaluation in an infant w/ infantile hemangiomas?

- >5 cutaneous lesions → Liver US
- Facial/ segmental → ECHO and MRI of the head
- Cervical facial → laryngoscopy
- Lumbosacral → spinal US
- Infants with multiple cutaneous hemangiomas have a statistically higher chance of also having hemangiomas in internal organs, particularly the liver.

5. What are desmoid tumors?

- Desmoid tumors are slow-growing and locally aggressive benign neoplasms with a high rate of local recurrence, even after surgical excision.

6. What is the first line tx of atopic dermatitis? NBME 6 B4

- Petrolatum based moisturizing ointments

7. What is the 2nd line tx of atopic dermatitis?

- Tacrolimus NBME 6 B4

8. What is the tx of Pemphigoid gestationis?

- topical triamcinolone (triamcinolone is a synthetic corticosteroid, Binding to glucocorticoid receptors: Triamcinolone binds to specific receptors in the cell, called glucocorticoid receptors (GR).)

9. Tx of actinic keratosis ?

- 5FU and cryotherapy

10. What is the NBS in bullous pemphigoid ?

- Skin biopsy --> Performing a skin biopsy, including both routine histology and direct immunofluorescence, helps confirm the diagnosis of bullous pemphigoid by demonstrating the characteristic subepidermal blisters and immune deposits along the basement membrane, thereby differentiating it from other blistering disorders.

11.



11. A 58-year-old man comes to the office because of a 1-year history of a slowly enlarging, painless, non-itchy lesion on his right inner thigh. He notices the lesion only when he bathes and believes he might be developing a similar one on his right forearm. He has HIV infection well controlled with antiretroviral therapy. He also takes a daily multivitamin. He does not smoke cigarettes or drink alcohol. He used illicit intravenous heroin for 5 years but stopped 35 years ago. He has worked on a farm for 40 years. Vital signs are within normal limits. A photograph of the lesion over the right thigh is shown. Examination of the right forearm shows a 3-cm, raised lesion with well-demarcated borders and dark pigmentation. The remainder of the examination shows no abnormalities. Which of the following historical factors most likely increased this patient's risk for developing these lesions?

- ☐ A) Age



49. A 71-year-old man comes to the office with his wife for an initial visit because of a non-itchy, painless spot on the patient's back that the patient thinks has been present for several years. His wife notes that the spot has enlarged and become darker during the past several months. The patient's medical history is unremarkable and he takes no medications. Vital signs are normal. Physical examination discloses no adenopathy. Examination of the patient's back discloses the lesion shown in the photograph. The remainder of the physical examination discloses no abnormalities. Which of the following is the most appropriate next step in management?

- ☒ A) Biopsy of the lesion
- ☐ B) Cryotherapy
- ☐ C) Microscopic examination of a scraping of the lesion
- ☐ D) Surgical excision of the lesion
- ☐ E) Topical triamcinolone therapy
- ☐ F) Observation only

Correct Answer: F

CNS

1. tx of Idiopathic Intracranial Hypertension ?

- Acetazolamide due to decrease CSF and topi (increase GABA)

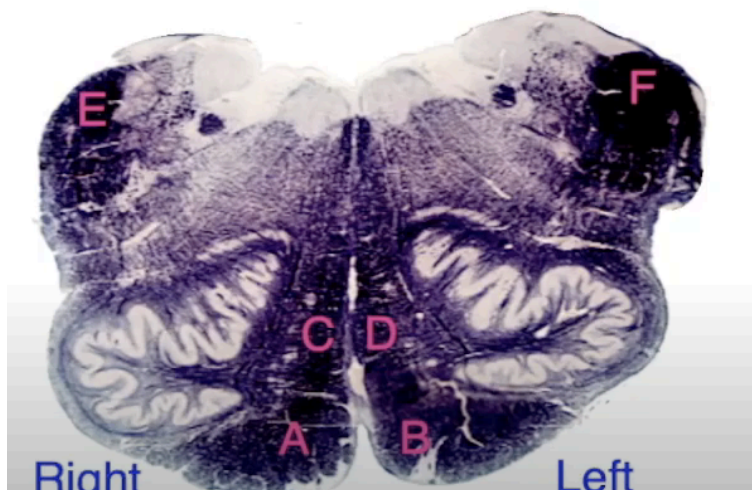
2. Dx of Carotid Artery Dissection?

- W/ CT angiography we can see extra and intra cranial and NOT duplex US because duplex US will not allow us to see the intramural hematoma, collaterals or other stuff

3. What happens to Pregnancy associated plasma protein A in Down Syndrome ?

- {{c1::Decreased}}

- Placenta's ability to produce hormones and proteins like PAPP-A could be impaired in pregnancies affected by Down syndrome.
4. In Alzheimer disease which lobe do we atrophy of ?
- Temporal lobe
 - We have 2 two hippocampi, one located in each hemisphere of the brain. Each hippocampus is situated in the medial temporal lobe. The temporal lobe, particularly the hippocampus, is highly active and involved in memory formation and learning.
 - Amyloid-beta plaques and neurofibrillary tangles tend to accumulate initially in the entorhinal cortex and hippocampus. Tau proteins are microtubule-associated proteins primarily found in neurons, where they help stabilize microtubules involved in maintaining cell structure and facilitating intracellular transport.
5. TOADG --> what does A stand for ?
- Vitamin A, Vitamin A increase CSF production
6. What type of Nystagmus do we NOT see in peripheral vertigo ?
- Vertical nystagmus is never seen (due to the orientation of the semicircular canal)
7. How long does it take for there to be **dementia** in **Parkinson disease** after motor symptoms ?
- Years → Parkinson's disease primarily affects movement due to the degeneration of **dopamine-producing neurons** in the substantia nigra. While cognitive decline can occur, it usually involves different areas of the brain, particularly the **cortex** and **subcortical regions**. This process of degeneration can take time, often spanning years, before cognitive symptoms become evident.
8. What is the management of IIH ? Do we have LP or Acetazolamide first ?
- LP before Acetazolamide in IIH



9. What does A and B represent ?
- Pyramids which carry the corticospinal tracts ?
10. What does C and D carry ?
- medial lemniscus Which is for the loss of fine touch, vibration, and proprioception
11. What is the difference between Fasciculus Cuneatus vs Fasciculus gracilis ?

- Fasciculus Cuneatus = sensory information from the upper limbs, including the arms, upper trunk, and neck
- Fasciculus Gracilis = Carries sensory information from the lower limbs

12. Fever + right tympanic membrane is NOT visible due to copious purulent drainage

What is the dx ?

Correct = {{c1::Suppurative otitis media }}

Yours = Serous otitis media occurs when an effusion is present in the middle ear canal in the absence of infection and inflammation. It typically follows episodes of suppurative otitis media, but it is not associated with fever, pain, crankiness, tympanic membrane rupture, or purulent drainage.

Chronic Suppurative Otitis Media

Chronic suppurative otitis media	
Microbiology	- Often polymicrobial • <i>Staphylococcus aureus</i> & <i>Pseudomonas aeruginosa</i> • Fungi (eg, <i>Aspergillus</i>)
Symptoms	• Chronic (>6 wk), purulent otorrhea • Hearing loss • Absence of ear pain
Examination	• Tympanic membrane perforation • Otorrhea within normal-appearing external auditory canal
Treatment	• Otological fluoroquinolone drops (eg, ofloxacin)
Complications	• Infectious spread (eg, mastoiditis, meningitis, intracranial abscess) • Permanent hearing loss

13. Step 3 wrongs What is the long term guidance for a patient w/ Seborrheic dermatitis ?

- Chronic {{c1::relapsing}} condition
- Your = 1 course of tx usually leads to long term remission

initial treatment can provide significant improvement in symptoms, but patients usually benefit from intermittent re-treatment. As a result, patients usually benefit from intermittent re-treatment. Typical regimens include topical ketoconazole or ciclopirox every 1-2 weeks.

14. What is the NBS in a patient w/ Corneal laceration ? (Step 3 wrongs)

- Correct = consultation w/ {{c1::opthal}}

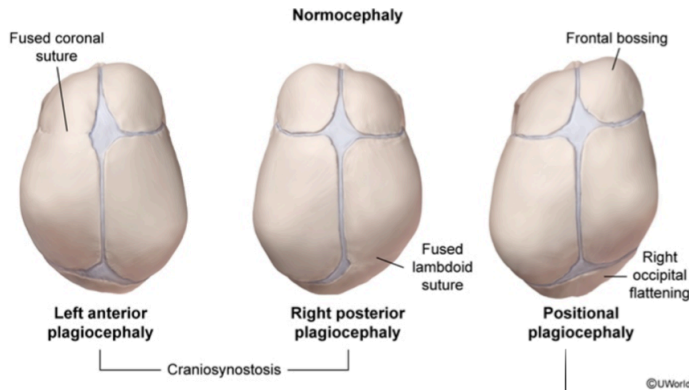
Yours = Irrigation of the eye w/ saline --> Saline irrigation is commonly used to clear a superficial foreign body. In patients with full-thickness corneal lacerations, as in this patient, saline irrigation is contraindicated because it can push environmental pathogens from the surface of the eye into the globe, increasing risk of infection.

Corneal laceration can cause an open globe injury if it extends through the full thickness of the cornea. A positive Seidel sign (ie, concentrated fluorescein uptake with subsequent clearing in a waterfall pattern) indicates full-thickness corneal laceration, an ophthalmologic emergency that requires immediate ophthalmologic consultation.

15. What is the NBS in patients w/ keratitis ? Step 3 wrong

- {{c1::Ophthalmologist referral}} --> risk of blindness hence referral is important

- Yours = Switch to oral fluoroquinolone --> Intravenous or oral fluoroquinolone therapy does not provide any additional drug delivery to the cornea or conjunctiva and does not provide sufficient coverage against gram-positive organisms. However, intravenous therapy may be indicated for patients whose compliance with oral or topical therapy cannot be assured



18.

Plagio = Slanted and cephalic = head

19. Cause of LBBB ?

IHD- Myocardial infarction (especially affecting the interventricular septum) can damage the conduction pathways, leading to LBBB, Wrong = LVHT

Short subjects

- When do we use praziquantel for tx ?
 - Schistosomiasis and tinea solium and Diphyllobatrnum latat
- Duchenne muscular dystrophy at what age ?
 - Below age of 5
- Hepatitis B causes which disease ?
 - Hepatocellular cancer
- Most common immunodef is ?
 - IgA deficient
- Who will have a positive PPD of above 10 mm will be positive ? (4)**
 - **Health care workers, prison workers, high risk TB reactivation (DM and Cortico)**
- Tetanus prevents the release of which NT ?
 - Glycine and GABA
- MARfan syndrome he is asymptomatic. What is the nba prior to sports participation ?
 - Echo —> Yours = Slit lamp exam —> not for sports
- 25M w/ 2 weeks of 3rd degree burns and has been on orotracheal ventilation for 10 to 14 days.What is the NBS ?**
 - **Tracheostomy —> improve WOB, earlier ventilatory weaning and improve communication and decrease sedation needs decrease risk of laryngeal injury increase comfort and mobility**
- Which cells is Hyperacute rejection mediated by ?
 - Preformed antibodies
- What is the treatment of Hyperacute rejection?
 - Graft removal

11. What is the tx of Invasive Candida or Invasive Aspergillosis

- Echinocandins

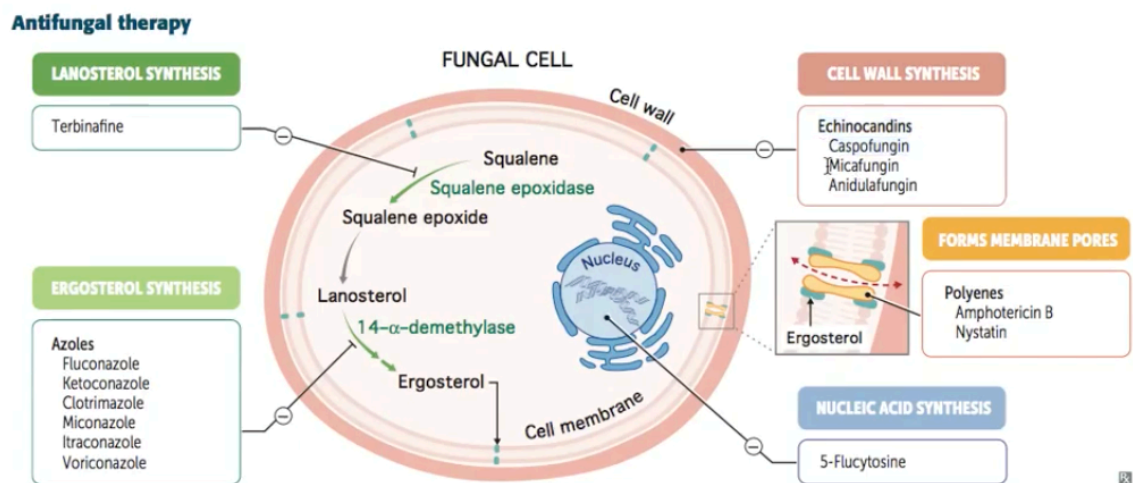
12. What is used for the diagnosis of Candida vulvovaginitis ?

- KOH preparation (wet mount is used for a variety of condition but is NOT that sensitive)

13. MOA of Echinocandins ?

- Inhibition of (1→3)-β-D-glucan synthase, an essential enzyme involved in the synthesis of (1→3)-β-D-glucan, a major component of the fungal cell wall.
- Disrupts fungal cell wall integrity, leading to osmotic instability and ultimately cell lysis and death.

14. What are the last 2 steps of fungal cell wall synthesis ?



15. What does Amphotercin bind to ?

- It binds to ergosterol

16. What drug inhibits squalene epoxidase ?

- Turbenfine

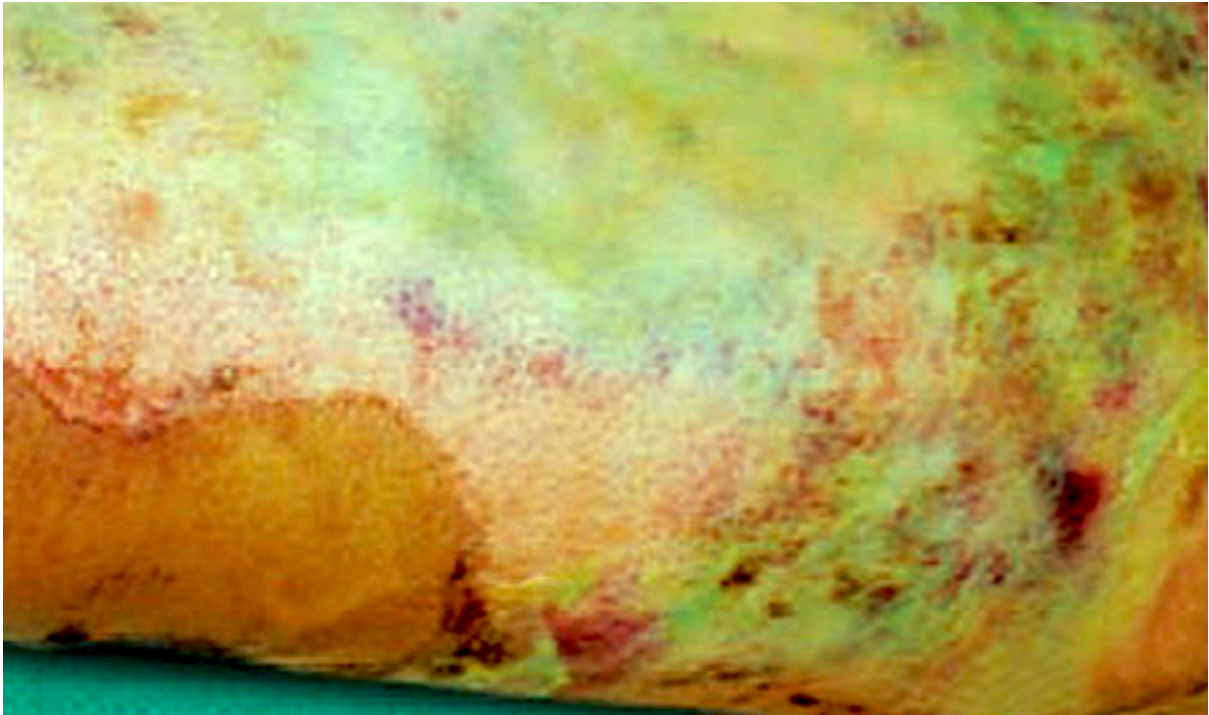
17. What is the prophylaxis criteria for lyme disease ?

TIP BN must meet all 5

- Tick attached for > 36 hours
- Ixodes scapularis (deer tick)
- Prophylaxis started with 72 hours of tick removal
- Borrelia burgdorferi infection rate > 20 % for example patient located in New England
- No CI to Dox

18. 6 month old infant w/ bronchiolitis what is the infant at greatest risk of developing ?

- Correct = {{c1::Recurrent wheezing }}
- Yours = FTT --> dehydration and WL during the symptomatic period due to insensible fluid loss (eg tachypnea) or decreased fluid intake. However, after the infection is resolved the weight gain and growth are expected.
- Infants **age <2 months** and those born prematurely or with cardiopulmonary disease are at greatest risk for **apnea** and/or **respiratory failure** during peak symptoms. In contrast, older, full-term, healthy infants and young toddlers typically recover with no acute complications.

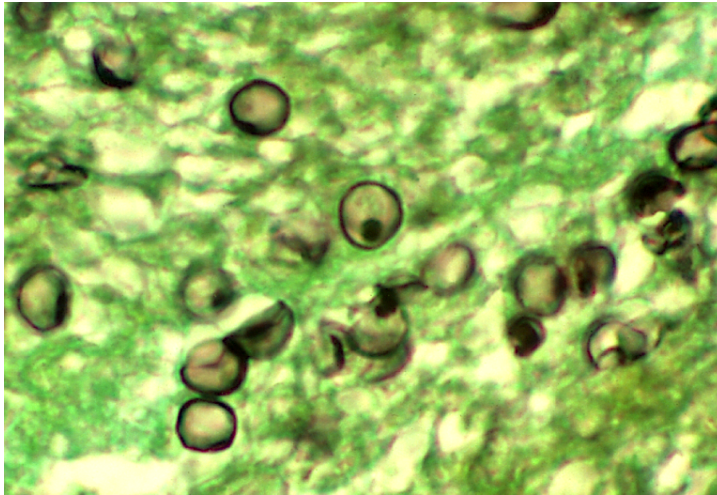


After a burn ?

Pseudo

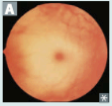
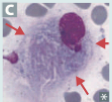
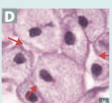
HY USMLE Q #974 – Micro / Derm

HY USMLE Q #962 – Micro / Pharm



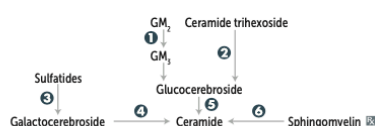
Sliver stain w/ yeast, methadone → IVUDU → HIV → PCP

Lysosomal storage diseases Lysosomal enzyme deficiency → accumulation of abnormal metabolic products. ↑ incidence of Tay-Sachs, Niemann-Pick, and some forms of Gaucher disease in Ashkenazi Jews.

DISEASE	FINDINGS	DEFICIENT ENZYME	ACCUMULATED SUBSTRATE	INHERITANCE
Sphingolipidoses				
Tay-Sachs disease 	Progressive neurodegeneration, developmental delay, hyperreflexia, hyperacusis, "cherry-red" spot on macula A (lipid accumulation in ganglion cell layer), lysosomes with onion skin, no hepatosplenomegaly (vs Niemann-Pick).	1 Hexosaminidase A ("Tay-Sax").	GM ₂ ganglioside.	AR
Fabry disease 	Early: triad of episodic peripheral neuropathy, angiokeratomas B , hypohidrosis. Late: progressive renal failure, cardiovascular disease.	2 α-galactosidase A.	Ceramide trihexoside (globotriaosylceramide).	XR
Metachromatic leukodystrophy	Central and peripheral demyelination with ataxia, dementia.	3 Arylsulfatase A.	Cerebroside sulfate.	AR
Krabbe disease	Peripheral neuropathy, destruction of oligodendrocytes, developmental delay, optic atrophy, globoid cells.	4 Galactocerebrosidase (galactosylceramidase).	Galactocerebroside, AR psychosine.	AR
Gaucher disease 	Most common. Hepatosplenomegaly, pancytopenia, osteoporosis, avascular necrosis of femur, bone crises, Gaucher cells C (lipid-laden macrophages resembling crumpled tissue paper).	5 Glucocerebrosidase (β-glucosidase); treat with recombinant glucocerebrosidase.	Glucocerebroside.	AR
Niemann-Pick disease 	Progressive neurodegeneration, hepatosplenomegaly, foam cells (lipid-laden macrophages) D , "cherry-red" spot on macula A .	6 Sphingomyelinase.	Sphingomyelin.	AR
Mucopolysaccharidoses				
Hurler syndrome	Developmental delay, skeletal abnormalities, airway obstruction, corneal clouding, hepatosplenomegaly.	α-L-iduronidase.	Heparan sulfate, dermatan sulfate.	AR
Hunter syndrome	Mild Hurler + aggressive behavior, no corneal clouding.	Iduronate-2 (two)-sulfatase.	Heparan sulfate, dermatan sulfate.	XR

Angiokeratomas are hard bumps on your skin. The condition occurs when tiny blood vessels called capillaries get bigger or break open near your skin's surface and the surface of your skin thickens. Red, blue, purple or black bumps form underneath your skin. Angiokeratomas are a type of noncancerous (benign) tumor.

MS



Hunters see clearly (no corneal clouding) and aggressively aim for the X (X-linked recessive).

18.

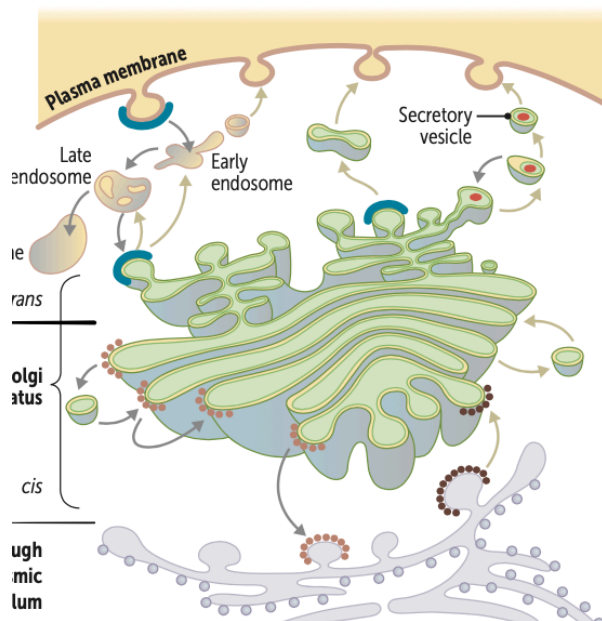
Familial dyslipidemias

TYPE	INHERITANCE	PATHOGENESIS	↑ BLOOD LEVEL	CLINICAL
I—Hyper-chylomicronemia	AR	Lipoprotein lipase or apo CII deficiency	Chylomicrons, TG, cholesterol	Pancreatitis, hepatosplenomegaly, and eruptive/pruritic xanthomas (no ↑ risk for atherosclerosis). Creamy layer in supernatant.
II—Hyper-cholesterolemia	AD Apo B100 binds LDL receptor	Absent or defective LDL receptors, or defective apo B ₁₀₀	TG are normal IIa: LDL, cholesterol IIb: LDL, cholesterol, VLDL	Heterozygotes (1:500) have cholesterol ≈ 300 mg/dL; homozygotes (very rare) have cholesterol ≥ 700 mg/dL. Accelerated atherosclerosis (may have MI before age 20), tendon (Achilles) xanthomas, and corneal arcus.
III—Dysbeta-lipoproteinemia	AR APOB NBME g	ApoE (defective in type III) thrEE	Chylomicrons, VLDL	Premature atherosclerosis, tuberoeruptive and palmar xanthomas.
IV—Hyper-triglyceridemia	AD	Hepatic overproduction of VLDL	VLDL, TG	Hypertriglyceridemia (> 1000 mg/dL) can cause acute pancreatitis. Related to insulin resistance.

T is the last letter

19.

I-cell disease (inclusion cell disease/mucopolipidosis type II)—inherited lysosomal storage disorder (autosomal recessive); defect in N-acetylglucosaminyl-1-phosphotransferase → failure of the Golgi to phosphorylate mannose residues (↓ mannose-6-phosphate) on glycoproteins → enzymes secreted extracellularly rather than delivered to lysosomes → lysosomes deficient in digestive enzymes → buildup of cellular debris in lysosomes (inclusion bodies). Results in coarse facial features, gingival hyperplasia, corneal clouding, restricted joint movements, claw hand deformities, kyphoscoliosis, and ↑ plasma levels of lysosomal enzymes. Symptoms similar to but more severe than Hurler syndrome. Often fatal in childhood.



Signal recognition particle (SRP)—abundant, cytosolic ribonucleoprotein that traffics polypeptide-ribosome complex from the cytosol to the RER. Absent or dysfunctional SRP → accumulation of protein in cytosol.

Vesicular trafficking proteins

- COPI: Golgi → Golgi (retrograde); cis-Golgi → ER.
- COPII: ER → cis-Golgi (anterograde). “Two (COPII) steps forward (anterograde); one (COPI) step back (retrograde).”
- Clathrin: trans-Golgi → lysosomes; plasma membrane → endosomes (receptor-mediated endocytosis [eg, LDL receptor activity])

20. What is the prognosis of pertussis ?

Correct = {{c1::good prognosis He likely recover completely w/ appropriate tx }}

Yours = He will have life time immunity to this conditon after it resolve --> Generally protection from pertussis, whether in the form of vaccination or naturally acquired immunity wanes over time. For this reason, the booster are recommended every 10 years.

Pertussis occurs as a result of an infection from *Bordetella pertussis*. Pertussis may lead to severe paroxysmal coughing which may be accompanied by cyanosis and followed by syncope, emesis or apnea

Memory B cells and T cells specific to *B. pertussis* decline over time, reducing the ability to mount a strong response upon re-exposure.

21. Malaria prophylaxis

Recommended antimalaria chemoprophylaxis options for short-term travelers		
	Medication	Adverse effects/comments
Areas with chloroquine-resistant <i>P. falciparum</i> (Sub-Saharan Africa, southern & Southeast Asia)	Atovaquone-proguanil	• Expensive • GI disturbance (eg, abdominal pain), ↑ liver function tests
	Doxycycline	• Inexpensive • GI disturbance, sun sensitivity, teratogenic
	Mefloquine	• Neuropsychiatric effects • Agent of choice in pregnancy • Weekly dosing
Areas with chloroquine-susceptible <i>P. falciparum</i> (in addition to options above)	Chloroquine, hydroxychloroquine	• Need to be started 1-2 weeks in advance • Potential exacerbation of some skin conditions • Weekly dosing
Areas without <i>P. falciparum</i> (parts of South America, Mexico, Korean peninsula)	Primaquine	• Potential teratogenicity • Hemolysis in patients with G6-PD deficiency • Weekly dosing

GI = gastrointestinal; G6-PD = glucose-6-phosphate dehydrogenase.

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22. How to prevent Giardiasis ?

Correct = {{c1::S}}symptomatic students w/ positive stool samples should refrain from using recreational water venues

Transmission occurs via fecal oral route or ingestion of contaminated food/water. Exposure to untreated water during camping or hiking is a common source of infection.

Symptoms of acute infection include bulky, greasy stools.

Recreational water venues are another common source of outbreaks, as cysts often resist chlorination and remain viable in water. Affected individuals should therefore refrain from attending these venues until symptoms have resolved for 2 weeks.

Chronic infection leads to

Yours = Hand sanitizer

Hand hygiene is important in controlling the spread of giardiasis. Soap-and-water-based agents are preferred, as Giardia cysts are resistant to many alcohol-based hand sanitizers and disinfectants.

10M (1) myalgias and arthralgias (2) 38.8 C (3) Petechia on the bilateral wrists and ankles (4) Low platelet (5) camping trip in North Carolina

What is the diagnosis ?

Correct = {{c1::RMSF}}

Yours = No therapy is indicated --> Mono

CLaSH

Carcinomas originate from epithelial cells lining organs. Carcinoma cells tend to invade nearby lymphatic vessels because the lymphatic system provides a network of channels that facilitate tumor cell dissemination. Lymphatic vessels are often abundant near epithelial tissues.

Sarcoma originate from mesenchymal tissues such as bone, muscle, cartilage, or connective tissue. Sarcoma cells invade blood vessels directly because of their proximity and the rich vascular supply of mesenchymal tissues.

Skin manifestation of hep C

LCCP = Lichen planus, Cryoglobulinemia, Cutaneous Leuko, PCT

What are other catalase positive organism apart from SPAC ?

Serratia and Burkholderia

Prophylaxis of CGD

Itraconazole inhibits fungal ergosterol synthesis, inhibits Aspergillus

TMP-SMX inhibits bacterial folate synthesis, providing broad-spectrum bacterial prophylaxis Prophylaxis against bacterial infections, particularly *Staphylococcus aureus*

INF gamma : Immunomodulatory therapy to enhance phagocyte function. IFN- γ stimulates the oxidative burst activity of phagocytes, partially compensating for the defective NADPH oxidase.

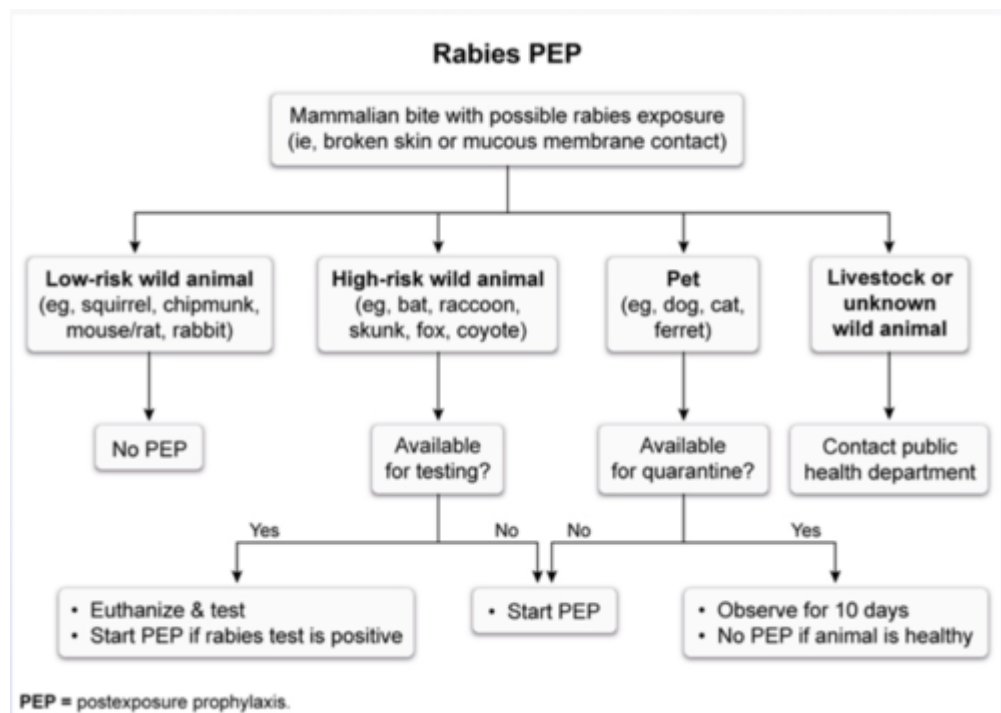
25. 25M

(1) bite by a dog

What is the NBS ?

{{c1::observe dog for 10 days }}

Wrong answer = Sarcific dogs



NBME 7 B4

General Pediatrics, Geriatrics and Public health

1. What is considered a High Blood pressure in a 5 year old child?

- 95th percentile (roughly around 110 mmHg systolic is considered high in children)

2. What happens to the renal system in the elderly ?

- reduction in functional {{c2::glomeruli}} Decreased renal {{c1::blood flow }} Limited hormonal responsiveness (eg renin PTH)

3. Which age is the HPV vaccine given ?

- 9 to 26
- You though = 11 to 26 years

4. PPSv23 vaccine involves b or t cells?

- Only b cells, T cell independent → Polysaccharide antigens directly stimulate **B cells** that have B-cell receptors specific for the polysaccharide.

This activation **bypasses T-cell help**, leading to:

- Production of **mainly IgM antibodies**
- Limited formation of **memory B cells**

5. What are the 2 dosages for Meningococcal vaccine?

- First dose 11/12 years
- Second dose: **16 y/o**